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The Development and Testing of the Continuity Assessment Record and Evaluation (CARE) Item Set: Final Report on CARE Item Set and Current Assessment Comparisons: Volume 3 of 3

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Volume 3 of 3

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RTI INTERNATIONAL

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CONTENTS SUMMARY

This document represents Volume 3 of 3 of the final report, *The Development and Testing of the Continuity Assessment Record and Evaluation (CARE) Item Set*. This project was conducted by RTI International under contract with the Centers for Medicare & Medicaid Services. The report is divided into three volumes.

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EXECUTIVE SUMMARY

ES.1 Background and Introduction

The Centers for Medicare & Medicaid Services (CMS) has undertaken a major initiative to evaluate and realign the incentives for inpatient and post-acute services provided under the Medicare program. Currently, about a fourth of all beneficiaries are admitted to a general acute care hospital each year; almost 35 percent of them are discharged to additional care in a long-term care hospital (LTCH), an inpatient rehabilitation facility (IRF), a skilled nursing facility (SNF), or a home with additional services provided by a home health agency (HHA). Many beneficiaries use more than one service following hospital discharge (Gage et al., 2008). Although these services constitute a continuum of care for the patient, the current measurement systems do not allow Medicare to examine the effects of these continuing services on the patient's overall health and functional status.

The Medicare program currently mandates that IRFs, SNFs, and HHAs each submit assessment data on the beneficiary's medical, functional, and cognitive status. CMS uses this information in both its payment and quality monitoring efforts. Hospitals, both general acute care and LTCHs, also submit data on medical conditions being treated as they are reported under the Medicare Severity-Diagnosis Related Group (MS-DRG) based on a case-mix system used to pay and monitor these providers. Despite the inclusion of these factors in the existing systems, four of the five case-mix systems were developed independently and use different items to measure each set of concepts. As a result, the Medicare program has not been able to measure changes in patients' health status as they progress across their episode of care. Further, this lack of standardized measurement makes it difficult to understand the extent to which patient costs and program costs differ across the settings.

The Deficit Reduction Act of 2005 (DRA) directed CMS to develop methods for consistently measuring Medicare beneficiaries' health status across acute and post-acute care (PAC) settings. This contract addresses this issue by testing the use of a standardized set of items for measuring medical, functional, cognitive, and social support factors in the acute hospital, LTCH, IRF, SNF, and HHA. These items are based on the science underlying currently mandated assessments in the Medicare payment systems, including the IRF-Patient Assessment Instrument (PAI), Minimum Data Set (MDS), and Outcome and Assessment Information Set (OASIS) instruments. Over the past few years, RTI International has been working with the Office of Clinical Standards and Quality and the research and clinical communities associated with acute and PAC services, including clinicians, case-mix measurement experts, accreditation bodies (such as The Joint Commission and the Commission on the Accreditation of Rehabilitation Facilities), provider associations, and others, to identify a select set of items that would be appropriate for measuring beneficiary severity of illness, regardless of site of care. Input was collected through numerous stakeholder meetings, including several open-door forums (ODFs) and technical expert panels (TEPs). The results of these panels were submitted for publication in the *Federal Register* and underwent two sets of public comment periods. The results led to the development and pilot testing of the Continuity Assessment Record and Evaluation (CARE) Item Set. The items were revised following the pilot test and the resulting changes were implemented for use in the Post-Acute Care Payment Reform Demonstration (PAC-PRD). Data were collected in the PAC-PRD from 2008 to 2010. Over 53,000

assessments were collected in acute hospitals, LTCHs, IRFs, SNFs, and HHAs. Volume 1 of this set of reports reviews the development of the CARE tool, including justification of the item set, pilot testing, and item edification processes.

Two types of reliability tests were conducted and profiled in Volume 2. The first is a traditional interrater reliability test, which examines how well the assessment items measure specific concepts when two clinicians are measuring the same patient at the same time. The second reliability test examines how discipline and provider setting affect assessment item scoring. Additional analyses of the internal consistency of the functional status subscales in the standardized CARE items were also examined. As expected, most of the items performed reliably, as similar items were already in use and found to be reliable within some PAC settings, but had not necessarily been tested in use across the other settings. Given that patient assessment applies to patients across settings, it is not surprising that items found to be reliable in one setting were also reliable in other settings. The exception was in some of the instrumental activities of daily living (IADLs) such as shopping and laundry, which were more subjective in nature than the clinical items.

Volume 3 provides an additional set of analyses comparing the standardized CARE items with analogous items in the mandated assessment instruments being collected at the time of the PAC-PRD data collection. The purpose of this analysis is to examine item and coding differences between each of the three CMS assessment instruments and CARE and to consider how these differences affect relative coding on the comparable assessment tool items for the same patient.

Volume 3 has several sections. *Section 12* introduces the volume and provides a roadmap to other reports in the three-volume set. The next three sections discuss the item definitions and coding differences between the standardized CARE items and the mandated assessment instruments—IRF-PAI, MDS 2.0, and OASIS-B—that Medicare-certified providers were using at the time of data collection. These three sections also present data from cases in the CARE sample to show how the standardized items relate to the mandated items and to highlight expected similarities and differences between items. *Section 13* examines the comparability of the standardized CARE items to those items currently in the IRF-PAI assessment tool. *Section 14* compares the CARE items to the MDS 2.0 items for each patient in the CARE sample who was admitted to a SNF. While the MDS 3.0 went into effect in 2010, the results are compared with the assessment data used at the time of data collection (MDS 2.0). Due to the close collaboration of the CARE development team with the MDS 3.0 development team, many of the CARE items are intentionally similar to those items in the MDS 3.0. *Section 15* reviews the CARE items relative to the OASIS-B items. OASIS-C has gone into effect since the data collection. However, OASIS-B was used during the time of the reliability tests. The CARE items also were based on discussions with the OASIS-C developers to create consistency in item modifications.

As described throughout the reporting of these results, we did not expect a one-to-one match between CARE item responses and the mandated assessment instruments. The item definitions differ as do the definitions of the coding categories. Understanding how the standardized items compare to those items already used in the respective health communities to monitor the quality of care and adjust payment policies for differences in patient severity or case-

mix characteristics will be important. Most important, the high reliability results reported in Volume 2 suggest that the standardized items work well in each setting. The information presented here in Volume 3 is important for understanding the expected differences in rating between the current items and the standardized items.

ES.2 CARE Item Set and IRF-PAI: Overview, Background, and Methods

Comparisons are made between selected items from the CARE Item Set and the FIM® Instrument[1] items on the IRF-PAI. The IRF-PAI, which is the current assessment tool for the inpatient rehabilitation setting, includes FIM® items and function modifiers. For each beneficiary in the CARE sample who was admitted to an IRF, the analysis compares admission scores between the existing IRF-PAI/FIM® items that are used for payment (12 motor items) with conceptually similar CARE items. These analyses focused on items capturing concepts used in the current Medicare IRF prospective payment system (PPS) to determine payments.

To conduct these analyses, we merged the January 2010 extract of the CARE data with IRF-PAI/FIM® assessments available through December 31, 2010.[2] The merge was based on the beneficiary identification number and a match on admission or discharge dates on each assessment. We successfully matched 93 percent of the CARE assessments with IRF-PAI/FIM® Instrument data and have a total of 9,481 assessments: 4,890 admission assessments and 4,591 discharge assessments. The analyses included in this report focus on the admission assessment items.

ES.2.1 Purpose of Analyses

As previously noted, these analyses focus on items capturing concepts used in the current Medicare IRF PPS to determine payments. The CARE Item Set includes items in the Impairments and Functional Status sections that are similar in concept to the IRF-PAI/FIM® items. The comparable concepts in the Impairments section include the bladder and bowel management items. The comparable concepts in the Functional Status section include items in Section A (the Core Self-Care items), Section B (the Core Functional Mobility items), and Section C (the Supplemental Functional Ability items). The results are organized by these sections. Some of the CARE and IRF-PAI/FIM® items are similar, but for others, the comparable concepts are more distal and may include more than one variable in the comparison. Finally, not all CARE items have an equivalent IRF-PAI/FIM® and vice versa. For example, the eating items in the CARE Item Set and IRF-PAI/FIM® Instrument are similar, but not exactly the same. The CARE Item Set has separate items for eating and administration of tube feedings. In the IRF-PAI/FIM® Instrument, these activities are reported in a single item, eating. Walking is also measured very differently in the two data sets, making it difficult to compare items across the CARE Item Set and the IRF-PAI/FIM® Instrument.

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[1] FIM® is a trademark of Uniform Data System for Medical Rehabilitation, a division of UB Foundation Activities, Inc.

[2] CARE extract date 01/28/2010. Data shown in this chapter were generated with the req_lc008_v3, req_lc012, req_lc013, and req_lc014 programs.

ES.2.2 Reasons for Expected Differences in Item Response Codes (CARE vs. IRF-PAI)

ES.2.2.1 Overview

There are several reasons why FIM® scores on the IRF-PAI Instrument and CARE Item Set scores for similar items will not match, including the following:

Time Frame: The assessment time frame for most of the FIM® items on the IRF-PAI is 3 calendar days, whereas the CARE Item Set time frame is 2 calendar days (if the patient is admitted before noon) or 3 calendar days (for patients admitted after noon). The only CARE Item Set time frame exception is for the CARE Mood items that use a 14-day look-back period.

Most Dependent Episode vs. Usual Performance: If the patient's functional performance varies during the assessment time frame, the instructions for completing the IRF-PAI/FIM® direct the clinician to report the patient's most dependent episode. For the CARE Item Set, clinicians are instructed to report the patient's usual performance during the CARE assessment time frame.

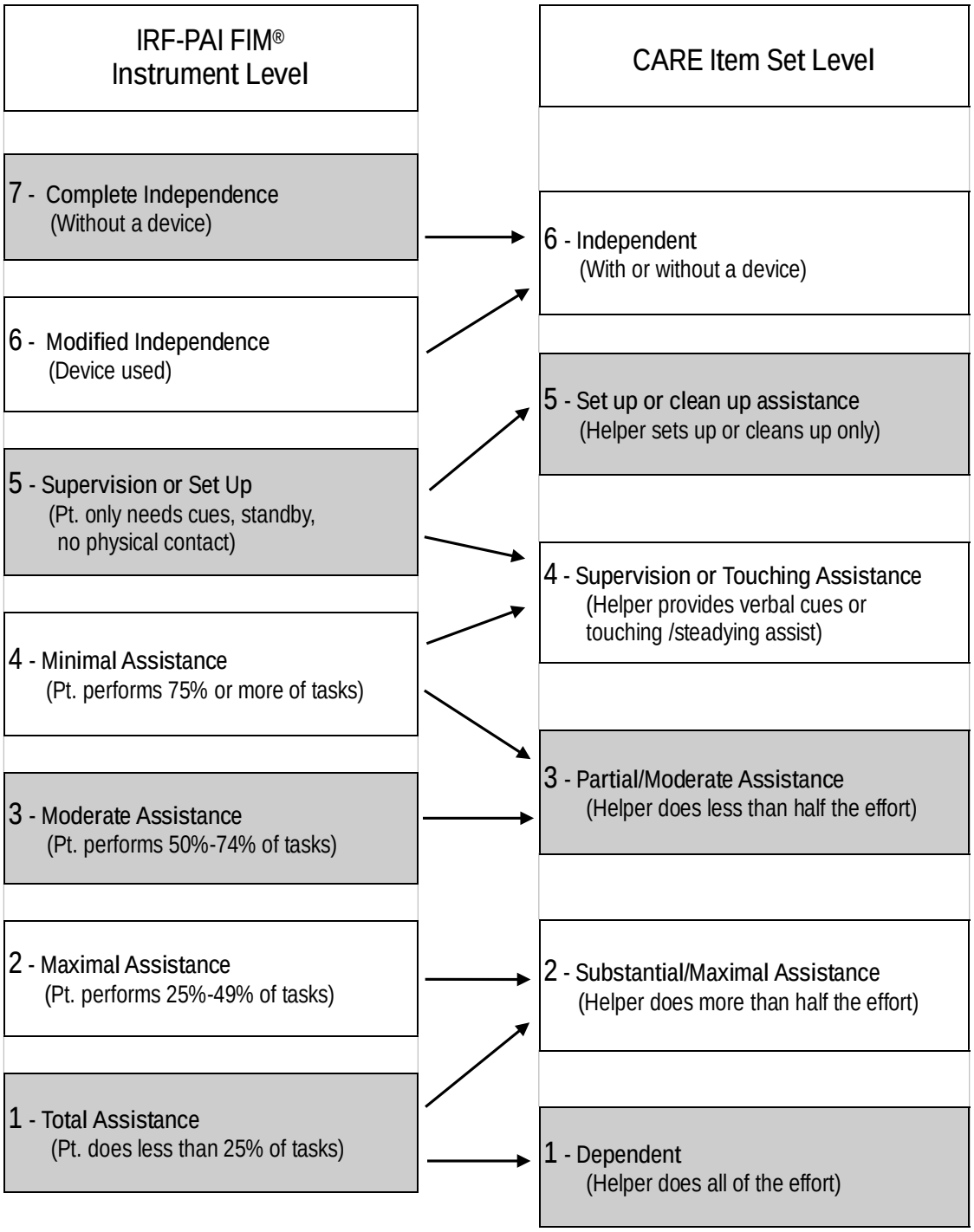
Implication: In general, these differences are likely to result in FIM® scores that reflect a lower level of independence than the CARE Item Set's assessment scores for the same patient. We would expect that some FIM® scores will be lower than CARE scores for some items.

Differences in Rating Scales: The CARE functional item rating scale has a range of 6 (Independent) to 1 (Dependent), and the FIM® items on the IRF-PAI/FIM® Instrument have a range of 7 (Complete Independence) to 1 (Total Assistance). The definitions at each level differ across each rating scale. The CARE scale was designed to provide better specificity at the lowest level and remove differences associated with use of a device at the higher level, in keeping with the International Classification of Function approach.

Figure ES-1 shows how FIM® scores generally map to CARE Item Set scores. Note that the IRF-PAI/FIM® Instrument instructs the clinician to determine the assessment code based on what percentage of the task the patient can perform safely and independently. The CARE Item Set instructs the clinician to determine what amount of assistance the helper provides for the patient so that the patient can safely complete the activity.

Differences in Item Definitions: Each instrument defines items differently, specifically what is and what is not included in each of the items. For example, the CARE Item Set has separate items for eating and administration of tube feedings. In the IRF-PAI/FIM® Instrument, these activities are reported in a single item, eating. When the functional assessment items in the CARE Item Set were developed, the objective was to have definitions that would be relevant to assessing all PAC patients. Additionally, CARE items were designed to focus on discrete activities; some FIM® items may capture multiple concepts or activities. Thus, the definitions of items on the IRF-PAI/FIM® Instrument and the CARE Item Set are often different. There are important distinctions between these two instruments. For each activity on the CARE and IRF-PAI/FIM® instruments, there are unique differences in task inclusion. Each instrument includes items that the other instrument does not.

Figure ES-1
General relationship between IRF-PAI/FIM® Instrument levels and CARE Item Set levels



Error: Some disagreement between the CARE and IRF-PAI items may be attributable to clinician reporting errors on one of the tools. As noted in the interrater reliability section in Volume 2, and in prior evaluations of IRF-PAI items, some items have lower reliability than others.

ES.2.2.2 Clinical Examples

We provide the following clinical examples to assist with the interpretation of the data results.

Example of CARE score 6 and FIM® scores 6 & 7

- The CARE Item Set and IRF-PAI/FIM® Instrument use distinct codes to reflect the most independent patients. The CARE score 6–Independent is similar to merging the FIM® scores of 7–Complete Independence and 6–Modified Independence. The CARE score 6–Independent is reported for the patient who completes an activity with or without an assistive device. The CARE Item Set includes separate items that collect data about the patient's use of mobility devices and aids. The IRF-PAI/FIM® score 7–Complete Independence is used for the patient who completes the activity with reasonable time, without a device, and without concern for the patient's safety. The IRF-PAI/FIM® score 6–Modified Independence is used for patients who need more than a reasonable amount of time, who use a device, or for whom there is a safety concern.
  - Example: A patient can safely feed him/herself without assistance and does not use any devices; however, he/she requires more than a reasonable amount of time to complete this activity. The clinician using the CARE Item Set codes 6–Independent (the highest independence rating). The clinician using the IRF-PAI/FIM® Instrument uses code 6–Modified Independence (the second highest independence rating).

Example of CARE scores 5 & 4 and FIM® score 5

- If the patient needs only setup or clean-up assistance and can be safely left to complete the activity, the CARE item score is 5–Setup or Clean-up Assistance. The IRF-PAI/FIM® Instrument scores this patient as 5–Supervision or Setup.
  - Example: The use of CARE score 5–Setup or Clean-up Assistance and IRF-PAI/FIM® score 5–Supervision or Setup is reported if the patient needs a helper to gather clothes for upper body dressing and the patient *does not need any supervision* with the activity. If the helper provides setup assistance and then leaves the room while the patient completes upper body dressing, then the scores for the FIM® and the CARE data set may be the same—a score of 5. However, if a patient needs supervision in addition to setup assistance, then the CARE score of 4–Supervision or Touching Assistance is reported and indicates the need for the helper to remain with the patient. The IRF-PAI/FIM® score for the patient who needs supervision is scored 5–Supervision or Setup.

Example of CARE score 4 and FIM® scores 5 & 4

- The CARE score for a patient who needs only *setup assistance* differs from the CARE score for a patient requiring supervision, verbal cueing, or touching/steadying assistance to complete an activity. The CARE item is scored as 4–Supervision or Touching Assistance for patients who need supervision, verbal cueing, or touching/steadying. The IRF-PAI/FIM® Instrument rating scale uses one score for these assistance levels.
  - Example: If a patient needs verbal cues to complete upper or lower body dressing, the clinician reports CARE score 4–Supervision or Touching Assistance. When using the IRF-PAI/FIM® to assess the same patient, a score of 5–Supervision or Setup is reported (as long as no hands-on assistance is used for the patient during any portion of the activity). However, if the patient requires steadying/touching (e.g., steadying the patient while she pulls up her pants), the clinician will report the IRF-PAI/FIM® Instrument score as 4–Minimal Assistance.
- Clinician feedback favored the CARE Item Set's ability to make clinically important distinctions between the patient's need for supervision (CARE score 4) and Setup or Clean-up Assistance (CARE score 5). The need to provide supervision (CARE score 4) often means that the clinician is present intermittently or throughout the time that the patient performs an activity (such as eating or walking). In contrast, Setup or Clean-up (CARE score 5) often means that the clinician can leave (and attend to other responsibilities) while the patient performs the remaining tasks. The clinician may return to the patient at the end of the activity to provide any clean-up assistance. Clinician feedback indicated that these distinctions have major implications regarding the time needed to provide care for these higher-level patients.

Example of CARE score 4 and FIM® score 4

- An additional example shows some of the similarities in coding. A patient who needs touching/steadying assistance would be coded on the CARE as 4–Supervision or Touching Assistance because the patient is unsteady upon rising from sit to stand and requires the clinician to place his/her hand on the patient to steady him/her during this activity. When assessing this same patient using the IRF-PAI/FIM®, score 4–Minimal Assistance is also used because the patient performed 75 percent or more of the task.

Example of CARE score 3 and FIM® scores 3 & 4

- If the helper assists with less than half of the effort, the CARE item score is 3–Partial/Moderate Assistance. This patient may be scored on the IRF-PAI/FIM® Instrument as either a 4–Minimal Assistance (patient performs 75 percent or more of the task) or 3–Moderate Assistance (patient performs 50 to 74 percent of the task), depending on the patient's need for assistance.
  - Example: A patient transfers to and from his bed with the helper providing lifting assistance, but less than half the effort. The CARE coding for this patient is 3–Partial/Moderate Assistance. The IRF-PAI/FIM® coding requires the clinician to

determine what percentage of the task the patient performs. If the patient performs 75 percent or more of the task, then the patient is scored a 4–Minimal Assistance, but if the patient performs 50 to 74 percent of the task, then the FIM® score 3–Moderate Assistance is reported.

Example of CARE scores 1 & 2 and FIM® scores 1 & 2

- The CARE coding distinguishes between a patient who contributes a small amount of effort (rated as level 2) and a patient who is totally dependent (rated as level 1). These scores differ from the IRF-PAI/FIM® Instrument scores. If the helper assists the patient with *more than half of the effort*, the CARE item score is 2–Substantial/Maximal Assistance. This patient may be scored on the IRF-PAI/FIM® Instrument as either 2–Maximal Assistance if the patient performs 25 to 49 percent of the task or 1–Total Assistance if the patient performs less than 25 percent of the task.
  - Example: A patient is assessed using the CARE while transferring into and out of bed. The helper does all of the effort to complete this activity upon admission to the facility and scores the patient 1–Dependent. Upon discharge, the same patient contributes a bit of effort while performing the activity and is scored 2–Substantial/Maximal Assistance to document the patient's progress in performing this activity. If the patient performed less than 25 percent of the task, then the IRF-PAI/FIM® score would be 1–Total Assistance at both admission and discharge. Clinician feedback during the CARE Item Set training indicated that it is important to distinguish between patients who are *unable to participate* in an activity and patients who are *beginning to participate* in an activity. Clinicians also emphasized that there are fundamental, relevant, and measurable distinctions among lower-functioning patients.

Example of CARE scores 1 & 2 and FIM® score 1

- The IRF-PAI/FIM® score 1–Total Assistance (patient performs less than 25 percent of effort) includes a *broader range* of patient performance than the CARE score of 1. The FIM® Instrument's lowest score includes patients who perform less than 25 percent of the activity, including patients who require total assistance. The CARE rating scale differentiates between level 1–Dependent and level 2–Substantial/Maximal Assistance (helper does more than half the effort).
  - Example: The CARE approach is based on whether the patient can do more than half or less than half the activity and, given that information, how much assistance is needed. If the patient can do more than half the activity, does the clinician need to stay and supervise or can they set up and walk away, safely leaving the patient? If the patient does less than half the activity, must the helper do all the effort or just more than half the effort?

ES.2.2.3 Summary

The differences between the IRF-PAI/FIM® Instrument and the CARE Item Set, including the administration and rating scales, are essential to recognize while interpreting the

results of the data comparison. It is not expected that a one-to-one comparison can be made between IRF-PAI/FIM® and CARE items for these and other reasons that are highlighted in the following section. For each comparison, we note where the expectation for the most overlap should occur. When data appear inconsistent, we are unable to determine the patient's true status.

ES.2.3 Selected Results of the CARE Item Set and IRF-PAI/FIM® Instrument Analysis

Corresponding assessment instrument items were chosen from CARE and the IRF-PAI® instruments. The analysis used scores from the 4,890 admission assessments collected.

ES.2.3.1 Bowel and Bladder Items

This complex grouping of comparison items from the CARE and IRF-PAI assessment instruments was most challenging in the items' distinct definitions and coding scales. The Bladder item in CARE corresponded best to the FIM® Bladder Management item and two related function modifier items (Bladder Level of Assistance and Bladder Frequency of Accidents). The IRF-PAI/FIM® and CARE instruments both measure the level of assistance the patient requires for managing the use of equipment/devices related to bladder (with a separate item for bowel care); however, the FIM® uses a scale of 7 through 1 to indicate the amount of assistance needed, whereas the CARE uses "Yes" or "No," resulting in the inability to use cross-tabulation comparison analyses. Instead, frequency tables are provided and indicate that 61 percent of patients assessed using CARE had a bladder or bowel impairment upon admission. Within the same sample, nearly 50 percent of the patients assessed with the IRF-PAI/FIM® required "Total Assistance" for Bladder Level of Assistance.

Cross-tabulation comparisons were possible for CARE Frequency of Incontinence and IRF-PAI's Frequency of Accidents. The IRF-PAI item defines "accidents" as the act of wetting linen or clothing with urine, including urinal or bedpan spills. The CARE Item Set reports bladder incontinence as the involuntary leakage of urine. Successful use of incontinence pads/undergarments (diapers) results in the patient's being incontinent without any urine spilling onto linen or clothing. The FIM® item does not collect data on the frequency of the patient's "successful use" of incontinence pads/undergarments (diapers); thus, the FIM® item reflects not the number of times a patient is incontinent when using incontinence pads/undergarments (diapers), but instead the frequency with which the patient had a FIM®-defined "bladder accident." The same corresponding items for Bowel were used for item comparison in the analysis. The distinct difference in each instrument's use of "incontinence" (CARE) and "accidents" (IRF-PAI) affected the level of agreement noted between these two items in the analysis. The expected areas of highest overlap between the CARE and FIM® bladder items did occur. For example, there was 85 percent agreement between the instruments when CARE was coded as "continent" for Frequency of Incontinence and IRF-PAI was coded as 6–No Accidents With Device or 7–No Accidents Without Device. As previously noted, we expected differences in score match rates due to the differences in the definitions of these items.

ES.2.3.2 Selected Activities of Daily Living Items

Eating Item

Each instrument's distinct definition of the Eating item impacted the analysis percentage of agreement. For example, the eating items in the CARE Item Set and IRF-PAI/FIM® Instrument are similar, but not exactly the same. The CARE Item Set has separate items for eating and administration of tube feedings. In the IRF-PAI/FIM® Instrument, these activities are reported in a single item, Eating. The cross-tabulations show that the CARE codes of 1, 2, 3, 4, and 5 tended to overlap with the IRF-PAI/FIM® codes, as expected. The highest agreement was between a CARE value of Dependent and an IRF-PAI/FIM® value of Total Assistance, where both groups are included in the highest dependency group. Other group matches were affected by the absence of the tube feeding cases in the CARE numbers and their inclusion in the IRF-PAI numbers.

Toilet Hygiene/Toileting Item

Influencing the level of agreement between the instruments for this item were the similar definitions yet distinct coding differences. The CARE values of 1, 2, 3, and 4 overlapped with the FIM® values on the IRF-PAI as expected. The most agreement was between a CARE value of Dependent and the IRF-PAI/FIM® value of Total Assistance (90 percent), followed by a CARE value of Substantial/Maximal Assistance with the IRF-PAI/FIM® values of Total Assistance (42 percent) and Maximal Assistance (45 percent).

Upper Body Dressing and Lower Body Dressing Items

Both the IRF-PAI/FIM® and the CARE instruments' Upper Body Dressing items are defined similarly. The Lower Body Dressing item definition on each instrument is similar except the CARE item excludes footwear; putting on and taking off footwear and orthotics is a separate item on the CARE Item Set.

Comparing the Upper Body Dressing item from each instrument, all CARE values overlapped with the IRF-PAI/FIM® values as expected, with the exception of CARE level 6–Independent, which overlapped most with an IRF-PAI/FIM® level of Supervision/Setup (34 percent). This overlap may have been due to the IRF-PAI's emphasis on rating the patient's most dependent versus CARE's usual performance criteria. The most agreement was between a CARE value of Substantial/Maximal Assistance and IRF-PAI/FIM® values of Total Assistance (26 percent) and Maximal Assistance (60 percent). There was also high agreement among patients with CARE values of Dependent and IRF-PAI/FIM® values of Total Assistance (83 percent).

For the Lower Body Dressing item used from each instrument, all CARE values overlapped with the IRF-PAI/FIM® values as expected. The most agreement was among patients with a CARE value of Substantial/Maximal Assistance and IRF-PAI/FIM® values of Total Assistance (33 percent) and Maximal Assistance (57 percent).

Chair/Bed-to-Chair Transfer Item

The transfer item definitions were similar; however, the IRF-PAI definition includes the wheelchair as one of the surfaces on which the patient is assessed. The CARE values of 1, 2, 3, and 4 overlapped with the IRF-PAI/FIM® values as expected, except CARE's code Setup or Clean-up Assistance, which overlapped the most with the IRF-PAI/FIM® levels Minimal Assistance/Touching (44 percent) and Supervision/Setup (31 percent). Patients coded as Independent on the CARE item were most often coded as needing supervision (35 percent) and minimal assistance (31 percent) on the IRF-PAI/FIM® Instrument. The most agreement was among patients with a CARE value of Dependent and an IRF-PAI/FIM® value of Total Assistance (93 percent).

Toilet Transfer Item

Each instrument defines toilet transfer differently. The CARE Item Set includes transfer on and off a toilet or commode, whereas the IRF-PAI/FIM® item defines toilet transfer as getting on and off a standard toilet (potentially a more difficult transfer without height adjustment). All CARE values overlapped with the IRF-PAI/FIM® values as expected except for the CARE value of Independent, which overlapped most with an IRF-PAI/FIM® level of Minimal Assistance/Touching (33 percent). This overlap may have been due to the different definitions allowing toilet seat height adjustment. The most agreement was among patients with a CARE value of Substantial/Maximal Assistance and IRF-PAI/FIM® values of Total Assistance (29 percent) and Maximal Assistance (49 percent). There was also substantial overlap between patients with CARE values of Dependent and IRF-PAI/FIM® values of Total Assistance (76 percent).

Shower/Bathe Item

Both the IRF-PAI/FIM® and the CARE instruments' Shower/Bathe items are defined similarly. CARE values overlapped with the IRF-PAI/FIM® values as expected. The most agreement was among patients with a CARE value of Partial/Moderate Assistance and IRF-PAI/FIM® values of Moderate Assistance (52 percent) and Minimal Assistance (25 percent).

ES.2.3.3 Mobility Items

Walking is measured so differently in the two data sets that data cannot be easily compared across the CARE Item Set and the IRF-PAI/FIM® Instrument, thus not allowing for cross-tabulation analysis. Frequency data are presented for each instrument.

Mode of Mobility—Walking/Wheelchair Items

The CARE instrument requires coding the patient's performance for the walking or wheeling item, and only one distance of this mode of mobility is coded. On the CARE Item Set, all walking items are left blank if the patient usually uses a wheelchair. The IRF-PAI/FIM® Instrument requires selection of the mode of locomotion by anticipating the patient's mode of mobility at discharge or, if the clinician is uncertain, the clinician completes at admission both scores for wheelchair mobility and the walking items. Both walking and wheelchair scores are reported for each IRF-PAI, whereas the CARE Item Set codes one score for the patient's

performance using the most frequently used mode of mobility (walking or wheeling) during the admission assessment period.

Less than half (43 percent) of the patients in the sample assessed with the CARE Item Set primarily used a wheelchair for mobility upon admission. Results on the IRF-PAI showed that, upon admission, the most frequent distance walked was coded as Less Than 50 Feet and the most frequent distance wheeled was coded as Activity Does Not Occur. The walk item most often coded was Total Assistance, and the most frequent codes for the wheelchair item were Activity Does Not Occur and Total Assistance.

Up and Down Stairs Item

The CARE Item Set has two distinct items for assessing a patient's level of assistance needed to go up and down 12 or 4 steps. The IRF-PAI/FIM® Instrument uses one item to assess the patient's ability to go up and down 12 to 14 steps. The IRF-PAI/FIM® Instrument has an exception code that is used if the patient can perform "household ambulation" (going up and down four to six steps independently, with or without a device), if the activity takes more than a reasonable amount of time, if there are safety considerations, or if the patient requires supervision. The data analysis revealed that going up and down stairs was a challenging activity for many patients on admission, and codes indicating that the activity did not occur were common on both instruments. The CARE Item Set has a skip pattern for the stair items if the patient primarily uses a wheelchair. Nearly 43 percent of all patients were coded as Coded on Other Item or Missing for the CARE item, and 74 percent were coded as Activity Does Not Occur on the IRF-PAI/FIM® Instrument.

ES.2.3.4 CARE Correlations with IRF Length of Stay

The correlations between the CARE Item Set and IRF-PAI/FIM® Instrument functional items with length of stay (LOS) are used to address predictive validity. Correlations between a subset of the CARE Item Set's function items and IRF LOS are displayed side by side with correlations between the IRF-PAI/FIM® Instrument items and IRF LOS.

Although LOS is not equivalent with resource intensity, it provides general information on the expected direction and relationship between functional items and a measureable outcome that represents length of treatment. LOS is used as a proxy to look at the relative effects of CARE Item Set and IRF-PAI/FIM® Instrument items and their association with the amount of rehabilitation treatment received.

The correlations with the IRF LOS with the CARE items and IRF-PAI/FIM® Instrument items are generally similar. There are some instances where the absolute value of the correlation is slightly higher on the CARE items. For example, the CARE toilet hygiene item correlation with IRF LOS is −0.377, whereas the IRF-PAI/FIM® Instrument toileting correlation is −0.364. For other items, the correlation with IRF LOS was higher for the IRF-PAI/FIM® Instrument item than for the CARE item. Overall, it appears that the CARE Item Set's capacity to explain LOS is comparable to that of the IRF-PAI/FIM® Instrument.

ES.2.4 Summary of the CARE Item Set and IRF-PAI/FIM® Instrument Analysis

There was generally good agreement between CARE Item Set and IRF-PAI/FIM® Instrument scoring levels where agreement was expected, that is, for areas where the item definition was similar. Specifically, because of similarities between task performance definitions across the CARE and IRF-PAI self-care items, agreement was excellent and predictable based on the altered structure of the measure response levels. This pattern was remarkably consistent across the self-care items, as well as those supplemental items with similar activity definitions.

When items were conceptually similar but definitions were very different, agreement was not expected. For example, definition differences for bowel and bladder items and for walking items challenged comparisons. Our preliminary analyses showed that the relationship between LOS and individual CARE items was comparable to correlations between individual IRF-PAI items and LOS, even though the latter assessment was tailored to fit the IRF setting.

ES.3 CARE Item Set and MDS 2.0 Instrument: Overview, Background, and Methods

These analyses compare the CARE Item Set items relative to MDS 2.0 prospective payment items (resource utilization group [RUG]-III V5.20). Analyses are based on CARE assessments matched with MDS 2.0 assessments. CARE and MDS 2.0 assessment data were merged using Medicare beneficiary identification number (HICN), gender, and birth date. In summary, 93.3 percent of the CARE admission assessments collected in participating SNFs were successfully matched with MDS 2.0 data, for a total of 3,977 assessment pairs.

ES.3.1 Expected Differences in Response Item Codes between CARE and the MDS 2.0

Selected items from both the MDS 2.0 Instrument and CARE Item Set were compared for this analysis. As with the IRF-PAI–CARE comparison, items were selected based on concepts used in the SNF PPS for case-mix adjustment. Although many CARE items address activities that are also included on the MDS 2.0, there are several key differences between the two assessment instruments that may have resulted in differences in data reported on the two assessments. Key differences between the assessment instruments affecting all item-by-item comparisons include the following:

Time Frame: The assessment time frame for the CARE Item Set is 2 calendar days (if the resident is admitted before 12 noon) or 3 calendar days (for residents admitted after 12 noon). The MDS 2.0, 5-day PPS assessment was used for patients who are covered by Medicare Part A. Most MDS 2.0 items are assessed during a 7-day look-back period. The assessment allows up to 3 additional grace period days for the 5-day PPS instrument, during which the resident is assessed by "looking back over the last 7-day assessment period." Other MDS 2.0 items have a 14-day look-back period.

Implication: Patients may be assessed at different acuity levels on the MDS 2.0 and CARE Item Set. When preadmission days are included in the 7-day look-back period and when only one instrument uses the 14-day look-back period, the resident's prior acuity level can affect the data comparison of the two instruments. These status differences may occur at preadmission or post-admission to the SNF.

Item Rating Scales: Differences between CARE and MDS 2.0 in item rating scales exist, and a comparison and alignment of the rating scales are noted with each item comparison. The functional item rating scale differences are detailed in the following sections prior to the selected item analysis discussion.

Item Definitions: Although similar concepts are compared in this analysis, specific item definitions may not be identical, and specific item definitions are described before each comparison.

Administration Differences: Another source of potential variation between the CARE Item Set and MDS 2.0 items may be due to different types of clinicians conducting the CARE assessment and the MDS assessment.

Error: Some disagreement between the CARE and MDS 2.0 items may be attributable to clinician reporting errors on one of the tools. As noted in the interrater reliability section in Volume 2, and in prior evaluations of MDS 2.0 items, some items have lower reliability than others.

ES.3.2 Selected Results of the CARE Item Set and MDS 2.0 Instrument Analyses

ES.3.2.1 Items in the Major Treatments Section

A subset of Major Treatments items in the CARE Item Set were paired with corresponding items on the MDS 2.0 and analyzed using the admission patient data sample of 3,977 patients. Within the 12 Major Treatments assessment items analyzed for this report, three item pairings were assessed by the MDS 2.0 over a 7-day assessment period compared with the CARE 2-day assessment period. Nine item pairings were assessed by the MDS 2.0 over a 14-day assessment period compared with the CARE 2-day assessment period (the only exception is the 14-day look-back period for the CARE Mood items). There was very high agreement (89 to 99.8 percent) between 9 out of 12 of the Major Treatments item pairings. These nine paired items assessed the patient as *not* having received the comparable Major Treatments item described by the MDS 2.0 and CARE.

For most of these items, the MDS 2.0 identified a small quantity of patients as having received the Major Treatments item when CARE assessed the patient as not having received it. This discrepancy is likely due to the broader MDS 2.0 assessment period of 7 or 14 days (e.g., Pressure Relieving/Specialty Surface, Complex/Surgical Wounds, and Oxygen). Also, the definitions between the instruments varied with the MDS 2.0 capturing a much broader range of patients within the definition of these items compared with the CARE Item Set definition. For example, CARE item Specialty Surface or Bed was assessed as "No Treatment Received" and MDS 2.0 assessed as "Yes, Treatment Received" 79 percent of the time for this item pairing, exemplifying the more inclusive definition used in the MDS 2.0. See ***Table ES-1*** for a breakdown of CARE and MDS 2.0 agreement on Major Treatments items.

Table ES-1
CARE agreement with MDS 2.0 for Major Treatments items

CARE & MDS 2.0: Major Treatments Items; CARE 2-Day Assessment; MDS 2.0 7-Day or 14-Day Assessment	Item coded "treatment not provided" percentage of agreement between CARE & MDS 2.0	MDS 2.0 7-day assessment item	MDS 2.0 14-day assessment item
CARE: Major treatments: Total parenteral nutrition (item III.D3a) MDS 2.0: Nutritional approaches: Parenteral/IV (item K5a)	92.9%	x	—
CARE: Major treatments: Blood transfusion(s) (item D5a) MDS 2.0: Special treatments and procedures: Transfusions (item P1ak)	89.0%	—	x
CARE: Tracheostomy tube with suctioning (item D11a) MDS: Tracheostomy care (item P1aj)	99.7%	—	x
CARE: Tracheostomy tube with suctioning (item D11a) MDS 2.0: Suctioning (item P1ai)	99.8%	—	x
CARE: Ventilator weaning (item D14a) MDS: Ventilator or respirator (item P1al)	99.2%	—	x
CARE: Ventilator non-weaning (item D15a) MDS: Ventilator or respirator (item P1al)	99.3%	—	x
CARE: IV Chemotherapy (item D28a) MDS: Chemotherapy (item P1aa)	99.4%	—	x
CARE: Peritoneal dialysis (item D17a) MDS: Dialysis (item P1ab)	96.8%	—	x
CARE: Hemodialysis (item D16a) MDS: Dialysis (item P1ab)	99.2%	—	x
CARE: High O_2 concentration delivery system with $FiO_2 > 40\%$ (item D12a) MDS 2.0: Oxygen therapy (item P1ag)	67.0% Also (CARE=No; MDS=Yes, 32.6%)	—	x
CARE: Specialty surface or bed (item D24a) MDS: Pressure-relieving device for bed (item M5b)	21.0% Also (CARE=No; MDS=Yes, 78.8%)	x	—
CARE: Complex wound management (item D20a) MDS: Surgical wound care (item M5f)	67.0% Also (CARE=No; MDS=Yes, 32.0%)	x	—

ES.3.2.2 Skin Integrity Items

Differences in assessment windows, item definitions, and rating scales may explain variation where the MDS 2.0 reports more pressure ulcers and wounds than the CARE Item Set does.

Pressure Ulcers

Analyses comparing the two instruments' items for Pressure Ulcers showed the following: Among patients with zero, one, or two stage 2 pressure ulcers reported, there was a high level of agreement between the CARE and MDS items. For example, among patients with zero ulcers reported in CARE, 94 percent also had zero ulcers reported in the MDS. The data representing the level of agreement for stage 3 and stage 4 pressure ulcers were based on less than 2 percent of the sampled population and were not reported here.

Surgical Wounds and Other Major Wounds

Among patients with Delayed Surgical Wounds reported on the CARE Item Set, 89 percent had a Surgical Wound reported on the MDS 2.0. In contrast, among patients with no delayed surgical wounds reported on the CARE Item Set, 39 percent had a surgical wound reported on the MDS 2.0. This discrepancy is likely the result of differing item definitions; the MDS 2.0 item is broader (all surgical wounds) than the CARE item (nonhealing surgical wounds).

The comparison of CARE item Number of Other Wounds versus MDS 2.0 item Surgical Wounds showed the following: Among patients with other major wounds reported on the CARE Item Set, 81 percent had a surgical wound reported on the MDS 2.0. For patients with no other major wounds reported on the CARE Item Set, only 33 percent had a surgical wound on the MDS 2.0. Among patients with other major wounds reported on the CARE Item Set, 4 percent had another lesion reported on the MDS 2.0. This discrepancy is predictable given the more restrictive MDS item definition.

ES.3.2.3 Selected Cognitive Status and Mood Items

Short-Term Memory Items

In this section we compare the CARE items for recall of the words "sock," "blue," and "bed" and the MDS 2.0 Short-Term Memory OK items. The CARE item rates the patient on recall success for each of the three items and whether patients required a "cue" to prompt their recall of each item during the 2-day assessment period. The MDS 2.0 (7-day assessment period) uses a broader method to determine short-term memory problems (e.g., not able to recall multiple items or not following through on a direction given 5 minutes earlier). The responses to the individual CARE items may indicate short-term memory problems, whereas the MDS 2.0 item may not capture milder memory problems. The analysis results are consistent with this hypothesis. The CARE item response "Yes after cueing" for these items rating patient ability to recall each word showed 53, 54, 45 percent agreement when compared with the MDS 2.0 "Yes" (memory problem). This may be explained because the CARE's response scores the patient's ability to recall a word when a cue is given, whereas the same patient assessed by the MDS 2.0

would not have been offered a cue word. Thus, on the MDS 2.0, the same patient would likely not recall the word, resulting in the memory problem rating. Notably, for each of the three CARE items, approximately 18 to 21 percent of patients who could recall "sock," "blue," or "bed" were recorded as having short-term memory problems on the MDS 2.0.

Physical/Abusive Behavioral Symptoms Directed Toward Others

Among patients who were assessed on the CARE Item Set as not having physical behavioral symptoms directed toward others, 98 percent were similarly assessed on the MDS 2.0. Notably, among the patients who did have physical behavioral symptoms directed toward others on the CARE Item Set, 61 percent did not have these behaviors reported on the MDS 2.0. This result may have been due to the difference in the items' "titles" or definitions.

Selected Mood Items

Among patients who were reported as not having Little Interest or Pleasure Doing Things on the CARE Item Set, 98 percent also did not report Withdrawal from Activities on the MDS and 98 percent did not report Reduced Social Interaction on the MDS 2.0. Among the patients who did have some frequency of Little Interest or Pleasure Doing Things on the CARE Item Set, the vast majority (ranging from 92 to 97 percent) did not report Withdrawal from Activities or Reduced Social Interaction on the MDS. This discrepancy might be due to the more specific MDS item definitions.

Among patients who were reported as not being Down, Depressed, or Hopeless on the CARE Item Set, 99 percent also did not report Negative Statements, 99 percent did not report Self-Deprecation, and 97 percent did not report Crying/Tearfulness on the MDS. Notably, among the patients who did have some frequency of being Down, Depressed, or Hopeless on the CARE Item Set, the vast majority (ranging from 87 to 100 percent) did not report Negative Statements, Self-Deprecation, or Crying/Tearfulness on the MDS. This discrepancy might be due to the more specific MDS item definitions or differences in how these behaviors are assessed in SNFs.

ES.3.2.4 Impairments

Swallowing Items

In this section, we focus on CARE tube/parenteral feeding and MDS 2.0 feeding tube items. Among patients whose CARE assessment reported usual ability with swallowing using tube/parenteral feeding, 94 percent also had a feeding tube reported on the MDS 2.0. There are differences in how each instrument categorizes these two items: MDS 2.0 allows multiple selections among several choices for the clinician to indicate the facility's nutritional approaches taken with the patient; the CARE item's more specific nature asks the clinician to choose only one of three answers to represent the patient's usual ability with swallowing. Choosing only one answer results in the high frequency of "missing" data for the CARE item. The MDS 2.0 item indicated Feeding Tube Not Used and highly agreed with the CARE item tube/parenteral feeding coding "No," resulting in the items showing a high agreement for the mapping of the findings (99 percent).

Select Communication Item

The CARE item Expression of Ideas and Wants and the MDS 2.0 item Making Self Understood have similar definitions and scales. Both the CARE and MDS 2.0 report that sampled patients who had no difficulty in self-expression (CARE) also indicated that they were understood (MDS 2.0). Among those who were reported as being understood in MDS, 59 percent were reported as indicating some difficulty in self-expression, whereas 28 percent were reported as indicating frequent difficulty in self-expression on CARE.

ES.3.2.5 Selected Functional Status Items

Functional Status Rating Scale

The MDS 2.0 uses two rating scales to capture functional status, whereas the CARE rating scale captures both the self-performance and assistance provided in one rating scale. The items for Physical Functioning (MDS 2.0 term) and Functional Status (CARE term) use different rating scales to assess each instrument's activities (e.g., eating). These rating scales are used in the data analyses to compare the MDS 2.0's *two* rating scales with the *single* CARE Item Set's rating scale and present a very complex set of challenges when presenting each instrument's activities (e.g., toileting, eating) for comparison.

The CARE rating scale is an independence scale, and the higher numbers indicate more independence; the MDS 2.0 has two rating scales, a *support rating scale* and a *self-performance scale*, that are dependence rating scales with the lower numbers indicating more independence.

Additionally, the definition differences may result in item categories between the CARE and MDS 2.0 assessments not cleanly mapping. For example, a patient who is highly involved with managing the equipment necessary for tube feeding but is not eating may score a higher functional level on the MDS 2.0 because the MDS 2.0 item includes tube feeding, whereas the CARE Item Set does not. The CARE Item Set includes tube feeding as a separate item. See ***Table ES-2*** for a mapping of the two types of MDS 2.0 item scales with the CARE function scale.

Level of Performance and Data Analysis Challenges

Examples are provided to illustrate how each instrument assesses level of performance. The CARE Item Set discriminates between a CARE level 3–Partial/Moderate Assistance and a CARE level 2–Substantial/Maximal Assistance by assessing whether the helper did less than half or more than half the effort.

On the MDS 2.0, the level of assistance between level 2–Limited Assistance and level 3–Extensive Assistance is determined by assessing (1) whether the helper provided non-weight-bearing support or weight-bearing support, (2) if full staff support was needed, and (3) the number of times assistance was needed during the assessment period.

Table ES-2
CARE scale levels mapped to MDS 2.0 ADL self-performance scale levels, controlling for MDS ADL support provided scale levels

MDS ADL support provided level	Plus	CARE level	Equals	MDS ADL self-performance level
0 – No setup or physical help	+	6 – Independent	=	0 – Independent
1 – Setup help only	+	5 – Setup or clean-up	=	0 – Independent
1 – Setup help only	+	5 – Setup or clean-up	=	1 – Supervision
1 – Setup help only	+	4 – Supervision/touching assistance	=	1 – Supervision
2 – One person physical assist	+	4 – Supervision/touching assistance	=	1 – Supervision
2 – One person physical assist	+	4 – Supervision/touching assistance OR 3 – Partial/moderate assistance	=	2 – Limited assistance
2 – One person physical assist	+	3 – Partial/moderate assistance OR 2 – Substantial/maximal assistance OR 1 – Dependent	=	3 – Extensive assistance
2 – One person physical assist	+	1 – Dependent	=	4 – Total dependence
3 – Two+ person physical assist	+	1 – Dependent	=	2 – Limited assistance OR 3 – Extensive assistance OR 4 – Total dependence
8 – Activity did not occur	+	Letter code – Activity not attempted	=	8 – Activity did not occur

A very complex set of data analyses challenges was met when presenting each of the two instruments' activities (e.g., toileting) and using the MDS 2.0's two rating scales when comparing the single CARE Item Set's rating scale. To address this challenge, many cross-tabulation tables compare data for specific MDS 2.0 and CARE activities (e.g., toileting, eating) while controlling for (holding constant) the MDS 2.0's rating scale ADL Support Provided. Each of the tables that control for ADL Support Provided specify which of the four levels (i.e., no setup or physical help, setup help only, one person physical assist, two+ person physical assist) of the MDS 2.0 rating scale is being held constant for the data analysis. The following are selected items from each of the two instruments describing the cross-tabulation

data analysis tables. For most of the headings in the following sections, the activity name from each instrument is stated followed by the ADL Support Provided that is held constant.

CARE Eating Item and MDS 2.0 Eating Item

The analyses show that approximately 50 to 99 percent of the paired CARE–MDS 2.0 assessments map as expected in terms of the functional item scale categories when the MDS 2.0 ADL Support item is considered. The highest percent agreement (approximately 99 percent) occurs when the independent level is considered, mapping the independent and setup/clean-up categories in CARE to the independent category in MDS 2.0. The lowest percent agreement (approximately 51 percent of 187 paired assessments) is observed when the supervision category is considered. Reviewing the analyses for this item suggests that consideration to mapping functional item levels across tables (i.e., while controlling for MDS 2.0 ADL Support) strengthens the already robust functional item category match between instruments.

CARE Toilet Hygiene Item and MDS 2.0 Toilet Use ADL Self-Performance Item when MDS 2.0 Support Level Is Controlled

Among the 873 patients who were evaluated as needing Partial Assistance on the CARE Item Set and required a One Person Physical Assist on the MDS, the majority of responses were seen in the expected MDS levels (36 percent in Limited Assistance and 53 percent in Extensive Assistance). Similarly, CARE response level 2 (Substantial Assistance) maps well to MDS Self-Performance level 3 (Extensive Assistance), showing 66 percent. The majority of responses in the CARE Supervision or Setup categories fell into the expected MDS Self-Performance levels when Setup Help Only is indicated in the MDS Support variable.

CARE Lying to Sitting Item and MDS 2.0 Bed Mobility ADL Self-Performance Item when MDS 2.0 Support Level Is Controlled

The majority of responses in the CARE Supervision or Setup categories fell into the expected MDS Self-Performance levels when Setup Help only is indicated in the MDS Support variable. Among the 779 patients who were evaluated as needing Partial Assistance on the CARE Item Set and required a One Person Physical Assist on the MDS, the majority of responses were seen in the expected MDS levels (42 percent in Limited Assistance and 52 percent in Extensive Assistance). Similarly, CARE response level 2 (Substantial Assistance) maps well to MDS Self-Performance level 3 (Extensive Assistance), showing 66 percent agreement.

CARE Chair/Bed-to-Chair Transfer Item and MDS 2.0 Transfer ADL Self-Performance Item when MDS 2.0 Support Level Is Controlled

Among the nearly 800 patients who were evaluated as needing Partial Assistance on the CARE Item Set and required a One Person Physical Assist on the MDS, 93 percent were assessed in the predicted MDS Self-Performance categories of either Limited Assistance or Extensive Assistance. There is also a bit of scatter outside the predicted response pairings, indicating a more dependent response on the MDS 2.0. The discrepancy may be due to the differing item definitions.

When controlling for MDS 2.0 Transfer ADL Support Provided level 3 (Two+ Person Physical Assist) and comparing the two items, the expected mapping agreement occurred between CARE's level Dependent and MDS 2.0 rating scores Extensive Assistance and Total Dependence. There was greater than expected agreement between the MDS 2.0 rating Extensive Assistance scores and the CARE rating scores Substantial/Maximal Assistance (88 percent), Partial/Moderate Assistance (88 percent), and Supervision/Touching Assistance (86 percent).

CARE Roll Left and Right by MDS 2.0 Bed Mobility ADL Self-Performance when Controlling for MDS 2.0 Bed Mobility ADL Support Provided

The data analysis showed a high amount of agreement (96 percent) for patients assessed as Independent on the CARE Item Set and assessed as Independent in Self-Performance on the MDS 2.0 who did not require Setup or Physical Help. There was good agreement between the instruments for patients who were evaluated as needing Substantial Assistance on the CARE Item Set and required a One Person Physical Assist on the MDS; 68 percent were assessed as needing Extensive Assistance in Self-Performance on the MDS, which is the predicted response. Similarly high levels of agreement are also shown within the CARE levels for Dependent, Partial Assistance, and Supervision.

ES.3.3 Summary of the CARE Item Set and MDS 2.0 Analysis

This section profiles a set of descriptive analyses of the level of agreement between selected CARE Item Set and MDS 2.0 Instrument items. A direct one-to-one item comparison between the two instruments is not possible because of differences in assessment time frames, item rating scales, and the sometimes unique definitions for similar items used to assess function. This mapping of selected items and associated scales presents an important examination of how selected CARE items are assessed and how they align with similar MDS 2.0 items. These findings indicated a high to moderate level of agreement between the two assessment instruments with respect to selected items. There was an absence of any large and/or unexpected association(s) between the two instruments. Sometimes more modest agreement occurred between functional item pairs (e.g., approximately 50 percent).

ES.4 CARE Item Set and OASIS-B Instruments: Overview, Background, and Methods

The purpose of this analysis is to assess the concurrent validity of the CARE Item Set with the OASIS-B. Analyses are based on finalized CARE Item Set admission assessments matched with OASIS-B "Start of Care" or "Resumption of Care" assessments. To begin, HHA admission assessment data from the January 2010 CARE extract data (n = 4,996) were merged with OASIS-B assessment data available through December 31, 2009, by HICN, gender, and birth date. The final data set contained CARE admission assessments matched to either an OASIS-B "Start of Care" or "Resumption of Care" assessment and contained 4,587 observations (representing 92 percent of finalized CARE admission assessments from HHAs). As with the IRF-PAI and MDS comparisons, items were selected for comparison if they captured concepts included in the HHA PPS as case-mix adjustment variables.

ES.4.1 Differences between CARE Item Set and OASIS-B

Although many CARE items share comparable concepts to OASIS-B items, there are several key differences between the two assessment instruments that were anticipated to result in differences in patient assessment and associated differences between assessment instrument item responses.

Time Frame: The assessment time frame for the CARE Item Set is 2 calendar days (if the patient is admitted before 12 noon) or 3 calendar days (for patients admitted after 12 noon). The OASIS-B time frame for the majority of items evaluated in the following sections refers to the patient's status for most of the day of the assessment visit, or the patient's *usual status*. The CARE Item Set does instruct clinicians to report the usual (or typical) performance but with a slightly longer time frame. A few of the OASIS-B items regarding prior service use and conditions require a 14-day look-back period immediately preceding the assessment. The CARE instrument has a 14-day look-back period only for the CARE Mood items.

Implication: In general, we expect that differences in assessment time period should play little role in differences between OASIS-B and CARE Item Set responses. It is likely that the data for both assessments were collected simultaneously the majority of the time.

Differences in Rating Scales: Differences between CARE and OASIS-B instruments exist regarding alignment of scales. Further discussion about the CARE functional rating scale versus the OASIS-B ADL/IADL rating scale is provided in the comparisons of these items and the associated data analysis in the following sections.

Differences in Item Definitions: Although comparable concepts are used in the comparison for this analysis, specific item definitions may not be identical.

Error: Some disagreement between the CARE and OASIS-B items may be attributable to clinician reporting errors on one of the tools. As noted in the interrater reliability section in Volume 2, and in prior evaluations of OASIS-B items, some items have lower reliability than others.

ES.4.2 Selected Results for CARE and OASIS-B Instrument Items Analyzed

ES.4.2.1 Stage 2, 3, and 4 Pressure Ulcers Item

There is a high degree of agreement where expected between the CARE and OASIS-B items for numbers of Stage 2, 3, and 4 pressure ulcers. For example, among those patients with no Stage 2 pressure ulcers indicated in CARE, 99 percent also had no Stage 2 pressure ulcers indicated in OASIS-B. Similarly, among those patients with one Stage 2 pressure ulcer recorded in CARE, 80 percent also had one Stage 2 pressure ulcer recorded in OASIS-B. There was 85 percent agreement between the instruments for two Stage 2 pressure ulcers. However, because of the small sample size, it is not possible to draw any conclusions about the agreement between the instruments for any of the responses indicating more than one Stage 3 and 4 pressure ulcer.

ES.4.2.2 Surgical Wound Item

There was high agreement between the instruments among those CARE-assessed patients with no Delayed Healing Surgical Wounds and OASIS-B–assessed patients who had either no Problematic Surgical Wounds or Fully Granulated Surgical Wounds. Also, there was a high degree of agreement (89 percent) between the instruments for patients with one Delayed Healing Surgical Wound in CARE and either Partial Granulation or Not Healing in OASIS-B. The same high level of agreement is evident when two Delayed Healing Surgical Wounds are indicated in CARE.

ES.4.2.3 Pain Item

The results of the CARE item Pain Effect on Activities and OASIS-B item Frequency of Pain Interfering with Patient's Activity or Movement are of note. Because of the skip pattern in the CARE Item Set, approximately 35 percent of patients in the sample had no response for this item in CARE because they had no pain or hurting in the last 2 days. Only the patients who responded "Yes" to an initial question about the presence of pain were assessed for pain's effect on activities. Therefore, it is possible to view the 70 percent of patients with a missing value in CARE but with no pain in OASIS-B as a potential area of agreement.

Among patients who responded "Yes" to any pain present and reported that pain limits their activities on CARE, 96 percent indicated that pain affects their movement or activities at some frequency (ranging from less often than daily to all of the time) on OASIS-B. Unexpectedly among patients who responded "Yes" to Any Pain Present but who reported that Pain Does Not Limit Their Activities on CARE, the majority (59 percent) had daily (but not constant) pain interfering with activity or movement reported on OASIS-B. One of the potential reasons for this discrepancy is that CARE is set up as an interview item, and OASIS-B is not a direct interview item.

ES.4.2.4 Bladder Incontinence Item and Bowel Incontinence Items

There was a high amount of agreement between the CARE item Frequency of Bladder Incontinence and OASIS-B item Frequency of Incontinence or Urinary Catheter. For example, among patients who were assessed as continent on the CARE Item Set, 92 percent reported no urinary incontinence or catheter on OASIS-B.

There was a relatively high amount of agreement between the CARE item Frequency of Bowel Incontinence and OASIS-B item Frequency of Bowel Incontinence. For example, among patients who were reported to have bowel incontinence less than daily on the CARE Item Set, 97 percent were reported to have either no or very rare bowel incontinence, incontinence less than weekly, incontinence one to three times weekly, or incontinence four to six times weekly on OASIS-B, which follows the expected response pattern.

ES.4.2.5 Functional Status Section and Rating Scale Differences

The functional status section of the CARE Item Set is composed of three major sections: Core Self-Care (Section A); Core Functional Mobility (Section B); and Supplemental Functional

Ability (Section C). Alignment between the OASIS-B and CARE functional item scales is variable for multiple reasons.

The CARE functional items were patterned after the IRF-PAI/FIM® functional items; thus, the CARE Item Set align more closely with the IRF-PAI/FIM® definitions than the OASIS-B definitions.

Functional Rating Scale Differences

- The CARE scale for this item ascends to demonstrate independence, whereas the OASIS-B scale for this item descends to demonstrate independence. For example, a patient who is independent is scored as a six on the CARE Item Set, but the same patient is scored as a zero on the OASIS-B Instrument.
- The CARE scale is more subdivided, and each functional status item consistently uses the same metric to demonstrate whether the patient requires helper assistance and the amount of assistance the helper provides.
- The CARE Item Set discriminates between a level 3–Partial/Moderate Assistance and a level 2–Substantial/Maximal Assistance by assessing whether the helper did more than half the effort. The OASIS-B does not distinguish between these two levels and identifies only whether someone must help the patient to complete the activity.
- The CARE functional item rating is a six-category scale, ranging from six through one, whereas the OASIS-B ADL/IADL scale includes varied categories and can range from zero to two, zero to three, zero to four, or zero to five per item. Each group of rating scales included UK–unknown. The level descriptions that vary per item for the OASIS-B are included in the analyses.
- The CARE and OASIS-B instrument scales both assess patients' usual performance.
- Differences between the instruments (e.g., the assessment time frame window and the rating scales) are important considerations in interpreting the mapping results. Because the OASIS-B items vary, we have not included a mapping here as in the prior comparisons with the MDS and IRF-PAI.

Upper Body Dressing Item

Because of the differences in the OASIS-B and CARE rating scales' defining metrics, the OASIS-B level Someone Must Help the Patient Put On Upper Body Clothing would be expected to map to CARE levels Supervision or Touching Assistance, Partial/Moderate Assistance, and Substantial/Maximal Assistance for the upper body dressing item. This result was indeed the case because high levels of agreement were observed between these levels of the CARE scale and their corresponding OASIS-B levels. In most cases, agreement exceeded 70 percent. There was also high agreement (75 percent) for the comparable Independent rating for both instruments.

Lower Body Dressing and Putting On/Taking Off Footwear Items

The two CARE items' (Lower Body Dressing and Putting On/Taking Off Footwear) data were individually paired with the OASIS-B item Ability to Dress Lower Body to yield results for the analyses. Overall, there was a high amount of agreement between the CARE lower body dressing and OASIS-B lower body dressing items. The levels of agreement between the two items range from 58 percent for agreement in setup responses to 81 percent agreement between the CARE level Partial Assistance and OASIS-B level Someone Must Help Put On Undergarments, Socks or Nylons, and Shoes.

Similarly, relatively high levels of agreement were observed between the CARE item Putting On/Taking Off Footwear and the OASIS-B item Lower Body Dressing. Rating levels ranged from 47 percent for agreement in setup responses to 75 percent agreement between the CARE level Partial Assistance and OASIS-B level Someone Must Help Put On Undergarments, Socks or Nylons, and Shoes.

More agreement was noted between the CARE lower body dressing item and the OASIS-B item on identifying dependent patients than when looking at the CARE footwear item. However, because the OASIS-B item includes lower body dressing and footwear management, we expected that more patients were rated as dependent on the CARE footwear item than were rated as not dependent on the OASIS-B item; 42 percent of patients dependent in the CARE footwear item were only a level 2 (Someone Must Help Put On Undergarments, Slacks, Socks or Nylons, and Shoes) on OASIS-B. This difference was expected because putting on footwear is a more difficult activity than lower body dressing—hence the 43 percent agreement seen in the cross-tabulation analysis.

CARE Chair/Bed to Chair Transfer Item and OASIS-B Transferring Item

The OASIS-B definition for the transferring item combines several concepts (i.e., the ability to transfer on and off toilet or commode, the ability to transfer into and out of the tub or shower, the ability to turn and position self in bed if patient is bedfast, and the ability to bear weight). These activities are measured in separate items on CARE. Although there are substantial differences in item definitions, the trends seen in the analyses indicate a high degree of agreement between these items, suggesting that they are measuring similar concepts.

For example, by combining the percentage of patients assessed in each of the OASIS-B rating scale items that matched the CARE item Dependent, 89 percent agreement was achieved between the two instrument scales. The OASIS-B scale item and the percentage of agreement to the CARE Dependent rating scale included Unable to Transfer Self but Able to Bear Weight (30 percent), Unable to Transfer Self and Unable to Bear Weight (38 percent), Bedfast but Able to Position Self (7 percent), and Bedfast and Unable to Position Self (14 percent). Patients who were assessed as either Partial Assistance, Supervision, or Setup in CARE had approximately 73 to 87 percent of responses falling in the expected OASIS-B category of Transfers with Minimal Human Assistance.

Shower/Bathing Item

A key difference between the two instrument items is that the OASIS-B item Bathing includes getting in and out of the shower or tub, whereas the CARE item Shower/Bathe Self does not include these tasks. A range of high to moderate agreement was observed between the CARE scale and corresponding OASIS-B levels: 87 percent for agreement between CARE Independent and across the three OASIS-B levels (where agreement was anticipated between the instruments) to 43 percent agreement between the CARE level Setup and OASIS-B level Able to Bathe in Shower or Tub with Assistance of Another Person. The latter OASIS-B item includes help getting in and out of the shower or tub. Again, shower/tub transfers are not included in the CARE instrument, thus explaining the lesser agreement between instruments.

Mode of Mobility: Ambulation and Locomotion

The challenge in presenting the data for this section was great because OASIS-B has a single ambulation/locomotion item, whereas the CARE Item Set asks the clinician to select between four separate mobility distances or four separate wheeling distances to measure the patient's walking or wheeling ability. In addition, the OASIS-B combines stair climbing and walking on uneven surfaces with the OASIS-B ambulation/locomotion item, whereas the CARE separately measures the patient's ability for these as two distinct items ("Ability to go up and down steps" and "Walking on uneven surfaces").

Only two of the four CARE distances for walking were used for the analyses, and two CARE distance items were used for wheeling when comparing the single OASIS-B ambulation/locomotion item. We generated individual frequency tables for the four chosen CARE items (two for walking and two for wheeling), one frequency table for OASIS-B (shown twice), and four separate cross-tabulation tables to compare the agreement between the four CARE variables and one OASIS-B variable. Examples from each of the four cross-tabulation analyses follow.

<u>Comparison of CARE Walk 150 Feet versus OASIS-B ambulation/locomotion items.</u> Among patients who were assessed as Independent on the CARE Item Set Walk 150 Feet, 94 percent were assessed as either "Able to walk independently on even and uneven surfaces" or "Requires use of a device to walk alone" on OASIS-B. Similarly high levels of agreement were observed between the CARE Supervision category and the corresponding OASIS-B levels: 65 percent in the OASIS-B category of "Requires use of device or requires human supervision" and 33 percent in the OASIS-B category of "Able to walk only with the supervision or assistance of another person at all times."

<u>Comparison of CARE Walk in Room Once Standing versus OASIS-B ambulation/ locomotion items</u>. Among patients who were assessed as Independent on the CARE Item Set item Walk in Room Once Standing, 88 percent were assessed as either "Able to walk independently on even and uneven surfaces" or "Requires use of a device to walk alone" on OASIS-B. Similarly high levels of agreement were observed between the CARE Supervision category for Walk in Room Once Standing and the corresponding OASIS-B levels: 40 percent in the OASIS-B category of "Requires use of device or requires human supervision" and 57 percent in the OASIS-B category of "Able to walk only with the supervision or assistance of another person at all times."

Comparison of CARE Wheel 150 Feet versus OASIS-B ambulation/locomotion items and comparison of CARE Wheel in Room Once Seated versus OASIS-B ambulation/locomotion items. Among patients who were assessed as Independent in wheeling 150 feet and for those patients separately assessed as Independent in wheeling once seated on the CARE Item Set, the majority (45 and 46 percent, respectively) were categorized in OASIS-B as "Chairfast–unable to ambulate but is able to wheel self independently." This category is where the majority of coding for each of these two instrument pairings was expected to fall. The analysis revealed 26 percent agreement between the instruments for patients who were assessed on the CARE Item Set as Independent in wheeling 150 feet and were assessed as "Requires use of device to walk alone" or "Requires human supervision or assistance" on the OASIS-B. Recall that the OASIS-B codes used for this item include ratings for walking for the most independent code (0) and chairfast or bedfast for the most dependent codes.

Also, the analysis revealed 19 percent agreement between the instruments that assessed patients who were Independent in wheeling once seated on the CARE Item Set and patients who were assessed as "Requires use of device to walk alone" or "Requires human supervision or assistance" on the OASIS-B. Sometimes the reason why the data take unexpected patterns such as in this cross-tabulation is unclear. The multiple tasks included in the OASIS-B item may account for these unexpected patterns.

ES.4.3 Summary of CARE Item Set and OASIS-B Instruments Analysis

Similar to the MDS 2.0 and IRF-PAI analyses summarized, the purpose of this analysis was to measure the level of agreement between the CARE Item Set and the OASIS-B items. Although a direct one-to-one item comparison between the two instruments is not possible due to the instruments' differences, the examination of each instrument's items determined logical pairings for comparison and use in the analysis. Although there are lesser differences between the instruments that affect the results of the analysis (i.e., assessment time frame), there are marked differences in the instruments' rating scale categories that affect the comparison of the instruments. For example, the variable inclusion or exclusion of activities, equipment used, or levels of patient assistance required within each OASIS-B rating scale measurement may have influenced the ability for precise agreement between activity item pairings. The complexity of the multiple variables per OASIS-B item required specific pairings using a combination of coding items per individual instrument activity in order to map the item to a similar CARE item(s).

The mapping of items and associated scales resulted in this analysis and is presented to increase the understanding of how CARE items were assessed vis-à-vis similar OASIS-B items associated with payment policy at the time of data collection, where equivalent items were available. Please note that some HHA PPS items were not possible to evaluate because of an intentional lack of an equivalent CARE item, such as count of therapy visits or for patients with multiple consecutive HHA episodes, an indicator of which episode the assessment corresponds to in the sequence.

Considering the degree of differences in the item rating scales and the successful matching of items according to most similar content, the item pairings from the CARE Item Set and OASIS-B instruments demonstrated an overall moderate to high level of agreement where

expected between the instruments. Again, the reliability of the items in these settings is reported in Volume 2 of this set of reports, but these comparisons are helpful for understanding the impact of improved item definitions and coding as they relate to expected scores.

ES.5 Conclusions

The findings in these reports are critical to understanding the applicability of using standardized versions of items in place of historical items on the three mandated patient assessment tools: IRF-PAI, MDS, and OASIS. The tools measure similar concepts of medical, functional, and cognitive health status but use different items to measure these concepts. The differences among these assessments make it impossible to compare patients across settings, examine the adequacy of the access to care in different parts of the country, or monitor the quality of care that similar patients may receive in different settings.

The standardized CARE items were based on an extensive stakeholder process that took into account the existing items on the mandated assessment tools, the current scientific approaches for determining patient complexity, and the methodological issues in using items in different settings with differing staff mix. The items tested in the CARE assessment were based on the current science in each of the fields of care. Consideration of the granularity of an item and its ability to measure changes at both the high end and the low end of severity was important if a standardized item would be able to measure care across the continuum. The selection process also recognized the importance of clinical input from each of the five settings and the variation in the types of clinicians involved in each setting.

The reliability tests reported in Volume 2 were important for determining the feasibility of using standardized items across settings. The results showed that most items, with the exception of several IADLs, such as laundry and shopping, were reliable. Comparisons with earlier tests of the mandated assessment items showed that the standardized items were at least as consistent as, and in some cases more reliable than, items in the existing assessment tools. The goal of these tests was to at least match the reliability of items currently in use. The reliability tests included in Volume 2 showed that moving to standardized items will not affect the reliability of the information collected in the different settings.

The work in Volume 3 helps explain some of the differences between the standardized items and each of the analogous current assessment items on each tool. Each of the three mandated tools had different rules that they followed in measuring the concepts. The assessment windows and look-back periods differed across tools. For some concepts, entirely different items were used to measure a concept, whereas for other concepts, the item definitions varied only slightly. However, these differences resulted in broader or narrower definitions of the condition being measured. In most cases, the CARE item used the most granular or most focused item.

The comparisons in Volume 3 are useful for understanding how patients were rated differently using the standardized and setting-specific mandated assessment items. Differences between items on the two different assessment items being compared were provided, comparing assessment time frames, differences in rating scales, and, if applicable, differences in item definitions and instructions in addition to other potential sources of variation between the two

assessments. Paired ratings for cases in the CARE sample were shown as cross-tabulations of the items being compared between the two assessments. Where items differed, the differences were largely as expected.

The items tested in the PAC-PRD show that standardized items can be used across the Medicare program to measure patient complexity. Although every item may not be relevant for every patient, it is an important first step to have consistent ways of measuring items that are relevant, independent of care site. Having reliable standardized items is necessary to allow examination of the patients' clinical changes at different points in their episode, regardless of care site. This information is particularly important in today's world as payers examine the value of care provided in each setting and across a continuum of care.

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SECTION 12
INTRODUCTION

The Centers for Medicare & Medicaid Services (CMS) has undertaken a major initiative to evaluate and realign the incentives for inpatient and post-acute services provided under the Medicare program. Currently, about a fourth of all beneficiaries are admitted to a general acute hospital each year; almost 35 percent of them are discharged to additional care in a long-term care hospital (LTCH), inpatient rehabilitation facility (IRF), skilled nursing facility (SNF), or home with additional services provided by a home health agency (HHA) (Gage et al., 2008). While these services constitute a continuum of care for the patient, the current measurement systems do not allow Medicare to examine the effects of these continuing services on the patient's overall health and functional status.

The Medicare program currently mandates that IRFs, SNFs, and HHAs each submit assessment data on the beneficiary's medical, functional, and cognitive status. This information is used in both the payment and quality monitoring efforts at CMS. Medical status is also measured to some extent in the Medicare Severity-Diagnosis Related Group (MS-DRG) based case-mix system used to pay and monitor admissions in the acute hospital settings, both the short-term and long-term care hospitals. Despite the inclusion of these factors in the existing systems, each system was developed independently and uses different items to measure each set of concepts. For example, only the post-acute care (PAC) settings (IRF, SNF, and HHA) measure functional status and cognitive status independent of diagnosis codes. And each of the three PAC measurement systems—Inpatient Rehabilitation Facility Patient Assessment Instrument (IRF-PAI), Minimum Data Set (MDS), and Outcome and Assessment Information Set (OASIS), respectively—use different items to measure function and cognition. As a result, the Medicare program has not been able to measure changes in patients' health status as they progress across their episode of care. Further, this lack of standardized measurement makes it difficult to understand the extent to which patients differ clinically in their use of different PAC settings. Past research has suggested that, after controlling for differences in patient complexity, site of care decisions may be associated with the availability of different service options (Gage et al., 2008). These analyses are based on the standardized case-mix data available in claims. However, this limited information may mask actual differences in patients using each PAC provider and their outcomes associated with service use. Without standardized ways to measure the patients' medical, functional, and cognitive status, CMS is unable to adequately examine whether the costs and utilization patterns reflect differences in patient case-mix complexity or other factors, not related to individual patient needs. Given the differences in program costs associated with each type of Medicare provider, and the potential impact on outcomes associated with different treatment approaches in the different types of providers, it is important to understand the extent to which differences in program costs and service utilization reflect patient needs, local practice patterns, or local supply options.

The Deficit Reduction Act of 2005 directed CMS to address this issue and develop methods for measuring Medicare beneficiaries' health status in a consistent way that would allow CMS to examine whether Medicare's various payment systems introduced inconsistent incentives for treating clinically-similar patients. This contract addresses this issue by testing the use of a standardized set of items for measuring medical, functional, cognitive, and social support factors in the acute hospital, LTCH, IRF, SNF, and HHA. These items are based on the science behind the currently mandated assessment items in the Medicare payment systems, including those in the

mandated IRF-PAI, MDS, and OASIS instruments. Over the past few years, RTI has been working with the Office of Clinical Standards and Quality and the research and clinical communities associated with acute and PAC services, including case-mix measurement experts, accreditation bodies (such as The Joint Commission and the Commission on the Accreditation of Rehabilitation Facilities), provider associations, and others, to develop a select set of items based on the science behind current assessment items that would be appropriate for measuring beneficiary severity of illness, regardless of site of care. The objective was to capture the best qualities of each of the mandated assessments while improving on them in important ways.

Input was collected through various stakeholder meetings, including several Open Door Forums (ODFs) and Technical Expert Panels (TEPs). Two types of TEPs were conducted. The first set of clinical experts were invited to identify the types of items that were important for measuring case-mix differences that may explain patient complexity and the need for different types of services. The second set of discussions focused on measurement issues. They included experts from the acute hospital, LTCH, IRF, SNF, and HHA research communities. The results of these panels were submitted for publication in the *Federal Register* and underwent two sets of public comment periods. The results led to the development and pilot testing of the Continuity Assessment Record and Evaluation (CARE) tool. The items were revised following the pilot test and the resulting changes were implemented for use in the Post-Acute Care Payment Reform Demonstration (PAC-PRD). Data were collected in the PAC-PRD from 2008 to 2010. Over 53,000 assessments were collected in acute hospitals, LTCHs, IRFs, SNFs, and HHAs.

Under the current project, two types of reliability tests were conducted and profiled in Volume 2 of this set. The first is a traditional interrater reliability test which examines how well the items measure the specific concepts when two clinicians are measuring the same patient at the same time; and second, an approach which allowed examination of how discipline and setting affected item scoring. Additional analyses of the internal consistency of the functional status subscales in the standardized CARE items were also examined.

This volume profiles a set of additional analyses of the CARE items compared with items measuring the same concepts in the mandated assessment instruments being collected at the time of the PAC-PRD data collection. The purpose of this analysis is to understand item and coding differences between the CARE items and the analogous items found in the mandated instruments currently used by CMS. As described throughout the reporting of these results, we did not expect a one-to-one match between CARE and the mandated assessment instruments. While the standardized items were based on the science behind the current tools, the three existing tools differed in the specific items used to measure a concept. The standardized CARE set applied one item across each setting. The results are important for understanding how the standardized items compare to those already used in the respective health communities to monitor the quality of care and adjust payment policies for differences in patient severity or case-mix characteristics. This report matches CARE data and mandated assessment items for each patient in the CARE sample to examine these expected differences. The report is organized in three volumes:

- Volume 1 is a report on the development of the CARE Item Set. Section 1 provides an overview of the project, and Section 2 details the purpose and methods of the CARE Item Set development.

- Volume 1, Section 3, describes in detail the justification for including each of the CARE items in the assessment, including support from the literature.
- Volume 1, Section 4, presents the process of obtaining stakeholder input for the development of the CARE Item Set through Technical Expert Panel meetings.
- Volume 1, Section 5, gives an overview of the two pilot tests of the CARE Item Set that were conducted as part of the CARE Item Set development.
- Volume 1, Section 6, presents the process and CARE Item Set changes resulting from the Office of Management and Budget clearance review process.
- Volume 1, Section 7, describes potential opportunities and challenges for the CARE Item Set identified at the end of the initial item set development.
- Volume 2 is a report on the reliability testing of the CARE Item Set. Section 8 provides an overview of the issues and our approach for testing the reliability and validity of the standardized items developed to create consistent measurement approaches across inpatient and PAC services.
- Volume 2, Section 9, presents the methodology and results of the traditional interrater reliability tests on paired assessments in each of the five settings (acute, LTCH, IRF, SNF, HHA).
- Volume 2, Section 10, reports the results of the cross-disciplinary, cross-setting analysis of reliability using videos.
- Volume 2, Section 11, contains additional analyses of internal consistency, focusing specifically on development of the functional status subscales in the standardized items.
- Volume 3 is a comparison of the CARE Item Set and current assessment items. Section 12 introduces the analyses conducted to examine the comparability of the CARE Item Set to items on assessment tools (IRF-PAI, MDS 2.0, and OASIS-B) being used by Medicare certified providers at the time of data collection.
- Volume 3, Section 13, examines the comparability of the standardized CARE items to those currently in the IRF-PAI assessment tool. This section presents differences in the actual items and crosswalks the two sets of items conceptually to help the reader understand the differences and overlap in the standardized items relative to the current IRF-PAI items.
- Volume 3, Section 14, examines the concurrent validity of the CARE items relative to the MDS 2.0 items for each patient in the SNF sample. While the MDS 3.0 went into effect in 2010, the results are compared to the assessment data used at the time of data collection. Due to the close collaboration of the CARE development team with the MDS 3.0 development team, many of the CARE items are intentionally similar to those in the MDS 3.0.
- Volume 3, Section 15, reviews the CARE items relative to the OASIS-B items. Again, while OASIS-C has since gone into effect, OASIS-B was being used during the time of the reliability tests. Again, the CARE items were based on discussions with the OASIS-C developers to create consistency in item modifications.

- Although many of the CARE items are consistent with those being put forth in the MDS 3.0 and OASIS-C, the comparison analyses had to use data from the existing mandated assessments at the time of each test for each of the patients in the respective CARE samples. Hence, comparisons are made with MDS 2.0 and OASIS-B. In their entirety, these analyses will be used to further refine the current CARE Item Set, as outlined in Volume 3, Section 16, which considers conclusions and next steps.

SECTION 13
IRF-PAI–CARE COMPARISONS

13.1 Overview

While Volume 2, Section 9, presented results of the reliability of each item, this section allows the reader to understand differences between the Continuity Assessment Record and Evaluation (CARE) items and those in the existing assessment tools. This section presents comparisons of several items from the CARE Item Set and conceptually matching items from the Inpatient Rehabilitation Facility Patient Assessment Instrument (IRF-PAI). The IRF-PAI, which is the current assessment tool for the inpatient rehabilitation setting, includes items on medical, functional, and cognitive health status. The focus of this analysis is on comparisons between the existing function and cognitive IRF-PAI items that are used for payment and conceptually similar CARE items. The IRF payment items are 12 of the motor items in the FIM®[3] Instrument; the "Tub/Shower Transfer" FIM® item is not a payment item. The analysis included in this section compares the scores for the CARE admission items to the IRF-PAI/FIM® items for each beneficiary in our IRF sample.

To conduct these analyses, we merged the January 2010 extract of the CARE data with IRF-PAI assessments available through December 31, 2010.[4] The merge was based on the beneficiary identification number and a match on admission or discharge dates on each assessment. We successfully matched 93 percent of the CARE assessments with IRF-PAI data and have a total of 9,481 assessments: 4,890 admission assessments and 4,591 discharge assessments. The analyses included in this chapter focus only on the admission assessment items.

The analyses are organized based on the order of the CARE items in the Impairments and Functional Status sections. Each section includes a brief overview of the items being compared, IRF-PAI and CARE item definitions, frequencies of individual items, and lastly a cross-tabulation of the paired items. We conducted correlations of the CARE and IRF-PAI items individually with IRF length of stay (LOS) and report these results at the end of this chapter.

The purpose of these analyses is to examine the concurrent validity of the CARE Item Set. As described throughout the reporting of these results, we did not expect a one-to-one match between CARE and IRF-PAI item scores. This is because the CARE Item Set and the IRF-PAI/FIM® Instrument differ in several fundamental ways. First, the instructions for administration of the measure are not the same; second, the rating scales are structurally different; and third, the item definitions are not the same. The background section provides details on these differences, and we also include explanations of the logic underlying various item-specific differences, as applicable.

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[3] FIM® is a trademark of Uniform Data System for Medical Rehabilitation, a division of UB Foundation Activities, Inc.

[4] CARE extract date 01/28/2010. Data shown in this chapter were generated with the req_lc008_v3, req_lc012, req_lc013, and req_lc014 programs.

13.2 Background

As previously noted, the CARE Item Set includes items in the Impairments and Functional Status sections that are similar in concept to the IRF-PAI/FIM® items. The comparable concepts in the Impairments section include the bladder and bowel management items. The comparable concepts in the Functional Status section include items in Section A (the Core Self-Care items), Section B (the Core Functional Mobility items), and Section C (the Supplemental Functional Ability items). The results are organized by these sections. Some of the CARE and IRF-PAI/FIM® items are similar, but for others, the comparable concepts are more distal and may include more than one variable in the comparison. Finally, for other items there are no equivalent items. As an example, the eating items in the CARE Item Set and IRF-PAI/FIM® Instrument are similar, but not exactly the same. The CARE Item Set has separate items for eating and administration of tube feedings. In the IRF-PAI/FIM® Instrument, these activities are reported in a single item, eating. Walking is also measured very differently in the two data sets, making it difficult to compare across the CARE Item Set and the IRF-PAI/FIM® Instrument on those items.

13.2.1 Expected Differences in Item Response Codes

There are several reasons why FIM® scores on the IRF-PAI Instrument and CARE item scores for similar items will not match, including the following:

- Differences in data collection instructions:
  - **Time frame:** The assessment time frame for most of the FIM® items on the IRF-PAI is 3 calendar days, whereas the CARE Item Set time frame is 2 calendar days (if admitted before noon) or 3 calendar days (for patients admitted after noon).
  - **Most dependent episode versus usual performance**: If the patient's functional performance varies during the assessment time frame, the instructions for completing the IRF-PAI/FIM® direct the clinician to report the patient's most dependent episode. For the CARE Item Set, we instruct clinicians to report the patient's usual performance during the CARE assessment time frame.[5]
  - **Implication:** In general, these differences are likely to result in FIM® scores that reflect a lower level of independence than the CARE Item Set's assessment scores for the same patient. Therefore, we would expect some FIM® scores to be lower than CARE scores for some items.
- Rating scale distinctions:
  - The CARE functional item rating scale has a range of 6 (Independent) to 1 (Dependent), and the FIM® scale on the IRF-PAI/FIM® Instrument has a range of 7 (Complete Independence) to 1 (Total Assistance). The definitions at each level differ across each rating scale. The CARE scale was designed to provide better specificity at the lowest level and to remove differences associated with use of a

[5] Using the "usual" performance allowed patients to be rated on their typical ability level during the assessment window as defined by status noted more than once, rather than on a potential outlier occurrence.

device at the higher level, in keeping with the International Classification of Function approach.

Below, the CARE rating scale definitions and the FIM® rating scale definitions are provided:

CARE Levels of Function

Activities may be completed with or without assistive devices. If helper assistance is required because patient's performance is unsafe or poor quality, score according to amount of assistance provided.

6. Independent. Patient completes the activity by him/herself with no assistance from a helper.
5. Setup or clean-up assistance. Helper SETS UP or CLEANS UP; patient completes activity. Helper assists only prior to or following the activity.
4. Supervision or touching assistance. Helper provides VERBAL CUES or TOUCHING/STEADYING assistance as patient completes activity. Assistance may be provided throughout the activity or intermittently.
3. Partial/moderate assistance. Helper does LESS THAN HALF the effort. Helper lifts, holds, or supports trunk or limbs, but provides less than half the effort.
2. Substantial/maximal assistance. Helper does MORE THAN HALF the effort. Helper lifts or holds trunk or limbs and provides more than half the effort.
1. Dependent. Helper does ALL of the effort. Patient does none of the effort to complete the task.

If activity was not attempted code:

M. Not attempted due to medical condition

S. Not attempted due to safety concerns

A. Task attempted but not completed

N. Not applicable

P. Patient refused

FIM® Levels of Function and Their Score

No Helper:

7. Complete independence. Patient safely performs all tasks of activity within a reasonable amount of time without modification, assistive devices, or aids.
6. Modified independence. One or more of the following may be true: the activity requires an assistive device or aid, takes more than a reasonable time, or activity involves safety (risk) considerations.

5. Supervision or setup. Patient requires no more help than standby, cueing, or coaxing without physical contact; alternatively, the helper sets up need items or applies orthoses or assistive/adaptive devices.

Helper:

4. Minimal contact assistance. The patient requires no more help than touching, and expends 75 percent or more of the effort.
3. Moderate assistance. The patient requires more help than touching, or expends between 50 and 74 percent of the effort.
2. Maximal assistance. The patient expends between 25 and 49 percent of the effort.
1. Total assistance. The patient expends less than 25 percent of the effort.
0. Activity does not occur. The patient does not perform the activity, and a helper does not perform the activity during the entire assessment time frame.

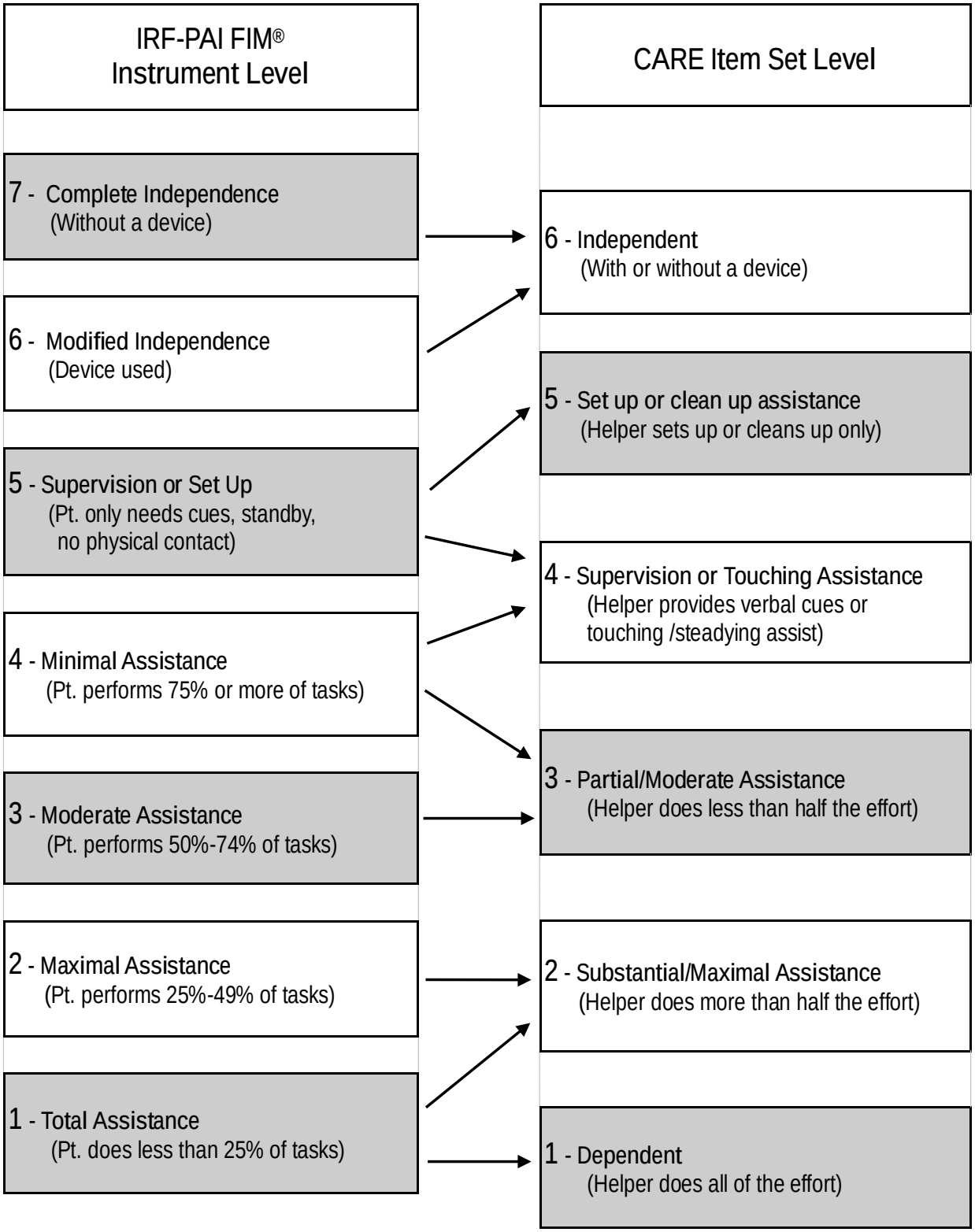
Figure 13-1 shows how FIM® scores generally map to CARE Item Set scores. Note the IRF-PAI/FIM® Instrument instructs the clinician to determine the assessment code based upon what percentage of the task *the patient* can perform safely and independently. The CARE Item Set instructs the clinician to determine what amount of assistance *the helper provides for the patient* so that the patient can safely complete the activity.

We provide clinical examples below to assist with the interpretation of the data results.

Example of CARE score 6 and FIM® scores 6 & 7

- The CARE Item Set and IRF-PAI/FIM® Instrument use distinct codes to reflect the most independent patients. The CARE score 6–Independent is similar to merging the FIM® scores of 7–Complete Independence and 6–Modified Independence. The CARE score 6–Independent is reported for the patient who completes an activity with or without an assistive device. The CARE Item Set includes separate items that collect data about the patient's use of mobility devices and aids. The IRF-PAI/FIM® score 7–Complete Independence is used for the patient who completes the activity with reasonable time, without a device, and without concern for the patient's safety. The PAI/FIM® score 6–Modified Independence is used for patients who need more than a reasonable amount of time, who use a device, or for whom there is a safety concern.
  - Example: A patient can safely feed him/herself without assistance and does not use any devices; however, he requires more than a reasonable amount of time to complete this activity. The clinician using the CARE Item Set codes 6–Independent (the highest independence rating). The clinician using the IRF-PAI/FIM® Instrument uses code 6–Modified Independence (the second highest independence rating).

Figure 13-1
General relationship between IRF-PAI/FIM® instrument levels and CARE Item Set levels



Example of CARE score 5 & 4 and FIM® score 5

- If the patient needs only setup or clean-up assistance and can be safely left to complete the activity, the CARE item score is 5–Setup or Clean-up Assistance. The IRF-PAI/FIM® Instrument scores this patient as 5–Supervision or Setup.

  – Example: The use of CARE score 5–Setup or Clean-up Assistance and IRF-PAI/FIM® score 5–Supervision or Setup are reported if the patient needs a helper to gather clothes for upper body dressing *and the patient does not need any supervision* with the activity. If the helper provides setup assistance and then leaves the room while the patient completes upper body dressing, then the scores for the FIM® and the CARE data set may be the same—a score of 5. However, if a patient needs supervision in addition to setup assistance, then the CARE score of 4–Supervision or Touching Assistance is reported and indicates the need for the helper to remain with the patient. The IRF-PAI/FIM® score for the patient who needs supervision is scored 5–Supervision or Setup.

Example of CARE score 4 and FIM® score 5 & 4

- The CARE score for a patient who needs only *setup assistance* differs from the CARE score for a patient requiring supervision, verbal cueing, or touching/steadying assistance to complete an activity. The CARE item is scored as 4–Supervision or Touching Assistance for patients that need supervision, verbal cueing, or touching/steadying. The IRF-PAI/FIM® Instrument rating scale uses one score for these assistance levels.

  – Example: If a patient needs verbal cues to complete upper body or lower body dressing, the clinician reports CARE score 4–Supervision or Touching Assistance. When using the IRF-PAI/FIM® to assess the same patient, a score 5–Supervision or Setup is reported (as long as no hands-on assistance is used for the patient during any portion of the activity). However, if the patient requires steadying/touching (e.g., steadying the patient while she pulls up her pants), the clinician will report the IRF-PAI/FIM® Instrument score as 4–Minimal Assistance.

- Clinician feedback favored the CARE Item Set's ability to make clinically important distinctions between the patient's need for supervision (CARE score 4) and Setup or Clean-up Assistance (CARE score 5). The need to provide supervision (CARE score 4) often means that the clinician is present intermittently or throughout the time that the patient performs an activity (such as eating or walking). In contrast, Setup or Clean-up (CARE score 5) often means that the clinician can leave (and attend to other responsibilities) while the patient performs the remaining tasks. The clinician may return to the patient at the end of the activity to provide any clean-up assistance. Clinician feedback indicated that these distinctions have major implications regarding the time needed to provide care for these higher-level patients.

Example of CARE score 4 and FIM® score 4

- An additional example shows some of the similarities in coding. A patient who needs "touching/steadying assistance" would be coded on the CARE as 4–Supervision or Touching Assistance because the patient is unsteady upon rising from sit to stand and requires the clinician to place his/her hand onto the patient to steady him/her during this activity. When assessing this same patient using the IRF-PAI/FIM®, score 4–Minimal Assistance is also used because the patient performed 75 percent or more of the task.

Example of CARE score 3 and FIM® scores 3 & 4

- If the helper assists with less than half of the effort, the CARE item score is 3–Partial/Moderate Assistance. This patient may be scored on the IRF-PAI/FIM® Instrument as either a 4–Minimal Assistance (patient performs 75 percent or more of the task) or 3–Moderate Assistance (patient performs 50–74 percent of the task), depending on the patient's need for assistance.
  - Example: A patient transfers to and from his bed with the helper providing lifting assistance, but less than half the effort. The CARE coding for this patient is 3–Partial/Moderate Assistance. The IRF-PAI/FIM® coding requires the clinician to determine what percentage of the task the patient performs. If the patient performs 75 percent or more of the task, then the patient is scored a 4–Minimal Assistance, but if the patient performs 50–74 percent of the task, then the FIM® score 3–Moderate Assistance is reported.

Example of CARE scores 1 & 2 and FIM® scores 1 & 2

- The CARE coding distinguishes between a patient who contributes a small amount of effort (rated as level 2) and a patient who is totally dependent (rated as level 1). This differs from the IRF-PAI/FIM® Instrument. If the helper assists the patient with *more than half of the effort*, the CARE item score is 2–Substantial/Maximal Assistance. This patient may be scored on the IRF-PAI/FIM® Instrument as either 2–Maximal Assistance if the patient performs 25–49 percent of the task or 1–Total Assistance if the patient performs less than 25 percent of the task.
  - Example: A patient is assessed using the CARE while transferring into and out of bed. The helper does all of the effort to complete this activity upon admission to the facility and scores the patient 1–Dependent. Upon discharge, the same patient contributes a bit of effort while performing the activity and is scored 2–Substantial/Maximal Assistance to documents the patient's progress in performing this activity. If the patient performed less than 25 percent of the task, then the IRF-PAI/FIM® score would be 1–Total Assistance at both admission and discharge. Clinician feedback during the CARE Item Set training indicated that it is important to distinguish between patients who are *unable* to participate in an activity and those patients who are *beginning to participate* in an activity. Clinicians also emphasized that there are fundamental, relevant, and measurable distinctions among lower functioning patients.

Example of CARE scores 1 & 2 and FIM® score 1

- The IRF-PAI/FIM® score 1–Total Assistance (patient performs less than 25 percent of effort) includes a *broader range* of patient performance than the CARE score of 1. The FIM® instrument's lowest score includes patients who perform less than 25 percent of the activity, including patients who require total assistance. The CARE rating scale differentiates between Level 1–Dependent and Level 2–Substantial/Maximal Assistance (helper does more than half the effort).

  The CARE approach is based on whether the patient can do more than half or less than half the activity and, given that, how much assistance is needed. If the patient can do more than half the activity, does the clinician need to stay and supervise or can the clinician set up and safely walk away from the patient? If the patient does less than half the activity, must the helper do all the effort or just more than half the effort?

13.2.2 Item Definitions

When the functional assessment items in the CARE Item Set were developed, the objective was to have definitions that would be relevant to assessing patients. Additionally, CARE items were designed to focus on discrete activities; some FIM® items may capture multiple concepts or activities. Thus, the definitions of items on the IRF-PAI/FIM® Instrument and the CARE Item Set are often different. There are important distinctions between these two instruments. For each activity on the CARE and IRF-PAI/FIM® instruments, there are unique differences in task inclusion. Each instrument includes items that the other instrument does not.

13.2.3 Summary

The differences between the IRF-PAI/FIM® Instrument and the CARE Item Set, including the administration and rating scales, are essential to recognize while interpreting the results of the data comparison. It is not expected that a one-to-one comparison can be made between IRF-PAI/FIM® and CARE items for these and other reasons that are highlighted below. For each comparison below, it is noted where the expectation for the most overlap should occur. When data appear inconsistent, we are unable to determine the patient's true status.

13.3 Results of the IRF-PAI/FIM® Instrument & CARE Item Set Analysis

1. V. Impairments: A. Bladder and Bowel Management: A1, A2a, A3a, A4a, and A5a Bladder (IRF-PAI/FIM®: G. Bladder and Function Modifiers)

The bladder management items in the Impairments section of the CARE Item Set correspond to the FIM® bladder item on the IRF-PAI (item 39G) and two related function modifiers, Bladder Level of Assistance (item 28) and Bladder Frequency of Accidents (item 29). The items on the IRF-PAI/FIM® Instrument and the CARE Item Set document a similar construct, but the definitions are quite different. Therefore, we expected that comparisons would not match up in many cases. Differences between the items are provided below:

- The assessment windows differ between the instruments:

- The admission assessment time frame for the item Bladder Level of Assistance is assessed for the past 3 calendar days.
- The admission assessment time frame for the Bladder Frequency of Accidents is 7 calendar days—4 days prior to the rehabilitation admission and the first 3 days in the IRF. The IRF may not always have patient information about the frequency of bladder accidents for the 4 days prior to the patient's admission. The CARE Item Set time frame is 2 calendar days (if admitted before noon) or 3 calendar days (for patients admitted after noon), all days within the IRF stay.
- The definitions of the IRF-PAI and CARE items differ, and the coding scales also differ, so we did not expect scores to match for many records. The item definitions for the CARE Item Set and the IRF-PAI items are provided below. The bladder item on the CARE Item Set is an impairment as defined by the International Classification of Function (ICF), because it relates to incontinence (i.e., dysfunction at the organ level).

CARE Item Set Definitions:
A1. *Does the patient have any* ***impairments with bladder*** *or bowel management (e.g., use of a device or incontinence)? 0. No; 1. Yes*
A2a. *Does this patient use an* ***external or indwelling device*** *or require intermittent catheterization? 0. No; 1. Yes*
A3a. Indicate the frequency of incontinence:
0. Continent (no documented incontinence)
1. Stress incontinence only (bladder only)
2. Incontinent less than daily (only once during the 2-day assessment period)
3. Incontinent daily (at least once a day)
4. Always incontinent
5. No urine/bowel output (e.g., renal failure)
9. Not applicable (e.g., indwelling catheter)
A4a. *Does the patient* ***need assistance to manage equipment or devices related to bladder*** *care (e.g., urinal, bedpan, indwelling catheter, intermittent catheterization, ostomy, incontinence pads/undergarments)? 0. No; 1. Yes*
A5a. *If the patient is incontinent or has an indwelling device, was the patient* ***incontinent*** *(excluding stress incontinence)* ***immediately prior*** *to the current illness, exacerbation, or injury? 0. No; 1. Yes; 9. Unknown*

IRF-PAI/FIM® Instrument Definitions:
39G. Bladder Management: *Includes the safe use of equipment or agents for bladder management.*
[Note: The lower score of IRF-PAI items 29. and 30. is entered as the 39.G score on the FIM® instrument]
Function Modifiers: ***29. Bladder Level of Assistance:*** *Use FIM® levels 1-7 to score this item, based upon the three day assessment period. Do not use code 0.*
30. Bladder Frequency of Accidents: *Use scale listed on IRF-PAI to score frequency of accidents, based upon the 7 day calendar assessment period. Do not use code 0.*
7. No accidents
6. No accidents, uses device such as a catheter

5. One accident in the past 7 days
4. Two accidents in the past 7 days
3. Three accidents in the past 7 days
2. Four accidents in the past 7 days
1. Five or more accidents in the past 7 days

Other factors specific to these items that impact how the assessment data compare include the following:

- The CARE Item Set is designed with gateway questions in an effort to reduce respondent burden. In the Impairment Section, if a patient does not use equipment and does not have incontinence, then no impairment is indicated for item A1, and the subsequent items in the section are skipped. There is no similar skip pattern on the IRF-PAI/FIM® Instrument. In order to have a complete comparison for the analysis CARE codes were populated when items were skipped because the patient did not have any bladder impairments. For example patients who were coded as having no impairments in item A1 were coded as not requiring external/indwelling devices and not requiring intermittent catheterization in item A2a, as being continent in item A3a, and as not needing assistance in item A4a.
- For the FIM® items in the IRF-PAI, patients who do not void—for example, a patient with renal failure—is coded 7–Complete Independence, whereas on the CARE Item Set these patients would be coded as 5–No Urine/Bowel Output.
- IRF-PAI/FIM® and CARE instruments both measure the "level of assistance" the patient requires for managing the use of equipment/devices related to bladder care. The IRF-PAI/FIM® Instrument function modifier (item 29) uses the FIM® scores 7–1 (Complete Independence through Total Assistance) to indicate the level of assistance the patient requires. For the CARE item A4a, the clinician reports the patient's need for assistance in managing equipment or devices related to bladder care by answering "Yes" or "No" to indicate the patient's need. The CARE Item Set does not use a rating scale to document assistance with bladder equipment.
- The IRF-PAI/FIM® Instrument function modifier (item 30) reports the number of "bladder accidents," which are defined as the act of wetting linen or clothing with urine, including urinal or bedpan spills. The CARE Item Set reports bladder incontinence as the involuntary leakage of urine. Successful use of incontinence pads/undergarments (diapers) results in the patients' being incontinent *without* any urine spilling onto linen or clothing. The FIM® item does not collect data on the frequency of the patient's "successful use" of incontinence pads/undergarments (diapers); thus, the FIM® item reflects not the number of times a patient is incontinent when using incontinence pads/undergarments (diapers) but the number of times the patient has had a FIM® defined "bladder accident."
- To illustrate the differences between the two items the following example is presented. In this example, the patient has urine leakage (i.e., incontinence) but is usually successful in use of an incontinence undergarment (pad or diaper). On the CARE Item Set, the patient is coded based on the number of times the patient was incontinent (leaks urine) into his/her undergarment during the assessment period. The

CARE item focuses on urine leakage only. In contrast, the IRF-PAI/FIM® *would not* code this patient for frequency of incontinence *contained within* an incontinence undergarment or pad. Instead the IRF-PAI/FIM® function modifier Frequency of Accidents would assess the patient's frequency for the *act of wetting linen or clothing with urine, including urinal or bedpan spills.*

  - Example: During the assessment period the patient uses incontinence pads (4 times each day), voids in the toilet the other times, and requires no assistance to use these pads during the assessment period. One time during the assessment period the patient did not wear an incontinence pad and leaked urine only once onto linen and his clothing. This patient would be assessed by each instrument as follows: FIM® Frequency of Accidents is coded as 5 for having one bladder accident in the past 7 days; CARE item A3a is coded 3–Incontinent Daily based on the patient's frequency of incontinence. For the CARE item, the patient is coded according to his incontinence frequency, regardless of whether the urine is within the incontinence pad or has spilled elsewhere (e.g., bed linen, clothing, could not contain all urine into the urinal/bedpan in his/her haste to void). The CARE coding indicates the frequency (always, at least once a day, less than daily, or stress incontinence only). This patient would be coded as a 3–Incontinent Daily on the CARE Item Set in this example (even if this patient had used his incontinence pads successfully during the assessment period—this CARE code would remain the same because CARE does not collect data on spilling urine onto other surfaces).

- Stress incontinence is included on the CARE Item Set but is not addressed specifically on the IRF-PAI/FIM® Instrument.

The overall frequencies for these items are shown in Tables 13-1a and 13-1b, followed by the cross-tabulation of the items in Table 13-1c.

Table 13-1a
CARE *admission* bladder impairment items

Item/Response Options	N	Percent
A1. *Does the patient have any* ***impairments with bladder*** *or bowel management (e.g., use of a device or incontinence)?*		
Missing	14	0.3
No	1,901	38.9
Yes	2,975	60.8
A2a. *Does this patient use an* ***external or indwelling device*** *or require intermittent catheterization?*		
Missing	14	0.3
No	3,350	68.5
Yes	1,526	31.2
A3a. *Indicate the frequency of incontinence.*		
Missing	14	0.3
0 = Continent (no documented incontinence)	2,585	52.9
1 = Stress incontinence only (bladder only)	152	3.1
2 = Incontinent less than daily (only once during the 2-day assessment period)	246	5.0
3 = Incontinent daily (at least once a day)	527	10.8
4 = Always incontinent	201	4.1
5 = No urine output (e.g., renal failure)	53	1.1
9 = Not applicable (e.g., indwelling catheter)	1,112	22.7

SOURCE: RTI analysis of CARE Item Set data, 2008–2009.

Table 13-1b
IRF-PAI/FIM® *admission* bladder items

Item/Response Options	N	Percent
*IRF-PAI **29. Bladder Level of Assistance***		
1 = Total Assist.	2,437	49.8
2 = Max. Assist.	248	5.1
3 = Mod. Assist.	368	7.5
4 = Min. Assist./Touching	360	7.4
5 = Supervision/Setup	944	19.3
6 = Mod. Independ.	262	5.4
7 = Complete Independ.	271	5.5
*IRF-PAI **30. Bladder Frequency of Accidents***		
1 = Five or more accidents in the past 7 days	352	7.2
2 = Four accidents in the past 7 days	82	1.7
3 = Three accidents in the past 7 days	124	2.5
4 = Two accidents in the past 7 days	186	3.8
5 = One accident in the past 7 days	372	7.6
6 = No accidents, uses device such as a catheter	2,970	60.7
7 = No accidents	804	16.4
*IRF-PAI/FIM® **39G. Bladder***		
(39G is the lower (more dependent) score from items 29 and 30 above)		
1 = Total Assist.	2,504	51.2
2 = Max. Assist.	220	4.5
3 = Mod. Assist.	345	7.1
4 = Min. Assist./Touching	370	7.6
5 = Supervision/Setup	938	19.2
6 = Mod. Independ.	265	5.4
7 = Complete Independ.	248	5.1

NOTE: Missing = 0 (IRF-PAI/FIM® missing values).

SOURCE: RTI analysis of IRF-PAI/FIM® instrument data, 2008–2009.

Table 13-1c
CARE *admission* frequency of bladder incontinence by IRF-PAI/FIM® *admission* frequency of accidents

CARE frequency of incontinence (N = 4,876)	IRF-PAI/ FIM® Instrument: 1. Five or more accidents in the past 7 days	IRF-PAI/ FIM® Instrument: 2. Four accidents in the past 7 days	IRF-PAI/ FIM® Instrument: 3. Three accidents in the past 7 days	IRF-PAI/ FIM® Instrument: 4. Two accidents in the past 7 days	IRF-PAI/ FIM® Instrument: 5. One accident in the past 7 days	IRF-PAI/ FIM® Instrument: 6. No accidents, uses device, e.g., catheter bedpan, diaper	IRF-PAI/ FIM® Instrument: 7. No accidents
0 = Continent (n = 2,585)	2.7	0.9	1.7	2.9	6.8	59.2*	25.8*
1 = Stress incontinence only (n = 152)	8.6	0.7	0.7	3.3	9.9	65.1*	11.8*
2 = Incontinent less than daily (n = 246)	10.6*	3.3*	6.5*	8.5*	19.1*	38.6	13.4
3 = Incontinence Daily (n = 527)	22.8*	5.3*	9.3*	10.1	14.2	31.7	6.6
4 = Always incontinent (n = 201)	36.3*	6.5*	3.0*	8.0	7.0	36.3	3.0
5 = No urine output (n = 53)	1.9	0.0	1.9	1.9	3.8	52.8*	37.7*
9 = Not applicable i.e. indwelling catheter (n = 1,112)	4.1	0.7	0.7	1.4	3.6	87.1*	2.2

* These values indicate the area of anticipated overlap between the CARE and IRF-PAI/FIM® Instrument responses.

NOTE: Missing = 14 (includes CARE Item Set missing values). Values refer to row percents.

SOURCE: RTI analysis of CARE Item Set and IRF-PAI/ FIM® Instrument data, 2008–2009.

Summary Points

Because of the item and coding differences noted above, certain differences in coding each patient were expected if the two item sets were operating similarly. In fact, they were, as summarized below:

- Sixty-one percent of all patients were scored on the CARE Item Set as having a bladder or bowel impairment (e.g., uses device or had incontinence) at admission, and 31 percent used an external or indwelling devices or required intermittent catheterization. Fifty-three percent of patients did not have bladder incontinence.
- The IRF-PAI admission function modifier bladder items indicated that nearly 50 percent of all patients required total assistance, 61 percent had no accidents, and overall, 51 percent had an overall FIM® score of 1–Total Assistance.
- Table 13-1c compares the admission CARE bladder incontinence scores and IRF-PAI frequency of bladder accidents scores for the same patients and expected areas of highest overlap between the CARE and FIM® bladder items. As previously noted, we did not expect scores to match at a high rate due to the many differences of these items.

- On Table 13-1c, 87 percent of patients' codes on the CARE's Frequency of Incontinence response 9–Not Applicable (e.g., indwelling catheter) were scored 6–No Accidents (uses device, e.g., ostomy, bedpan, commode, diaper) on the IRF-PAI. The high level of agreement for these items was expected, because when a patient was assessed using the CARE and he/she had an indwelling catheter or other device the clinician usually coded the item as "not applicable." A patient with an indwelling catheter would not be expected to have "accidents," as defined by the IRF-PAI/FIM® Instrument.
- Among patients with stress incontinence on the IRF-PAI, 65 percent had an IRF-PAI Bladder Accidents score of 6–No Accidents, Uses Device. Also, patients with a CARE item score of 5–No Urine Output were most often coded 6–No Accidents, Uses Device and 7–No Accidents.
- Among patients with CARE Frequency of Continence response of 3–Incontinence Daily, the IRF-PAI score of 6–No Accidents, Uses Device was the most common, followed by 1–Five or More Accidents in the Past 7 Days. For patients with a CARE score of 4–Always Incontinent, the most common IRF-PAI scores were 6–No Accidents, Uses Device and 1–Five or More Accidents in the Past 7 Days. Patients who are incontinent daily or always would have a greater probability of wetting linen or clothing with urine, including urinal or bedpan spills, which is the IRF-PAI/FIM®'s definition of bladder accidents. Patients coded as having incontinence on the CARE, but not having accidents on the IRF-PAI may be due to the definition differences; for example, urine being contained in the incontinence undergarment without any leaking onto linen or clothing.

2. V. Impairments: A. Bladder and Bowel Management: A1, A2b, A3b, A4b, and A5b Bowel (IRF-PAI/FIM® Instrument: H. Bowel and Function Modifiers)

The bowel management items in the Impairments section of the CARE Item Set correspond to the FIM® bowel item on the IRF-PAI (item 39H) and two related function modifiers, Bowel Level of Assistance (item 31) and Bowel Frequency of Accidents (item 32); however, these comparisons are not exact. The assessment time frames differ between the instruments, and the rating scales also differ. The item definitions for the CARE Item Set and the FIM® item on the IRF-PAI are provided below. Thus, the expected patterns of highest overlap were similar to the bladder management items.

- The assessment windows differ between the instruments:
  - The admission assessment time frame for the FIM® items on the IRF-PAI Bowel Level of Assistance is assessed for the first 3 calendar days of the stay.
  - The admission assessment time frame for the FIM® items on the IRF-PAI Bowel Frequency of Accidents is a 7-calendar-day assessment window that includes the 4 days prior to the rehabilitation admission and the first 3 days in the inpatient rehabilitation facility. The facility may not have patient information about the frequency of bowel accidents for the 4 days prior to the patient's admission.
  - The CARE Item Set time frame is 2 calendar days (if admitted before noon) or 3 calendar days (for patients admitted after noon).

– The definitions of items and coding differ, so we did not expect many of the records to have the same codes. The item definitions for the CARE Item Set and the FIM® items on the IRF-PAI are provided below. The bowel item on the CARE Item Set is an impairment, as defined by the International Classification of Function (ICF), because it relates to incontinence, i.e., dysfunction at the organ level.

CARE Item Set Definitions:
A1*. Does the patient have any* ***impairments with bladder or bowel management*** *(e.g., use of a device or incontinence)? 0. No; 1. Yes*
A2b. *Does this patient use an* ***external or indwelling device*** *or require intermittent catheterization? 0. No; 1. Yes*
A3b. *Indicate* ***the frequency of incontinence.***
0. Continent (no documented incontinence)
1. Stress incontinence only (bladder only)
2. Incontinent less than daily (only once during the 2-day assessment period)
3. Incontinent daily (at least once a day)
4. Always incontinent
5. No urine/bowel output (e.g., renal failure)
9. Not applicable (e.g., indwelling catheter)
A4b. *Does the patient* ***need assistance to manage equipment or devices related to bowel care*** *(e.g., urinal, bedpan, indwelling catheter, intermittent catheterization, ostomy, incontinence pads/undergarments)? 0. No; 1. Yes*
A5b. *If the patient is* ***incontinent*** *or has an indwelling device, was the patient incontinent (excluding stress incontinence)* ***immediately prior*** *to the current illness, exacerbation, or injury? 0. No; 1. Yes; 9. Unknown*

IRF-PAI/FIM® Instrument Definitions:
39H. Bowel Management: *Includes the use of equipment or agents for bowel management.*
Function Modifiers:
31. Bowel Level of Assistance: *Use IRF-PAI/FIM® Instrument levels 1-7 to score this item, based upon the three day assessment period. Do not use code 0.*
32. Bowel Frequency of Accidents: *Use scale listed on IRF-PAI/FIM® Instrument to score frequency of accidents, based upon the 7 calendar day assessment period. Do not use code 0.*
7. No accidents
6. No accidents, uses device such as an ostomy
5. One accident in the past 7 days
4. Two accidents in the past 7 days
3. Three accidents in the past 7 days
2. Four accidents in the past 7 days
1. Five or more accidents in the past 7 days

Other factors specific to these items that impact how the assessment data compare include the following:

- The CARE Item Set is designed with gateway questions for this section, so that if no impairment is indicated in item A1, the subsequent items in the section are skipped. There is no similar skip pattern on the IRF-PAI/FIM® Instrument. The supplemental items were populated on the CARE Item Set in order to have a complete comparison of data. For patients who had no impairments in A1, as not requiring external or indwelling devices in item A2b, as being continent in item A3b, and as not needing assistance in item A4b.
- The FIM® item on the IRF-PAI reports the number of "bowel accidents," defined as soiling linen or clothing with stool, which includes bedpan spills. The CARE Item Set reports bowel incontinence, which is defined as involuntary leakage of stool. This means that a person who is incontinent (leaks stool) according to the CARE Item Set may be coded as not having accidents, that is, not soiling linen or clothing, if the person has a device (adult diapers, bowel catheter, or colostomy) that can contain the stool.
- IRF-PAI/FIM® and CARE instruments both measure the level of assistance the patient requires for managing the use of equipment/devices related to bowel care. The IRF-PAI/FIM® Instrument function modifier 29 uses the FIM® scores 7–1 (Complete Independence through Total Assistance) to indicate the level of assistance the patient requires. The clinician uses the CARE instrument item A4a to assess the patient's need for assistance in managing equipment or devices related to bowel care. Clinicians use CARE codes "Yes" or "No" to indicate the patient's need rather than level of assistance required.
- The overall frequencies for these items are shown in Tables 13-2a and 13-2b, followed by the cross-tabulation of the items in Table 13-2c.

Table 13-2a
CARE *admission* bowel impairment items

Item/Response Options	N	Percent
A1. *Does the patient have any* ***impairments with bladder or bowel management*** *(e.g., use of a device or incontinence)?*		
Missing	14	0.3
No	1,901	38.9
Yes	2,975	60.8
A2b. *Does this patient use an* ***external or indwelling device*** *or require intermittent catheterization?*		
Missing	14	0.3
No	4,704	96.2
Yes	172	3.5
A3b. *Indicate the frequency of incontinence (bowel).*		
Missing	14	0.3
0 = Continent (no documented incontinence)	3,857	78.9
1 = Stress incontinence only (bladder only)	N/A	N/A
2 = Incontinent less than daily (only once during the 2-day assessment period)	399	8.2
3 = Incontinent daily (at least once a day)	296	6.1
4 = Always incontinent	178	3.6
5 = No urine/bowel output (e.g., renal failure)	71	1.5
9 = Not applicable (e.g., indwelling catheter)	75	1.5
A4b. *Does the patient* ***need assistance to manage equipment or devices related to*** *bowel care (e.g., urinal, bedpan, indwelling catheter, intermittent catheterization, ostomy, incontinence pads/undergarments)?*		
Missing	14	0.3
No	2,695	55.1
Yes	2,181	44.6
A5b. *If the patient is incontinent or has an indwelling device, was the patient* ***incontinent*** *(excluding stress incontinence)* ***immediately prior*** *to the current illness, exacerbation, or injury?*		
Missing	14	0.3
0 = No	493	10.1
1 = Yes	189	3.9
8 = Not Applicable (Patient does not have any impairments with bladder or bowel management and for the analysis only we have inserted this code)	3,857	78.9
9 = Unknown	337	6.9

SOURCE: RTI analysis of CARE Item Set data, 2008–2009.

Table 13-2b
IRF-PAI/FIM® *admission* bowel items

Item/Response Options	N	Percent
*IRF-PAI/FIM® **29. Bowel Level of Assistance***		
1 = Total Assist.	1,551	31.7
2 = Max. Assist.	297	6.1
3 = Mod. Assist.	339	6.9
4 = Min. Assist./Touching	363	7.4
5 = Supervision/Setup	693	14.2
6 = Mod. Independ.	1,470	30.1
7 = Complete Independ.	177	3.6
*IRF-PAI/FIM® **30. Bowel Frequency of Accidents***		
1 = Five or more accidents in the past 7 days	314	6.4
2 = Four accidents in the past 7 days	67	1.4
3 = Three accidents in the past 7 days	87	1.8
4 = Two accidents in the past 7 days	171	3.5
5 = One accident in the past 7 days	377	7.7
6 = No accidents, uses device such as a catheter	2,808	57.4
7 = No accidents	1,066	21.8
*IRF-PAI/FIM® **39G. Bowel***		
(39G is the lower (more dependent) score from items 29 and 30 above)		
1 = Total Assist.	1,597	32.7
2 = Max. Assist.	273	5.6
3 = Mod. Assist.	336	6.9
4 = Min. Assist./Touching	378	7.7
5 = Supervision/Setup	710	14.5
6 = Mod. Independ.	1,441	29.5
7 = Complete Independ.	155	3.2

SOURCE: RTI analysis of IRF-PAI/FIM® Instrument data, 2008–2009.

Table 13-2c
CARE *admission* frequency of bowel incontinence by IRF-PAI/FIM® *admission* frequency of accidents

CARE frequency of incontinence (N = 4,876)	IRF-PAI/ FIM® Instrument: 1 = Five or more accidents in the past 7 days	IRF-PAI/ FIM® Instrument: 2 = Four accidents in the past 7 days	IRF-PAI/ FIM® Instrument: 3 = Three accidents in the past 7 days	IRF-PAI/ FIM® Instrument: 4 = Two accidents in the past 7 days	IRF-PAI/ FIM® Instrument: 5 = One accident in the past 7 days	IRF-PAI/ FIM® Instrument: 6 = No accidents, uses device	IRF-PAI/ FIM® Instrument: 7 = No accidents
0 = Continent (n = 3,857)	3.6	0.6	1.0	2.1	5.8	61.6*	25.4*
1 = Stress incontinence only (n = 0)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2 = Incontinent less than daily (n = 399)	9.0	+	4.5	10.0*	20.6*	44.6*	8.8
3 = Incontinence daily (n = 296)	22.6*	6.4	6.1	10.5	15.9	29.4	9.1
4 = Always incontinent (n = 178)	38.2*	7.3	6.7	8.4	9.6	25.3	+
5 = No bowel output (n = 71)	+	+	+	+	+	66.2*	15.5*
9 = Not applicable (i.e., indwelling catheter) (n = 75)	+	+	+	+	+	88.0*	+

***** These **values** indicate the area of anticipated overlap between the CARE Item Set and IRF-PAI/FIM® Instrument responses.

+ Cells based on a sample size of n < 11 are not shown.

NOTE: Missing = 14 (includes CARE Item Set missing values). Values refer to row percents.

SOURCE: RTI analysis of CARE Item Set and IRF-PAI/FIM® Instrument data, 2008–2009.

Summary Points

Again, like the bladder incontinence sections, the differences in coding each patient with the two sets of items were expected. The similarities and differences in coding are highlighted below:

- Sixty-one percent of all patients were scored on the CARE Item Set as having a bladder or bowel impairment at admission. Almost 79 percent of patients did not have bowel incontinence, and 55 percent of the patients did not require assistance to manage equipment or devices related to bowel care.
- The IRF-PAI admission bowel items Level of Assistance and Frequency of Accidents indicated that nearly 32 percent of all patients required total assistance, 58 percent had no accidents (soiling linen or clothing, etc.) and used a device, and 33 percent had an overall FIM® score of 1–Total Assistance.
- Table 13-2c presents the cross-tabulation of the CARE item scores for Frequency of Incontinence and the scores for the IRF-PAI Bowel Frequency of Accidents items for the same patients, and the expected areas of highest overlap between the CARE and IRF-PAI bowel items. Among patients coded on the CARE as 9–Not Applicable,

88 percent of patients on the IRF-PAI were scored 6–No Accidents (e.g., uses device: ostomy, bedpan, commode, or diaper). The high level of agreement for these items may have been because, when a patient was assessed using the CARE and he/she had an indwelling catheter or other device, the clinician usually coded the item as "not applicable." The same patient assessed using the IRF-PAI Instrument was less likely to have "accidents," as defined by the FIM®. The relevance of this point is that, because the CARE "incontinence" item and the IRF-PAI/FIM® term "accidents" do not have the same meaning, the CARE's Not Applicable and FIM®'s No Accidents Uses Device usually had similar results of no soiling; thus the high level of agreement for this item comparison is not unexpected.

- Among patients with a CARE Frequency of Incontinence score of 0–Continent, 62 percent were scored 6–No Accidents (e.g., uses device: ostomy, bedpan, commode, or diaper) on the IRF-PAI and 25 percent were scored 7–No Accidents.

3. VI. Functional Status: Core Self-Care: A1 Eating (IRF-PAI/FIM® Instrument: A. Eating)

Eating

The CARE Eating item is similar to the FIM® Eating item on the IRF-PAI (39A); however, there are some important differences to note. The assessment windows differ between the instruments, as does the emphasis on usual performance versus most dependent functional levels during the assessment time frame. The rating scales also differ. The item definitions for the CARE Item Set and the IRF-PAI/FIM® Instrument item are included below.

CARE Item Set Definition:
A1. Eating: *The ability to use suitable utensils to bring food to the mouth and swallow food once the meal is presented on a table/tray. Includes modified food consistency.*

IRF-PAI/FIM® Instrument Definition:
39A. Eating: *includes the ability to use suitable utensils to bring food to mouth, as well as the ability to chew and swallow the food once the meal is presented in the customary manner on a table or tray. The patient performs this activity safely.*

Other factors specific to these items that impact how the assessment data compare include the following:

- The FIM® Eating item on the IRF-PAI codes the patient's ability to bring food to the mouth, as well as the tasks required to administer tube feedings, when applicable. The CARE eating item is limited to bringing food to the mouth and does not include administering tube feedings. As a result, the data for the FIM® Eating item on the IRF-PAI may reflect a score based on the degree of assistance a patient requires for the activity of tube feeding administration. If the patient does not eat and gets all nutrition through tube feedings, the CARE item for this patient would not have a number score, but a letter code (e.g., M indicating the task was not completed due to medical condition) instead.

- If the patient eats and received nutrition through a tube feeding, the IRF-PAI/FIM® score may reflect the amount of assistance provided with tube feeding administration and the CARE score would be based on the eating activity only. In this case, we would expect the IRF-PAI/FIM® Instrument code to be at the lower levels at admission relative to the CARE data.

The overall frequencies for these items are shown in Tables 13-3a and 13-3b, followed by the cross-tabulation of the items in Table 13-3c. Figure 13-2 shows the individual distributions of the IRF-PAI/FIM® Instrument to CARE Item Set responses.

Table 13-3a
CARE *admission* eating item

CARE Item Set: Core Self-Care: Eating (N = 4,890)	N	Percent
Missing	16	0.3
1 = Dependent (Helper does all of the effort)	161	3.3
2 = Substantial/max. assist. (Helper does more than half)	105	2.2
3 = Partial/mod. assist. (Helper does less than half)	247	5.1
4 = Supervision or touching assist.	725	14.8
5 = Setup or clean-up assist.	2,028	41.5
6 = Independent	1,408	28.8
A = Task attempted but not completed	+	0.1
M = Not attempted due to medical condition	39	0.8
N = Not applicable when coded	142	2.9
P = Patient refused	+	0.1
S = Not attempted due to safety concerns	13	0.3

+ Cells based on a sample size of n < 11 are not shown.

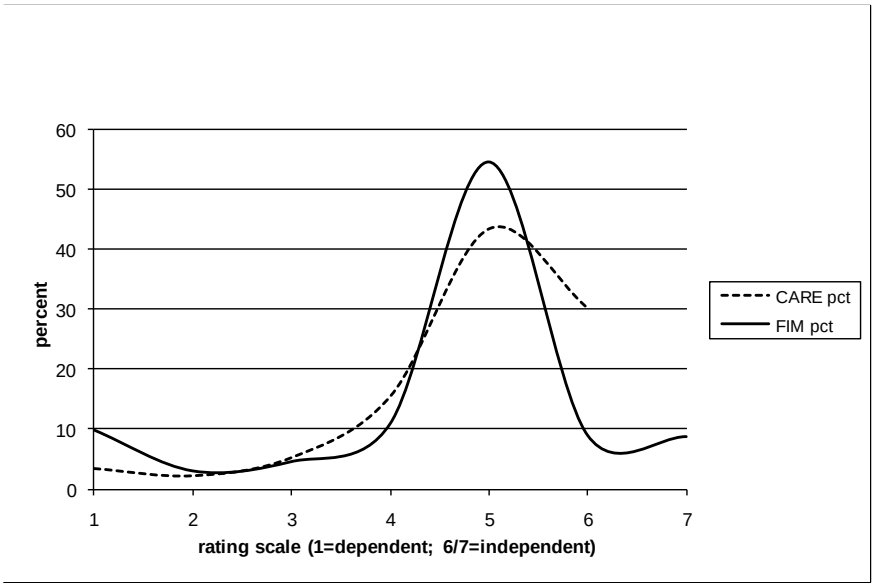
SOURCE: RTI analysis of CARE Item Set data, 2008–2009.

Table 13-3b
IRF-PAI/FIM® *admission* eating item

IRF-PAI/FIM® Instrument 39A. Eating	N	Percent
0 = Activity does not occur	14	0.3
1 = Total Assist.	475	9.7
2 = Max. Assist.	143	2.9
3 = Mod. Assist.	219	4.5
4 = Min. Assist./Touching	528	10.8
5 = Supervision/Setup	2,656	54.3
6 = Mod. Independ.	433	8.9
7 = Complete Independ.	422	8.6

SOURCE: RTI analysis of IRF-PAI/FIM® Instrument data, 2008–2009.

Figure 13-2
Distributions of CARE and IRF-PAI/FIM® admission eating items



NOTE: See above for the values for each rating scale. Please note that the CARE Item Set rating scale ranges 1–6.

SOURCE: RTI analysis of CARE Item Set and IRF-PAI/FIM® Instrument data, 2008–2009.

Table 13-3c
CARE *admission* eating item by IRF-PAI/FIM® *admission* eating item

CARE Core Self-Care: Eating (N = 4,874)	0 = Activity does not occur	1 = Total Assist.	2 = Max. Assist.	3 = Mod. Assist.	4 = Min. Assist./Touch-ing	5 = Super-vision/ Setup	6 = Mod. Independ.	7 = Complete Independ.
1 = Dependent (n = 161)	+	89.4*	+	+	+	+	+	+
2 = Substantial/max. assist. (n = 105)	+	36.2*	44.8*	+	+	11.4	+	+
3 = Partial/mod. assist. (n = 247)	+	14.6	10.9	25.1*	34.4*	13.8	+	+
4 = Supervision or touching assist. (n = 725)	+	5.5	4.1	7.6	22.9*	56.0*	1.8	+
5 = Setup or clean-up assist. (n = 2,028)	+	2.7	1.2	3.1	9.3	74.8*	4.6	4.1
6 = Independent (n = 1,408)	0.3	0.6	0.4	2.1	5.5	45.5	22.7*	22.9*
Letter codes (n = 200)	+	77.0	+	+	+	16.0	+	+

* These values indicate the area of anticipated overlap between the CARE Item Set and IRF-PAI/FIM® Instrument responses.
+ Cells based on a sample size of n < 11 are not shown.
NOTE: Missing = 16 (includes CARE Item Set missing values). Values refer to row percents.
SOURCE: RTI analysis of CARE Item Set and IRF-PAI/FIM® Instrument data, 2008–2009.

Summary Points

- The most frequent value for the CARE Eating item at admission is 5–Setup or Clean-up Assistance, with 42 percent of the patients.
- The most frequent value for the FIM® Eating item on the IRF-PAI is 5–Supervision/Setup, with 54 percent of patients.
- In Table 13-3c, the cross-tabulations show that the CARE codes of 1, 2, 3, 4, and 5 tended to overlap with the IRF-PAI/FIM® codes, as expected. The highest agreement was between a CARE value of 1–Dependent and a IRF-PAI/FIM® value of 1–Total Assistance, followed by a CARE value of 2–Substantial/Maximal Assistance and IRF-PAI/FIM® values of 1–Total Assistance and 2–Substantial/Maximal Assistance. The score of 1 was expected, both because the rating scale definitions differ (CARE = dependent and IRF-PAI/FIM® = 0–25 percent of the effort) and because the IRF-PAI/FIM® codes represent the patient's most dependent performance.

4. VI. Functional Status: Core Self-Care: A3 Oral Hygiene (IRF-PAI/FIM® Instrument: B. Grooming)

The next CARE self-care item is oral hygiene. The CARE Item Set and IRF-PAI/FIM® Instrument items do not have items that are directly comparable. We will compare the grooming FIM® activity, which includes oral care and other grooming activities, to the CARE's oral hygiene item. The FIM® grooming item on the IRF-PAI includes four or five activities (oral care, combing hair, washing hands, washing face, and either shaving or applying make-up). The

CARE Item Set includes *only 1 activity*: oral hygiene. The CARE Item Set includes oral hygiene because this activity would be completed in all acute and post-acute care settings. Focusing on a single activity was expected to simplify the item. In addition to covering different activities, these items also differ in the following areas: assessment period windows, CARE Item Set's emphasis on usual performance versus IRF-PAI/FIM® items' emphasis on coding the patient's most dependent function, and the rating scales. The item definitions are below.

CARE Item Set Definition:
A3. Oral hygiene: *The ability to use suitable items to clean teeth. Dentures: The ability to remove and replace dentures from and to mouth, and manage equipment for soaking and rinsing.*

IRF-PAI/FIM® Instrument Definition:
39B Grooming: *Grooming includes oral care, hair grooming (combing or brushing hair), washing the hands, washing the face, and either shaving the face or applying make-up. If the subject neither shaves nor applies make-up, Grooming includes only the first four tasks. The patient performs this activity safely. This item includes obtaining articles necessary for grooming.*

The overall frequencies for these items are shown in Tables 13-4a and 13-4b, followed by the cross-tabulation of the paired items in Table 13-4c. Figure 13-3 illustrates the individual item distributions.

Table 13-4a
CARE *admission* oral hygiene item

CARE Core Self-Care: Oral Hygiene (N = 4,890)	N	Percent
Missing	16	0.3
1 = Dependent (Helper does all of the effort)	220	4.5
2 = Substantial/max. assist. (Helper does more than half)	195	4.0
3 = Partial/mod. assist. (Helper does less than half)	555	11.4
4 = Supervision or touching assist.	1,118	22.9
5 = Setup or clean-up assist.	2,274	46.5
6 = Independent	369	7.6
A = Task attempted but not completed	14	0.3
M = Not attempted due to medical condition	11	0.2
N = Not applicable when coded	53	1.1
P = Patient refused	40	0.8
S = Not attempted due to safety concerns	25	0.5

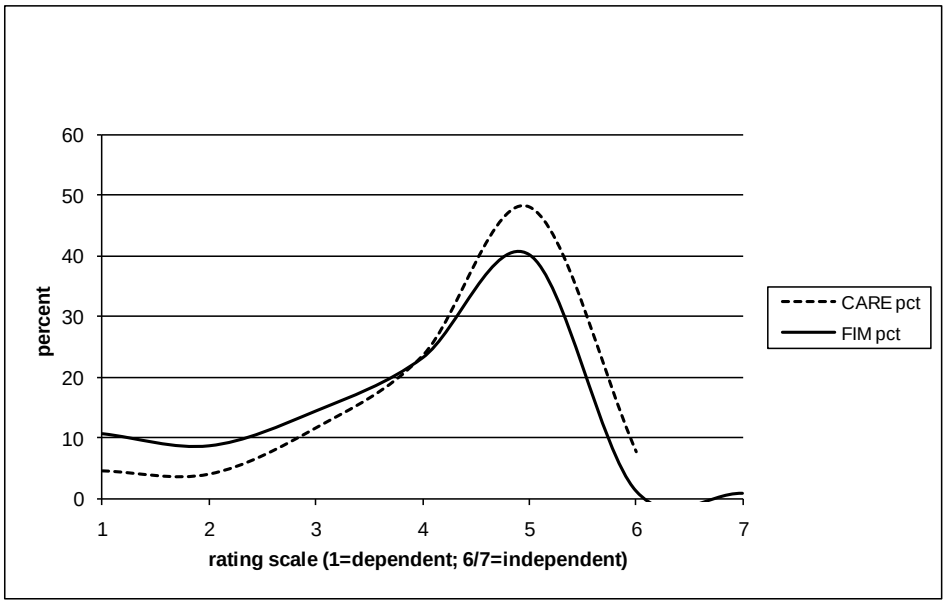
SOURCE: RTI analysis of CARE Item Set data, 2008–2009.

Table 13-4b
IRF-PAI/FIM® *admission* grooming item

IRF-PAI/FIM® Instrument 39B. Grooming	N	Percent
0 = Activity does not occur	34	0.7
1 = Total Assist.	523	10.7
2 = Max. Assist.	426	8.7
3 = Mod. Assist.	705	14.4
4 = Min. Assist./Touching	1,131	23.1
5 = Supervision/Setup	1,960	40.1
6 = Mod. Independ.	66	1.4
7 = Complete Independ.	45	0.9

SOURCE: RTI analysis of IRF-PAI/FIM® Instrument data, 2008–2009.

Figure 13-3
Distributions of CARE *admission* oral hygiene item and IRF-PAI/FIM® *admission* grooming item



NOTE: See above for the values for each rating scale. Please note that the CARE Item Set rating scale ranges 1–6.

SOURCE: RTI analysis of CARE Item Set and IRF-PAI/FIM® Instrument data, 2008–2009.

Table 13-4c
CARE *admission* oral hygiene item by IRF-PAI/FIM® *admission* grooming item

CARE Core Self-Care: Oral Hygiene (N = 4,874)	0 = Activity does not occur	1 = Total Assist.	2 = Max. Assist.	3 = Mod. Assist.	4 = Min. Assist./Touching	5 = Super-vision/Setup	6 = Mod. Independ.	7 = Complete Independ.
1 = Dependent (n = 220)	+	86.4*	8.2	+	+	+	+	+
2 = Substantial/max. assist. (n = 195)	+	34.4*	44.1*	12.3	6.2	+	+	+
3 = Partial/mod. assist. (n = 555)	+	6.6	8.3	15.2*	31.8*	36.9	+	+
4 = Supervision or touching assist. (n = 1,118)	+	6.6	8.3	15.2	31.8*	36.9*	+	+
5 = Setup or clean-up assist. (n = 2,274)	0.5	4.0	4.9	11.2	21.3	56.8*	0.9	+
6 = Independent (n = 369)	+	+	3.0	8.4	21.7	44.4	11.1*	9.8*
Letter codes (n = 143)	+	16.8	11.2	18.9	16.1	30.8	+	+

* These values indicate the area of anticipated overlap between the CARE Item Set and IRF-PAI/FIM® Instrument responses.
+ Cells based on a sample size of n < 11 are not shown.
NOTE: Missing = 16 (includes CARE Item Set missing values). Values refer to row percents.
SOURCE: RTI analysis of CARE Item Set and IRF-PAI/FIM® Instrument data, 2008–2009.

Summary Points

- The most frequent value for the CARE Oral Hygiene item at admission is 5–Setup or Clean-up Assistance, in which 47 percent of the responses are coded.
- The most frequent value for the IRF-PAI/FIM® Instrument Grooming item is code 5–Supervision/Setup, in which 40 percent of all responses are coded.
- As shown in Table 13-4c, the CARE values of 1, 2, 3, 4, and 5 overlapped with the IRF-PAI/FIM® values as expected. The most agreement was between a CARE value of 1–Dependent and a IRF-PAI/FIM® value of 1–Total Assistance, followed by a CARE value of 2–Substantial/Maximal Assistance and IRF-PAI/FIM® values of 1–Total Assistance and 2–Maximal Assistance.

5. VI. Functional Status: Core Self-Care: A4 Toilet Hygiene (IRF-PAI/FIM® Instrument: F. Toileting)

The next CARE self-care item is toilet hygiene. The Toileting FIM® item on the IRF-PAI is most similar to this CARE item.

Factors to consider when comparing the data from these two instruments include the differences in the time frames to complete the patient assessment, CARE Item Set's emphasis on usual performance versus IRF-PAI/FIM® items' emphasis on coding the patient's lowest functional levels, and the differences in each instruments' rating scales. The item definitions are below.

CARE Item Set Definition:
A4. Toilet hygiene: *The ability to maintain perineal hygiene, adjust clothes before and after using toilet, commode, bedpan, urinal. If managing ostomy, include wiping opening but not managing equipment.*

IRF-PAI/FIM® Instrument Definition:
39F. Toileting*: Toileting includes maintaining perineal hygiene and adjusting clothing before and after using a toilet, commode, bedpan, or urinal. The patient performs this activity safely.*

The overall frequencies for these items are shown in Tables 13-5a and 13-5b, followed by the cross-tabulation of these items in Table 13-5c. Figure 13-4 illustrates the individual item distributions.

Table 13-5a
CARE *admission* toilet hygiene item

CARE Core Self-Care: Toilet Hygiene (N = 4,890)	N	Percent
Missing	16	0.3
1 = Dependent (Helper does all of the effort)	1,173	24.0
2 = Substantial/max. assist. (Helper does more than half)	891	18.2
3 = Partial/mod. assist. (Helper does less than half)	1,097	22.4
4 = Supervision or touching assist.	1,152	23.6
5 = Setup or clean-up assist.	318	6.5
6 = Independent	108	2.2
A = Task attempted but not completed	12	0.3
M = Not attempted due to medical condition	20	0.4
N = Not applicable when coded	69	1.4
P = Patient refused	19	0.4
S = Not attempted due to safety concerns	15	0.3

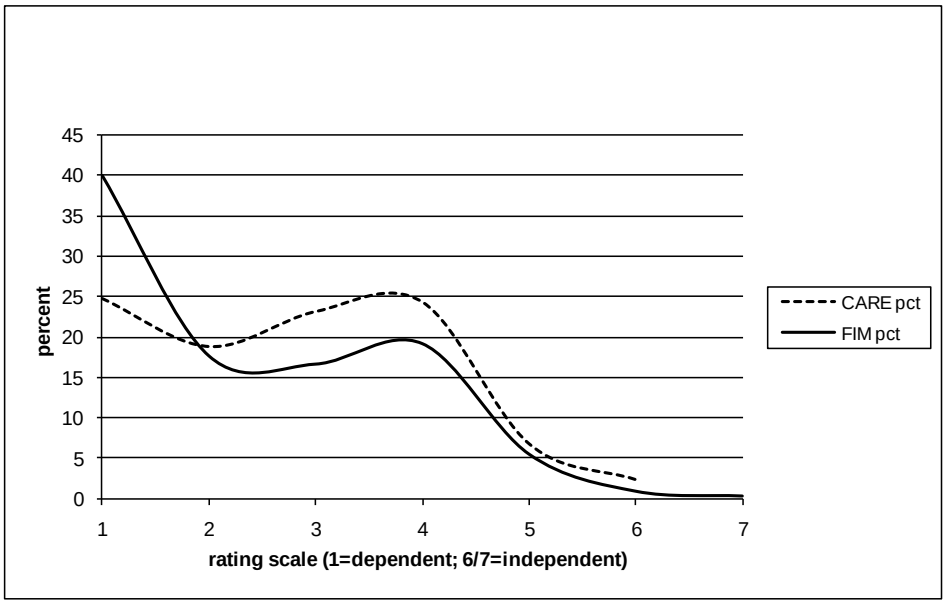
SOURCE: RTI analysis of CARE Item Set data, 2008–2009.

Table 13-5b
IRF-PAI/FIM® *admission* toileting item

IRF-PAI/FIM® 39F. Toileting	N	Percent
0 = Activity does not occur	48	1.0
1 = Total Assist.	1,938	39.6
2 = Max. Assist.	854	17.5
3 = Mod. Assist.	805	16.5
4 = Min. Assist./Touching	928	19.0
5 = Supervision/Setup	264	5.4
6 = Mod. Independ.	41	0.8
7 = Complete Independ.	12	0.3

SOURCE: RTI analysis of IRF-PAI/FIM® Instrument data, 2008–2009.

Figure 13-4
Distributions of CARE *admission* toilet hygiene item by IRF-PAI/FIM® *admission* toileting item



NOTE: See above for the values for each rating scale. Please note that the CARE Item Set rating scale ranges 1–6.

SOURCE: RTI analysis of CARE Item Set and IRF-PAI/FIM® Instrument data, 2008–2009.

Table 13-5c
CARE *admission* toilet hygiene item by IRF-PAI/FIM® *admission* toileting item

CARE Core Self-Care: Toileting (N = 4,874)	0 = Activity does not occur	1 = Total Assist.	2 = Max. Assist.	3 = Mod. Assist.	4 = Min. Assist./Touch-ing	5 = Super-vision/ Setup	6 = Mod. Independ.	7 = Complete Independ.
1 = Dependent (n = 1,173)	1.1	90.1*	6.5	1.3	+	+	+	+
2 = Substantial/max. assist. (n = 891)	+	43.2*	44.7*	7.9	2.4	+	+	+
3 = Partial/mod. assist. (n = 1,097)	+	22.4	18.3	37.1*	20.1*	+	+	+
4 = Supervision or touching assist. (n = 1,152)	+	12.8	10.2	20.3	44.4*	10.1*	1.0	+
5 = Setup or clean-up assist. (n = 318)	+	10.4	9.4	13.2	34.3	28.6*	+	+
6 = Independent (n = 108)	+	+	+	12.0	32.4	26.9	13.9*	+
Letter codes (n = 135)	+	44.4	15.6	17.0	11.1	+	+	+

* These values indicate the area of anticipated overlap between the CARE Item Set and IRF-PAI/FIM® Instrument responses.

+ Cells based on a sample size of n < 11 are not shown.

NOTE: Missing = 16 (includes CARE Item Set missing values). Values refer to row percents.

SOURCE: RTI analysis of CARE Item Set and IRF-PAI/FIM® Instrument data, 2008–2009.

Summary Points

- The most frequent values for the CARE toilet hygiene item at admission are 1–Dependent (patient unable to perform any of the activity), in which 24 percent of the responses are coded, and 4–Supervision or Touching Assistance, also with approximately 24 percent of responses.
- The most frequent value for the FIM® toileting item on the IRF-PAI is 1–Total Assistance (patient performs less than 25 percent of the activity), in which 40 percent of all responses are coded.
- On Table 13-5c, the CARE values of 1, 2, 3, and 4 overlapped with the FIM® values on the IRF-PAI as expected. The most agreement was between a CARE value of 1–Dependent and the IRF-PAI/FIM® value of 1–Total Assistance, followed by a CARE value of 2–Substantial/Maximal Assistance and IRF-PAI/FIM® values of 1–Total Assistance and 2–Maximal Assistance.

6. VI. Functional Status: Core Self-Care: A5 Upper Body Dressing (IRF-PAI/FIM® Instrument: D. Dressing Upper Body)

Next is the CARE self-care Upper Body Dressing item. The Dressing Upper Body FIM® item on the IRF-PAI is similar and will be used for comparison. Factors to consider when comparing the data from these two instruments include the differences in the time frames to

complete the patient assessment, CARE Item Set's emphasis on usual performance versus IRF-PAI/FIM® items' emphasis on coding the patient's lowest functional levels, and the differences in the instruments' rating scales. The item definitions are below.

CARE Item Set Definition:
A5. Upper Body Dressing*: The ability to put on and remove shirt or pajama top. Includes buttoning, if applicable.*

IRF-PAI/FIM® Instrument Definition:
39D. Dressing Upper Body *includes dressing and undressing above the waist, as well as applying and removing a prosthesis or orthosis when applicable. The patient performs this activity safely.*

The overall frequencies for these items are shown in Tables 13-6a and 13-6b, followed by the cross-tabulation in Table 13-6c. Figure 13-5 illustrates the individual item distributions.

Table 13-6a
CARE *admission* upper body dressing item

CARE Core Self-Care: Upper Body Dressing (N = 4,890)	N	Percent
Missing	16	0.3
1 = Dependent (Helper does all of the effort)	395	8.1
2 = Substantial/max. assist. (Helper does more than half)	546	11.2
3 = Partial/mod. assist. (Helper does less than half)	1,190	24.3
4 = Supervision or touching assist.	1,140	23.3
5 = Setup or clean-up assist.	1,403	28.7
6 = Independent	99	2.0
A = Task attempted but not completed	+	+
M = Not attempted due to medical condition	16	0.3
N = Not applicable when coded	35	0.7
P = Patient refused	25	0.5
S = Not attempted due to safety concerns	15	0.3

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE Item Set data, 2008–2009.

Table 13-6b
IRF-PAI/FIM® *admission* dressing upper body item

IRF-PAI/FIM® 39D. Dressing Upper Body	N	Percent
0 = Activity does not occur	128	2.6
1 = Total Assist.	722	14.8
2 = Max. Assist.	717	14.7
3 = Mod. Assist.	869	17.8
4 = Min. Assist./Touching	1,129	23.1
5 = Supervision/Setup	1,284	26.3
6 = Mod. Independ.	24	0.5
7 = Complete Independ.	17	0.4

SOURCE: RTI analysis of IRF-PAI/FIM® Instrument data, 2008–2009.

Figure 13-5
Distributions of CARE *admission* upper body dressing and IRF-PAI/FIM® *admission* dressing upper body admission items

NOTE: See above for the values for each rating scale. Please note that the CARE Item Set rating scale ranges 1–6.

SOURCE: RTI analysis of CARE Item Set and IRF-PAI/FIM® Instrument data, 2008–2009.

Table 13-6c
CARE *admission* upper body dressing item by IRF-PAI/FIM® *admission* dressing upper body item

CARE Core Self-Care: Upper Body Dressing (N = 4,874)	0 = Activity does not occur	1 = Total Assist.	2 = Max. Assist.	3 = Mod. Assist.	4 = Min. Assist./Touch-ing	5 = Super-vision/ Setup	6 = Mod. Independ.	7 = Complete Independ.
1 = Dependent (n = 395)	8.1	83.3*	6.1	+	+	+	+	+
2 = Substantial/max. assist. (n = 546)	3.1	25.6*	59.7*	7.5	3.3	+	+	+
3 = Partial/mod. assist. (n = 1,190)	1.3	10.2	15.0	36.5*	33.4*	3.6	+	+
4 = Supervision or touching assist. (n = 1,140)	1.4	5.4	8.8	17.5	34.2*	32.4*	+	+
5 = Setup or clean-up assist. (n = 1,403)	0.8	3.3	5.1	12.0	20.2	58.0*	+	+
6 = Independent (n = 99)	+	+	+	+	20.2	34.3	16.2*	+
Letter codes (n = 101)	34.7	18.8	+	+	10.9	13.9	+	+

* These values indicate the area of anticipated overlap between the CARE Item Set and IRF-PAI/FIM® Instrument responses.

+ Cells based on a sample size of n < 11 are not shown.

NOTE: Missing = 16 (includes CARE Item Set missing values). Values refer to row percents.

SOURCE: RTI analysis of CARE and IRF-PAI/FIM® Instrument data, 2008–2009.

Summary Points

- The most frequent values for the CARE Upper Body Dressing item at admission are 5–Setup or Clean-up Assistance, in which 29 percent of the responses are coded; 3–Partial/Moderate Assistance, with 24 percent; and 4–Supervision or Touching Assistance, with 23 percent.
- The most frequent values for the FIM® Dressing Upper Body item on the IRF-PAI are 5–Supervision/Setup, in which 26 percent of all responses are coded, and 4–Minimal Assistance/Touching, with 23 percent.
- All CARE values overlapped with the IRF-PAI/FIM® values as expected, with the exception of 6, which overlapped most with an IRF-PAI/FIM® level of 5. The most agreement was between a CARE value of 2–Substantial/Maximal Assistance and IRF-PAI/FIM® values of 1–Total Assistance and 2–Maximal Assistance. There was also high agreement among patients with CARE values of 1–Dependent and IRF-PAI/FIM® values of 1–Total Assistance.

7. VI. Functional Status: Core Self-Care: A6 Lower Body Dressing (IRF-PAI/FIM® Instrument: E. Dressing Lower Body)

The CARE self-care Lower Body Dressing item is similar to the Dressing Lower Body FIM® item on the IRF-PAI, with important exceptions noted below. Factors to consider when comparing the data from these two instruments include the differences in the time frames to complete the patient assessment, CARE Item Set's emphasis on usual performance versus IRF-PAI/FIM® items' emphasis on coding the patient's lowest functional levels, and the differences in the instruments' rating scales. The item definitions are below.

CARE Item Set Definition:
A6. Lower body dressing: *The ability to dress and undress below the waist, including fasteners. Does not include footwear.*

IRF-PAI/FIM® Instrument Definition:
39E. Dressing Lower Body *includes dressing and undressing from the waist down, as well as applying and removing a prosthesis or orthosis when applicable. The patient performs the activity safely.*

Other factors specific to these items that impact how the assessment data compare include the following:

- The CARE item specifically excludes footwear. Putting on and taking off footwear is measured in a separate CARE item. The FIM® item on the IRF-PAI for lower body dressing includes dressing and undressing from the waist down and includes the patient's ability to put on and take off footwear and foot orthotics.
- The lower body dressing items on the CARE and IRF-PAI/FIM® assessments each include assessing the patient's ability to put on and take off prostheses for above and below the knee; however, the IRF-PAI/FIM® Instrument includes assessing the patient's ability to put on and take off ankle/foot orthoses or foot orthotics, whereas the CARE Item Set has a separate measure for this skill, Putting on and Taking off Footwear. Assistance with applying or removing a prosthesis or orthosis is scored as a piece of clothing on the CARE Item Set, which is different than the scoring on the IRF-PAI/FIM® Instrument.

The overall frequencies for these items are shown in Tables 13-7a and 13-7b, followed by the cross-tabulation in Table 13-7c. Figure 13-6 illustrates the individual item distributions.

Table 13-7a
CARE *admission* lower body dressing item

Core Self-Care: Lower Body Dressing (N = 4,890)	N	Percent
Missing	16	0.3
1 = Dependent (Helper does all of the effort)	1,284	26.3
2 = Substantial/max. assist. (Helper does more than half)	1,428	29.2
3 = Partial/mod. assist. (Helper does less than half)	1,172	24.0
4 = Supervision or touching assist.	670	13.7
5 = Setup or clean-up assist.	196	4.0
6 = Independent	32	0.7
A = Task attempted but not completed	11	0.2
M = Not attempted due to medical condition	17	0.4
N = Not applicable when coded	31	0.6
P = Patient refused	26	0.5
S = Not attempted due to safety concerns	+	+

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE Item Set data, 2008–2009.

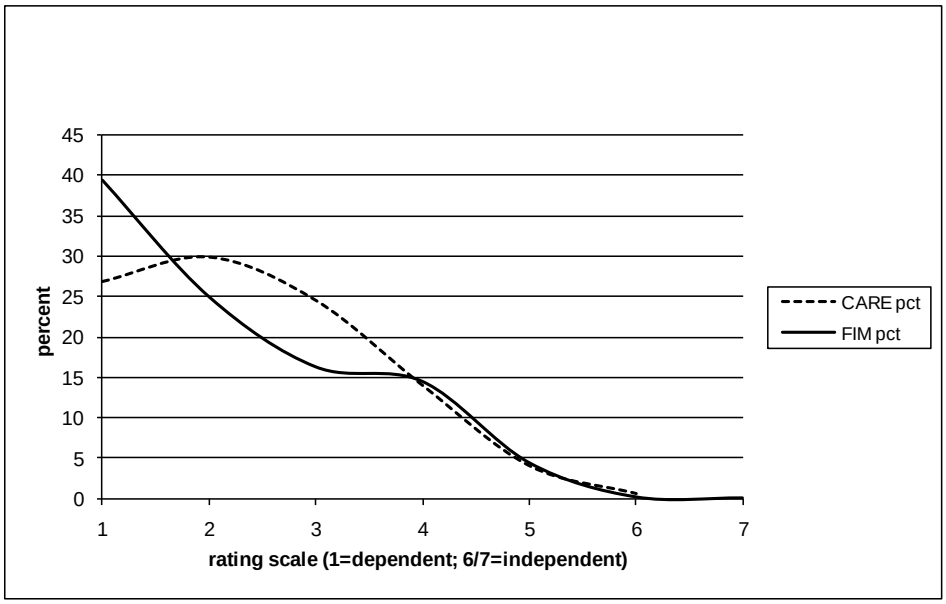
Table 13-7b
IRF-PAI/FIM® *admission* dressing lower body item

IRF-PAI/FIM® 39E. Dressing Lower Body	N	Percent
0 = Activity does not occur	114	2.3
1 = Total Assist.	1,880	38.5
2 = Max. Assist.	1,192	24.4
3 = Mod. Assist.	779	15.9
4 = Min. Assist./Touching	693	14.2
5 = Supervision/Setup	214	4.4
6 = Mod. Independ.	12	0.3
7 = Complete Independ.	+	+

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of IRF-PAI/FIM® Instrument data, 2008–2009.

Figure 13-6
Distributions of CARE *admission* lower body dressing item and IRF-PAI/FIM® *admission* dressing lower body item



NOTE: See above for the values for each rating scale. Please note that the CARE Item Set rating scale ranges 1–6.

SOURCE: RTI analysis of CARE Item Set and IRF-PAI/FIM® Instrument data, 2008–2009.

Table 13-7c
CARE *admission* lower body dressing item by IRF-PAI/FIM® *admission* dressing lower body item

CARE Core Self-Care: Lower Dressing (N = 4,874)	0 = Activity does not occur	1 = Total Assist.	2 = Max. Assist.	3 = Mod. Assist.	4 = Min. Assist./Touch-ing	5 = Super-vision/ Setup	6 = Mod. Independ.	7 = Complete Independ.
1 = Dependent (n = 1,284)	3.7	90.2*	4.8	1.0	+	+	+	+
2 = Substantial/max. assist. (n = 1,428)	1.0	32.6*	57.1*	7.6	1.5	+	+	+
3 = Partial/mod. assist. (n = 1,172)	1.1	13.6	20.1	41.4*	23.0*	+	+	+
4 = Supervision or touching assist. (n = 670)	+	7.3	7.9	19.4	49.7*	14.9*	+	+
5 = Setup or clean-up assist. (n = 196)	+	6.6	+	12.8	29.1	43.9*	+	+
6 = Independent (n = 32)	+	+	+	+	+	+	+	+
Letter codes (n = 92)	33.7	33.7	14.1	+	+	+	+	+

* These values indicate the area of anticipated overlap between the CARE Item Set and IRF-PAI/FIM® Instrument responses.

+ Cells based on a sample size of n < 11 are not shown.

NOTE: Missing = 16 (includes CARE Item Set missing values). Values refer to row percents.

SOURCE: RTI analysis of CARE Item Set and IRF-PAI/FIM® Instrument data, 2008–2009.

Summary Points

- The most frequent values for the CARE Lower Body Dressing item at admission are 2–Substantial/Maximal Assistance, in which 29 percent of the responses are coded, and 1–Dependent, with 26 percent.
- The most frequent value for the FIM® Dressing Lower Body item on the IRF-PAI is 1–Total Assistance, in which 39 percent of all responses are coded.
- All CARE values overlapped with the IRF-PAI/FIM® values as expected. The most agreement was among patients with a CARE value of 2–Substantial/Maximal Assistance and IRF-PAI/FIM® values of 1–Total Assistance and 2–Maximal Assistance.

8. VI. Functional Status: Core Functional Mobility: B3. Chair/Bed-to-Chair Transfer (IRF-PAI/FIM® Instrument: I. Bed, Chair, Wheelchair Transfer)

The first comparison item in the functional mobility section is bed and chair transfers. It appears in the CARE Item Set as the Chair/Bed-to-Chair Transfer item and is similar to the Bed, Chair, Wheelchair Transfer item in the IRF-PAI/FIM® Instrument. Factors to consider when comparing the data from these two instruments include the differences in the time frames to complete the patient assessment, CARE Item Set's emphasis on usual performance versus IRF-

PAI/FIM® items' emphasis on coding the patient's lowest functional levels, and the differences in each instrument's rating scales. The item definitions are below.

CARE Item Set Definition:
B3. Chair/Bed-to-Chair Transfer: *The ability to safely transfer to and from a chair (or wheelchair). The chairs are placed at right angles to each other.*

IRF-PAI/FIM® Instrument Definition:
39I. Transfers: Bed, Chair, Wheelchair *includes all aspects of transferring from a bed to a chair and back, or from a bed to a wheelchair and back, or coming to a standing position if walking is the typical mode of locomotion. The patient performs the activity safely.*

The overall frequencies for these items are shown in Tables 13-8a and 13-8b, followed by the cross-tabulation in Table 13-8c. Figure 13-7 illustrates the individual item distributions.

Table 13-8a
CARE *admission* chair/bed-to-chair transfer item

CARE Core Self-Care: Chair/Bed-to-Chair (N = 4,890)	N	Percent
Missing	15	0.3
1 = Dependent (Helper does all of the effort)	537	11.0
2 = Substantial/max. assist. (Helper does more than half)	789	16.1
3 = Partial/mod. assist. (Helper does less than half)	1,721	35.2
4 = Supervision or touching assist.	1,613	33.0
5 = Setup or clean-up assist.	68	1.4
6 = Independent	65	1.3
A = Task attempted but not completed	+	+
M = Not attempted due to medical condition	33	0.7
N = Not applicable when coded	17	0.4
P = Patient refused	12	0.3
S = Not attempted due to safety concerns	12	0.3

+ Cells based on a sample size of n < 11 are not shown.

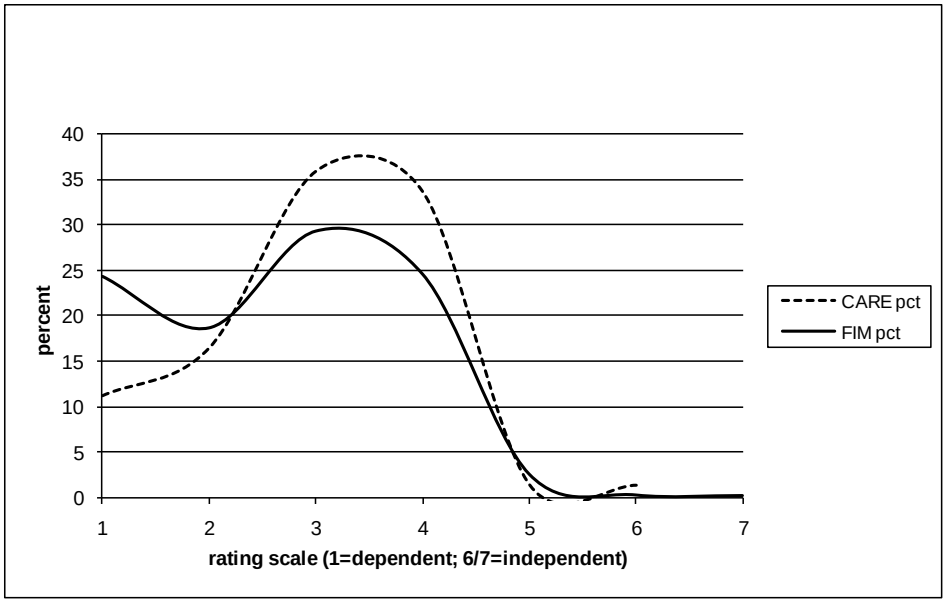
SOURCE: RTI analysis of CARE Item Set data, 2008–2009.

Table 13-8b
IRF-PAI/FIM® *admission* bed, chair, wheelchair transfer item

IRF-PAI/FIM® 39I. Bed, Chair, Wheelchair	N	Percent
0 = Activity does not occur	24	0.5
1 = Total Assist.	1,183	24.2
2 = Max. Assist.	908	18.6
3 = Mod. Assist.	1,425	29.1
4 = Min. Assist./Touching	1,196	24.5
5 = Supervision/Setup	127	2.6
6 = Mod. Independ.	15	0.3
7 = Complete Independ.	12	0.3

SOURCE: RTI analysis of IRF-PAI/FIM® Instrument data, 2008–2009.

Figure 13-7
Distributions of CARE *admission* and IRF-PAI/FIM® *admission* chair/bed-to-chair transfer admission items



NOTE: See above for the values for each rating scale. Please note that the CARE Item Set rating scale ranges 1–6.

SOURCE: RTI analysis of CARE Item Set and IRF-PAI/FIM® Instrument data, 2008–2009.

Table 13-8c
CARE *admission* chair/bed-to-chair transfer item by IRF-PAI/FIM® *admission* bed, chair, wheelchair transfer item

CARE Core Self-Care: Chair/Bed-to-Chair (N = 4,874)	0 = Activity does not occur	1 = Total Assist.	2 = Max. Assist.	3 = Mod. Assist.	4 = Min. Assist./Touch-ing	5 = Super-vision/ Setup	6 = Mod. Independ.	7 = Complete Independ.
1 = Dependent (n = 537)	+	92.9*	4.8	+	+	+	+	+
2 = Substantial/max. assist. (n = 789)	+	39.9*	46.8*	11.4	+	+	+	+
3 = Partial/mod. assist. (n = 1,721)	+	13.1	21.9	44.6*	19.8*	+	+	+
4 = Supervision or touching assist. (n = 1,613)	+	5.0	7.7	33.4	48.8*	4.6*	+	+
5 = Setup or clean-up assist. (n = 68)	+	+	+	+	44.1	30.9*	+	+
6 = Independent (n = 65)	+	+	+	+	30.8	35.4	+	+
Letter codes (n = 82)	+	63.4	+	+	+	+	+	+

* These values indicate the area of anticipated overlap between the CARE Item Set and IRF-PAI/FIM® Instrument responses.

+ Cells based on a sample size of n < 11 are not shown.

NOTE: Missing = 15 (includes CARE Item Set missing values). Values refer to row percents.

SOURCE: RTI analysis of CARE Item Set and IRF-PAI/FIM® Instrument data, 2008–2009.

Summary Points

- The most frequent values for the CARE Chair/Bed-to-Chair item at admission are 3–Partial/Moderate Assistance, in which 35 percent of the responses are coded, and 4–Supervision or Touching Assistance, with 33 percent.
- The most frequent values for the FIM® Bed, Chair, Wheelchair item on the IRF-PAI are 3–Moderate Assistance, in which 29 percent of all responses are coded; 4–Minimal Assistance/Touching, with 25 percent; and 1–Total Assistance, with 24 percent.
- Table 13-8c reported that the CARE values of 1, 2, 3, and 4 overlapped with the IRF-PAI/FIM® values as expected. Similarly, CARE's code 5–Setup or Clean-up Assistance overlapped the most with IRF-PAI/FIM® levels 4–Minimal Assistance/Touching and 5–Supervision/Setup. Patients coded as 6–Independent on the CARE item were most often coded as needing supervision and minimal assistance on the IRF-PAI/FIM® Instrument. The most agreement was among patients with a CARE value of 1–Dependent and an IRF-PAI/FIM® value of 1–Total Assistance.

9. VI. Functional Status: Core Functional Mobility: B4. Toilet Transfer (IRF-PAI/FIM® Instrument: J. Toilet Transfer)

Next is the CARE toilet transfer item, which is being compared to the Toilet Transfer item included in the IRF-PAI/FIM® Instrument. Factors to consider when comparing the data from these two instruments include the differences in the time frames to complete the patient assessment, CARE Item Set's emphasis on usual performance versus IRF-PAI/FIM® items' emphasis on coding the patient's lowest functional levels, and the differences in the instruments' rating scales. The item definitions are below.

CARE Item Set Definition:
B4. Toilet Transfer: *The ability to safely get on and off a toilet or commode.*

IRF-PAI/FIM® Instrument Definition:
39J. Toilet Transfer *includes safely getting on and off a standard toilet.*

Other factors specific to these items that impact how the assessment data compare include the following:

- Each instrument defines the activity differently. The CARE Item Set includes the transfer on and off a toilet or commode, whereas the IRF-PAI/FIM® item defines the toilet transfer as getting on and off a standard toilet.

The overall frequencies for these items are shown in Tables 13-9a and 13-9b, followed by the cross-tabulation of the paired items in Table 13-9c. Figure 13-8 illustrates the individual item distributions.

Table 13-9a
CARE *admission* toilet transfer item

CARE Item Set Core Functional Mobility: Toilet Transfer (N = 4,890)	N	Percent
Missing	15	0.3
1 = Dependent (Helper does all of the effort)	515	10.5
2 = Substantial/max. assist. (Helper does more than half)	693	14.2
3 = Partial/mod. assist. (Helper does less than half)	1,400	28.6
4 = Supervision or touching assist.	1,428	29.2
5 = Setup or clean-up assist.	126	2.6
6 = Independent	39	0.8
A = Task attempted but not completed	18	0.4
M = Not attempted due to medical condition	90	1.8
N = Not applicable when coded	231	4.7
P = Patient refused	42	0.9
S = Not attempted due to safety concerns	293	6.0

SOURCE: RTI analysis of CARE Item Set data, 2008–2009.

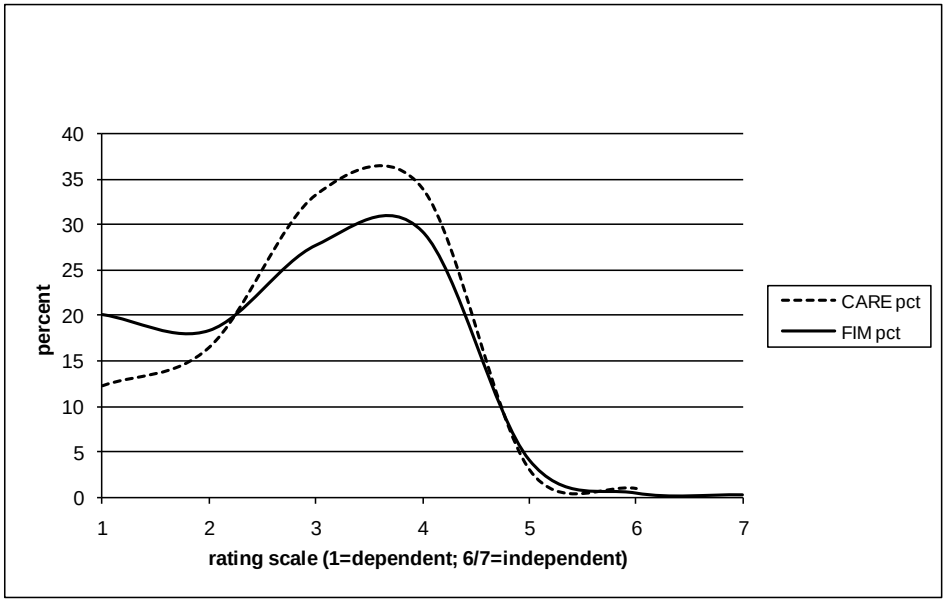
Table 13-9b
IRF-PAI/FIM® *admission* toilet transfer item

IRF-PAI/FIM® 39J. Toilet Transfer	N	Percent
0 = Activity does not occur	283	5.8
1 = Total Assist.	925	18.9
2 = Max. Assist.	844	17.3
3 = Mod. Assist.	1,277	26.1
4 = Min. Assist./Touching	1,347	27.6
5 = Supervision/Setup	187	3.8
6 = Mod. Independ.	18	0.4
7 = Complete Independ.	+	+

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of IRF-PAI/FIM® Instrument data, 2008–2009.

Figure 13-8
Distributions of CARE *admission* and IRF-PAI/FIM® *admission* toilet transfer admission items



NOTE: See above for the values for each rating scale. Please note that the CARE Item Set rating scale ranges 1–6.

SOURCE: RTI analysis of CARE Item Set and IRF-PAI/FIM® Instrument data, 2008–2009.

Table 13-9c
CARE *admission* toilet transfer item by IRF-PAI/FIM® *admission* toilet transfer item

CARE Core Self-Care: Toilet Transfer (N = 4,874)	0 = Activity does not occur	1 = Total Assist.	2 = Max. Assist.	3 = Mod. Assist.	4 = Min. Assist./Touch-ing	5 = Super-vision/ Setup	6 = Mod. Independ.	7 = Complete Independ.
1 = Dependent (n = 515)	12.4	75.7*	7.2	3.3	+	+	+	+
2 = Substantial/max. assist. (n = 693)	5.9	26.8*	49.4*	12.6	4.5	+	+	+
3 = Partial/mod. assist. (n = 1,400)	2.5	9.4	14.1	45.9*	27.0*	0.9	+	+
4 = Supervision or touching assist. (n = 1,428)	1.2	3.1	5.3	24.4	58.3*	7.4*	+	+
5 = Setup or clean-up assist. (n = 126)	+	+	+	18.3	31.7	31.7*	+	+
6 = Independent (n = 39)	+	+	+	+	33.3	+	20.5*	+
Letter codes (n = 674)	18.0	24.5	27.0	22.3	6.5	+	+	+

* These values indicate the area of anticipated overlap between the CARE Item Set and IRF-PAI/FIM® Instrument responses.

+ Cells based on a sample size of n < 11 are not shown.

NOTE: Missing = 15 (includes CARE Item Set missing values). Values refer to row percents.

SOURCE: RTI analysis of CARE Item Set and IRF-PAI/FIM® Instrument data, 2008–2009.

Summary Points

- The most frequent values for the CARE Toilet Transfer item at admission are values of 3–Partial/Moderate Assistance and 4–Supervision or Touching Assistance, in each of which 29 percent of the responses are coded.
- The most frequent values for the FIM® Toilet Transfer item on the IRF-PAI are 3–Moderate Assistance and 4–Minimal Assistance/Touching, in which 26 percent and 28 percent of all responses are coded, respectively.
- All CARE values overlapped with the IRF-PAI/FIM® values as expected except for 6–Independent, which overlapped most with an IRF-PAI/FIM® level of 4–Minimal Assistance/Touching. The most agreement was among patients with a CARE value of 2–Maximal Assistance and IRF-PAI/FIM® values of 1–Total Assistance and 2–Maximal Assistance. There was also substantial overlap between patients with CARE values of 1–Dependent and IRF-PAI/FIM® values of 1–Total Assistance.
- The CARE Item Set includes the transfer on and off a *toilet or commode*, whereas the IRF-PAI/FIM® item defines the toilet transfer as taking place on and off a *standard toilet.* This difference may have impacted a patient's results in achieving a less independent functional level in CARE than using IRF-PAI/FIM®. The rationale is that a commode can be height adjusted to increase the ease of the transfer, impacting the independence of a patient using a commode, whereas a standard toilet is not

height adjustable and a taller or weaker patient may require more transfer assistance from a helper.

10. VI. Functional Status: Core Functional Mobility: Mode of Mobility: B5-B5a-B5b (IRF-PAI/FIM® Instrument: L. Walk/Wheelchair and Function Modifiers)

The next items to be discussed are the CARE Mode of Mobility items and the IRF-PAI/FIM® Instrument 39L Locomotion item for Walk/Wheelchair, along with the associated function modifiers (35, 36, 37, and 38). Factors to consider when examining the data from these two instruments include the differences in the time frames to complete the patient assessment, the differences in the instruments' rating scales, differing administrative rules in how the clinician should complete these items, and item definition differences. Given the very different definitions, frequency data are presented for each item from each instrument. The item definitions are below.

CARE Item Set Definitions:
Items B5, B5a, and B5b:
B5: Does this patient primarily use a wheelchair for mobility?
0. No *(If* ***No****, code B5a for the longest distance completed.)*
1. Yes *(If* ***Yes,*** *code B5b for the longest distance completed.)*
B5a. Select the longest distance the patient walks and code his/her level of independence (Level 1-6) on that distance. Observe performance. (Select only one.)

1. *Walk 150 ft (45 m): Once standing, can walk at least 150 feet (45 meters) in corridor or similar space.*
2. *Walk 100 ft (30 m): Once standing, can walk at least 100 feet (30 meters) in corridor or similar space.*
3. *Walk 50 ft (15 m): Once standing, can walk at least 50 feet (15 meters) in corridor or similar space.*
4. *Walk in Room Once Standing: Once standing, can walk at least 10 feet (3 meters) in room, corridor or similar space.*

B5b. Select the longest distance the patient wheels and code his/her level of independence (Level 1-6). Observe performance. (Select only one.)

1. *Wheel 150 ft (45 m): Once sitting, can wheel at least 150 feet (45 meters) in corridor or similar space.*
2. *Wheel 100 ft (30 m): Once sitting, can wheel at least 100 feet (30 meters) in corridor or similar space.*
3. *Wheel 50 ft (15 m): Once sitting, can wheel at least 50 feet (15 meters) in corridor or similar space.*
4. *Wheel in Room Once Seated: Once seated, can wheel at least 10 feet (3 meters) in room, corridor, or similar space.*

IRF-PAI/FIM® Instrument Definitions:

IRF-PAI Modifiers for Walking & Wheelchair:
Locomotion: Walk *includes walking on a level surface once in a standing position. The patient performs the activity safely. Wheelchair includes using a wheelchair on a level surface once in a seated position. The patient performs the activity safely.*

39L. Locomotion Walk/Wheelchair
This item is scored at Admission based upon the expected mode of locomotion at discharge. For example, if the patient walks at admission, and is expected to walk at discharge, the score for item 37 is entered in 39L. If the patient uses a wheelchair at admission, and is expected to use a wheelchair at discharge, item 38 is entered in 39L.

IRF-PAI Function Modifier for Walking:
35. Distance Walked*: Code using: 3-150 feet; 2-50 to 149 feet; 1-Less than 50 feet; 0-activity does not occur*
37. Walk: *Sccored on both level of assistance needed and distance of locomotion. Score Levels 1-7; 0 if activity does not occur. Use information from Item 35 above to help determine score.*

IRF-PAI Function Modifier for Wheelchair:
36. Distance Traveled in Wheelchair: *Code using: 3-150 feet; 2-50 to 149 feet; 1-Less than 50 feet; 0-activity does not occur.*
38. Wheelchair: *Scored on both level of assistance needed and distance of locomotion. Use IRF-PAI/FIM® Instrument levels 1-7 to score these items; use 0 if Activity does not occur. Use information from Item 36 above to help determine score.*

Other factors specific to these items that impact the reader's review of each the item's frequency data include the following:

- The CARE Item Set instructs the clinician to choose the patient's primary mode of mobility (walk or wheel). The clinician assesses the patient using only one of these modes of mobility. Further, the patient is assessed on only one distance of the chosen mode of mobility. This is shown on Table 13-10b below, which displays large amounts of data as Coded on Other Item or Missing. On the CARE Item Set, all walking items would have been left blank if the patient usually used the wheelchair.
- On the IRF-PAI/FIM®, there are function modifier items that the clinician scores to assess the patient's distance walked or wheeled. There are also specific rules for the clinician to follow when scoring IRF-PAI/FIM® item 39L. Item 39L requires the clinician to enter only one mode of locomotion score from the appropriate function modifiers walking (item 37) or wheelchair (item 38) score. Item 39L requires that the patient's reported mode of locomotion must match for admission and discharge.

The overall frequencies for these items are shown in Tables 13-10a through 13-10d.

Table 13-10a
CARE *admission* mode of mobility items (B5)

CARE Core Functional Mobility: Mode of Mobility (B5) (N = 4,890)	N	Percent
Does the patient primarily use a wheelchair for mobility?		
Missing	16	0.3
0-No	2,771	56.7
1-Yes	2,103	43.0

SOURCE: RTI analysis of CARE Item Set and IRF-PAI/FIM® Instrument data, 2008–2009.

Table 13-10b
CARE *admission* mode of mobility items (B5a1-4)

CARE Core Functional Mobility: Mode of Mobility (B5a) (N = 4,890)	Walk 150 ft N	Walk 150 ft Percent	Walk 100 ft N	Walk 100 ft Percent	Walk 50 ft N	Walk 50 ft Percent	Walk in Room Once Standing N	Walk in Room Once Standing Percent
Coded on Other Item or Missing	4,132	84.5	4,522	92.5	4,223	86.4	3,912	80.0
1 = Dependent	+	+	+	+	+	+	40	0.8
2 = Substantial/max. assist.	+	+	+	+	21	0.4	74	1.5
3 = Partial/mod. assist.	106	2.2	99	2.0	244	5.0	383	7.8
4 = Supervision or touching assist.	537	11.0	246	5.0	363	7.4	271	5.5
5 = Setup or clean-up assist.	29	0.6	+	+	+	+	+	+
6 = Independent	24	0.5	+	+	+	+	+	+
A = Attempted not completed	+	+	+	+	31	0.6	149	3.1
M = Medical condition	+	+	+	+	+	+	25	0.5
N = Not applicable	40	0.8	+	+	+	+	+	+
P = Patient refused	+	+	+	+	+	+	+	+
S = Safety concerns	+	+	+	+	+	+	15	0.3

+ Cells based on a sample size of n < 11 are not shown.

NOTE: On the CARE Item Set, all walking items would have been left uncoded if the patient usually used the wheelchair, resulting in the high n and percentages reported here as Coded on Other Item or Missing.

SOURCE: RTI analysis of CARE Item Set and IRF-PAI/FIM® Instrument data, 2008–2009.

Table 13-10c
IRF-PAI/FIM® *admission* distance walked and distance traveled in wheelchair

Response Options	35. Distance Walked N	35. Distance Walked Percent	36. Distance Traveled in Wheelchair N	36. Distance Traveled in Wheelchair Percent
0 = Activity does not occur	891	18.2	1,924	39.4
1 = Less than 50 feet	2,078	42.5	1,286	26.3
2 = 50 to 149 feet	1,168	23.9	926	18.9
3 = 150 feet	753	15.4	754	15.4

SOURCE: RTI analysis of CARE Item Set and IRF-PAI/FIM® Instrument data, 2008–2009.

Table 13-10d
IRF-PAI/FIM® *admission* function modifiers and walk/wheelchair item

Response options	37. Walk N	37. Walk percent	38. Wheelchair N*	38. Wheelchair percent*	IRF-PAI/FIM® Instrument 39L. Walk/Wheelchair** N	IRF-PAI/FIM® Instrument 39L. Walk/Wheelchair** percent
0 = Activity does not occur	872	17.8	1,747	35.7	501	10.3
1 = Total Assist.	2,087	42.7	1,602	32.8	2,155	44.1
2 = Max. Assist.	1,164	23.8	888	18.2	1,320	27.0
3 = Mod. Assist.	45	0.9	30	0.6	48	1.0
4 = Min. Assist./Touching	589	12.0	144	2.9	602	12.3
5 = Supervision/Setup	124	2.5	407	8.3	218	4.5
6 = Mod. Independ.	+	+	71	1.5	40	0.8
7 = Complete Independ.	+	+	+	+	+	+

+ Cells based on a sample size of n < 11 are not shown.

*The IRF-PAI/FIM® function modifiers scores for Walk/Wheelchair (items 37 and 38) consider both the level of assistance and the distance of the locomotion.

The FIM® item 39L admission score is based upon the expected mode of locomotion at discharge. For example: If the patient uses a wheelchair at admission ***but* is expected to walk at discharge the score entered into 39L is from item 37 Walk. If the patient is expected to use a wheelchair at discharge then 39L is scored using item 38.

SOURCE: RTI analysis of CARE Item Set and IRF-PAI/FIM® Instrument data, 2008–2009.

Summary Points

- Less than half (43 percent) of the patients in our sample assessed with the CARE Item Set primarily used a wheelchair for mobility upon admission.

- The CARE code reflects the patient's admission performance using his or her usual mobility device during the admission assessment period. The clinician chooses to code the patient's performance using walking *or* wheeling. The IRF-PAI/FIM® Instrument instructs the clinicians to select the mode of locomotion by *anticipating* what mode of locomotion the patient will *usually* be using at discharge or, if the clinician is uncertain of the anticipated mode of locomotion at discharge, the clinician is to complete at admission both scores for wheelchair mobility and walking in the function modifier items (35, 36, 37, and 38). The result of this rule is that for the IRF-PAI/FIM® there will be both a walking and wheelchair score reported for each patient, whereas the clinician using the CARE Item Set codes one score for the patient's performance using the most frequently used mode of mobility (walking or wheeling) during the admission assessment period in the rehabilitation program.
- Review of the function modifiers on the IRF-PAI showed that, upon admission, the most frequent distance walked was code 1–Less than 50 Feet and the most frequent distance wheeled was code 0–Activity Does Not Occur. The walk function modifier most often coded was 1–Total Assistance, and the most frequent codes for the wheelchair modifier were 0–Activity Does Not Occur and 1–Total Assistance.

11. VI. Functional Status: C. Supplemental Functional Ability: C1. Wash Upper Body (IRF-PAI/FIM® Instrument: B. Grooming and C. Bathing)

The first supplemental functional ability item is Wash Upper Body. There is not an equivalent item on the IRF-PAI/FIM® Instrument, so we will compare these items using the Grooming and Bathing IRF-PAI/FIM® Instrument items as approximate items. The definitions below provide additional detail on the differences in these concepts. Factors to consider when comparing the data from these two instruments include the differences in the definitions and the time frames to complete the patient assessment, CARE Item Set's emphasis on usual performance versus IRF-PAI/FIM® items' emphasis on coding the patient's lowest functional levels, and the differences in the instruments' rating scales. The item definitions are below.

CARE Item Set Definition:
C1. Wash Upper Body: *The ability to wash, rinse, and dry the face, hands, chest, and arms while sitting in a chair or bed.*

IRF-PAI/FIM® Instrument Definitions:
39B. Grooming includes *oral care, hair grooming (combing or brushing hair), washing the hands, washing the face, and either shaving the face or applying make-up. If the subject neither shaves nor applies make-up, Grooming includes only the first four tasks. The patient performs this activity safely. This item includes obtaining articles necessary for grooming.*
39C. Bathing *includes washing, rinsing, and drying the body from the neck down (excluding the neck and back) in either a tub, shower or sponge/bed bath. The patient performs the activity safely.*

Other factors specific to these items that impact how the assessment data compare include the following:

- The CARE Wash Upper Body item overlaps with the IRF-PAI/FIM® Grooming item for the tasks of washing hands and face. The IRF-PAI/FIM® Grooming item includes other tasks that do not appear on the CARE Wash Upper Body item (i.e., oral care and hair grooming). The IRF-PAI/FIM® Bathing item includes upper and lower body bathing, whereas the CARE Wash Upper Body item does not include lower body bathing. These differences will impact the comparison of the two instruments.

The overall frequencies for these items are shown in Tables 13-11a and 13-11b, followed by a cross-tabulation of these items in Table 13-11c. Figure 13-9 illustrates the individual item distributions between the CARE Wash Upper Body item and the IRF-PAI/FIM® Instrument Bathing item.

Table 13-11a
CARE *admission* wash upper body item

CARE Supplemental Functional Ability: Wash Upper Body (N = 4,890)	N	Percent
Missing	20	0.4
1 = Dependent (helper does all of the effort)	322	6.6
2 = Substantial/max. assist. (Helper does more than half)	430	8.8
3 = Partial/mod. assist. (Helper does less than half)	948	19.4
4 = Supervision or touching assist.	1,357	27.8
5 = Setup or clean-up assist.	1,413	28.9
6 = Independent	147	3.0
A = Task attempted but not completed	+	+
E = Not completed due to environmental constraints	14	0.3
M = Not attempted due to medical condition	34	0.7
N = Not applicable when coded	56	1.2
P = Patient refused	65	1.3
S = Not attempted due to safety concerns	77	1.6

+ Cells based on a sample size of n < 11 are not shown.

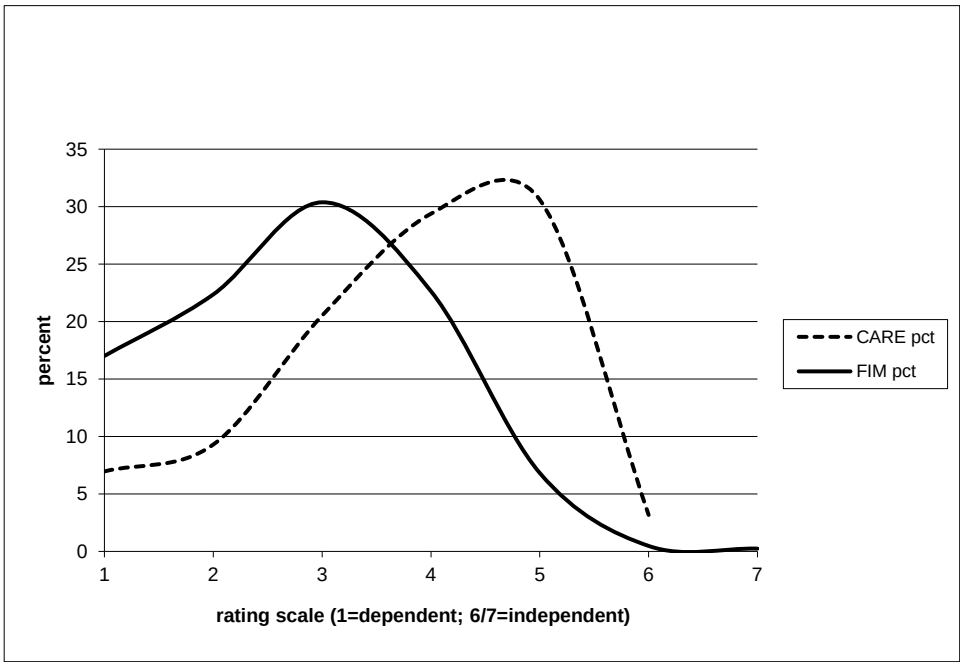
SOURCE: RTI analysis of CARE Item Set, 2008–2009.

Table 13-11b
IRF-PAI/FIM® *admission* grooming & bathing items

Response Options	N	Percent
IRF-PAI/FIM® 39B. Grooming		
0 = Activity does not occur	34	0.7
1 = Total Assist.	523	10.7
2 = Max. Assist.	426	8.7
3 = Mod. Assist.	705	14.4
4 = Min. Assist./Touching	1,131	23.1
5 = Supervision/Setup	1,960	40.1
6 = Mod. Independ.	66	1.4
7 = Complete Independ.	45	0.9
IRF-PAI/FIM® 39C. Bathing		
0 = Activity does not occur	161	3.3
1 = Total Assist.	805	16.5
2 = Max. Assist.	1,058	21.6
3 = Mod. Assist.	1,437	29.4
4 = Min. Assist./Touching	1,071	21.9
5 = Supervision/Setup	323	6.6
6 = Mod. Independ.	23	0.5
7 = Complete Independ.	12	0.3

SOURCE: RTI analysis of IRF-PAI/FIM® Instrument data, 2008–2009.

Figure 13-9
Distributions of CARE *admission* wash upper body and IRF-PAI/FIM® bathing *admission* items



NOTE: See above for the values for each rating scale. Please note that the CARE Item Set rating scale ranges 1–6.

SOURCE: RTI analysis of CARE Item Set and IRF-PAI/FIM® Instrument data, 2008–2009.

Table 13-11c
CARE *admission* wash upper body item by IRF-PAI/FIM® *admission* bathing item

CARE Core Functional Mobility: Wash Upper Body (N = 4,870)	0 = Activity does not occur	1 = Total Assist.	2 = Max. Assist.	3 = Mod. Assist.	4 = Min. Assist./Touch-ing	5 = Super-vision/ Setup	6 = Mod. Independ.	7 = Complete Independ.
1 = Dependent (n = 322)	+	82.3*	9.9	+	+	+	+	+
2 = Substantial/max. assist. (n = 430)	+	40.2*	44.7*	10.7	+	+	+	+
3 = Partial/mod. assist. (n = 948)	3.1	14.7	33.7*	34.9*	12.2*	1.5	+	+
4 = Supervision or touching assist. (n = 1,357)	2.3	8.1	20.9	34.6*	25.7*	8.3*	+	+
5 = Setup or clean-up assist. (n = 1,413)	3.2	4.7	11.6	33.6	35.3*	11.0*	+	+
6 = Independent (n = 147)	+	+	7.5	25.9	32.0	17.7*	8.2*	+
Letter codes (n = 253)	12.7	17.8	22.5	24.9	15.0	5.1	+	+

* These values indicate the area of anticipated overlap between the CARE Item Set and IRF-PAI/FIM® Instrument responses.

+ Cells based on a sample size of n < 11 are not shown.

NOTE: Missing = 20 (includes CARE Item Set missing values). Values refer to row percents.

SOURCE: RTI analysis of CARE Item Set and IRF-PAI/FIM® Instrument data, 2008–2009.

Summary Points

- The most frequent values for the CARE Wash Upper Body item at admission are 5–Setup or Clean-up Assistance and 4–Supervision or Touching Assistance. Approximately 29 percent and 28 percent of the patients are assessed with these codes, respectively.
- The most frequent value for the FIM® Grooming item on the IRF-PAI is 5–Supervision/Setup, in which 40 percent of the responses are coded. The most frequent value for the IRF-PAI/FIM® Instrument bathing item is 3–Moderate Assistance, in which 29 percent of all responses are coded.
- As seen on Table 13-11c, all CARE Upper Body Bathing item values overlapped with the IRF-PAI/FIM® Bathing item values as expected. For CARE levels 3–6, FIM® scores tended to be lower; these more dependent scores make sense, because the FIM® requires washing the entire body, a harder activity than washing the upper body. The greatest agreement was between patients assessed for CARE's code 1–Dependent and a IRF-PAI/FIM® code 1–Total Assistance. There was also significant agreement among patients with CARE code 2–Substantial/Maximal Assistance and IRF-PAI/FIM® codes 1–Total Assistance and 2–Maximal Assistance.

12. VI. Functional Status: C. Supplemental Functional Ability: C2. Shower/Bathe Self (IRF-PAI/FIM® Instrument: C. Bathing)

The next CARE supplemental functional ability item is the Shower/Bathe Self item, which is most similar to the Bathing item on the IRF-PAI/FIM® Instrument. Factors to consider when comparing the data from these two instruments include the differences in the time frames to complete the patient assessment, CARE Item Set's emphasis on usual performance versus IRF-PAI/FIM® items' emphasis on coding the patient's lowest functional levels, and the differences in the instruments' rating scales. The item definitions are below.

CARE Item Set Definition:
C2. Shower/bathe self: *The ability to bathe self in shower or tub, including washing, rinsing, and drying, self. Does not include transferring in/out of tub/shower.*

IRF-PAI/FIM® Instrument Definition:
39C. Bathing *includes washing, rinsing, and drying the body from the neck down (excluding the neck and back) in either a tub, shower or sponge/bed bath. The patient performs the activity safely.*

The overall frequencies for these items are shown in Tables 13-12a and 13-12b, followed by the cross-tabulation in Table 13-12c. Figure 13-10 illustrates the individual item distributions.

Table 13-12a
CARE *admission* shower/bathe self item

CARE Supplemental Functional Ability: Shower/bathe self (N = 4,890)	N	Percent
Missing	20	0.4
1 = Dependent (helper does all of the effort)	461	9.4
2 = Substantial/max. assist. (Helper does more than half)	804	16.4
3 = Partial/mod. assist. (Helper does less than half)	1,210	24.7
4 = Supervision or touching assist.	697	14.3
5 = Setup or clean-up assist.	244	5.0
6 = Independent	36	0.7
A = Task attempted but not completed	20	0.4
E = Not completed due to environmental constraints	76	1.6
M = Not attempted due to medical condition	347	7.1
N = Not applicable when coded	464	9.5
P = Patient refused	121	2.5
S = Not attempted due to safety concerns	390	8.0

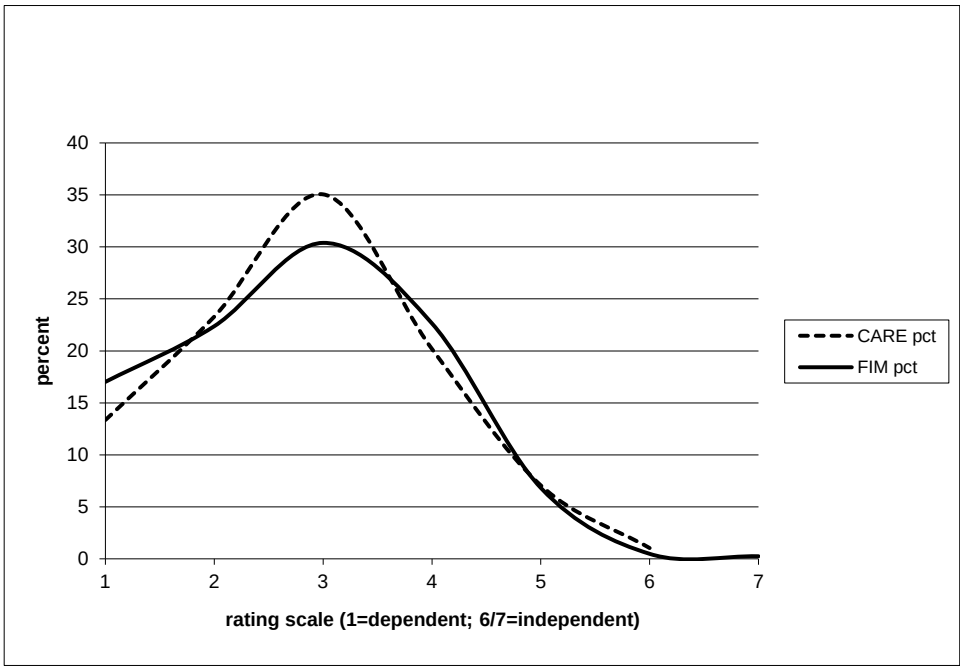
SOURCE: RTI analysis of CARE Item Set data, 2008–2009.

Table 13-12b
IRF-PAI/FIM® *admission* bathing item

IRF-PAI/FIM® 39C. Bathing	N	Percent
0 = Activity does not occur	161	3.3
1 = Total Assist.	805	16.5
2 = Max. Assist.	1,058	21.6
3 = Mod. Assist.	1,437	29.4
4 = Min. Assist./Touching	1,071	21.9
5 = Supervision/Setup	323	6.6
6 = Mod. Independ.	23	0.5
7 = Complete Independ.	12	0.3

SOURCE: RTI analysis of IRF-PAI/FIM® Instrument data, 2008–2009.

Figure 13-10
Distributions of CARE *admission* shower/bathe self and IRF-PAI/FIM® bathing *admission* items



NOTE: See above for the values for each rating scale. Please note that the CARE Item Set rating scale ranges 1–6.

SOURCE: RTI analysis of CARE Item Set and IRF-PAI/FIM® Instrument data, 2008–2009.

Table 13-12c
CARE *admission* shower/bathe self item by IRF-PAI/FIM® *admission* bathing item

CARE Supplemental Functional Ability: Shower/Bathe Self (N = 4,870)	0 = Activity does not occur	1 = Total Assist.	2 = Max. Assist.	3 = Mod. Assist.	4 = Min. Assist./Touch-ing	5 = Super-vision/ Setup	6 = Mod. Independ.	7 = Complete Independ.
1 = Dependent (n = 461)	2.4	70.5*	18.7	6.5	+	+	+	+
2 = Substantial/max. assist. (n = 804)	3.1	14.8*****	55.1*	22.6	3.7	+	+	+
3 = Partial/mod. assist. (n = 1,210)	2.6	6.4	11.6	51.7*	25.5*****	2.0	+	+
4 = Supervision or touching assist. (n = 697)	3.0	3.6	6.9	20.1	50.8*	15.1*****	+	+
5 = Setup or clean-up assist. (n = 244)	+	5.3	9.8	18.4	26.2	34.8*	+	+
6 = Independent (n = 36)	+	+	+	+	+	+	+	+
Letter codes (n = 1,418)	4.6	17.1	22.2	28.4	20.2	6.8	+	+

***** These values indicate the area of anticipated overlap between the CARE Item Set and IRF-PAI/FIM® Instrument responses.

+ Cells based on a sample size of n < 11 are not shown.

NOTE: Missing = 20 (includes CARE Item Set missing values). Values refer to row percents.

SOURCE: RTI analysis of CARE Item Set and IRF-PAI/FIM® Instrument data, 2008–2009.

Summary Points

- At admission, the most frequent value for the CARE item Shower/Bathe Self is 3–Partial/Moderate Assistance, in which 25 percent of the responses are coded.
- The most frequent value for the FIM® bathing item on the IRF-PAI is 3–Moderate Assistance, in which 29 percent of all responses are coded.
- All CARE values overlapped with the IRF-PAI/FIM® values as expected. The most agreement was among patients with a CARE value of 3–Partial/Moderate Assistance and IRF-PAI/FIM® values of 3–Moderate Assistance and 4–Minimal Assistance.

13. VI. Functional Status: C. Supplemental Functional Ability: C6. Putting On/Taking Off Footwear (IRF-PAI/FIM® Instrument: E. Dressing-Lower Body)

The next CARE supplemental functional ability is the Putting on/Taking off Footwear item, which is most similar to the Dressing–Lower Body item on the IRF-PAI/FIM® Instrument. On the CARE Item Set, the footwear item is separate and is not combined with lower extremity dressing. The tasks required for Putting on/Taking off Footwear are intrinsically different from the tasks required for lower extremity dressing.

Factors to consider when comparing the data from these two instruments include the differences in the time frames to complete the patient assessment, CARE Item Set's emphasis on

usual performance versus IRF-PAI/FIM® items' emphasis on coding the patient's lowest functional levels, and the differences in the instruments' rating scales. The item definitions are below.

CARE Item Set Definition:
C6. Putting on/taking off footwear: *The ability to put on and take off socks and shoes or other footwear that are appropriate for safe mobility.*

IRF-PAI Definition:
39E. Dressing Lower Body *includes dressing and undressing from the waist down, as well as applying and removing a prosthesis or orthosis when applicable. The patient performs the activity safely.*

The overall frequencies for these items are shown in Tables 13-13a and 13-13b, followed by the cross-tabulation in Table 13-13c.

Table 13-13a
CARE *admission* putting on/taking off footwear item

CARE Supplemental Functional Ability: Putting on/Taking off Footwear (N = 4,890)	N	Percent
Missing	20	0.4
1 = Dependent (helper does all of the effort)	1,782	36.4
2 = Substantial/max. assist. (Helper does more than half)	1,005	20.6
3 = Partial/mod. assist. (Helper does less than half)	760	15.5
4 = Supervision or touching assist.	557	11.4
5 = Setup or clean-up assist.	270	5.5
6 = Independent	63	1.3
A = Task attempted but not completed	27	0.6
E = Not completed due to environmental constraints	+	+
M = Not attempted due to medical condition	96	2.0
N = Not applicable when coded	141	2.9
P = Patient refused	20	0.4
S = Not attempted due to safety concerns	141	2.9

+ Cells with a value of n < 11 are not shown.

SOURCE: RTI analysis of CARE Item Set data, 2008–2009.

Table 13-13b
IRF-PAI/FIM® *admission* dressing lower body item

IRF-PAI/FIM® 39E. Dressing–Lower Body	N	Percent
0 = Activity does not occur	114	2.3
1 = Total Assist.	1,880	38.5
2 = Max. Assist.	1,192	24.4
3 = Mod. Assist.	779	15.9
4 = Min. Assist./Touching	693	14.2
5 = Supervision/Setup	214	4.4
6 = Mod. Independ.	12	0.3
7 = Complete Independ.	+	+

+ Cells with a value of n < 11 are not shown.

SOURCE: RTI analysis of IRF-PAI/FIM® Instrument data, 2008–2009.

Table 13-13c
CARE *admission* putting on/taking off footwear item by IRF-PAI/FIM® *admission* dressing lower body item

CARE Supplemental Functional Ability: Putting on/Taking off footwear (N = 4,870)	0 = Activity does not occur	1 = Total Assist.	2 = Max. Assist.	3 = Mod. Assist.	4 = Min. Assist./Touch-ing	5 = Super-vision/ Setup	6 = Mod. Independ.	7 = Complete Independ.
1 = Dependent (n = 1,782)	2.6	70.2*	20.0	5.9	1.1	+	+	+
2 = Substantial/max. assist. (n = 1,005)	1.3	26.8*	47.6*	19.5	4.6	+	+	+
3 = Partial/mod. assist. (n = 760)	1.8	12.6	23.0	34.2*	26.3*	1.8	+	+
4 = Supervision or touching assist. (n = 557)	+	7.5	9.5	20.8	45.2*	15.3*	+	+
5 = Setup or clean-up assist. (n = 270)	+	7.0	7.8	13.3	40.7*	27.4*	+	+
6 = Independent (n = 63)	+	+	+	17.5	19.1	27.0*	+	+
Letter codes (n = 433)	5.5	45.5	22.6	11.1	11.3	3.7	+	+

* These values indicate the area of anticipated overlap between the CARE Item Set and IRF-PAI/FIM® Instrument responses.

+ Cells based on a sample size of n < 11 are not shown.

NOTE: Values refer to row percents.

SOURCE: RTI analysis of CARE Item Set and IRF-PAI/FIM® Instrument data, 2008–2009.

Summary Points

- The most frequent value for the CARE supplemental functional ability item Putting on/Taking off Footwear at admission is 1–Dependent, in which 36 percent of the responses are coded.
- The most frequent value for the FIM® Dressing Lower Body item on the IRF-PAI is 1–Total Assistance, in which 39 percent of all responses are coded.
- As seen on Table 13-13c, footwear CARE item values tend to overlap with the IRF-PAI/FIM® values as expected. The most agreement was the combination of patients with a CARE value of 2–Substantial/Maximal Assistance and IRF-PAI/FIM® values of 1–Total Assistance and 2–Maximal Assistance. There was also substantially high agreement among patients with a CARE value of 1–Dependent and an IRF-PAI/FIM® value of 1–Total Assistance.

14. VI. Functional Status: C. Supplemental Functional Ability: Mode of Mobility: C7, C7c, and C7d. (IRF-PAI/FIM® Instrument: M. Stairs)

The final CARE supplemental functional ability is the mode of mobility items for stairs, which is most similar to the stairs item on the IRF-PAI/FIM® Instrument. Factors to consider when comparing the data from these two instruments include the differences in the time frames to complete the patient assessment, CARE Item Set's emphasis on usual performance versus IRF-PAI/FIM® items' emphasis on coding the patient's lowest functional levels, and the differences in the instruments' rating scales.

The item definitions are below.

CARE Item Set Definitions:
C7. *Does this patient primarily use a wheelchair for mobility?* ***0. No****;* ***1. Yes***
C7c. 12 steps: *The ability to go up and down 12 steps with or without a rail.*
C7d. 4 steps: *The ability to go up and down 4 steps with or without a rail.*

IRF-PAI/FIM® Instrument Definition:
39M. Stairs *includes going up and down 12 to 14 stairs (one flight) indoors in a safe manner.*

Other factors specific to these items that impact the reader's review of each item's frequency data include the following:

- The CARE Item Set has two distinct items for assessing a patient's level of assistance needed to go up and down 12 or 4 steps. The IRF-PAI/FIM® Instrument uses one item to assess the patient's ability to go up and down 12–14 stairs. The clinician codes the patient's performance based upon the above item definition; however, the IRF-PAI/FIM® Instrument has an Exception Code of 5 that is used if the patient can perform "household ambulation," defined as going up and down 4–6 stairs independently, with or without a device. The activity takes more than a reasonable amount of time, or there are safety considerations. Note that IRF-PAI/FIM® code 5

can also be used to code the patient who requires supervision for going up and down 12–14 stairs.

The overall frequencies for these items are shown in Tables 13-14a and 13-14b, followed by the cross-tabulation of the 12 steps item on the CARE Item Set with the FIM® stairs item on the IRF-PAI/FIM® Instrument in Table 13-14c.

Table 13-14a
CARE *admission* supplemental functional mode of mobility item (C7c and C7d)

CARE Supplemental Functional Mode of Mobility (C7c and C7d) (N = 4,890)	12 Steps N	12 Steps Percent	4 Steps N	4 Steps Percent
Coded on Other Item or Missing	2,094	42.8	2,094	42.8
1 = Dependent (helper does all of the effort)	+	+	+	+
2 = Substantial/max. assist. (Helper does more than half)	+	+	+	+
3 = Partial/mod. assist. (Helper does less than half)	32	0.7	98	2.0
4 = Supervision or touching assist.	121	2.5	257	5.3
5 = Setup or clean-up assist.	59	1.2	52	1.1
6 = Independent	12	0.3	16	0.3
A = Task attempted but not completed	283	5.8	23	0.5
E = Not completed due to environmental constraints	61	1.3	408	8.3
M = Not attempted due to medical condition	384	7.9	294	6.0
N = Not applicable when coded	896	18.3	779	15.9
P = Patient refused	23	0.5	18	0.4
S = Not attempted due to safety concerns	914	18.7	843	17.2

+ Cells with a value of n < 11 are not shown.

SOURCE: RTI analysis of CARE Item Set data, 2008–2009.

Table 13-14b
IRF-PAI/FIM® *admission* stairs item

IRF-PAI/FIM® 39M. Stairs	N	Percent
0 = Activity does not occur	3,622	74.1
1 = Total Assist.	432	8.8
2 = Max. Assist.	681	13.9
3 = Mod. Assist.	+	+
4 = Min. Assist./Touching	108	2.2
5 = Supervision/Setup	35	0.7
6 = Mod. Independ.	+	+
7 = Complete Independ.	+	+

+ Cells with a value of n < 11 are not shown.

SOURCE: RTI analysis of IRF-PAI/FIM® Instrument data, 2008–2009.

Summary Points

- Since managing stairs is a challenging activity for many patients on admission, letter codes on the CARE and the 0–Activity Does Not Occur are common on both the CARE Item Set and the IRF-PAI/FIM® Instrument. For the CARE Item Set, there is a skip pattern that skips over the stair items if the patient primarily uses a wheelchair. This results in the item appearing on Table 13-14a as Coded on Other Item or Missing.
- Nearly 43 percent of all patients were coded as Coded on Other Item or Missing for the CARE item, and 74 percent were coded as 0–Activity Does Not Occur on the IRF-PAI/FIM® Instrument. This result may suggest that providing shorter and longer distances allowed more patients to be coded.

15. Correlations with IRF Length of Stay

The final results that we will report are the correlations between the CARE Item Set and IRF-PAI/FIM® Instrument functional items with length of stay, which addresses predictive validity. Table 13-15 displays the correlations between a subset of the CARE Item Set's function items individually with IRF length of stay (LOS) side by side with the correlations between the IRF-PAI/FIM® Instrument items and IRF LOS.

While LOS is not equivalent with resource intensity, it provides general information on the expected direction and relationship between functional items and a measureable outcome that represents length of treatment. LOS was originally used as a predictor with IRF payment models and we use it here as a proxy to look at the relative effects of CARE Item Set and IRF-PAI/FIM® Instrument items and their association with the amount of rehabilitation treatment received. As is shown in Table 13-15, the correlation coefficients are similar between all of the CARE functional items and the IRF-PAI/FIM® Instrument items measuring the same concept.

Table 13-15
Relative correlations of CARE *admission* and IRF-PAI/FIM® *admission* functional items with IRF length of stay

CARE Item Set Item	Correlation Coefficient with IRF LOS	IRF-PAI/FIM® Instrument Item	Correlation Coefficient with IRF LOS
VI.A.1 Core Self-Care: Eating	−0.226	Self-Care: Eating	—
VI.A.2 Core Self-Care: Tube Feeding	−0.197	Self-Care: Eating	−0.271
VI.A.3 Core Self-Care: Oral Hygiene	−0.260	Self-Care: Grooming	−0.279
VI.A.4 Core Self-Care: Toilet Hygiene	−0.377	Self-Care: Toileting	−0.364
VI.A.5 Core Self-Care: Upper Body Dressing	−0.323	Self-Care: Dressing - Upper	−0.320
VI.A.6 Core Self-Care: Lower Body Dressing	−0.350	Self-Care: Dressing - Lower	—
VI.C.6 Supplemental Function: Put On/Take Off Footwear	−0.306	Self-Care: Dressing - Lower	−0.345
VI.B.3 Core Mobility: Chair/Bed to Chair Transfer	−0.395	Transfers: Bed, Chair, Wheelchair	−0.389
VI.B.4 Core Mobility: Toilet Transfer Code	−0.367	Transfers: Toilet	−0.368
VI.C.1 Supplemental Function: Wash Upper Body	−0.293	Self-Care: Grooming	−0.279
VI.C.2 Supplemental Function: Shower/Bathe Self	−0.323	Self-Care: Bathing	−0.357

SOURCE: RTI analysis of CARE Item Set and IRF-PAI/FIM® Instrument data, 2008–2009.

Summary Points

- To perform these initial correlations, we converted the values into numbers, which means that the letter codes and missing data are not included.
- The negative correlation coefficients refer to there being a negative relationship between function and LOS; higher or more independent function was associated with shorter LOS.
- The correlations with the IRF LOS with the CARE items and IRF-PAI/FIM® Instrument items are generally similar. There are some instances where the absolute value of the correlation is slightly higher on the CARE items. For example, the CARE toilet hygiene item correlation with IRF LOS is −0.377, whereas the IRF-PAI/FIM® Instrument toileting correlation is −0.364. For other items, the correlation with IRF LOS was higher for the IRF-PAI/FIM® Instrument item than for the CARE item. Overall it appears the CARE Item Set's capacity to explain LOS is comparable to that of the IRF-PAI/FIM® Instrument.

13.4 Concluding Summary for Section

There was generally good agreement between CARE Item Set and IRF-PAI/FIM® Instrument scoring levels where agreement was expected, that is, for areas where the item definition was similar. Specifically, because of similarities between task performance definitions

across the self-care items of the CARE and IRF-PAI items, agreement was excellent and predictable based on the altered structure of the measure response levels. This pattern was remarkably consistent across the self-care items as well as those supplemental items with similar activity definitions.

The IRF-PAI/FIM® Instrument and CARE Item Set levels mapped as we expected (see Figure 13-1 showing how FIM® scores on the IRF-PAI/FIM® Instrument map to CARE Item Set scores):

- IRF-PAI/FIM® levels 7–Complete Independence and 6–Modified Independence mapped to CARE level 6–Independent.
- IRF-PAI/FIM® level 5–Supervision/Setup mapped to CARE level 5–Setup or Clean-up and CARE level 4–Supervision or Touching Assistance.
- IRF-PAI/FIM® level 4 mapped to CARE level 4–Supervision or Touching Assistance and CARE level 3–Partial/Moderate Assistance.
- IRF-PAI/FIM® level 3–Moderate Assistance mapped to CARE level 3–Partial/Moderate Assistance.
- IRF-PAI/FIM® level 2–Maximal Assistance mapped to CARE level 2–Substantial/Maximal Assistance and CARE level 1–Dependent.
- IRF-PAI/FIM® level 1–Total Assistance mapped to CARE level 2–Substantial/Maximal Assistance and CARE level 1–Dependent.

Agreement between some items on the IRF-PAI/FIM® Instrument and the CARE tool for items that were conceptually similar was not expected, because the item definitions were very different. For example, definition differences for bowel and bladder items and for walking items challenged comparisons.

This report begins to address the issue of how the CARE items are associated with IRF LOS. To be a successful measure across the full continuum of post-acute care, the measure will need to have comparable explanatory power for resource use when compared to measures currently being applied in those settings. Our preliminary analyses showed that the relationship between LOS and individual CARE items were comparable to correlations between individual IRF-PAI items and LOS, even though the latter measure was tailored specifically to fit the IRF setting.

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SECTION 14
MDS 2.0–CARE COMPARISONS

14.1 Overview

The analyses in this section compare the Continuity Assessment Record and Evaluation (CARE) Item Set items to the Minimum Data Set (MDS) 2.0 prospective payment items (resource utilization group (RUG)-III V5.20) for the same patient. The analyses are similar to the comparisons of the CARE Item Set and the Inpatient Rehabilitation Facility Patient Assessment Instrument (IRF-PAI)/ FIM® instrument discussed in Section 13. Analyses profiled in this section compare the scores for CARE admission assessments matched with MDS 2.0 assessments for the Post-Acute Care Payment Reform Demonstration (PAC-PRD) sample.

To conduct these analyses, we merged the January 2010 extract of the CARE data with MDS 2.0 assessments available through December 31, 2010. An initial merge was done based on Medicare beneficiary identification number, gender, and birth date. Additional matches were identified using social security number. The match was refined using the admission date on the CARE matched to the assessment reference date on the MDS 2.0 and the sample restricted to only CARE admission assessments and MDS 2.0 admission or 5-day prospective payment system (PPS) assessments. We restricted the time frame between matched assessments to less than 7 days to reduce discrepancies in observations on the two assessments that could be attributable to differences in timing and to match the look-back period for the MDS 2.0. We successfully matched 93.3 percent of the CARE assessments with MDS 2.0 data and have a total of 3,977 assessments. The analyses included in this chapter focus only on the admission assessment items.[6]

14.2 Expected Differences in Response Item Codes between CARE and the MDS 2.0

While many CARE items address activities that are also included on the MDS 2.0, there are several key differences between the two assessment instruments that may result in variations in data reported on the two assessments. Differences related to an instrument's item definition and assessment scales are addressed individually below, under item-by-item comparisons. Key differences between the two assessment instruments, affecting all item-by-item comparisons include:

- Differences between CARE and MDS 2.0 regarding assessment instructions
  - **Time Frame:** The assessment time frame for the CARE Item Set is 2 calendar days (if admitted before 12 noon) or 3 calendar days (for residents admitted after 12 noon). Selected items from both the MDS 2.0 instrument and CARE Item Set were compared for this analysis. The MDS 2.0 5-day PPS assessment was used for these patients who are covered by Medicare A.

[6] CARE extract date 01/28/2010. All data shown in this memo were generated with programs CAREREL017 and CAREREL018.

- The items on the MDS 2.0 are usually assessed during a 7-day look-back period. The assessment allows up to 3 additional grace period days (for the 5-day PPS instrument) during which the resident is assessed by "looking back over the last 7-day assessment period."

- Some of the patients assessed with the MDS 2.0 have a 7-day look-back period that may include his/her status as a patient during his/her prior inpatient hospital stay.

    - For example, if the assessment is being completed on the 5th or 6th day after the resident's admission to the skilled nursing facility (SNF), then the 7-day look-back period would include pre-SNF admission day(s) from the acute facility.

- Other items on the MDS 2.0 and CARE Item Set require a 14-day look-back period. The MDS 2.0 includes a small number of items that require a 30-day look-back period that would also include the patient's SNF preadmission period.

– **Implication:** Patients may be assessed at different points in their episode and therefore have different acuity levels on the MDS 2.0 and the CARE Item Set. When preadmission days are included in the 7-day look-back period and when only one instrument uses the 14-day look-back period, the resident's prior acuity level can impact the data comparison of the two instruments. These status differences may occur at preadmission or post-admission to the SNF. For example, issues that may be present prior to the SNF admission and included in the MDS window may be resolved prior to the CARE assessment time frame.

    - For these analyses, recognizing that large differences between CARE and MDS 2.0 assessment time frames would increase variation between paired CARE–MDS 2.0 assessment items, this report restricts the time frame between matched assessments to 8 days or less.

– **Item Rating Scales:** Differences between CARE and MDS 2.0 exist and a comparison and alignment of the rating scales will be noted with each item comparison.

– **Functional Status Rating Scale:** Differences between CARE and MDS 2.0 functional status rating scales exist, and will also be noted with each item comparison. The CARE rating scale is an independence scale and higher numbers indicate more independence; the MDS 2.0 has two rating scales, a support rating scale and a self-performance scale, that are dependence rating scales with lower numbers indicating more independence. A comparison of the CARE Item Set functional item levels and the MDS 2.0 activities of daily living (ADL) Self-Performance item levels are mapped and provided in Table 14-28c. The CARE functional item rating scale has a range of 6-1 and the MDS 2.0 uses two scales to assess function (e.g., ADL Self-Performance and ADL Support

Provided). These two MDS 2.0 functional components are captured within each CARE functional item.

- **Example of how each instrument determines the patient's level of performance:**
  - The CARE Item Set discriminates between a CARE level 3–Partial/Moderate Assistance and a CARE level 2–Substantial/Maximal Assistance by assessing whether the helper did *less than half* or *more than half the effort.*
  - On the MDS 2.0, the level of assistance between level 2–Limited Assistance and level 3–Extensive Assistance is determined by assessing (1) whether the helper provided non-weight-bearing support or weight-bearing support, (2) if full staff support was needed, and (3) the number of times assistance was needed during the assessment period.

– **Item Definitions**: Although similar concepts are compared in this analysis, specific item definitions may not be identical. Specific item definitions for the two instruments will precede each comparison table.

– **Administration Differences**: Another source of potential variation between the CARE Item Set and MDS 2.0 items may be due to different types of clinicians conducting the CARE assessment and the MDS 2.0 assessment.

– **Error**: Some disagreement between the CARE and MDS 2.0 items may be attributable to clinician reporting errors on one of the tools. As noted in the interrater reliability section in Volume 2, and in prior evaluations of MDS 2.0 items, there are some items that have lower reliability than others.

These important differences between instrument items, administration, and rating scales will be considered while interpreting the results of comparisons. For each item the CARE definitions of the item and the MDS 2.0 definitions are reported, followed by item frequencies. The tables that follow report the percent of patients with a given CARE item and response across available MDS 2.0 responses. Expected areas of agreement are marked with an asterisk.

14.3 Results: CARE Item Set—MDS 2.0 Comparisons

A. Current Medical Information: Major Treatments

CARE Item: Major Treatments: Total Parenteral Nutrition (item III.D3a) vs. MDS 2.0 Item: Nutritional Approaches: Parenteral/IV (item K5a)

The *Current Medical Information-Major Treatments* section of the CARE Item Set assesses whether the patient received total parenteral nutrition (TPN) (item III.D3a) during the 2-day admission assessment period and allows for up to 30 treatment items to be checked. The MDS 2.0 assesses whether a patient received Parenteral/IV (item K5a) in the last 7 days and

allows for up to eight nutritional approaches items to be checked. The definitions from the CARE and MDS 2.0 are:

CARE Definition:

D3a. Total Parenteral Nutrition: *Which of the following treatments did the patient receive during the 2-day assessment period? For treatments such as blood transfusions, dialysis, or IV chemotherapy, is the patient currently receiving them as part of their treatment plan?*

MDS 2.0 Definition:

K5a. Parenteral/IV: *A 7-day look-back period that includes only fluids administered for nutrition or hydration, such as: IV fluids or hyperalimentation, including TPN, administered continuously or intermittently; IV fluids running at keep vein open (KVO); IV fluids administered via heparin locks; IV fluids contained in IV piggybacks; and IV fluids used to reconstitute medications for IV administration. Do not include: IV medications; IV fluids administered as a routine part of an operative or diagnostic procedure or recovery room stay; IV fluids administered solely as flushes; or parenteral/IV fluids administered during chemotherapy or dialysis.*

Item frequencies for CARE and MDS 2.0 are shown in Tables 14-1a and 14-1b, respectively. A cross-tabulation of the items by instrument is presented in Table 14-1c.

Table 14-1a
CARE *admission* total parenteral nutrition at assessment

CARE: TPN	Frequency (n)	Percent
Missing	14	0.4
0 = No	3,954	99.4
1 = Yes	+	+

+ Cells based on a sample size of n < 11 are not shown.

NOTE: TPN = Total parenteral nutrition.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-1b
MDS 2.0 *admission* total parenteral nutrition during 7-day assessment period

MDS: TPN	Frequency (n)	Percent
Missing	+	+
0 = No	3,694	92.9
1 = Yes	277	7.0

+ Cells based on a sample size of n < 11 are not shown.

NOTE: TPN = Total parenteral nutrition

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-1c
CARE *admission* TPN item by MDS 2.0 *admission* TPN

CARE: TPN	MDS Missing	MDS 0 = No	MDS 1 = Yes	MDS Total
Missing	—	100.0	—	14
0 = No	+	93.0*	6.9	3,954
1 = Yes	+	+	+	+
Total	+	3,694	277	3,977

* Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

NOTE: TPN = Total parenteral nutrition.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Summary Results

- There is a high degree of agreement between the two instruments. Table 14-1c illustrates that 93 percent of the time, the CARE Item Set assessment was in agreement with the MDS 2.0 assessment in reporting that the patient was not receiving TPN.
- Approximately 67 percent of the time, the CARE Item Set assessment was in agreement with the MDS 2.0 assessment in reporting that the patient was receiving TPN. While this latter agreement rate may be lower than expected, one must also consider that the total number of matched assessments for patients receiving TPN (using CARE) is only nine. That is, of nine paired assessments, six CARE–MDS 2.0 paired assessments were in agreement in terms of assessing whether the patient received TPN treatment. On the other three cases, CARE assessments coded the patient as receiving TPN, while the three paired MDS 2.0 assessments coded the same patient as not receiving TPN. These differences could be due to coding errors (e.g., MDS 2.0 IV medications being coded under Section O–Medications or Section P–Special Care, the information source used to populate the instrument, or differences in the look-back period).

CARE Item: Major Treatments: Blood Transfusion(s) (item D5a) vs. MDS 2.0 Item: Special Treatments and Procedures: Transfusions (item P1ak)

The *Major Treatments* section of the CARE Item Set reports whether the patient received Blood Transfusion(s) (item D5a) during the 2-day admission assessment period and allows for up to 30 treatment items to be checked. The MDS 2.0 assesses whether a patient received any one of twelve treatments—one being a transfusion (item P1ak)—either at the facility or at a hospital as an outpatient or inpatient during the last 14 days. The definitions from the CARE and MDS 2.0 are included below.

CARE Definition:

D5a. Major Treatments: *Blood Transfusion(s): Which of the following treatments did the patient receive during the 2-day assessment period? For treatments such as blood transfusions, dialysis, or IV chemotherapy, is the patient currently receiving them as part of their treatment plan?*

MDS 2.0 Definition:

P1ak. Special Treatments and Procedures: Transfusions

Special Treatments, Procedures, and Programs. Special Care. *Fourteen-day look-back to identify any special treatments, therapies, or programs that the patient received in the specified time period. Do not code services that were provided solely in conjunction with a surgical or diagnostic procedure and the immediate post-operative or post-procedure recovery period.* ***Treatments.*** *The following treatments may be received by a nursing facility patient either at the facility, at a hospital as an outpatient, or as an inpatient, etc.* ***Transfusions.*** *Includes transfusions of blood or any blood products (e.g., platelets), which are administered directly into the bloodstream. Do not include transfusions that were administered during dialysis or chemotherapy.*

Item frequencies for CARE and MDS 2.0 are shown in Tables 14-2a and 14-2b, respectively. A cross-tabulation of the items by instrument is presented in Table 14-2c.

Table 14-2a
CARE *admission* blood transfusions at assessment

CARE: Blood transfusions	Frequency	Percent
Missing	14	0.4
0 = No	3,954	99.4
1 = Yes	+	+

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-2b
MDS 2.0 *admission* transfusions during 14-day assessment period

MDS 2.0: Transfusions	Frequency	Percent
0 = No	3,540	89.0
1 = Yes	437	11.0

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-2c
CARE *admission* blood transfusion by MDS 2.0 *admission* transfusion item

CARE: Blood transfusions	0 = No	1 = Yes	Total
Missing	85.7	+	14
0 = No	89.1*	10.9	3,954
1 = Yes	+	+	+
Total	3,540	437	3,977

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Summary Results

- There is a high degree of agreement between the two instruments as evidenced by Table 14-2c. This table illustrates that almost 90 percent of the time, the CARE Item Set assessment was in agreement with the MDS 2.0 assessment in reporting that the patient did not receive a blood transfusion.
- Eleven percent of patients who did not have a blood transfusion according to the CARE Item Set did have a transfusion according to the MDS 2.0.
- As in the TPN discussion above, this difference could be due to different assessment periods; the MDS includes time before admission, whereas the CARE assessment window is within the SNF stay. Also, the MDS 2.0 item excludes blood transfusions during dialysis; the CARE item does not have any exclusions.
- While further investigation is necessary to determine the reason for the disagreement in findings (e.g., coding error), one possibility is the date difference between the matched assessments may account for this variation. That is, the MDS 2.0 assessment paired with the CARE Item Set may account for as much as an 8-day difference between the patient's assessment dates. It is possible that the CARE Item Set would accurately assess a patient who has received a blood transfusion in the last 2 days, while the MDS 2.0 assessment from 8 days earlier would accurately assess the patient as not having received a blood transfusion.

CARE Item: Tracheostomy Tube with Suctioning (item D11a) vs. MDS 2.0 Item: Suctioning (item P1ai)

The *Major Treatments* section of the CARE Item Set assesses whether the patient has a tracheostomy tube with suctioning (item D11a) during the 2-day admission assessment period. The MDS 2.0 assesses whether a patient received any one of twelve treatments—one being tracheostomy care (item P1aj)—either at the facility or at a hospital as an outpatient or inpatient during the last 14 days. The definitions from the CARE and MDS 2.0 are included below.

CARE Definition:

D11a. Major Treatments: Tracheostomy Tube with Suctioning: *Which of the following treatments did the patient receive during the 2-day assessment period? For treatments such as blood transfusions, dialysis, or IV chemotherapy, is the patient currently receiving them as part of their treatment plan?*

MDS 2.0 Definition:

P1ai. Special Treatments and Procedures: Suctioning.

Special Treatments, Procedures, and Programs. Special Care. *Fourteen-day look-back to identify any special treatments, therapies, or programs that the patient received in the specified time period. Do not code services that were provided solely in conjunction with a surgical or diagnostic procedure and the immediate post-operative or post-procedure recovery period.* ***Treatments.*** *The following treatments may be received by a nursing facility patient either at the facility, at a hospital as an outpatient, or as an inpatient, etc.* ***Suctioning.*** *Includes nasopharyngeal or tracheal aspiration only. Oral suctioning should not be coded here.*

Item frequencies for CARE and MDS 2.0 are shown in Tables 14-3a and 14-3b, respectively. A cross-tabulation of the items by instrument is presented in Table 14-3c.

Table 14-3a
CARE *admission* tracheostomy tube with suctioning at assessment

CARE: Trach with suctioning	Frequency	Percent
Missing	14	0.4
0 = No	3,925	98.7
1 = Yes	38	1.0

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-3b
MDS 2.0 *admission* suctioning during 14-day assessment period

MDS: Suctioning	Frequency	Percent
0 = No	3,929	98.8
1 = Yes	48	1.2

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-3c
CARE *admission* tracheostomy tube with suctioning by MDS 2.0 *admission* suctioning item

CARE: Trach with suctioning	0 = No	1 = Yes	Total
Missing	92.9	+	14
0 = No	99.7*	0.3	3,925
1 = Yes	+	94.7*	38
Total	3,929	48	3,977

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Summary Results

Table 14-3c illustrates that between 95 and 99 percent of the paired assessments are in agreement; of a total of 3,977 assessments, fewer than 11 assessment pairs are in disagreement. That is, 48 cases in the MDS 2.0 assessments reported that the patient received suction, whereas only 38 cases in the CARE Item Set reported that the patient had a tracheostomy tube with suctioning. While further investigation is necessary to determine the reason for the disagreement in findings (e.g., coding error), one possible cause for the reported difference may be the date difference between the matched assessments. That is, the MDS 2.0 assessment paired with the CARE Item Set may account for as much as an 8-day difference between the patient's assessment dates. It is possible that the CARE Item Set could accurately assess a patient who has received a treatment/procedure in the last 2 days, while the MDS 2.0 assessment from 8 days earlier could accurately assess the patient as also having received a treatment/procedure.

CARE Item: Tracheostomy Tube with Suctioning (item D11a) vs. MDS 2.0 Item: Tracheostomy Care (item P1aj)

The *Major Treatments* section of the CARE Item Set assesses whether the patient received a tracheostomy tube with suctioning (item D11a) during the 2-day admission assessment period. The MDS 2.0 assesses whether a patient received any one of twelve treatments—one being tracheostomy care (item P1aj)—either at the facility or at a hospital as an

outpatient or inpatient during the last 14 days. The definitions from the CARE and MDS 2.0 are included below.

CARE Definition:

D11a. Major Treatments: Tracheostomy Tube with Suctioning: *Which of the following treatments did the patient receive during the 2-day assessment period? For treatments such as blood transfusions, dialysis, or IV chemotherapy, is the patient currently receiving them as part of their treatment plan?*

MDS 2.0 Definition:

P1aj. Special Treatments and Procedures: Tracheostomy Care.

Special Treatments, Procedures, and Programs. Special Care. *Fourteen-day look-back to identify any special treatments, therapies, or programs that the patient received in the specified time period. Do not code services that were provided solely in conjunction with a surgical or diagnostic procedure and the immediate post-operative or post-procedure recovery period.* ***Treatments.*** *The following treatments may be received by a nursing facility patient either at the facility, at a hospital as an outpatient, or as an inpatient, etc.* ***Tracheostomy.*** *Includes cleansing of tracheostomy and cannula.*

Item frequencies for CARE and MDS 2.0 are shown in Tables 14-4a and 14-4b, respectively. A cross-tabulation of the items by instrument is presented in Table 14-4c.

Table 14-4a
CARE *admission* trach tube with suctioning at assessment

CARE Trach tube with suctioning	Frequency	Percent
Missing	14	0.4
0 = No	3,925	98.7
1 = Yes	38	1.0

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-4b
MDS 2.0 *admission* tracheostomy care during 14-day assessment period

MDS: Trach care	Frequency	Percent
0 = No	3,933	98.9
1 = Yes	44	1.1

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-4c
CARE *admission* tracheostomy tube with suctioning by MDS 2.0 *admission* tracheostomy care items

CARE: Trach with suction	0 = No	1 = Yes	Total
Missing	92.9	+	14
0 = No	99.8*	+	3,925
1 = Yes	+	94.7*	38
Total	3,933	44	3,977

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Summary Results

These results are similar to the item comparison results regarding CARE tracheostomy tube with suction to MDS 2.0 suctioning. Here again, we expect a high degree of agreement between the two instruments. Table 14-4c illustrates that 99 percent of the paired assessments are in agreement regarding the presence of a tracheostomy tube with suctioning (CARE Item Set) and tracheostomy care (MDS 2.0). Of the total 3,977 paired assessments, fewer than 11 assessment pairs are in disagreement. That is, few MDS 2.0 assessments reported that the patient did not receive tracheostomy care while the CARE Item Set reported that the patient had a tracheostomy tube with suctioning. Again, we point out that a possible cause for the reported difference may be the differences in the look-back period between the matched assessments. That is, the MDS 2.0 assessment paired with the CARE Item Set may account for as much as an 8-day difference between the patient's assessment dates. It is possible that the CARE Item Set could accurately assess a patient who has received a treatment/procedure in the last 2 days, while the MDS 2.0 assessment from 8 days earlier could accurately assess the patient as *not* having received a treatment/procedure.

CARE Item: High O_2 Concentration Delivery System with FiO2 > 40% (item D12a) vs. MDS 2.0 Item: Oxygen Therapy (item P1ag)

The *Major Treatments* section of the CARE Item Set assesses whether the patient received high O_2 concentration delivery system with FiO_2 > 40 percent (item D12a) during the 2-day admission assessment period and allows for up to 30 treatment items to be checked. The MDS 2.0 assesses whether a patient received any one of twelve treatments—one being Oxygen therapy (item P1ag)—either at the facility or at a hospital as an outpatient or inpatient during the last 14 days. The definitions from the CARE and MDS 2.0 are included below.

CARE Definition:

D12a. Major Treatments: High O_2 Concentration Delivery System with FiO_2 > 40 percent: *Which of the following treatments did the patient receive during the 2-day assessment period? For treatments such as blood transfusions, dialysis, or IV chemotherapy, is the patient currently receiving them as part of their treatment plan?*

MDS 2.0 Definition:

P1ag. Special Treatments and Procedures: Oxygen Therapy.

Special Treatments, Procedures, and Programs. Special Care. *Fourteen-day look-back to identify any special treatments, therapies, or programs that the patient received in the specified time period. Do not code services that were provided solely in conjunction with a surgical or diagnostic procedure and the immediate post-operative or post-procedure recovery period.* ***Treatments.*** *The following treatments may be received by a nursing facility patient either at the facility, at a hospital as an outpatient, or as an inpatient, etc.* ***Oxygen Therapy.*** *Includes continuous or intermittent oxygen via mask, cannula, etc. (does not include hyperbaric oxygen for wound therapy).*

Item frequencies for CARE and MDS 2.0 are shown in Tables 14-5a and 14-5b, respectively. A cross-tabulation of the items by instrument is presented in Table 14-5c.

Table 14-5a
CARE *admission* high O_2 concentration delivery system with FiO_2 > 40% at assessment

CARE: High O_2 delivery	Frequency	Percent
Missing	14	0.4
0 = No	3,930	98.8
1 = Yes	33	0.8

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-5b
MDS 2.0 *admission* oxygen therapy during 14-day assessment period

MDS: Oxygen therapy	Frequency	Percent
0 = No	2,652	66.7
1 = Yes	1,325	33.3

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-5c
CARE *admission* high O_2 concentration delivery system by FiO_2 > 40% and MDS 2.0 oxygen therapy items

CARE: High O_2 delivery	0 = No	1 = Yes	Total
Missing	+	+	14
0 = No	67.4*	32.6	3,930
1 = Yes	+	100*	33
Total	2,652	1,325	3,977

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Summary Results

Comparison between the two instruments regarding the oxygen therapy item shows a more modest agreement when the percent yes/no responses for oxygen item are aligned between the two assessments (Table 14-5c) than seen in previously compared items above. That is, approximately 33 percent of CARE Item Set assessments report that the patient did not receive a major treatment regarding high O_2 concentration delivery system with FiO_2 > 40 percent, while the paired MDS 2.0 assessment reported that the patient received oxygen therapy. These results are within expectations given the definition differences between the MDS 2.0 and the CARE Item Set. The MDS 2.0 captures a much broader range of patients receiving oxygen with its definition of this item as "continuous or intermittent oxygen." The CARE Item Set is more restrictive in terms of including patients with a definition of "High O_2 concentration delivery system with FiO_2 > 40 percent." The MDS 2.0 also has a longer look-back window for this service. Despite this definitional difference, the item illustrates some agreement between the two assessment instruments.

CARE Item: Ventilator Weaning (D14a) vs. MDS 2.0 Item: Ventilator or Respirator (P1al)

The *Major Treatments* section of the CARE Item Set assesses whether the patient received ventilator weaning (item D14a) during the 2-day admission assessment period. The MDS 2.0 assesses whether a patient received any one of twelve treatments—one being ventilator or respiratory care (item P1al)—either at the facility or at a hospital as an outpatient or inpatient during the last 14 days. The definitions from the CARE and MDS 2.0 are included below.

CARE Definition:

D14a. Major Treatments: Ventilator Weaning: *Which of the following treatments did the patient receive during the 2-day assessment period? For treatments such as blood transfusions, dialysis, or IV chemotherapy, is the patient currently receiving them as part of their treatment plan?*

MDS 2.0 Definition:

P1al. Special Treatments and Procedures: Ventilator/Respirator.

Special Treatments, Procedures, and Programs. Special Care. *Fourteen-day look-back to identify any special treatments, therapies, or programs that the patient received in the specified time period. Do not code services that were provided solely in conjunction with a surgical or diagnostic procedure and the immediate post-operative or post-procedure recovery period.* ***Treatments.*** *The following treatments may be received by a nursing facility patient either at the facility, at a hospital as an outpatient, or as an inpatient, etc.* ***Ventilator or Respirator.*** *Assures adequate ventilation in patients who are or who may become unable to support their own respiration. Includes any type of electrically or pneumatically powered closed system mechanical ventilator support devices. Any patient who was in the process of being weaned off of the ventilator or respirator in the last 14 days should be coded under this definition. Does not include Continuous Positive Airway Pressure (CPAP) or Bi-level Positive Airway Pressure (BIPAP) devices.*

Item frequencies for CARE and MDS 2.0 are shown in Tables 14-6a and 14-6b, respectively. A cross-tabulation of the items by instrument is presented in Table 14-6c.

Table 14-6a
CARE *admission* ventilator weaning (D14a) at assessment

CARE: Vent weaning	Frequency	Percent
Missing	14	0.4
0 = No	3,954	99.4
1 = Yes	+	+

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-6b
MDS 2.0 *admission* ventilator or respirator care during 14-day assessment period

MDS: Ventilator/respirator	Frequency	Percent
0 = No	3,938	99.0
1 = Yes	39	1.0

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-6c
CARE *admission* ventilator weaning by MDS 2.0 *admission* ventilator or respirator care items

CARE: Vent weaning	0 = No	1 = Yes	Total
Missing	100	—	14
0 = No	99.2*	0.8	3,954
1 = Yes	+	+	+
Total	3,938	39	3,977

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Summary Results

There is a high degree of agreement between the two instruments as evidenced by the findings in Table 14-6c. Table 14-6c illustrates that over 99 percent of the time, the CARE Item Set assessment was in agreement with the MDS 2.0 assessment in terms of reporting that the patient was being weaned from a ventilator (CARE) or was on a ventilator/respirator (MDS 2.0). Of the total 3,977 paired assessments, fewer than 11 CARE Item Sets reported the patient as receiving ventilator weaning where the MDS 2.0 reported the patient was not receiving ventilator or respirator treatment. One major reason for the paired assessment difference may be due to definitional differences; the MDS 2.0 definition is more inclusive than the CARE Item Set definition. That is, the CARE Item Set will code a patient as a yes only if they are on a ventilator AND being weaned from the ventilator. A separate item on the CARE Item Set reports on non-weaning ventilators. The MDS 2.0 will code a patient as a yes if the patient is on a ventilator or respirator, regardless of whether the patient is actively being weaned or not. Despite this definitional difference, there is still a high level of item agreement between the two types of assessments.

CARE Item: Ventilator Non-Weaning (D15a) vs. MDS 2.0 Item: Ventilator or Respirator (P1al)

The *Major Treatments* section of the CARE Item Set assesses whether the patient received ventilator non-weaning (item D15a) during the 2-day admission assessment period. The MDS 2.0 assesses whether a patient received any one of 12 treatments—one being ventilator or respiratory care (item P1al)—either at the facility or at a hospital as an outpatient or inpatient during the last 14 days. The definitions from the CARE and MDS 2.0 are included below.

CARE Definition:

D15a. Major Treatments: Ventilator non-weaning: *Which of the following treatments did the patient receive during the 2-day assessment period? For treatments such as blood transfusions,*

dialysis, or IV chemotherapy, is the patient currently receiving them as part of their treatment plan?

MDS 2.0 Definition:

P1al. Special Treatments and Procedures: Ventilator/Respirator.

Special Treatments, Procedures, and Programs. Special Care. *Fourteen-day look-back to identify any special treatments, therapies, or programs that the patient received in the specified time period. Do not code services that were provided solely in conjunction with a surgical or diagnostic procedure and the immediate post-operative or post-procedure recovery period.* ***Treatments.*** *The following treatments may be received by a nursing facility patient either at the facility, at a hospital as an outpatient, or as an inpatient, etc.* ***Ventilator or Respirator.*** *Assures adequate ventilation in patients who are or who may become unable to support their own respiration. Includes any type of electrically or pneumatically powered closed system mechanical ventilator support devices. Any patient who was in the process of being weaned off of the ventilator or respirator in the last 14 days should be coded under this definition. Does not include CPAP or BIPAP devices.*

Item frequencies for CARE and MDS 2.0 are shown in Tables 14-7a and 14-7b, respectively. A cross-tabulation of the items by instrument is presented in Table 14-7c.

Table 14-7a
CARE *admission* ventilator non-weaning (D15a) at assessment

CARE: Vent non-weaning	Frequency	Percent
Missing	14	0.4
0 = No	3,953	99.4
1 = Yes	+	+

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-7b
MDS 2.0 *admission* ventilator or respirator care during 14-day assessment period

MDS: Ventilator	Frequency	Percent
0 = No	3,938	99.0
1 = Yes	39	1.0

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-7c
CARE *admission* ventilator non-weaning and MDS 2.0 *admission* ventilator or respirator care items

CARE: Vent non-weaning	0 = No	1 = Yes	Total
Missing	100	—	14
0 = No	99.3*	0.7	3,953
1 = Yes	+	+	+
Total	3,938	39	3,977

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Summary Results

Again, we see a high degree of agreement between the two instruments as evidenced by Table 14-7c, which illustrates that over 99 percent of the time, the CARE Item Set assessment was in agreement with the MDS 2.0 assessment in terms of reporting that the patient was not on a ventilator.

CARE Item: Hemodialysis (D16a) vs. MDS 2.0 Item: Dialysis (P1ab)

The *Major Treatments* section of the CARE Item Set assesses whether the patient received hemodialysis (item D16a) during the 2-day admission assessment period and allows for up to 30 treatment items to be checked. The MDS 2.0 assesses whether a patient received any one of twelve treatments—one dialysis (item P1ab)—either at the facility or at a hospital as an outpatient or inpatient during the last 14 days. The definitions from the CARE and MDS 2.0 are included below.

CARE Definition:

D16a. Major Treatments: Hemodialysis: *Which of the following treatments did the patient receive during the 2-day assessment period? For treatments such as blood transfusions, dialysis, or IV chemotherapy, is the patient currently receiving them as part of their treatment plan?*

MDS 2.0 Definition:

P1ab. Special Treatments and Procedures: Dialysis.

Special Treatments, Procedures, and Programs. Special Care. *Fourteen-day look-back to identify any special treatments, therapies, or programs that the patient received in the specified time period. Do not code services that were provided solely in conjunction with a surgical or diagnostic procedure and the immediate post-operative or post-procedure recovery period.*

Treatments. *The following treatments may be received by a nursing facility patient either at the facility, at a hospital as an outpatient, or as an inpatient, etc.* ***Dialysis.*** *Includes peritoneal or renal dialysis that occurs at the nursing facility or at another facility. Record treatments of hemofiltration, Slow Continuous Ultrafiltration (SCUF), Continuous Arteriovenous Hemofiltration (CAVH), and Continuous Ambulatory Peritoneal Dialysis (CAPD) in this item. IVs, IV medications, and blood transfusions administered during dialysis are not coded under the respective items K5a (parenteral/IV), P1ac (IV medications), and P1ak (transfusions).*

Item frequencies for CARE and MDS 2.0 are shown in Tables 14-8a and 14-8b, respectively. A cross-tabulation of the items by instrument is presented in Table 14-8c.

Table 14-8a
CARE *admission* hemodialysis (D16a) at assessment

CARE: Hemodialysis	Frequency	Percent
Missing	14	0.4
0 = No	3,858	97.0
1 = Yes	105	2.6

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-8b
MDS 2.0 *admission* dialysis during 14-day assessment period

MDS: Dialysis	Frequency	Percent
0 = No	3,846	96.7
1 = Yes	131	3.3

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-8c
CARE *admission* hemodialysis by MDS 2.0 *admission* dialysis items

CARE: Hemodialysis	0 = No	1 = Yes	Total
Missing	92.9	+	14
0 = No	99.2*	0.8	3,858
1 = Yes	+	96.2*	105
Total	3,846	131	3,977

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Summary Results

There is a high degree of congruency between the two instruments as evidenced by percent agreement (Table 14-8c). Table 14-8c illustrates that over 99 percent of the time, the CARE Item Set assessment was in agreement with the MDS 2.0 assessment in terms of reporting that the patient was receiving dialysis. A small percentage (0.8 percent; fewer than 11 paired assessments) are not in agreement; the CARE Item Set reports that the patient is on dialysis, while the MDS 2.0 reports that the patient is not receiving dialysis. Here again, the reason for the difference in this small number of assessments may be attributed to the different assessment look-back periods between the matched assessments. That is, the MDS 2.0 assessment paired with the CARE Item Set may account for as much as an 8-day difference between the patient's assessment dates. It is possible that the CARE Item Set could accurately assess a patient who has received a treatment/procedure in the last 2 days, while the MDS 2.0 assessment from 8 days earlier could accurately assess the patient as *not* having received a treatment/procedure.

CARE Item: Peritoneal Dialysis (D17a) vs. MDS 2.0 Item: Dialysis (P1ab)

The *Major Treatments* section of the CARE Item Set assesses whether the patient received peritoneal dialysis (item D17a) during the 2-day admission assessment period and allows for up to 30 treatment items to be checked. The MDS 2.0 assesses whether a patient received any one of twelve treatments—one being dialysis (item P1ab)—either at the facility or at a hospital as an outpatient or inpatient during the last 14 days. The definitions from the CARE and MDS 2.0 are included below.

CARE Definition:

D17a. Major Treatments: Peritoneal Dialysis: *Which of the following treatments did the patient receive during the 2-day assessment period? For treatments such as blood transfusions, dialysis, or IV chemotherapy, is the patient currently receiving them as part of their treatment plan?*

MDS 2.0 Definition:

P1ab. Special Treatments and Procedures: Dialysis.

Special Treatments, Procedures, and Programs. Special Care. *Fourteen-day look-back to identify any special treatments, therapies, or programs that the patient received in the specified time period. Do not code services that were provided solely in conjunction with a surgical or diagnostic procedure and the immediate post-operative or post-procedure recovery period.* ***Treatments.*** *The following treatments may be received by a nursing facility patient either at the facility, at a hospital as an outpatient, or as an inpatient, etc.* ***Dialysis.*** *Includes peritoneal or renal dialysis that occurs at the nursing facility or at another facility. Record treatments of hemofiltration, SCUF, CAVH, and CAPD in this item. IVs, IV medications, and blood transfusions administered during dialysis are not coded under the respective items K5a (parenteral/IV), P1ac (IV medications), and P1ak (transfusions).*

Item frequencies for CARE and MDS 2.0 are shown in Tables 14-9a and 14-9b, respectively. A cross-tabulation of the items by instrument is presented in Table 14-9c.

Table 14-9a
CARE *admission* peritoneal dialysis (D17a) at assessment

CARE: Peritoneal dialysis	Frequency	Percent
Missing	14	0.4
0 = No	3,957	99.5
1 = Yes	+	+

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-9b
MDS 2.0 *admission* dialysis during 14-day assessment period

MDS: Dialysis	Frequency	Percent
0 = No	3,846	96.7
1 = Yes	131	3.3

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-9c
CARE *admission* peritoneal dialysis by MDS 2.0 *admission* dialysis items

CARE: Peritoneal dialysis	0 = No	1 = Yes	Total
Missing	92.9	+	14
0 = No	96.8*	3.2	3,957
1 = Yes	+	+	+
Total	3,846	131	3,977

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Summary Results

The level of agreement between the CARE Item Set and the MDS 2.0 item regarding dialysis is relatively high. Table 14-9c shows approximately 97 percent agreement between the paired assessments in terms of reporting that the patient was not receiving dialysis. The level of agreement decreases (83 percent) when the two assessment types are compared in reporting that the patient is receiving dialysis. However, that 83 percent represents only one assessment. The difference between the two assessment types may be illustrative of the MDS 2.0 definition that captures more than peritoneal dialysis under this item (e.g., CAVH is also included in the MDS 2.0 dialysis item).

CARE Item: Complex Wound Management (D20a) vs. MDS 2.0 Item: Surgical Wound Care (M5f)

The *Major Treatments* section of the CARE Item Set assesses whether the patient received complex wound management (item D20a) during the 2-day admission assessment period. The MDS 2.0 assesses whether a patient received any of nine skin treatments in the last 7 days—one being surgical wound care (item M5f). The definitions from the CARE and MDS 2.0 are included below.

CARE Definition:

D20a. Major Treatments: Complex Wound Management: *Which of the following treatments did the patient receive during the 2-day assessment period? For treatments such as blood transfusions, dialysis, or IV chemotherapy, is the patient currently receiving them as part of their treatment plan?*

MDS 2.0 Definition:

M5f. Skin Condition: Skin Treatments. *Document any specific or generic skin treatments the resident has received in the past 7 days. Skin does not include eyes or oral mucosa. Include any intervention for treating or protecting any type of surgical wound. Examples of care include topical cleansing, wound irrigation, application of antimicrobial ointments, application of dressings of any type, suture removal, and warm soaks or heat application.*

Item frequencies for CARE and MDS 2.0 are shown in Tables 14-10a and 14-10b, respectively. A cross-tabulation of the items by instrument is presented in Table 14-10c.

Table 14-10a
CARE *admission* complex wound management (D20a) at assessment

CARE: Complex wound management	Frequency	Percent
Missing	14	0.4
0 = No	3,934	98.9
1 = Yes	29	0.7

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-10b
MDS 2.0 *admission* surgical wound care (M5f) during 7-day assessment period

MDS: Surgical wound care	Frequency	Percent
Missing	+	+
0 = No	2,681	67.4
1 = Yes	1,287	32.4

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-10c
CARE complex wound management by MDS 2.0 surgical wound care

CARE: Complex wound management	Missing	0 = No	1 = Yes	Total
Missing	+	78.6	+	14
0 = No	+	67.4*	32.4	3,934
1 = Yes	+	62.1	+	29
Total	+	2,681	1,287	3,977

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Summary Results

Item congruency for surgical wound care/complex wound management is lower compared to the level of agreement illustrated when the CARE Item Set item was compared to Special Treatment MDS 2.0 items (findings above). The paired assessments are in agreement about 67 percent of the time in terms of coding that the patient did not receive wound care/management; about 38 percent of the time, the paired assessments were in agreement in terms of coding that the patient received wound care/management. The likely reason for the coding discrepancy between the two assessment types is due to the CARE Item Set's more restrictive definition regarding *complex* wound management as opposed to the broad MDS 2.0 item definition regarding surgical wound care. That is, the MDS 2.0 definition includes any intervention for treating or protecting any type of surgical wound, such as topical cleansing, wound irrigation, application of antimicrobial ointments, application of dressings of any type, suture removal, and warm soaks or heat application. The CARE Item Set definition of complex wound management would not include all of these MDS 2.0 procedures. Second, the MDS assessment includes care in the prior 7 days, which may precede admission to the SNF, while the CARE item reflects only treatments received in the SNF.

CARE Item: Specialty Surface or Bed (D24a) vs. MDS 2.0 Item: Pressure Relieving Device for Bed (M5b)

The *Current Medical Information-Major Treatments* section of the CARE Item Set assesses whether the patient used a specialty surface or bed (item III.D24a) during the 2-day admission assessment period and allows for up to 30 treatment items to be checked. The MDS 2.0 assesses whether a patient received a Pressure Relieving Device for a Bed (item M5b) in the last 7 days and allows for up to 10 skin treatments to be checked. The definitions from the CARE and MDS 2.0 are:

CARE Definition:

D24a. Specialty Surface or Bed: *Which of the following treatments did the resident receive during the 2-day assessment period? For treatments such as blood transfusions, dialysis, or IV chemotherapy, is the resident currently receiving them as part of their treatment plan? Specialty Surface or Bed (i.e., air fluidized, bariatric, low air loss, or rotation bed).*

MDS 2.0 Definition:

M5b. Pressure Relieving Device(s) for a Bed: *Check treatments or programs received during the last 7 days. Pressure Relieving Device for a Bed—Includes air fluidized, low air loss therapy beds, flotation, water, or bubble mattress or pad placed on the bed. Do not include egg crate mattresses in this category.*

The overall frequencies for these items are shown in Tables 14-11a and 14-11b below, followed by the cross-tabulation of the items in Table 14-11c.

Table 14-11a
CARE—Frequency of specialty surface or bed (D24a) during 2-day assessment period

CARE: Specialty surface or bed	Frequency	Percent
Missing	14	0.4
0 = No	3,747	94.2
1 = Yes	216	5.4

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-11b
MDS 2.0 *admission* pressure-relieving devices for bed (M5b) at assessment

MDS: Specialty bed	Frequency	Percent
Missing	+	+
0 = No	794	20.0
1 = Yes	3,174	79.8

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-11c
CARE *admission* specialty surface or bed by MDS 2.0 *admission* pressure relieving devices for bed

CARE: Specialty surface or bed	Missing	0 = No	1 = Yes	Total
Missing	+	+	100	14
0 = No	+	21*	78.8	3,747
1 = Yes	+	+	95.8*	216
Total	+	794	3,174	3,977

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Summary Results

- Among patients who were reported as using a Specialty Surface or Bed on the CARE Item Set, 95.8 percent were similarly reported as using a Pressure Relieving Device for Bed on the MDS 2.0.

- Notably, for patients who were not reported as using a Specialty Surface or Bed on the CARE Item Set, 78.8 percent *were* reported as using a Pressure Relieving Device for Bed on the MDS 2.0. This discrepancy may be due to the different assessment windows between the two tools; alternatively, this may be because the MDS 2.0 item definition is broader, and references "water, or bubble mattress or pad," while the CARE item definition does not.

CARE Item: IV Chemotherapy (D28a) vs. MDS 2.0 Item: Chemotherapy (P1aa)

The *Current Medical Information-Major Treatments* section of the CARE Item Set assesses whether the patient received IV Chemotherapy (item III.D28a) during the 2-day

admission assessment period and allows for up to 30 treatment items to be checked. The MDS 2.0 assesses whether a patient received Chemotherapy (item P1aa) in the last 7 days and allows for up to 18 special treatments, procedures, and programs to be checked. The definitions from the CARE and MDS 2.0 are:

CARE Definition:

D28a. IV Chemotherapy: *Which of the following treatments did the patient receive during the 2-day assessment period? For treatments such as blood transfusions, dialysis, or IV chemotherapy, is the patient currently receiving them as part of their treatment plan?*

MDS 2.0 Definition:

P1aa. Chemotherapy: *Check treatments or programs received in during the last 14 days. Chemotherapy—Include any type of chemotherapy (anticancer drug) given by any route.*

The overall frequencies for these items are shown in Tables 14-12a and 14-12b below, followed by the cross-tabulation of the items in Table 14-12c.

Table 14-12a
CARE *admission* IV chemotherapy (D28a) at assessment

CARE: IV chemo	Frequency	Percent
Missing	14	0.4
0 = No	3,960	99.6
1 = Yes	+	+

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-12b
MDS 2.0 *admission* chemotherapy during 14-day assessment period

MDS: Chemotherapy	Frequency	Percent
0 = No	3,951	99.4
1 = Yes	26	0.7

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-12c
CARE *admission* IV chemotherapy by MDS 2.0 *admission* chemotherapy items

CARE: IV Chemotherapy	0 = No	1 = Yes	Total
Missing	100	—	14
0 = No	99.4*	0.6	3,960
1 = Yes	+	—	+
Total	3,951	26	3,977

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Summary Results

- Among patients who were reported as not receiving IV Chemotherapy on the CARE Item Set, 99.4 percent were similarly reported as not receiving Chemotherapy on the MDS 2.0.

Skin Integrity

CARE Item: Number of Stage 2 Pressure Ulcers (G2a) vs. MDS 2.0 Item: Number of Stage 2 Ulcers (M1b)

The *Skin Integrity* section of the CARE Item Set asks how many Stage 2 pressure ulcers (G2a) were present during the 2-day admission assessment window, while the MDS 2.0 asks how many Stage 2 ulcers were present (M1b) in the last 7 days. The definitions from the CARE and MDS 2.0 are included below.

CARE Definition:

G2a. Stage 2: *Partial thickness loss of dermis presenting as a shallow open ulcer with red pink wound bed, without slough. May also present as an intact or open/ruptured serum-filled blister (excludes those resulting from skin tears, tape stripping, or incontinence-associated dermatitis).*

MDS 2.0 Definition:

M1b. Stage 2: *A partial thickness loss of skin layers that presents clinically as an abrasion, blister, or shallow crater.*

Key CARE and MDS 2.0 Item Differences

- *Assessment Windows:* The assessment time frame for the CARE Item Set item is 2 calendar days (if admitted before 12 noon) or 3 calendar days (for patients admitted after 12 noon). In contrast, the MDS 2.0 assessment time frame is 7 calendar days.

- *Item Definitions:* While the CARE and MDS 2.0 definitions for Stage 2 Pressure Ulcers are similar in many respects, the MDS 2.0 ulcer item also includes venous or vascular ulcers.

- *Number of Ulcers:* While the CARE allows up to 8 ulcers (8 = 8 or more ulcers), the MDS 2.0 item allows up to 9 (9 = 9 or more ulcers).

Implications

- The MDS 2.0 and CARE assessments may indicate that a patient has a different number of Stage 2 pressure ulcers due to the difference in assessment time frame.

- The MDS 2.0 assessment may also indicate a greater number of Stage 2 ulcers because the item definition includes vascular ulcers, while the CARE item does not.

- Additionally, category 8 on the CARE Item Set (8 or more ulcers) will incorporate both MDS 2.0 categories 8 (8 ulcers) and 9 (9 or more ulcers).

The overall frequencies for these items are shown in Tables 14-13a and 14-13b below, followed by the cross-tabulation of the items in Table 14-13c.

Table 14-13a
CARE *admission* frequency of stage 2 pressure ulcers (G02a) during 2-day assessment period

CARE: Stage 2 pressure ulcer	Frequency	Percent
Missing	+	+
0 = 0 ulcers	3,665	92.2
1 = 1 ulcers	222	5.6
2 = 2 ulcers	63	1.6
3 = 3 ulcers	14	0.4
4 = 4 ulcers	+	+
5 = 5 ulcers	+	+
7 = 7 ulcers	+	+

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-13b
MDS 2.0 *admission* frequency of stage 2 ulcers during 7-day assessment period

MDS: Stage 2 pressure ulcer	Frequency	Percent
Missing	11	0.3
0 = 0 ulcers	3,522	88.6
1 = 1 ulcers	291	7.3
2 = 2 ulcers	98	2.5
3 = 3 ulcers	28	0.7
4 = 4 ulcers	12	0.3
5 = 5 ulcers	+	+
6 = 6 ulcers	+	+
7 = 7 ulcers	+	+
8 = 8 ulcers	+	+
9 = 9 or more	+	+

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-13c
CARE *admission* number of stage 2 pressure ulcers by MDS 2.0 *admission* number of stage 2 ulcers

CARE: Stage 2 pressure ulcer	Missing	0 = 0 ulcers	1 = 1 ulcer	2 = 2 ulcers	3 = 3 ulcers	4 = 4 ulcers	5 = 5 ulcers	6 = 6 ulcers	7 = 7 ulcers	8 = 8 ulcers	9 = 9 ulcers	Total
Missing	+	+	+	+	+	+	+	+	+	+	+	+
0 = 0 ulcers	+	94.5*	3.4	1	0.4	+	+	+	+	+	+	3,665
1 = 1 ulcers	+	19.4	68.9*	8.1	+	+	+	+	+	+	+	222
2 = 2 ulcers	+	17.5	+	55.6*	+	+	+	+	+	+	+	63
3 = 3 ulcers	+	+	+	+	+	+	+	+	+	+	+	14
4 = 4 ulcers	+	+	+	+	+	+	+	+	+	+	+	+
5 = 5 ulcers	+	+	+	+	+	+	+	+	+	+	+	+
7 = 7 ulcers	+	+	+	+	+	+	+	+	+	+	+	+
Total	11	3,522	291	98	28	12	+	+	+	+	+	+

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Summary Results

- Among patients with zero, one, or two Stage 2 pressure ulcers reported, there is a high level of agreement between the CARE and MDS 2.0 items. For example, among

patients with zero ulcers reported in CARE, 94.5 percent also had zero ulcers reported in the MDS 2.0.

- As the number of pressure ulcers observed per patient increases, there is a decrease in the amount of agreement between the CARE and MDS 2.0 items, likely attributable to the lower number of patients with more than one pressure ulcer. Differences in assessment windows and item definitions may explain variation where the MDS 2.0 reports more Stage 2 ulcers than the CARE Item Set.

CARE Item: Number of Stage 3 Pressure Ulcers (G2b) vs. MDS 2.0 Item: Number of Stage 2 Ulcers (M1c)

The *Skin Integrity* section of the CARE Item Set asks how many Stage 3 pressure ulcers (G2b) were present during the 2-day admission assessment window, while the MDS 2.0 asks how many Stage 3 ulcers were present (M1c) in the last 7 days. The definitions from the CARE and MDS 2.0 are included below.

CARE Definition:

G2b. Stage 3: *Full thickness tissue loss. Subcutaneous fat may be visible but bone, tendon, or muscles are not exposed. Slough may be present but does not obscure the depth of tissue loss. May include undermining and tunneling.*

MDS 2.0 Definition:

M1c. Stage 3: *A full thickness of skin is lost, exposing the subcutaneous tissues—presents as a deep crater with or without undermining adjacent tissue.*

<u>*Key Care and MDS 2.0 Item Differences*</u>

- *Assessment Windows:* The assessment time frame for the CARE Item Set item is 2 calendar days (if admitted before 12 noon) or 3 calendar days (for patients admitted after 12 noon). In contrast, the MDS 2.0 assessment time frame is 7 calendar days.

- *Item Definitions:* While the CARE and MDS 2.0 definitions for Stage 3 Pressure Ulcers are similar in many respects, the MDS 2.0 ulcer item also includes venous or vascular ulcers.

- *Number of Ulcers:* While the CARE item allows up to 8 ulcers (8 = 8 or more ulcers), the MDS 2.0 item allows up to 9 ulcers (9 = 9 or more ulcers).

<u>*Implications*</u>

- The MDS 2.0 and CARE assessments may indicate that a patient has different numbers of Stage 3 pressure ulcers due to the difference in assessment time frame.

- The MDS 2.0 assessment may also indicate a greater number of Stage 3 ulcers because the item definition includes vascular ulcers, while the CARE item does not.

- Additionally, category 8 on the CARE Item Set (8 or more ulcers) will incorporate both MDS 2.0 categories 8 (8 ulcers) and 9 (9 or more ulcers).

The overall frequencies for these items are shown in Tables 14-14a and 14-14b below, followed by the cross-tabulation of the items in Table 14-14c.

Table 14-14a
CARE *admission* frequency of stage 3 pressure ulcers (G02b) at assessment

CARE: Stage 3 pressure ulcers	Frequency	Percent
Missing	+	+
0 = 0 ulcers	3,942	99.1
1 = 1 ulcers	23	0.6
2 = 2 ulcers	+	+
4 = 4 ulcers	+	+

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-14b
MDS 2.0 *admission* frequency of stage 3 ulcers during 7-day assessment period

MDS: Stage 3 pressure ulcers	Frequency	Percent
Missing	11	0.3
0 = 0 ulcers	3,917	98.5
1 = 1 ulcer	34	0.9
2 = 2 ulcers	12	0.3
3 = 3 ulcers	+	+
4 = 4 ulcers	+	+
7 = 7 ulcers	+	+

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-14c
CARE *admission* number of stage 3 pressure ulcers by MDS 2.0 *admission* number of stage 3 ulcers

CARE: Stage 3 pressure ulcers	Missing	0 = 0 ulcers	1 = 1 ulcer	2 = 2 ulcers	3 = 3 ulcers	4 = 4 ulcers	7 = 7 ulcers	Total
Missing	+	+	+	+	+	+	+	+
0 = 0 ulcers	0.3	99.1*	0.5	+	+	+	+	3,942
1 = 1 ulcers	+	+	65.2*	+	+	+	+	23
2 = 2 ulcers	+	+	+	+	+	+	+	+
4 = 4 ulcers	+	+	+	+	+	+	+	+
Total	11	3,917	34	12	+	+	+	3,977

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Summary Results

- Among patients with zero or one Stage 3 pressure ulcers reported, there is a high level of agreement between the CARE and MDS 2.0 items. For example, among patients with zero ulcers reported in CARE, 99.1 percent also had zero ulcers reported in the MDS 2.0.

CARE Item: Number of Stage 4 Pressure Ulcers (G2c)

MDS 2.0 Item: Number of Stage 4 Ulcers (M1d)

The *Skin Integrity* section of the CARE Item Set asks how many Stage 4 pressure ulcers (G2c) were present during the 2-day admission assessment window, while the MDS 2.0 asks how many Stage 4 ulcers were present (M1d) in the last 7 days. The definitions from the CARE and MDS 2.0 are included below.

CARE Definition:

G2c. Stage 4: *Full thickness tissue loss with visible bone, tendon, or muscle. Slough or eschar may be present on some parts of the wound bed. Often includes undermining and tunneling.*

MDS 2.0 Definition:

M1d. Stage 4: *A full thickness of skin and subcutaneous tissue is lost, exposing muscle or bone.*

Key CARE and MDS 2.0 Item Differences

- *Assessment Windows:* The assessment time frame for the CARE Item Set item is 2 calendar days (if admitted before 12 noon) or 3 calendar days (for patients admitted after 12 noon). In contrast, the MDS 2.0 assessment time frame is 7 calendar days.

- *Item Definitions:* While the CARE and MDS 2.0 definitions for Stage 4 Pressure Ulcers are similar in many respects, the MDS 2.0 ulcer item also includes venous or vascular ulcers.

- *Number of Ulcers*: While the CARE item allows up to 8 ulcers (8 = 8 or more ulcers), the MDS 2.0 item allows up to 9 ulcers (9 = 9 or more ulcers)

Implications

- The MDS 2.0 and CARE assessments may indicate that a patient has different numbers of Stage 4 pressure ulcers due to the difference in assessment time frame.

- The MDS 2.0 assessment may also indicate a greater number of Stage 4 ulcers because the item definition includes vascular ulcers, while the CARE item does not.

- Additionally, category 8 on the CARE Item Set (8 or more ulcers) will incorporate both MDS 2.0 categories 8 (8 ulcers) and 9 (9 or more ulcers).

The overall frequencies for these items are shown in Tables 14-15a and 14-15b below followed by the cross-tabulation of the items in Table 14-15c.

Table 14-15a
CARE *admission* frequency of stage 4 pressure ulcers (G02c) during 2-day assessment period

CARE: Stage 4 pressure ulcers	Frequency	Percent
Missing	+	+
0 = 0 ulcers	3,932	98.9
1 = 1 ulcers	28	0.7
2 = 2 ulcers	+	+
3 = 3 ulcers	+	+
4 = 4 ulcers	+	+
5 = 5 ulcers	+	+

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-15b
MDS 2.0 *admission* frequency of stage 4 ulcers during 7-day assessment period

MDS: Stage 4 pressure ulcers	Frequency	Percent
Missing	11	0.3
0 = 0 ulcers	3,802	95.6
1 = 1 ulcer	100	2.5
2 = 2 ulcers	34	0.9
3 = 3 ulcers	+	+
4 = 4 ulcers	+	+
5 = 5 ulcers	+	+
6 = 6 ulcers	+	+
7 = 7 ulcers	+	+
8 = 8 ulcers	+	+
9 = 9 ulcers	+	+

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-15c
CARE *admission* number of stage 4 pressure ulcers by MDS 2.0 *admission* number of stage 4 ulcers

CARE: Stage 4 pressure ulcers	Missing	0 = 0 ulcers	1 = 1 ulcer	2 = 2 ulcers	3 = 3 ulcers	4 = 4 ulcers	5 = 5 ulcers	6 = 6 ulcers	7 = 7 ulcers	8 = 8 ulcers	9 = 9 ulcers	Total
Missing	+	+	+	+	+	+	+	+	+	+	+	+
0 = 0 ulcers	0.3	96.5*	1.9	0.8	+	+	+	+	+	+	+	3,932
1 = 1 ulcers	+	+	82.1*	+	+	+	+	+	+	+	+	+
2 = 2 ulcers	+	+	+	+	+	+	+	+	+	+	+	+
3 = 3 ulcers	+	+	+	+	+	+	+	+	+	+	+	+
4 = 4 ulcers	+	+	+	+	+	+	+	+	+	+	+	+
5 = 5 ulcers	+	+	+	+	+	+	+	+	+	+	+	+
Total	11	3,802	100	34	+	+	+	+	+	+	+	3,977

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Summary Results

- Among patients with zero or one Stage 4 pressure ulcers reported, there is a high level of agreement between the CARE and MDS 2.0 items. For example, among patients with zero ulcers reported in CARE, 96.5 percent also had zero ulcers reported in the MDS 2.0.

CARE Item: Number of Surgical Wounds with Delayed Healing (G05a)

MDS 2.0 Item: Any Surgical Wounds Present (M4g)

The *Skin Integrity* section of the CARE Item Set asks how many Surgical Wounds with Delayed Healing (G5a) were present during the 2-day admission assessment window, while the MDS 2.0 asks if any Surgical Wounds were present (M4g) in the last 7 days. For comparison purposes, the CARE item was recoded into a binary categorical variable. The definitions from the CARE and MDS 2.0 are included below.

CARE Definition:

G5a. Delayed Healing of Surgical Wound: A major wound that requires ongoing care from delayed healing.

MDS 2.0 Definition:

M4g. Surgical Wounds: Includes healing and non-healing, open or closed surgical incisions, skin grafts, or drainage sites on any part of the body. This category does not include healed surgical sites or stomas.

Key CARE and MDS 2.0 Item Differences

- *Assessment Windows:* The assessment time frame for the CARE Item Set item is 2 calendar days (if admitted before 12 noon) or 3 calendar days (for patients admitted after 12 noon). In contrast, the MDS 2.0 assessment time frame is 7 calendar days.

- *Item Definitions:* Although both items focus on healing of surgical wounds, the MDS 2.0 definition is more comprehensive, and is not limited to surgical wounds with delayed healing.

- *Number of Wounds*: The CARE Item Set asks for the number of surgical wounds present, while the MDS 2.0 asks whether any surgical wounds are present. For the purpose of this comparison, the CARE item was collapsed into a binary variable indicating whether any wounds are present.

Implications

- The MDS 2.0 and CARE assessments might differ in the number of surgical wounds reported due to the difference in assessment time frame.

- In addition, due to the more comprehensive MDS 2.0 item definition, it is possible that patients with no Delayed Healing of Surgical Wounds recorded in CARE would have Surgical Wounds reported in the MDS 2.0.

The overall frequencies for these items are shown in Tables 14-16a and 14-16b below followed by the cross-tabulation of the items in Table 14-16c.

Table 14-16a
CARE *admission* surgical wounds with delayed healing (G05a)

CARE: Surgical wounds	Frequency	Percent
Missing	+	+
0 = No delayed surgical wounds present	3,842	96.6
1 = Delayed surgical wounds present	132	3.3

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-16b
MDS 2.0 *admission* surgical wounds during 7-day assessment period

MDS: Surgical wounds	Frequency	Percent
Missing	+	+
0 = No	2,341	58.9
1 = Yes	1,626	40.9

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-16c
CARE presence of surgical wounds with delayed healing by MDS 2.0 surgical wounds

CARE: Surgical wounds	Missing	0 = No	1 = Yes	Total
Missing	+	+	+	+
0 = No delayed surgical wounds present	0.3	60.5*	39.3	3,842
1 = Delayed surgical wounds present	+	11.4	88.6*	132
Total	+	2,341	1,626	3,977

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Summary Results

- Among patients with Delayed Surgical Wounds reported on the CARE Item Set, 88.6 percent had a Surgical Wound reported on the MDS 2.0.

- In contrast, among patients with no Delayed Surgical Wounds reported on the CARE Item Set, 39.3 percent did have a Surgical Wound reported on the MDS 2.0. This discrepancy is likely the result of differing item definitions; the MDS 2.0 item is broader (all surgical wounds) than the CARE item (non-healing surgical wounds).

CARE Item: Number of Trauma-Related Wounds (e.g., Burns) Present (G5b) vs. MDS 2.0 Item: Any Burns Present (M4b)

The *Skin Integrity* section of the CARE Item Set asks how many Trauma-Related Wounds (e.g., Burns) (G5b) were present during the 2-day admission assessment window, while the MDS 2.0 asks if any Burns were present (M4b) in the last 7 days. For comparison purposes, the CARE item was recoded into a binary categorical variable. The definitions from the CARE and MDS 2.0 are included below.

CARE Definition:

G5b. Trauma-Related Wound (e.g., Burns): *A major trauma-related wound (e.g., burn) that requires ongoing care because of draining, infection, or delayed healing.*

MDS 2.0 Definition:

M4b. Burns (Second or Third Degree): *Includes burns from any cause (e.g., heat, chemicals) in any stage of healing. This category does not include first-degree burns (changes in skin color only).*

Key Item Differences

- *Assessment Windows:* The assessment time frame for the CARE Item Set item is 2 calendar days (if admitted before 12 noon) or 3 calendar days (for patients admitted after 12 noon). In contrast, the MDS 2.0 assessment time frame is 7 calendar days.

- *Item Definitions:* Although both include burns, the focus of the items is different. The CARE item emphasizes trauma-related wounds, including burns, while the MDS 2.0 focuses exclusively on second- or third-degree burns.

- *Number of Wounds*: The CARE Item Set asks for the number of trauma-related wounds present, while the MDS 2.0 asks whether any burns are present. For the purpose of this comparison, the CARE item was collapsed into a binary variable indicating whether any wounds are present.

Implications

- The MDS 2.0 and CARE assessments might indicate that a patient has different numbers of burns due to the difference in assessment time frame.

- In addition, the more restrictive MDS 2.0 item definition may result in patients who are categorized with a trauma-related wound on the CARE Item Set, but do not meet the definition of a second- or third-degree burn for the MDS 2.0.

The overall frequencies for these items are shown in Tables 14-17a and 14-17b below, followed by the cross-tabulation of the items in Table 14-17c.

Table 14-17a
CARE *admission* trauma related wounds (e.g., burns) (G05b) during 2-day assessment period

MDS: Trauma-related wounds	Frequency	Percent
Missing	+	+
0 = No trauma-related wounds present	3,930	98.8
1 = Trauma-related wounds present	44	1.1

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-17b
MDS 2.0 *admission* burns during 7-day assessment period

MDS: Burns	Frequency	Percent
Missing	+	+
0 = No	3,954	99.4
1 = Yes	14	0.4

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-17c
CARE *admission* presence of trauma-related wounds (e.g., burns) by MDS 2.0 *admission* burns second/third degree

CARE: Trauma-related wounds	Missing	0 = No	1 = Yes	Total
Missing	+	+	+	+
0 = No trauma-related wounds present	0.2	99.5*	0.3	3,930
1 = Trauma-related wounds present	+	95.5	+	44
Total	+	3,954	14	3,977

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Summary Results

- Among patients with no Trauma-Related Wounds reported on the CARE Item Set, 99.5 percent did not have a second- or third-degree burn reported on the MDS 2.0.

CARE Item: Number of Other Wounds (e.g., Incontinence Associated Dermatitis, Normal Surgical Wound Healing) Present (G5e)

MDS 2.0 Item: Surgical Wounds (M4g)

The *Skin Integrity* section of the CARE Item Set asks how many Other Wounds (e.g., Incontinence Associated Dermatitis, Normal Surgical Wound Healing) (G5e) were present during the 2-day admission assessment window, while the MDS 2.0 asks if any Surgical Wounds were present (M4g) in the last 7 days. For comparison purposes, the CARE item was recoded into a binary categorical variable. The definitions from the CARE and MDS 2.0 are included below.

CARE Definition:

G5e. Number of Other Wounds (e.g., Incontinence Associated Dermatitis, Normal Surgical Wound Healing): *A major wound that requires ongoing care from delayed healing.*

MDS 2.0 Definition:

M4g. Surgical Wounds: *Includes healing and non-healing, open or closed surgical incisions, and skin grafts or drainage sites on any part of the body. This category does not include healed surgical sites or stomas.*

Key Item Differences

- *Assessment Windows:* The assessment time frame for the CARE Item Set item is 2 calendar days (if admitted before 12 noon) or 3 calendar days (for patients admitted after 12 noon). In contrast, the MDS 2.0 assessment time frame is 7 calendar days.

- *Item Definitions:* Although both include surgical wounds, the focus of the items is different. The CARE item includes a broad category of "other" wounds, including normally healing surgical wounds, while the MDS 2.0 focuses on exclusively surgical wounds.

- *Number of Wounds*: The CARE Item Set asks for the number of wounds present, while the MDS 2.0 asks whether any surgical wounds are present. For the purpose of this comparison, the CARE item was collapsed into a binary variable indicating whether any wounds are present.

Implications

- The MDS 2.0 and CARE assessments might indicate that a patient has different numbers of surgical wounds due to the difference in assessment time frame.

- In addition, due to the more restrictive MDS 2.0 item definition, it is possible that patients with Other Major Wounds recorded in CARE would not have Surgical Wounds indicated in the MDS 2.0.

- Finally, surgical wounds included in the MDS 2.0 item may be more appropriately categorized in the CARE item G5a, Delayed Healing of Surgical Wounds.

The overall frequencies for these items are shown in Tables 14-18a and 14-18b below, followed by the cross-tabulation of the items in Table 14-18c.

Table 14-18a
CARE *admission* other wounds (e.g., incontinence associated dermatitis, normal surgical wound healing) (G05e)

CARE: Other wounds	Frequency	Percent
Missing	+	+
0 = No other major wounds present	3,359	84.5
1 = Other major wounds present	615	15.5

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-18b
MDS 2.0 *admission* surgical wounds during 7-day assessment period

MDS: Surgical wounds	Frequency	Percent
Missing	+	+
0 = No	2,341	58.9
1 = Yes	1,626	40.9

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-18c
CARE *admission* presence of other wounds (e.g., incontinence associated dermatitis, normal surgical wound healing) by MDS 2.0 *admission* surgical wounds

CARE: Other wounds	Missing	0 = No	1 = Yes	Total
Missing	+	+	+	+
0 = No other major wounds present	+	66.2*	33.5	3,359
1 = Other major wounds present	—	18.5	81.5*	615
Total	10	2,341	1,626	3,977

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Summary Results

- Among patients with Other Major Wounds reported on the CARE Item Set, 81.5 percent had a surgical wound reported on the MDS 2.0.

- For patients with no Other Major Wounds reported on the CARE Item Set, 66.2 percent did not have wounds on the MDS 2.0 and the remaining 33.5 percent did have a surgical wound. This discrepancy is not unexpected given the potential for surgical wounds to also be captured in CARE item G5a, Delayed Healing of Surgical Wounds.

CARE Item: Number of Other Wounds (e.g., Incontinence Associated Dermatitis, Normal Surgical Wound Healing) Present (G5e)

MDS 2.0 Item: Open Lesions Other than Ulcers, Rashes, Cuts (e.g., Cancer Lesions) (M4c)

The *Skin Integrity* section of the CARE Item Set asks how many Other Wounds (e.g., Incontinence Associated Dermatitis, Normal Surgical Wound Healing) (G05e) were present during the 2-day admission assessment window, while the MDS 2.0 asks if any Open Lesions Other than Ulcers, Rashes, or Cuts were present (M4c) in the last 7 days. For comparison purposes, the CARE item was recoded into a binary categorical variable. The definitions from the CARE and MDS 2.0 are included below.

CARE Definition:

G5e. Number of Other Wounds (e.g., Incontinence Associated Dermatitis, Normal Surgical Wound Healing): *A major wound that requires ongoing care from delayed healing.*

MDS 2.0 Definition:

M4c. Open Lesions Other than Ulcers, Rashes, Cuts (e.g., cancer lesions)

Key Item Differences

- *Assessment Windows:* The assessment time frame for the CARE Item Set item is 2 calendar days (if admitted before 12 noon) or 3 calendar days (for patients admitted after 12 noon). In contrast, the MDS 2.0 assessment time frame is 7 calendar days.

- *Item Definitions:* The focus of the items is different. The CARE item includes a broad category of "other" wounds, including normally healing surgical wounds, while the MDS 2.0 focuses more on lesions (e.g., cancer lesions) that are not ulcers, rashes, or cuts.

- *Number of Wounds*: The CARE Item Set asks for the number of wounds present, while the MDS 2.0 asks whether any other lesions are present. For the purpose of this comparison, the CARE item was collapsed into a binary variable indicating whether any wounds are present.

Implications

- The MDS 2.0 and CARE assessments might indicate that a patient has different numbers of wounds due to the difference in the assessment time frame.

- In addition, due to the more restrictive MDS 2.0 item definition, it is possible that patients with Other Major Wounds recorded in CARE would not have Other Lesions indicated in the MDS 2.0.

The overall frequencies for these items are shown in Tables 14-19a and 14-19b below, followed by the cross-tabulation of the items in Table 14-19c.

Table 14-19a
CARE *admission* other wounds (e.g., incontinence associated dermatitis, normal surgical wound healing) (G05e)

CARE: Other wounds	Frequency	Percent
Missing	+	+
0 = No other major wounds present	3,359	84.5
1 = Other major wounds present	615	15.5

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-19b
MDS 2.0 *admission* open lesions other than ulcers, rashes, or cuts during 7-day assessment period

MDS: Open lesions	Frequency	Percent
Missing	+	+
0 = No	3,838	96.5
1 = Yes	130	3.3

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-19c
CARE *admission* presence of other wounds (e.g., incontinence associated dermatitis, normal surgical wound healing) by MDS 2.0 *admission* open lesions other than ulcers, rashes, or cuts

CARE: Other wounds	Missing	0 = No	1 = Yes	Total
Missing	+	+	+	+
0 = No other major wounds present	+	96.5*	3.2	3,359
1 = Other major wounds present	+	96.3	3.7*	615
Total	+	3,838	130	3,977

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Summary Results

- Among patients with Other Major Wounds reported on the CARE Item Set, 3.7 percent had another lesion reported on the MDS 2.0. This discrepancy is not unexpected given the more restrictive MDS 2.0 item definition.

B. Cognitive Status, Mood, & Pain

Cognitive Status

CARE Item: Comatose (A1) vs. MDS 2.0 Item: Comatose (B1)

The *Cognitive Status* section of the CARE Item Set asks whether a patient is in a Persistent Vegetative State or has No Discernable Consciousness during the 2-day admission assessment window; the MDS 2.0 assesses this same item, but over the last 7 days. The definitions from the CARE and MDS 2.0 are included below.

CARE Definition:

A1. Persistent Vegetative State/No Discernible Consciousness at Time of Admission

MDS 2.0 Definition:

B1. Persistent Vegetative State/No Discernible Consciousness: *Indicates whether a patient's clinical record includes a documented neurological diagnosis of coma or persistent vegetative state.*

Key Item Differences

- *Assessment Windows:* The assessment time frame for the CARE Item Set item is 2 calendar days (if admitted before 12 noon) or 3 calendar days (for patients admitted after 12 noon). In contrast, the MDS 2.0 assessment time frame is 7 calendar days.

- *Item Definitions:* The item definitions are very similar.

Implications

- The CARE and MDS 2.0 assessments may be different due to differences in the assessment windows. While a patient may be comatose closer to admission (on the CARE assessment), they may no longer be so later in their stay, during the MDS 2.0 assessment period.

The overall frequencies for these items are shown in Tables 14-20a and 14-20b below, followed by the cross-tabulation of the items in Table 14-20c.

Table 14-20a
CARE *admission* persistent vegetative state

CARE: Comatose	Frequency	Percent
Missing	+	+
0 = No	3,964	99.7
1 = Yes	11	0.3

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-20b
MDS 2.0 *admission* persistent vegetative state during 7-day assessment period

MDS: Comatose	Frequency	Percent
Missing	+	+
0 = No	3,976	100.0
1 = Yes	+	+

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Summary Results

- All (100 percent) of patients reported as not comatose on the CARE assessment were also reported as not comatose on the MDS 2.0.

CARE Items: Recall of "Sock," "Blue," and "Bed" (B3c1–B3c3) vs. MDS 2.0 Item: Short-Term Memory OK (B2a)

The *Cognitive Status* section of the CARE Item Set assesses a patient's short-term memory by telling them to remember three words ("sock," "blue," and "bed") in item B3a, and then asking them to repeat these words after the words have been stated by the clinician. After this first attempt (immediate recall) the clinician states the three words again with a "cue" category (e.g., blue, a color) and allows the clinician to repeat the words up to two more times before a short interval of time (a few minutes) passes and the patient is then asked to recall the items B3c1 through B3c3 during the 2-day admission assessment window. The MDS 2.0 asks a clinician to assess whether the patient's "short-term memory is OK" using a similar approach—patients are asked to repeat a recent experience or asked to remember three items. The clinician repeats the three words immediately to verify the items were correctly heard and understood by the patient and then talks about another subject. After 5 minutes the patient is asked to repeat the three items. The definitions from the compared CARE and MDS 2.0 items are included below.

CARE Definitions:

B3a. Repetition of Three Words: *Ask patient: "I am going to say three words for you to remember. Please repeat the words after I have said all three. The words are sock, blue, and bed. Now tell me the three words."*

(Patient responds.)

After the patient's first attempt say: "I will repeat each of the three words with a cue and ask you about them later: sock, something to wear; blue, a color; bed, a piece of furniture."

(Three other, unrelated questions are asked in the interim.)

B3c. Recall: *Ask patient: "Let's go back to the first question. What were those three words that I asked you to repeat?" If unable to remember a word, give a cue (i.e., something to wear, a color, a piece of furniture) for that word.*

B3c1. Recalls "sock?"

B3c2. Recalls "blue?"

B3c3. Recalls "bed?"

MDS 2.0 Definition:

B2a. Short-Term memory OK: *Seems/appears to recall after 5 minutes.*

RAI Suggested Process: *Ask the resident to describe a recent event that both of you had the opportunity to remember. Or, you could use a more structured short-term memory test. For example, ask the resident to remember three items (book, watch, table) for a few minutes. After you have stated all three items, ask the resident to repeat them (to verify that you were heard and understood). Then proceed to talk about something else—do not be silent, do not leave the room. In 5 minutes, ask the resident to repeat the name of each item. If the resident is unable to recall all three items, code "1."*

<u>Key Item Differences</u>

- *Assessment Windows:* The assessment time frame for the CARE Item Set item is 2 calendar days (if admitted before 12 noon) or 3 calendar days (for patients admitted after 12 noon). In contrast, the MDS 2.0 assessment time frame is 7 calendar days.

  On the MDS 2.0 short-term memory item, the clinician is instructed to identify the most representative level of function, not the highest. Even if the clinician believes the patient's memory status is impacted by medication or other influences, the clinician still captures the patient's status during the assessment period to demonstrate the level of acuity during the admission assessment period. The patient's status may change over the MDS 2.0's 7-day look-back period and a higher level of functioning may be the most representative of the patient's level of functioning.

- *Item Definitions:* During the 7-day look-back period, the clinician asks the patient to describe a recent event or the clinician can use a more structured short-term memory test (i.e., ask the patient to remember three items and have patient recall after a 5-minute period). Although the items use similar methods to assess short-term memory, the MDS 2.0 calls for the clinician to indicate a problem with short-term memory if the patient is unable to recall all three items. The CARE recall rates the patient on recall success for each of the three items and if the patient required a "cue" to prompt the patient's recall of each item of the 2-day assessment period.

- *Scales*: While the MDS 2.0 item is binary, the CARE includes an intermediary response indicating that the patient could recall an item after cueing. The clinician records the immediate response and then repeats the three words to the patient and adds the category of the word to each. The clinician uses the category later to facilitate recall of the word if the patient does not recall the word spontaneously. Attaching a category to the word may enhance the patient's later recall of the word.

Implications

- The CARE and MDS 2.0 assessments may be different due to differences in the assessment windows. A patient may exhibit more memory closer to admission. This would lead to expected lower cognitive status scores for patients assessed in the 2-day assessment period, whereas the patient assessed using the MDS 2.0 may be assessed at a higher level of cognitive status.

- Since the MDS 2.0 uses a different method to determine short-term memory problems (not recalling multiple items or following through on a direction given 5 minutes earlier), the responses to the individual CARE items may indicate short-term memory problems when the MDS 2.0 item does not.

- On the CARE Item Instrument, the patient's ability to recall a word when a cue was given by the clinician was likely marked on the MDS 2.0 as the patient having a memory problem equal to the patient having had no recall of the item (no cue given on MDS 2.0) that could lead to lower cognitive status scores.

Each of the three CARE items is compared individually to the MDS 2.0 titled "Item for Short-Term Memory OK." The overall frequencies for each item are shown in Tables 14-21a(1-3) and 14-21b, followed by the cross-tabulation of the items in Table 14-21c(1-3).

Table 14-21a(1)
CARE *admission* recalls "sock"

CARE: Recalls "sock"	Frequency	Percent
Missing	168	4.2
0 = No, could not recall	746	18.8
1 = Yes, after cueing	645	16.2
2 = Yes, no cue required	2,418	60.8

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-21a(2)
CARE *admission* recalls "blue"

CARE: Recalls "blue"	Frequency	Percent
Missing	168	4.2
0 = No, could not recall	657	16.5
1 = Yes, after cueing	671	16.9
2 = Yes, no cue required	2,481	62.4

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-21a(3)
CARE *admission* recalls "bed"

CARE: Recalls "bed"	Frequency	Percent
Missing	168	4.2
0 = No, could not recall	849	21.4
1 = Yes, after cueing	816	20.5
2 = Yes, no cue required	2,144	53.9

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-21b
MDS 2.0 *admission* short-term memory OK during 7-day assessment period

MDS: Short-term memory	Frequency	Percent
Missing	22	0.6
0 = No	2,397	60.3
1 = Yes (memory problem)	1,558	39.2

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-21c(1)
CARE recalls "sock" by MDS 2.0 "short-term memory OK" items

CARE: Recalls "sock"	Missing	0 = No	1 = Yes (memory problem)	Total
Missing	+	19.6	78.6	168
0 = No, could not recall	+	17.7	82*	746
1 = Yes, after cueing	+	46.7	53	645
2 = Yes, no cue required	0.6	79.9*	19.5	2,418
Total	22	2,397	1,558	3,977

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-21c(2)
CARE *admission* recalls "blue" by MDS 2.0 *admission* short-term memory OK items

CARE: Recalls "blue"	Missing	0 = No	1 = Yes (memory problem)	Total
Missing	+	19.6	78.6	168
0 = No, could not recall	+	16.4	83.3*	657
1 = Yes, after cueing	+	45.2	54.4	671
2 = Yes, no cue required	0.6	78.7*	20.7	2,481
Total	22	2,397	1,558	3,977

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-21c(3)
CARE *admission* recalls "bed" by MDS 2.0 *admission* short-term memory OK items

CARE: Recalls "bed"	Missing	0 = No	1 = Yes (memory problem)	Total
Missing	+	19.6	78.6	168
0 = No, could not recall	+	21.3	78.4*	849
1 = Yes, after cueing	+	54.3	45.1	816
2 = Yes, no cue required	0.6	81.2*	18.3	2,144
Total	22	2,397	1,558	3,977

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Summary Results

- See Tables 14-2c(1-3). Among patients who could not recall "sock" on the CARE assessment, 82.0 percent were judged to have short-term memory problems on the MDS 2.0. Similarly, 83.3 percent who could not recall "blue" and 78.4 percent who could not recall "bed" were judged to have short-term memory problems on the MDS 2.0. Discrepancies here may be due to the MDS 2.0 using a different method to determine short-term memory problems (not recalling multiple items or following through on a direction given 5 minutes earlier), the responses to the individual CARE items may indicate short-term memory problems while the MDS 2.0 item may not capture milder memory problems.

- A possible reason for the results of the CARE "Yes after cueing" item's percentage of agreement (53 percent, 54.4 percent, 45.1 percent) to the MDS 2.0 "Yes" (memory problem) may be the following:

  – The CARE's response scores the patient's ability to recall a word when a cue is given while the same patient assessed by the MDS 2.0 would not have been offered a cue word and thus would likely not recall the word resulting in the MDS 2.0 score of 1 = Yes (memory problem).

- Notably, for each of the three CARE items, approximately 18.3 to 20.7 percent of patients who could recall "sock," "blue," or "bed" were recorded as having short-term memory problems on the MDS 2.0. This may be related to the 7-day MDS 2.0 assessment period (compared to the CARE 2- or 3-day assessment period).

Behavioral Signs & Symptoms

CARE Item: Physical Behavioral Symptoms Directed Toward Others (E1) vs. MDS 2.0 Item: Physically Abusive Behavioral Symptoms (E4Ac)

The *Behavioral Signs & Symptoms* section of the CARE Item Set asks whether a patient has demonstrated Physical Behavioral Symptoms Directed Toward Others during the 2-day admission assessment window, while the MDS 2.0 assesses the frequency of Physically Abusive Behavioral Symptoms over the last 7 days. For purposes of comparison, the MDS 2.0 categories were collapsed into a binary variable indicating whether or not the behavior was present. The definitions from the CARE and MDS 2.0 are included below.

CARE Definition:

E1. Physical Symptoms: *Physical behavioral symptoms directed toward others (e.g., hitting, kicking, pushing).*

MDS 2.0 Definition:

E4Ac. Physically Abusive Behaviors: *Others were hit, shoved, scratched, or sexually abused.*

Key Item Differences

- *Assessment Windows:* The assessment time frame for the CARE Item Set item is 2 calendar days (if admitted before 12 noon) or 3 calendar days (for patients admitted after 12 noon). In contrast, the MDS 2.0 assessment time frame is 7 calendar days.
- *Item Definitions:* The item definitions are very similar.
- *Scales*: While the CARE item is binary, the MDS 2.0 assesses the frequency of behavior over the last 7 days. For purposes of comparison, the MDS 2.0 responses were collapsed into binary categories.

Implications

- The CARE and MDS 2.0 assessments may be different due to differences in the assessment windows.

The overall frequencies for these items are shown in Tables 14-22a and 14-22b, followed by the cross-tabulation of the items in Table 14-22c.

Table 14-22a
CARE *admission* physical behavioral symptoms directed toward others

CARE: Physical behavioral symptoms	Frequency	Percent
Missing	13	0.3
0 = No	3,907	98.2
1 = Yes	57	1.4

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-22b
MDS 2.0 *admission* physically abusive behavioral symptoms directed toward others during 7-day assessment period

MDS: Physically abusive behavioral symptoms	Frequency	Percent
Missing	17	0.4
0 = No	3,897	98.0
1 = Yes	63	1.6

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-22c
CARE *admission* by MDS 2.0 physical behavioral symptoms directed toward others items

CARE: Physical behavioral symptom	Missing	0 = No	1 = Yes	Total
Missing	+	+	+	13
0 = No	0.4	98.5*	1	3,907
1 = Yes	—	61.4	38.6*	57
Total	17	3,897	63	3,977

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Summary Results

- Among patients who were assessed on the CARE Item Set as not having Physical Behavioral Symptoms Directed Toward Others, 98.5 percent were similarly assessed on the MDS 2.0.

Notably, among the patients who did have Physical Behavioral Symptoms Directed Toward Others on the CARE Item Set, 61.4 percent did not have these behaviors reported on the MDS 2.0. This discrepancy might be due to the difference in assessment time frames.

CARE Item: Verbal Behavioral Symptoms Directed Toward Others (E2) vs. MDS 2.0 Item: Verbally Abusive Behavioral Symptoms (E4Ab)

The *Behavioral Signs & Symptoms* section of the CARE Item Set asks whether a patient has demonstrated Verbal Behavioral Symptoms Directed Toward Others during the 2-day admission assessment window, while the MDS 2.0 assesses the frequency of Verbally Abusive Behavioral Symptoms over the last 7 days. For purposes of comparison, the MDS 2.0 categories were collapsed into a binary variable indicating whether or not the behavior was present. The definitions from the CARE and MDS 2.0 are included below.

CARE Definition:

E2. Verbal Symptoms: *Verbal behavioral symptoms directed toward others (e.g., threatening, screaming at others).*

MDS 2.0 Definition:

E4Ab. Verbally Abusive Behaviors: *Others were threatened, screamed at, or cursed at.*

<u>*Key Item Differences*</u>

- *Assessment Windows:* The assessment time frame for the CARE Item Set item is 2 calendar days (if admitted before 12 noon) or 3 calendar days (for patients admitted after 12 noon). In contrast, the MDS 2.0 assessment time frame is 7 calendar days.
- *Item Definitions:* The item definitions are very similar.
- *Scales*: While the CARE item is binary, the MDS 2.0 assesses the frequency of behavior over the last 7 days. For purposes of comparison, the MDS 2.0 responses were collapsed into binary categories.

<u>*Implications*</u>

- The CARE and MDS 2.0 assessments may be different due to differences in the assessment windows.

The overall frequencies for these items are shown in Tables 14-23a and 14-23b, followed by the cross-tabulation of the items in Table 14-23c.

Table 14-23a
CARE *admission* verbal behavioral symptoms directed toward others

CARE: Verbal behavioral symptoms	Frequency	Percent
Missing	13	0.3
0 = No	3,862	97.1
1 = Yes	102	2.6

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-23b
MDS 2.0 *admission* verbally abusive behavioral symptoms directed toward others during 7-day assessment period

MDS: Verbal behavioral symptoms	Frequency	Percent
Missing	17	0.4
0 = No verbal abuse during past 7 days	3,861	97.1
1 = Verbal abuse present during past 7 days	99	2.5

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-23c
CARE by MDS 2.0 verbally abusive behavioral symptoms directed toward others items

CARE: Verbal behavioral symptoms	Missing	0 = No	1 = Yes	Total
Missing	+	92.3	+	13
0 = No	0.4	98*	1.6	3,862
1 = Yes	—	64.7	35.3*	102
Total	17	3,861	99	3,977

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Summary Results

- Among patients who were reported as not having Verbal Behavioral Symptoms Directed Toward Others on the CARE Item Set, 98.0 percent were also assessed this way on the MDS 2.0.

- Notably, among the patients who did have Verbal Behavioral Symptoms Directed Toward Others on the CARE Item Set, 64.7 percent did not have these behaviors reported on the MDS 2.0.

Mood

CARE Item: Little Interest or Pleasure in Doing Things (F2b) vs. MDS 2.0 Items: Withdrawal from Activities of Interest (E1o) and Reduced Social Interaction (E1p)

The *Mood* section of the CARE Item Set asks the patient how often during the past 2 weeks they have been bothered by Little Interest or Pleasure in Doing Things during the 2-day admission assessment window. The MDS 2.0 assesses the frequency of two analogous items in the last 30 days: Withdrawal from Activities of Interest and Reduced Social Interaction. The definitions from the CARE and MDS 2.0 are included below.

CARE Definition:

F2b. Little Interest or Pleasure in Doing Things? *If Yes, how many days in the last 2 weeks?*

MDS 2.0 Definitions:

E1o. Withdrawal from Activities of Interest: *e.g., no interest in long-standing activities or being with family/friends*

E1p. Reduced Social Interaction: *e.g., less talkative, more isolated*

Key Item Differences

- *Assessment Windows:* The assessment time frame for the CARE Item Set item is 2 calendar days (if admitted before 12 noon) or 3 calendar days (for patients admitted after 12 noon). In contrast, the MDS 2.0 assessment time frame is for the last 30 days.

- *Item Definitions:* The MDS 2.0 items are more specific than the CARE item, although they assess the same type of behavior. In addition, the CARE item is an interview question, while the MDS 2.0 items are assessed by clinician observation.

- *Scales*: While both items assess the frequency of this behavior, the MDS 2.0 has a three-level scale that asks whether the behavior was not present at all, present up to 5 days a week, or present almost daily. The CARE Item Set has a screener question asking whether the behavior was present at all during the past 2 weeks, and if the answer is yes, there is a subsequent four-level scale question assessing the frequency during the past 2 weeks.

Implications

- The CARE and MDS 2.0 assessments may be different due to differences in the assessment windows.

- Due to the more specific nature of the MDS 2.0 items, the CARE item may indicate that a patient has little interest or pleasure in doing things when the corresponding MDS 2.0 items are not selected.

- If the patient is able to reflect upon and disclose the answers for this item, the CARE Item Set's self-report questions may be more accurate than the MDS 2.0's clinician observations of the patient (i.e., for the CARE items the patient may be able to reflect upon their usual mood in the last 2 weeks, whereas the MDS 2.0 limits the span of time that the patient's mood is observed by the clinician for the last 30 days).

The overall frequencies for these items are shown in Tables 14-24a and 14-24b, followed by the cross-tabulation of the items in Table 14-24c.

Table 14-24a
CARE *admission* little interest or pleasure in doing things

CARE: Little interest or pleasure	Frequency	Percent
Missing	553	13.9
0 = Never little interest doing things	2,690	67.6
1 = Yes generally, and 0-1 days in last 2 wks	38	1.0
2 = Yes generally, and 2-6 days in last 2 wks	398	10.0
3 = Yes generally, and 7-11 days in last 2 wks	145	3.7
4 = Yes generally, and 12-14 days in last 2 wks	153	3.9

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-24b(1)
MDS 2.0 *admission* withdrawal from activities of interest during 7-day assessment period

MDS: Withdrawn	Frequency	Percent
Missing	17	0.4
0 = Not indicated in last 30 days	3,898	98.0
1 = Indicator exhibited up to 5 days/week	52	1.3
2 = Indicator exhibited daily or almost daily	+	+

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-24b(2)
MDS 2.0 *admission* reduced social interaction during 7-day assessment period

MDS: Reduced interaction	Frequency	Percent
Missing	17	0.4
0 = Not indicated in last 30 days	3,853	96.9
1 = Indicator exhibited up to 5 days/week	91	2.3
2 = Indicator exhibited daily or almost daily	16	0.4

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-24c(1)
CARE *admission* little interest or pleasure in doing things by MDS 2.0 *admission* withdrawal from activities items

CARE: little interest or pleasure	Missing	Not present	1 = Up to 5 days	2 = Daily	Total
Missing	0.4	97.5	1.6	+	553
0 = Never little interest doing things	0.5	98.4*	1	+	2,690
1 = Yes generally, and 0-1 days in last 2 wks	+	97.4	+	+	38
2 = Yes generally, and 2-6 days in last 2 wks	+	97.7	+	+	398
3 = Yes generally, and 7-11 days in last 2 wks	+	94.5	+	+	145
4 = Yes generally, and 12-14 days in last 2 wks	+	96.7	+	+	153
Total	17	3,898	52	+	3,977

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-24c(2)
CARE *admission* little interest or pleasure in doing things by MDS 2.0 *admission* reduced social interaction items

CARE: Little interest or pleasure	Missing	Not present	1 = Up to 5 days	2 = Daily	Total
Missing	0.4	94.8	3.8	1.1	553
0 = Never little interest doing things	0.5	97.6*	1.7	+	2,690
1 = Yes generally, and 0-1 days in last 2 wks	+	97.4	+	+	38
2 = Yes generally, and 2-6 days in last 2 wks	+	97.2	+	+	398
3 = Yes generally, and 7-11 days in last 2 wks	+	94.5	+	+	145
4 = Yes generally, and 12-14 days in last 2 wks	+	92.8	+	+	153
Total	17	3,853	91	16	3,977

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Summary Results

- Among patients who were reported as not having Little Interest or Pleasure Doing Things on the CARE Item Set, 98.4 percent also did not report Withdrawal from Activities on the MDS 2.0 and 97.6 percent did not report Reduced Social Interaction on the MDS 2.0.

Notably, among the patients who did have some frequency of Little Interest or Pleasure Doing Things on the CARE Item Set, the vast majority (ranging from 92 percent to 97 percent) did not report Withdrawal from Activities or Reduced Social Interaction on the MDS 2.0. This discrepancy might be due to the more specific MDS 2.0 item definitions.

CARE Item: Down, Depressed, or Hopeless (F2d) vs. MDS 2.0 Items: Patient Made Negative Statements (E1a), Self-Deprecation (E1e) and Crying or Tearfulness (E1m)

The *Mood* section of the CARE Item Set asks the patient how often during the past 2 weeks they have been bothered by Feeling Down, Depressed, or Hopeless during the 2-day admission assessment window. The MDS 2.0 assesses the frequency of three analogous items in the last 30 days: Patient Made Negative Statements, Self-Deprecation, and Crying or Tearfulness. The definitions from the CARE and MDS 2.0 are included below.

CARE Definition:

F2d. Feeling Down, Depressed, or Hopeless? *If Yes, how many days in the last 2 weeks?*

MDS 2.0 Definitions:

E1a. Resident Made Negative Statements: *e.g., "Nothing matters; would rather be dead; what's the use; regrets having lived so long; let me die."*

E1e. Self-Deprecation: *e.g., "I am nothing; I am of no use to anyone."*

E1m. Crying or Tearfulness

<u>*Key Item Differences*</u>

- *Assessment Windows:* The assessment time frame for the CARE Item Set item is 2 calendar days (if admitted before 12 noon) or 3 calendar days (for patients admitted after 12 noon). In contrast, the MDS 2.0 assessment time frame is 7 calendar days.

- *Item Definitions:* The MDS 2.0 items are more specific than the CARE item, although they assess the same type of behavior. In addition, the CARE item is an interview question, while the MDS 2.0 items are assessed by clinician observation.

- *Scales*: While both items assess the frequency of this behavior, the MDS 2.0 has a three-level scale that asks whether the behavior was not present at all, present up to 5 days a week, or present almost daily. The CARE Item Set has a screener question asking whether the behavior was present at all during the past 2 weeks, and if the answer is yes, there is a subsequent four-level scale question assessing the frequency during the past 2 weeks.

<u>*Implications*</u>

- The CARE and MDS 2.0 assessments may be different due to differences in the assessment windows.

- Due to the more specific nature of the MDS 2.0 items, the CARE item may indicate that a patient is down, depressed, or hopeless when the corresponding MDS 2.0 item does not indicate a positive response.

The overall frequencies for these items are shown in Tables 14-25a and 14-25b, followed by the cross-tabulation of the items in Table 14-25c.

Table 14-25a
CARE *admission* down, depressed, or hopeless

CARE: Down, depressed, or hopeless	Frequency	Percent
Missing	549	13.8
0 = Never down, depressed, or hopeless	2,402	60.4
1 = Yes generally, and 0-1 days in last 2 wks	57	1.4
2 = Yes generally, and 2-6 days in last 2 wks	667	16.8
3 = Yes generally, and 7-11 days in last 2 wks	157	4.0
4 = Yes generally, and 12-14 days in last 2 wks	145	3.7

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-25b(1)
MDS 2.0 *admission* patient made negative statements during 7-day assessment period

MDS: Negative statements	Frequency	Percent
Missing	17	0.4
0 = Not indicated in last 30 days	3,897	98.0
1 = Indicator exhibited up to 5 days/week	62	1.6
2 = Indicator exhibited daily or almost daily	+	+

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-25b(2)
MDS 2.0 *admission* self-deprecation during 7-day assessment period

MDS: Self-deprecation	Frequency	Percent
Missing	17	0.4
0 = Not indicated in last 30 days	3,942	99.1
1 = Indicator exhibited up to 5 days/week	17	0.4
2 = Indicator exhibited daily or almost daily	+	+

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-25b(3)
MDS 2.0 *admission* crying or tearfulness during 7-day assessment period

MDS: Crying	Frequency	Percent
Missing	17	0.4
0 = Not indicated in last 30 days	3,811	95.8
1 = Indicator exhibited up to 5 days/week	145	3.7
2 = Indicator exhibited daily or almost daily	+	+

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-25c(1)
CARE *admission* down, depressed, or hopeless by MDS 2.0 *admission* patient made negative statements items

CARE: Depressed	Missing	Not indicated	Up to 5 days/wk	Daily/ almost daily	Total
Missing	+	97.6	+	+	549
0 = Never down, depressed, or hopeless	0.5	98.7*	0.9	+	2,402
1 = Yes generally, and 0-1 days in last 2 wks	+	94.7	+	+	57
2 = Yes generally, and 2-6 days in last 2 wks	+	97.5	2.2*	+	667
3 = Yes generally, and 7-11 days in last 2 wks	+	98.1	+	+	157
4 = Yes generally, and 12-14 days in last 2 wks	+	91.7	+	+	145
Total	17	3,897	62	+	3,977

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-25c(2)
CARE *admission* down, depressed, or hopeless by MDS 2.0 *admission* self-deprecation item

CARE: Depressed	Missing	Not indicated	Up to 5 days/wk	Daily/ almost daily	Total
Missing	0.4	98.9	0.5	+	549
0 = Never down, depressed, or hopeless	0.5	99.3*	+	+	2,402
1 = Yes generally, and 0-1 days in last 2 wks	+	98.2	+	+	57
2 = Yes generally, and 2-6 days in last 2 wks	+	99	+	+	667
3 = Yes generally, and 7-11 days in last 2 wks	+	100	+	+	157
4 = Yes generally, and 12-14 days in last 2 wks	+	96.6	+	+	145
Total	17	3,942	17	+	3,977

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-25c(3)
CARE *admission* down, depressed, or hopeless by MDS 2.0 *admission* crying or tearfulness items

CARE: Depressed	Missing	Not indicated	Up to 5 days/wk	Daily/ almost daily	Total
Missing	+	95.1	4.2	+	549
0 = Never down, depressed, or hopeless	0.5	97.0*	2.5	+	2,402
1 = Yes generally, and 0-1 days in last 2 wks	+	98.2	+	+	57
2 = Yes generally, and 2-6 days in last 2 wks	+	94.0	5.5*	+	667
3 = Yes generally, and 7-11 days in last 2 wks	+	94.9	+	+	157
4 = Yes generally, and 12-14 days in last 2 wks	+	86.9	11.7*	+	145
Total	17	3,811	145	+	3,977

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Summary Results

- Among patients who were reported as not being Down, Depressed, or Hopeless on the CARE Item Set, 98.7 percent also did not report Negative Statements,

99.3 percent did not report Self-Deprecation, and 97.0 percent did not report Crying or Tearfulness on the MDS 2.0.

- Notably, among the patients who did have some frequency of being Down, Depressed, or Hopeless on the CARE Item Set, the vast majority (ranging from 87 percent to 100 percent) did not report Negative Statements, Self-Deprecation, or Crying or Tearfulness on the MDS 2.0. This discrepancy might be due to the more specific MDS 2.0 item definitions or differences in how these behaviors are assessed.

C. Impairments

Hearing, Vision, and Communication

CARE Item: Expression of Ideas and Wants (C1b) vs. MDS 2.0 Item: Making Self Understood (C4)

The *Hearing, Vision, and Communication* section of the CARE Item Set assesses the patient's usual ability with Expression of Ideas and Wants, during the 2-day admission assessment window. The MDS 2.0 similarly indicates a patient's ability to make them understood during the last 7 days. The definitions from the CARE and MDS 2.0 are included below.

CARE Definition:

C1b. Expression of Ideas and Wants: *The ability to express complex messages, needs, and ideas in clear speech.*

MDS 2.0 Definition:

C4. Making Self Understood: *To document the resident's ability to express or communicate requests, needs, opinions, urgent problems, and social conversation, whether in speech, writing, sign language, or combinations of these.*

Key Item Differences

- *Assessment Windows:* The assessment time frame for the CARE Item Set item is 2 calendar days (if admitted before 12 noon) or 3 calendar days (for patients admitted after 12 noon). In contrast, the MDS 2.0 assessment time frame is 7 calendar days.

- *Item Definitions:* The CARE and MDS 2.0 items are very similar, although the MDS 2.0 item includes writing and sign language as means of communicating, whereas the CARE Item Set does not.

- *Scales*: The CARE item scale has four levels, ranging from expresses self without difficulty (4) to rarely/never able to express (1). The MDS 2.0 scale also has four levels, but higher scores indicate more dependence, and ranges from understood (0) to rarely/never understood (3).

Implications

- The CARE and MDS 2.0 assessment data may be different due to differences in the assessment windows.

The overall frequencies for these items are shown in Tables 14-26a and 14-26b, followed by the cross-tabulation of the items in Table 14-26c.

Table 14-26a
CARE *admission* expression of ideas and wants

CARE: Expression of ideas and wants	Frequency	Percent
Missing	+	+
1 = Rarely/never expresses self	77	1.9
2 = Frequent difficulty in self-expression	265	6.7
3 = Some difficulty in self-expression	583	14.7
4 = No difficulty in self-expression	3,015	75.8
8 = Unable to assess	29	0.7
9 = Unknown	+	+

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-26b
MDS 2.0 *admission* making self understood during 7-day assessment period

MDS: Makes self understood	Frequency	Percent
Missing	13	0.3
0 = Understood	3,262	82.0
1 = Usually understood	397	10.0
2 = Sometimes understood	236	5.9
3 = Rarely/never understood	69	1.7

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-26c
CARE by MDS 2.0 self-expression/making self understood items

CARE: Expression of ideas and wants	Missing	0 = Under-stood	1 = Usually	2 = Some-times	3 = Rarely/ never	Total
Missing	+	+	+	+	+	+
1 = Rarely/never expresses self	+	+	+	41.6	40.3*	77
2 = Frequent difficulty in self expression	+	27.9	32.8	34*	4.9	265
3 = Some difficulty in self expression	+	58.7	28*	12.2	+	583
4 = No difficulty in self expression	0.4	94*	4.5	1	+	3,015
8 = Unable to assess	+	+	+	41.4	48.3	29
9 = Unknown	+	+	+	+	+	+
Total	13	3,262	397	236	69	3,977

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Summary Results

- As indicated by cells marked with an asterisk in Table 14-26c, there is a high degree of agreement between the CARE and MDS 2.0 items at the level of No Difficulty of Self-Expression and Making Self Understood.

- Among those with no difficulty in self-expression reported in CARE, 94.0 percent also indicated in MDS 2.0 that they were understood.

- Among those who were reported as having some difficulty in self-expression on the CARE Item Set, 58.7 percent were coded as being understood on MDS 2.0. Among those who were reported as rarely/never expressing on the CARE Item Set, approximately 42 percent were rarely/never understood on the MDS 2.0 and another 40 percent were sometimes understood on the MDS 2.0. These discrepancies may be due to the longer MDS 2.0 assessment period. The CARE Item would have assessed the patient at a higher acuity level, right after admission.

D. Functional Status: Usual Performance

1. The functional status section of the CARE Item Set is comprised of three major sections: Core Self Care (Section A); Core Functional Mobility (Section B); and Supplemental Functional Ability (Section C). The results below are organized by these three CARE sections. While, in general, the functional items on the CARE Item Set and the MDS 2.0 have some similarities, there are several key ways that the functional items differ. There are differences in the CARE and MDS 2.0 functional assessment time frames: CARE uses 2 calendar days (if admitted before 12 noon) or 3

calendar days (for patients admitted after 12 noon). The MDS 2.0 uses a 7-day look-back period.

2. The functional rating scales differ between the two assessment instruments:

   a) The direction of the rating scale is different (e.g., MDS 2.0 rates independent as zero and higher scores indicate more dependence; CARE rates independent as six, and lower scores indicate more dependence).

      i. the number of levels within each rating scale; and

      ii. MDS 2.0 has two rating scales (ADL Support Provided and ADL Self-Performance) and the CARE Item Set has one rating scale.

   b) The CARE rating scale assesses the patient's usual performance while MDS 2.0 ADL Support Provided rating scale assesses the patient's worst performance and the ADL Self-Performance assesses the patient's usual performance. Similarities and differences between the CARE Item Set functional rating scale and the MDS 2.0 functional rating scales are discussed in detail below.

Functional Status Rating Scales

- One CARE functional rating scale versus two MDS 2.0 functional rating scales:
  - The CARE Functional Status rating scale (six-item rating scale)
    - The MDS 2.0 uses two rating scales to assess functional status:
      - ADL Self-Performance (five-level rating scale) PLUS
      - ADL Support Provided (four-level rating scale)
  - In order to map functional item scores between these two assessments, the data are moderated by the MDS 2.0 ADL Support Provided rating scale's level, prior to comparing individual assessment item data. This is shown in more detail in Table 14-27 below.
  - **CARE functional status rating scale vs. MDS 2.0 ADL Self-Performance scale**: The CARE functional rating scale has six levels, ranging from one through six, while the MDS 2.0 ADL Self-Performance scale includes five levels, ranging from zero to four.
    - The CARE rating scale is an independence scale and the MDS 2.0 rating scales are dependence scales. Therefore, the scoring scales are reversed, and a patient who is independent is scored as a six on the CARE rating scale; whereas the same patient is scored as a zero on the MDS 2.0 instrument.
    - Both the CARE and the MDS 2.0 ADL Self-Performance scales assess for usual performance. However, the MDS 2.0 captures *frequency* of performance within the functional rating scale category. For example, the

MDS 2.0 supervision level definition includes that the supervision occurred three or more times during the last 7 days, whereas CARE Item Set assesses based on whether the supervision required was the patient's usual performance.

- Scale-level definitions differ between the two instruments. Specifically, the CARE rating scale discriminates between a level 3–Partial/Moderate Assistance) and a level 2–Substantial/Maximal Assistance) by assessing whether the helper did *more than half the effort.* On the MDS 2.0, the level of assistance between level 2–Limited Assistance and level 3–Extensive Assistance is determined by assessing (1) whether the helper provided non-weight-bearing support or weight-bearing support, (2) if full staff support was needed, and (3) the number of times assistance was needed during the assessment period.

CARE Functional Status Rating Scale vs. MDS 2.0 ADL Support Provided Scale

- As previously stated, the CARE Functional Status rating scale contains a 6-level rating scale ranging from six through zero and includes assistance provided to perform the activity.
- The MDS 2.0 uses two rating scales to assess functional status: ADL Self-Performance (five-level rating scale) *plus* ADL Support Provided (four-level rating scale).
  - The MDS 2.0 ADL Support Provided rating scale is a four-level scale ranging from zero (no support) to three (two+ person physical assist).
  - 0 – No Setup or Physical Help
  - 1 – Setup Help Only
  - 2 – One Person Physical Assist
  - 3 – Two+ Person Physical Assist
  - 8 – Activity did not occur
- Here again, the scale order between the CARE rating scale and the MDS 2.0 is reversed. For example, the CARE rating scale assesses a patient who is independent in his/her performance on a task as patient code six; the MDS 2.0 ADL Support Provided scale assesses this same patient using the code zero.
- The CARE item scores reflect the patient's usual performance, whereas the MDS 2.0 ADL Support Provided scale assesses the highest level of support provided *or,* stated differently, the patient's worst performance over the last 7 days.

- Mapping items between the CARE rating scale and MDS 2.0 is best accomplished through noting differences between the instruments, while accounting for differences as each activity and rating scale data are presented.

  For example, the CARE functional item scale level 5 (i.e., setup or clean-up assistance) maps relatively closely to the MDS 2.0 ADL Support Provided item scale level 1 (i.e., setup help only). However, clear mapping of the remaining item scale levels are more ambiguous: level 2 (indicating one person is needed for physical assistance) or level 3 (indicating two or more persons provide physical assistance).

Differences between the instruments (e.g., the assessment time frame window and the rating scales) are important considerations in interpreting the mapping results. A close mapping is possible if differences between the instruments are accounted for as each item rating scale level is mapped. Toward this end, the expected overlap between the two instruments' functional item categories is marked with an asterisk in the table results presented below.

Mapping or Comparing the Instruments' Rating Scales

As previously noted, the Physical Functioning (MDS 2.0) and Functional Status (CARE) use different rating scales to assess each instrument's ADLs (e.g., toileting). These rating scales are used in the data analyses to compare the MDS 2.0's *two* rating scales with the *single* CARE Item Set's rating scale and present a very complex set of challenges when presenting each instruments "activities" (e.g., toileting, eating) for comparison. To address this challenge, the reader will note that many cross-tabulation tables compare data for specific MDS 2.0 and CARE activities (e.g., toileting) while "controlling for" (holding constant) the MDS 2.0's rating scale called "ADL Support Provided." Each of tables that control for ADL Support Provided will specify which of the four levels from this MDS 2.0 rating scale is being held constant for the data analysis. Within the table titles, the "activity" is followed by the ADL Support Provided level of the group of assessments that will be mapped using the CARE rating scale vs. the MDS 2.0 Self-Performance rating scale.

For example, Table 14-28d(2) is titled "Controlling for MDS 2.0 eating ADL support provided = 1 (setup only): CARE eating by MDS 2.0 eating ADL self-performance." This table compares the activity of eating and looks only at patients who were reported as needing 1–Setup Only according to the MDS 2.0 rating scale definition for ADL Support Provided. Next, these patients' assessments were compared to the single CARE rating scale and the MDS 2.0 rating scale of ADL Self-Performance. When these two scales were compared, a percentage of agreement is marked on the table. This method of analysis (mapping or cross-tabulation) allowed the MDS 2.0's rating scale ADL Self-Performance to be compared with the CARE's single rating scale while still accounting for the MDS 2.0's second rating scale called "ADL Support Provided." The CARE rating scale addresses the patient's self-performance and support provided within its single rating scale.

Table 14-27 is the first-level mapping between the CARE Item Set functional status rating scale levels and the MDS 2.0 ADL Self-Performance rating scale levels, controlling for MDS 2.0 ADL Support Provided rating scale levels. This table provides a visual of how the functional status rating scales are aligned between the two instruments. Cross-tabulation

functional rating scale results between the CARE rating scale and the MDS 2.0 are presented in the table row series 14-27-E(1) through 14-27-E(5). Here, the MDS 2.0 ADL support level is the "control" item used to maximize alignment between the two instruments. Expected areas of agreement in the tables are marked with an asterisk.

Table 14-27
CARE scale levels mapped to MDS 2.0 ADL self-performance scale levels, controlling for MDS 2.0 ADL support provided scale levels

Table series	MDS 2.0 ADL support provided level	Plus	CARE level	Equals	MDS 2.0 ADL self-performance level
#E(1)	0 – No setup or physical help	+	6 – Independent	=	0 – Independent
#E(2)	1 – Setup help only	+	5 – Setup or clean-up	=	0 – Independent
#E(2)	1 – Setup help only	+	5 – Setup or clean-up	=	1 – Supervision
#E(2)	1 – Setup help only	+	4 – Supervision/touching assistance	=	1 – Supervision
#E(3)	2 – One person physical assist	+	4 – Supervision/touching assistance	=	1 – Supervision
#E(3)	2 – One person physical assist	+	4 – Supervision/touching assistance OR 3 – Partial/moderate assistance	=	2 – Limited assistance
#E(3)	2 – One person physical assist	+	3 – Partial/moderate assistance OR 2 – Substantial/maximal assistance OR 1 – Dependent	=	3 – Extensive assistance
#E(3)	2 – One person physical assist	+	1 – Dependent	=	4 – Total dependence
#E(4)	3 – Two+ person physical assist	+	1 – Dependent	=	2 – Limited assistance OR 3 – Extensive assistance OR 4 – Total dependence
#E(5)	8 – Activity did not occur	+	Letter code – activity not attempted	=	8 – Activity did not occur

Below we recap the differences between the functional status rating scale definitions for each assessment instrument:

CARE Scale

Activities may be completed with or without assistive devices.

6. **Independent**. Patient completes the activity by him/herself with no assistance from a helper.

5. **Setup or clean-up assistance**. Helper SETS UP or CLEANS UP; patient completes activity. Helper assists only prior to or following the activity.

4. **Supervision or touching assistance**. Helper provides VERBAL CUES or TOUCHING/STEADYING assistance as patient completes activity. Assistance may be provided throughout the activity or intermittently.

3. **Partial/moderate assistance**. Helper does LESS THAN HALF the effort. Helper lifts, holds, or supports trunk or limbs, but provides less than half the effort.

2. **Substantial/maximal assistance**. Helper does MORE THAN HALF the effort. Helper lifts or holds trunk or limbs and provides more than half the effort.

1. **Dependent**. Helper does ALL of the effort. Patient does none of the effort to complete the task.

If activity was not attempted code:

M. Not attempted due to **medical condition**

S. Not attempted due to **safety concerns**

A. Tasks **attempted** but not completed

N. **Not applicable**

P. **Patient refused**

MDS 2.0 ADL self-performance functional scale

0. **Independent**. No help or oversight—OR—Help/oversight provided only one or two times during last 7 days.

1. **Supervision**. Oversight, encouragement, or cueing provided three or more times during last 7 days—OR—Supervision (three or more times) plus physical assistance provided only one or two times during last 7 days.

2. **Limited assistance**. Resident highly involved in activity; received physical help in guided maneuvering of limbs or other nonweight bearing assistance three or more times—OR—More help provided only one or two times during last 7 days.

3. **Extensive assistance**. While resident performed part of activity, over last 7-day period, help of following type(s) provided three or more times:

   - Weight-bearing support

   - Full staff performance during part (but not all) of last 7 days

4. **Total dependence**. Full staff performance of activity during entire 7 days.

8. **Activity did not occur—**during entire 7 days.

MDS 2.0 ADL support provided functional scale

Rating is reported at the resident's most dependent level, even if the amount of assistance occurs only once during the last 7 days.

0. No setup or physical help from staff.

1. Setup help only.

2. One person physical assist.

3. Two+ person physical assist.

8. Activity did not occur—during entire 7 days.

Core Self Care – Usual Performance

CARE Item: Eating (A1) vs. MDS 2.0 ADL Self-Performance Item: Eating (G1Ah)

The *Functional Status* section of the CARE Item Set assesses a patient's usual performance regarding Eating during the 2-day admission assessment period. The MDS 2.0 also assesses Eating, but codes for the patient's self-performance over all shifts during the last 7 days. We compare this item between the two instruments by first reporting frequency statistics by CARE Item Set and MDS 2.0 ADL Self-Performance (Tables 14-28a and 14-28b), followed by a cross-tabulation of the two items, with respect to the MDS 2.0 ADL Support item (Table 14-28c). The definitions from the CARE and MDS 2.0 are also included below for easy reference.

CARE Definition:

A1. Eating: *The ability to use suitable utensils to bring food to the mouth and swallow food once the meal is presented on a table/tray. Includes modified food consistency.*

MDS 2.0 Definition:

G1(A)h. Eating: *How the resident eats and drinks, regardless of skill. Do not include eating/drinking during medication pass. Includes intake of nourishment by other means (e.g., tube feeding, total parenteral nutrition). Measures what the resident actually did (not what he or she might be capable of doing) within each ADL category over the last 7 days according to a performance-based scale. The intent is to record the resident's self-care performance in ADLs (i.e., what the resident actually did for himself or herself and/or how much verbal or physical help was required by staff members) during the last 7 days.*

Key Item Differences

- *Assessment Windows:* The assessment time frame for the CARE Item Set item is 2 calendar days (if admitted before 12 noon) or 3 calendar days (for patients admitted after 12 noon). In contrast, the MDS 2.0 assessment time frame is 7 calendar days.

- *Item Definitions:* The MDS 2.0 eating item includes intake of nourishment by tube feeding and total parenteral nutrition, whereas the CARE item does not. Tube feeding is assessed separately from eating in the CARE Item Set.

- *Scales*: As described previously, there are differences between the CARE and MDS 2.0 ADL Self-Performance rating scales in terms of (1) direction, (2) number of categories, and (3) MDS 2.0 using two rating scales to capture functional status while the CARE rating scale captures both the self-performance and assistance provided in one rating scale.

Implications

- The CARE and MDS 2.0 item scores may differ slightly due to differences in the assessment time frame. For example, the function level on the MDS 2.0 may be higher than that reported on the CARE, because the MDS 2.0 assessment captures activity within the last 7 days, allowing for improvement beyond the 2-day assessment period in the CARE Item Set.

- Additionally, the definition differences may result in item categories between the CARE and MDS 2.0 assessments not cleanly mapping. For example, a patient who is independent on tube feeding management but is eating with setup assistance may be coded as more dependent on the MDS 2.0 because the MDS 2.0 item includes tube feeding while the CARE Item Set does not.

Item frequencies by instrument are shown in Tables 14-28a and 14-28b, followed by the cross-tabulation of the CARE and MDS 2.0 ADL Self-Performance items in Table 14-28c. Tables 14-28d(1) through 14-28d(5) show the cross-tabulation of the CARE and MDS 2.0 ADL Self-Performance items, controlling for different levels of MDS 2.0 ADL Support Provided.

Table 14-28a
CARE *admission* eating

CARE: Eating	Frequency	Percent
Missing	+	+
1 = Dependent	122	3.1
2 = Substantial/maximal assistance	136	3.4
3 = Partial/moderate assistance	223	5.6
4 = Supervision or touching assistance	336	8.5
5 = Setup or clean-up assistance	1,732	43.6
6 = Independent	1,325	33.3
A = Task attempted but not completed	+	+
M = Not attempted due to medical restrictions	20	0.5
N = Not applicable	63	1.6
P = Patient refused	+	+
S = Not attempted due to safety concerns	11	0.3

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-28b
MDS 2.0 *admission* eating ADL self-performance *7-day* assessment period

MDS: Eating self-performance	Frequency	Percent
0 = Independent	2,361	59.4
1 = Supervision	809	20.3
2 = Limited assistance	331	8.3
3 = Extensive assistance	280	7.0
4 = Total dependence	191	4.8
8 = Activity did not occur	+	+

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-28c
CARE *admission* eating by MDS 2.0 *admission* eating self-performance

CARE: Eating	0 = Independent	1 = Supervision	2 = Limited assistance	3 = Extensive assistance	4 = Total dependence	8 = Activity did not occur	Total
Missing	+	+	+	+	+	+	+
1 = Dependent	+	+	+	28.7	52.5*	+	122
2 = Substantial assist.	10.3	12.5	11	46.3*	19.9	+	136
3 = Partial assist.	22.9	22	23.3*	26	5.8	+	223
4 = Supervision	33.3	36*	14.3	11.6	4.8	+	336
5 = Setup assist.	67.4*	21.6	7.8	2.8	+	+	1,732
6 = Independent	74.7*	17.8	5.3	1.7	+	+	1,325
L = Letter code	14	+	+	14	57	+	100
Total	2,361	809	331	280	191	+	3,977

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-28d(1)
Controlling for MDS 2.0 eating ADL support provided = 0 (no setup or physical help): CARE eating by MDS 2.0 eating ADL self-performance

CARE: Eating	0 = Independent	1 = Supervision	2 = Limited assistance	3 = Extensive assistance	4 = Total dependence	8 = Activity did not occur	Total
Missing	+	+	+	+	+	+	+
1 = Dependent	+	+	+	+	+	+	+
2 = Substantial assist.	+	+	+	+	+	+	+
3 = Partial assist.	+	+	+	+	+	+	+
4 = Supervision	+	+	+	+	+	+	13
5 = Setup assist.	85.9	+	+	+	+	+	64
6 = Independent	89.8*	10.2	—	—	—	—	127
Total	187	27	—	—	—	—	214

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009

Table 14-28d(2)
Controlling for MDS 2.0 eating ADL support provided = 1 (setup only): CARE eating by MDS 2.0 eating ADL self-performance

Eating	0 = Independent	1 = Supervision	2 = Limited assistance	3 = Extensive assistance	4 = Total dependence	8 = Activity did not occur	Total
Missing	+	+	+	+	+	+	+
1 = Dependent	+	+	+	+	+	+	12
2 = Substantial assist.	+	58.3	+	+	+	+	24
3 = Partial assist.	54.7	45.3	—	—	—	—	86
4 = Supervision	48.7	50.8*	+	+	+	+	187
5 = Setup assist.	76.8*	22.8*	+	+	+	+	1,408
6 = Independent	79.9	19.4	+	+	+	+	1,059
L = Letter code	76.5	+	+	+	+	+	17
Total	2,098	683	11	+	+	+	2,795

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-28d(3)
Controlling for MDS 2.0 eating ADL support provided = 2 (one person physical assist): CARE eating by MDS 2.0 eating ADL self-performance

CARE: Eating	0 = Independent	1 = Supervision	2 = Limited assistance	3 = Extensive assistance	4 = Total dependence	8 = Activity did not occur	Total
1 = Dependent	+	+	+	33.3*	61*	+	105
2 = Substantial assist.	+	+	13.9	56.5*	24.1	+	108
3 = Partial assist.	+	+	38.6*	43.2*	+	+	132
4 = Supervision	+	17.2*	35.8*	28.4	11.2	+	134
5 = Setup assist.	11.5	16.9	50.4	18.1	+	+	260
6 = Independent	21.7	13	45.7	15.2	+	+	138
L = Letter code	+	+	+	17.9	73.1	+	78
Total	75	99	319	273	189	—	955

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

The cross-tabulation results above indicate a relatively good agreement between the items when the two assessment instruments are compared. More than half of the assessment pairs are in alignment when the CARE Item Set Setup and Assist category or Independent is included with the MDS 2.0 Independent category (as there is no other logical mapping).

The following tables illustrate the closest mapping of the functional item scale between CARE and MDS 2.0. The mapping incorporates the two MDS 2.0 functional items (i.e., Self-Performance and Support) matching them to the one CARE functional scale (i.e., controlling for the MDS 2.0 Support scale in a cross-tabular presentation). The cells marked with an asterisk indicate expected areas of functional item/scale agreement between the matched CARE–MDS 2.0 assessments.

Summary Results

- Cell sizes for ADL Support Provided = 3 (two+ person physical assist) and ADL Support Provided = 8 (activity did not occur) were all smaller than 11, so results are not reported here.

- An examination of Tables 14-28d(1-5) illustrates that approximately 50 percent to 99 percent of the paired CARE–MDS 2.0 assessments map as expected in terms of the functional item scale categories when the MDS 2.0 ADL Support item is considered. The highest percent agreement (approximately 99 percent) occurs when the independent level is considered, mapping the independent and setup/clean-up categories in CARE to the independent category in MDS 2.0 (see Table 14-28d(2)).

- As we move through the tables, lower agreement percentages are observed. For example, the lowest percent agreement (approximately 51 percent of 187 paired assessments) is observed when the supervision category is considered (see Table 14-28d(2)). However, the best mapping is understood if the CARE functional item category is observed over multiple tables. For example, the best mapping of the "supervision" functional category between the two instruments not only accounts for the 51 percent in Table 14-28d(2) (controlling for MDS 2.0 Setup help support) but also includes the supervision matches controlling for MDS 2.0 one person assistance support (Table 14-28d(3); 17 percent of 134 paired assessments). This consideration to mapping functional item levels across tables (i.e., while controlling for MDS 2.0 ADL Support) strengthens the already robust functional item category match between instruments.

- While there are a number of paired assessments where the functional item scale does not align (e.g., CARE reports 1, dependent; MDS 2.0 reports 0, independent; see Table 14-28d(2)) it is usually the case that the number of paired assessments in these instances is small (e.g., 66 percent of 12 paired assessments; Table 14-28d(2)).

- Further investigation is warranted regarding investigating those paired assessments demonstrating agreement in unexpected cells (e.g., CARE functional items coded as partial assistance, substantial assistance and dependence matched to MDS 2.0 ADL independent with ADL setup support; see Table 14-28d(2)). However, again it is

noted that the number of cases is small (less than 70 out of 2,795 paired assessments in this example).

CARE Item: Tube Feeding (A2) vs. MDS 2.0 ADL Self-Performance Item: Eating (G1Ah)

The *Functional Status* section of the CARE Item Set assesses a patient's most usual performance with Tube Feeding during the 2-day admission assessment window. The MDS 2.0 also assesses Tube Feeding as part of the Eating item, but codes for the patient's self-performance over all shifts during the last 7 days. This comparison first reports basic statistics on the CARE and MDS 2.0 ADL Self-Performance items, followed by a cross-tabulation of these two variables, modified by the MDS 2.0 ADL Support item. The definitions from the CARE and MDS 2.0 are included below.

CARE Definition:

A2. Tube Feeding: *The ability to manage all equipment/supplies related to obtaining nutrition.*

MDS 2.0 Definition:

G1(A)h. Eating: *How resident eats and drinks (regardless of skill). Includes intake of nourishment by other means (e.g., tube feeding, total parenteral nutrition).*

<u>*Key Item Differences*</u>

- *Assessment Windows:* The assessment time frame for the CARE Item Set item is 2 calendar days (if admitted before 12 noon) or 3 calendar days (for patients admitted after 12 noon). In contrast, the MDS 2.0 assessment time frame is 7 calendar days.

- *Item Definitions:* The MDS 2.0 item includes both tube feeding and regular eating function, whereas the CARE item focuses strictly on tube feeding. In the CARE Item Set, tube feeding is assessed separately from eating.

- *Scales*: As discussed previously, there are significant differences between the single CARE and the two MDS 2.0 rating scales.

<u>*Implications*</u>

- The CARE and MDS 2.0 assessment data may be different due to differences in the assessment time frame windows. The function level on the MDS 2.0 may be higher than that reported on the CARE because the MDS 2.0 assessment may be occurring up to 7 days later than the CARE assessment.

- Additionally, the differing definitions may also generate score differences. For example, a patient who manages tube feeding, but cannot eat may be scored as more dependent on the MDS 2.0 because that item includes eating while the CARE does not.

The overall frequencies for these items are shown in Tables 14-29a and 14-29b, followed by the cross-tabulation of the CARE and MDS 2.0 ADL Self-Performance items in

Table 14-29c. Tables 14-29d(1) through 14-29d(5) show the cross-tabulation of the CARE and MDS 2.0 ADL Self-Performance items, controlling for different levels of MDS 2.0 ADL Support Provided.

The cross-tabulation results above indicate a high degree of agreement between the two CARE and MDS 2.0 items for patients coded as dependent on the CARE Item Set. Among the CARE Dependent responses, 68.8 percent map to Total Dependence in the MDS 2.0. Due to the relatively small cell sizes at the other levels, it is not possible to truly judge agreement of responses.

Table 14-29a
CARE *admission* tube feeding

CARE: Tube feeding	Frequency	Percent
Missing	+	+
1 = Dependent	125	3.1
2 = Substantial/maximal assistance	+	+
3 = Partial/moderate assistance	+	+
4 = Supervision or touching assistance	+	+
5 = Setup or clean-up assistance	+	+
6 = Independent	+	+
A = Task attempted but not completed	15	0.4
M = Not attempted due to medical restrictions	+	+
N = Not applicable	3,800	95.6
P = Patient refused	+	+
S = Not attempted due to safety concerns	+	+

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-29b
MDS 2.0 *admission* eating ADL self-performance 7-day assessment period

MDS: Eating	Frequency	Percent
0 = Independent	2,361	59.4
1 = Supervision	809	20.3
2 = Limited assistance	331	8.3
3 = Extensive assistance	280	7.0
4 = Total dependence	191	4.8
8 = Activity did not occur	+	+

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009

Table 14-29c
CARE tube feeding by MDS 2.0 eating ADL self-performance

CARE: Eating	0 = Independent	1 = Supervision	2 = Limited assistance	3 = Extensive assistance	4 = Total dependence	8 = Activity did not occur	Total
Missing	+	+	+	+	+	+	+
1 = Dependent	+	+	+	16	68.8*	+	125
2 = Substantial assist.	+	+	+	+	+	+	+
3 = Partial assist.	+	+	+	+	+	+	+
4 = Supervision	+	+	+	+	+	+	+
5 = Setup assist.	+	+	+	+	+	+	+
6 = Independent	+	+	+	+	+	+	+
L = Letter code	61	21	8.5	6.6	2.7	+	3,826
Total	2,361	809	331	280	191	+	3,977

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Tables 14-29d(1-3) illustrate the closest mapping of the functional item scale between CARE and MDS 2.0. The mapping incorporates the two MDS 2.0 functional items (i.e., Self-Performance and Support) matching them to the one CARE functional item (i.e., controlling for the MDS 2.0 Support item in a cross-tabular presentation). The cells marked with an asterisk indicate expected areas of functional item/scale agreement between the matched CARE–MDS 2.0 assessments.

Table 14-29d(1)
Controlling for MDS 2.0 eating ADL support provided = 0 (no setup or physical help): CARE tube feeding by MDS 2.0 eating ADL self-performance

CARE: Eating	0 = Independent	1 = Supervision	2 = Limited assistance	3 = Extensive assistance	4 = Total dependence	8 = Activity did not occur	Total
Missing	+	+	+	+	+	+	+
L = Letter code	87.3	12.7	—	—	—	—	213
Total	187	27	—	—	—	—	214

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-29d(2)
Controlling for MDS 2.0 eating ADL support provided = 1 (setup help only): CARE tube feeding by MDS 2.0 eating ADL self-performance

CARE: Eating	0 = Independent	1 = Supervision	2 = Limited assistance	3 = Extensive assistance	4 = Total dependence	8 = Activity did not occur	Total
Missing	+	+	+	+	+	+	+
1 = Dependent	+	+	+	+	+	+	13
2 = Substantial assist.	+	+	+	+	+	+	+
3 = Partial assist.	+	+	+	+	+	+	+
5 = Setup assist.	+	+	+	+	+	+	+
6 = Independent	+	+	+	+	+	+	+
L = Letter code	75	24.5	0.4	+	+	—	2,764
Total	2,098	683	11	+	+	—	2,795

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-29d(3)
Controlling for MDS 2.0 eating ADL support provided = 2 (one person physical assist): CARE tube feeding by MDS 2.0 eating ADL self-performance

CARE: Eating	0 = Independent	1 = Supervision	2 = Limited assistance	3 = Extensive assistance	4 = Total dependence	8 = Activity did not occur	Total
1 = Dependent	+	+	+	18*	76.6*	+	111
2 = Substantial assist.	+	+	+	+	+	+	+
3 = Partial assist.	+	+	+	+	+	+	+
4 = Supervision touching assist.	+	+	+	+	+	+	+
5 = Setup assist.	+	+	+	+	+	+	+
L = Letter code	8.7	11.8	37.5	29.6	12.3	—	837
Total	75	99	319	273	189	—	955

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Summary Results

- Cell sizes for ADL Support Provided = 3 (two+ person physical assist) and ADL Support Provided = 8 (activity did not occur) were all smaller than 11, so results are not reported here.

- Table 14-29d(3) demonstrates a relatively high amount of agreement between the CARE and MDS 2.0 items. Among the 111 patients who were evaluated as Dependent on the CARE Item Set and required a One Person Physical Assist on the MDS 2.0, the majority of responses were seen in the expected MDS 2.0 levels (76.6 percent in Total Dependence).

CARE Item: Toilet Hygiene (A4) vs. MDS 2.0 ADL Self-Performance Item: Toilet Use (G1Ai)

The *Functional Status* section of the CARE Item Set assesses a patient's most usual performance with Toilet Hygiene during the 2-day admission assessment window. The MDS 2.0 also assesses Toilet Hygiene as part of the Toilet Use item, but codes for the patient's self-performance over all shifts during the last 7 days. This comparison first reports basic statistics on the CARE and MDS 2.0 ADL Self-Performance items, followed by a cross-tabulation of these two variables, modified by the MDS 2.0 ADL Support item. The definitions from the CARE and MDS 2.0 are included below.

CARE Definition:

A4. Toilet Hygiene: *The ability to maintain perineal hygiene, adjust clothes before and after using toilet, commode, bedpan, or urinal. If managing ostomy, include wiping opening, but not managing equipment.*

MDS 2.0 Definition:

G1(A)i. Toilet Use: *How patient uses the toilet room (or commode, bedpan, urinal); transfer on/off toilet, cleanses, changes pad, manages ostomy or catheter, and adjusts clothes.*

<u>*Key Item Differences*</u>

- *Assessment Windows:* The assessment time frame for the CARE Item Set item is 2 calendar days (if admitted before 12 noon) or 3 calendar days (for patients admitted after 12 noon). In contrast, the MDS 2.0 assessment time frame is 7 calendar days.

- *Item Definitions:* The MDS 2.0 item includes both toilet hygiene and toilet transfer function, whereas the CARE item focuses strictly on toilet hygiene. In the CARE Item Set, toilet transfer is assessed separately from toilet hygiene.

- *Scales*: As discussed previously, there are significant differences between the single CARE and the two MDS 2.0 rating scales.

<u>*Implications*</u>

- The CARE and MDS 2.0 assessments may be different due to differences in the assessment windows. The function level on the MDS 2.0 may be higher than that reported on the CARE because the MDS 2.0 assessment may be occurring up to 7 days later than the CARE assessment.

- Additionally, the differing definitions may also generate item differences. For example, a patient who is able to manage toilet hygiene but not transferring may score lower on the MDS 2.0 because that item includes transfer abilities while the CARE does not.

The overall frequencies for these items are shown in Tables 14-30a and 14-30b, followed by the cross-tabulation of the CARE and MDS 2.0 ADL Self-Performance items in Table 14-30c. Tables 14-30d(1-5) show the cross-tabulation of the CARE and MDS 2.0 ADL Self-Performance items, controlling for different levels of MDS 2.0 ADL Support Provided.

Table 14-30a
CARE *admission* toilet hygiene

CARE: Toilet hygiene	Frequency	Percent
Missing	+	+
1 = Dependent	472	11.9
2 = Substantial/maximal assistance	864	21.7
3 = Partial/moderate assistance	1,185	29.8
4 = Supervision or touching assistance	833	21.0
5 = Setup or clean-up assistance	364	9.2
6 = Independent	224	5.6
A = Task attempted but not completed	+	+
M = Not attempted due to medical restrictions	13	0.3
N = Not applicable	+	+
P = Patient refused	+	+
S = Not attempted due to safety concerns	+	+

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-30b
MDS 2.0 *admission* toilet use ADL self-performance 7-day assessment period

MDS: Toilet use	Frequency	Percent
0 = Independent	153	3.9
1 = Supervision	261	6.6
2 = Limited assistance	1,044	26.3
3 = Extensive assistance	2,137	53.7
4 = Total dependence	380	9.6
8 = Activity did not occur	+	+

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-30c
CARE toilet hygiene by MDS 2.0 toilet use ADL self-performance

CARE: Toilet hygiene	0 = Independent	1 = Supervision	2 = Limited assistance	3 = Extensive assistance	4 = Total dependence	8 = Activity did not occur	Total
Missing	+	+	+	+	+	+	+
1 = Dependent	+	+	3	51.5	44.9*	+	472
2 = Substantial assist.	+	1.3	12	74.3*	11.8	+	864
3 = Partial assist.	2.4	6.2	27.1*	60.4	3.9	+	1,185
4 = Supervision	4.6	10.6*	41.1	43.1	+	+	833
5 = Setup assist.	9.1	12.1	48.4	29.1	+	+	364
6 = Independent	21*	19.2	37.5	21.4	+	+	224
L = Letter code	+	+	+	65.6	+	+	32
Total	153	261	1,044	2,137	380	+	3,977

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

The cross-tabulation results above indicate a high degree of agreement between the two CARE and MDS 2.0 items. With respect to simple CARE–MDS 2.0 ADL Self-Performance cross-tabulation results, Table 14-30c shows strong agreement between CARE level 2 (Substantial Assistance) and MDS 2.0 level 3 (Extensive Assistance). Among the CARE Substantial Assistance responses, 74.3 percent map to Extensive Assistance in the MDS 2.0 and 12.0 percent map to Limited Assistance. Similarly, among the CARE Dependent responses in this table, 44.9 percent map to the Total Dependence level in the MDS 2.0. Agreement among the remaining levels does not exceed 30 percent, but this may be the result of differing item definitions or the MDS 2.0 Support Provided variable, which is not considered in Table 14-30c.

The following tables illustrate the closest mapping of the functional item scale between CARE and MDS 2.0. The mapping incorporates the two MDS 2.0 functional items (i.e., Self-Performance and Support), matching them to the one CARE functional item (i.e., controlling for the MDS 2.0 Support item in a cross-tabular presentation). The cells marked with an asterisk indicate expected areas of functional item/scale agreement between the matched CARE–MDS 2.0 assessments.

Table 14-30d(1)
Controlling for MDS 2.0 toilet hygiene ADL support provided = 0 (no setup or physical help): CARE toilet hygiene by MDS 2.0 toilet use ADL self-performance

CARE: Toilet hygiene	0 = Independent	1 = Supervision	2 = Limited assistance	3 = Extensive assistance	4 = Total dependence	8 = Activity did not occur	Total
1 = Dependent	+	+	+	+	+	+	+
2 = Substantial assist.	+	+	+	+	+	+	+
3 = Partial assist.	81.3	+	+	+	+	+	16
4 = Supervision touching assist.	68.2	+	+	+	+	+	22
5 = Setup assist.	78.3	+	+	+	+	+	23
6 = Independent	89.7*	+	+	+	+	+	29
Total	75	18	—	—	—	—	93

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-30d(2)
Controlling for MDS 2.0 toilet hygiene ADL support provided = 1 (setup help only): CARE toilet hygiene by MDS 2.0 toilet use ADL self-performance

CARE: Toilet hygiene	0 = Independent	1 = Supervision	2 = Limited assistance	3 = Extensive assistance	4 = Total dependence	8 = Activity did not occur	Total
Missing	+	+	+	+	+	+	+
2 = Substantial assist.	+	+	+	+	+	+	+
3 = Partial assist.	+	77.1	+	+	+	+	35
4 = Supervision touching assist.	25.8	71*	+	+	+	+	62
5 = Setup assist.	28.2*	71.8*	+	+	+	+	39
6 = Independent	43.8	56.3	+	+	+	+	32
Total	51	122	+	+	+	+	176

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-30d(3)
Controlling for MDS 2.0 toilet hygiene ADL support provided = 2 (one person physical assist): CARE toilet hygiene by MDS 2.0 toilet use ADL self-performance

CARE: Toilet hygiene	0 = Independent	1 = Supervision	2 = Limited assistance	3 = Extensive assistance	4 = Total dependence	8 = Activity did not occur	Total
Missing	+	+	+	+	+	+	+
1 = Dependent	—	—	5.6	38.4*	56*	+	250
2 = Substantial assist.	+	+	18.3	65.6*	14.8	+	520
3 = Partial assist.	+	5	35.9*	53.2*	5	+	873
4 = Supervision touching assist.	+	5.5*	49.1*	43.8	+	+	676
5 = Setup assist.	+	3.9	61.7	31.6	+	+	282
6 = Independent	+	14.1	53.8	26.3	+	+	156
L = Letter code	+	+	+	62.5	+	+	24
Total	27	121	1,014	1,344	277	+	2,783

*Expected areas of agreement are marked with an asterisk.
+ Cells based on a sample size of n < 11 are not shown.
SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-30d(4)
Controlling for MDS 2.0 toilet use ADL support provided = 3 (two+ person physical assist): CARE toilet hygiene by MDS 2.0 toilet use ADL self-performance

CARE: Toilet hygiene	0 = Independent	1 = Supervision	2 = Limited assistance	3 = Extensive assistance	4 = Total dependence	8 = Activity did not occur	Total
1 = Dependent	+	+	+	67.1*	32.9*	+	219
2 = Substantial assist.	+	+	+	89.9	7.5	+	335
3 = Partial assist.	+	+	+	96.6	+	+	261
4 = Supervision touching assist.	+	+	+	84.9	+	+	73
5 = Setup assist.	+	+	+	85	+	+	20
6 = Independent	+	+	+	+	+	+	+
L = Letter code	+	+	+	+	+	+	+
Total	+	+	28	792	103	+	923

*Expected areas of agreement are marked with an asterisk.
+ Cells with a value of n < 11 or an equivalent percentage are not shown.
SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Summary Results

- Cell sizes for ADL Support Provided = 3 (two+ person physical assist) and ADL Support Provided = 8 (activity did not occur) were all smaller than 11 so results are not reported here.

- Tables 14-30d(1-4) generally show a high amount of agreement between the CARE Toilet Hygiene item and MDS 2.0 Toilet Use ADL Self-Performance item when MDS 2.0 Support Level is controlled.

- In Table 14-30d(2), the majority of responses in the CARE Supervision or Setup categories fell into the expected MDS 2.0 Self-Performance levels when Setup Help Only is indicated in the MDS 2.0 Support level variable.

- For example, Table 14-30d(3) demonstrates a relatively high degree of agreement between the CARE and MDS 2.0 items. Among the 873 patients who were evaluated as needing Partial Assistance on the CARE Item Set and required a One Person Physical Assist on the MDS 2.0, the majority of responses were seen in the expected MDS 2.0 levels (35.9 percent in Limited Assistance and 53.2 percent in Extensive Assistance). Similarly, CARE response level 2 (Substantial Assistance) maps well to MDS 2.0 Self-Performance level 3 (Extensive Assistance), showing 65.6 percent agreement.

- Although clinicians were instructed that any patient who required a Two+ Person Physical Assist in the MDS 2.0 should be scored as Dependent in CARE regardless of MDS 2.0 Self-Performance level, Table 14-30d(4) indicates that this may not have occurred. Also, discrepancies showing more dependence on the MDS 2.0 might also be the result of differing assessment time frames and item definitions.

  – For example, an unexpectedly high number of patients received CARE rating scales: 3–Partial/Moderate Assistance and 2–Substantial/Maximal Assistance when receiving a MDS 2.0 Extensive Assistance rating. This may have been due to the MDS 2.0 rule for Self-Performance rating of Extensive Assistance and Limited Assistance. In this case, the patient may have required weight-bearing assistance more than three times during the task of toilet transfer within the MDS 2.0 item of "toilet use." Patients requiring weight-bearing support three times or more during the any of the tasks within the MDS 2.0 Toilet Use item would have received the Extensive Assistance rating; and any patient requiring guided maneuvering of limbs or other non-weight-bearing assistance three or more times or *one* or two times of weight-bearing assistance, would have been rated as requiring Limited Assistance. The CARE Toilet Hygiene item does not include assessing the patient's toilet transfer ability, while the MDS 2.0 item Toilet Use includes this task. Also, the MDS 2.0's 7-day assessment period would have increased the likelihood of the patient requiring weight-bearing assistance three or more times during the more dependent nighttime hours as compared to the less frequent need for assistance during the CARE assessment period. CARE assesses the usual performance of the patient and in this item toilet transfer would have been separate.

CARE Item: Lying to Sitting on Side of Bed (B1) vs. MDS 2.0 ADL Self-Performance Item: Bed Mobility (G1Aa)

The *Functional Status* section of the CARE Item Set assesses a patient's most usual performance with Lying to Sitting on Side of Bed during the 2-day admission assessment window. The MDS 2.0 also assesses how a patient moves to and from a lying position as part of the Bed Mobility item, but codes for the patient's self-performance over all shifts during the last 7 days. This comparison first reports basic statistics on the CARE and MDS 2.0 ADL Self-Performance items, followed by a cross-tabulation of these two variables, modified by the MDS 2.0 ADL Support item. The definitions from the CARE and MDS 2.0 are included below.

CARE Definition:

B1. Lying to Sitting on Side of Bed: *The ability to safely move from lying on the back to sitting on the side of the bed with feet flat on the floor, no back support.*

MDS 2.0 Definition:

G1(A)a. Bed Mobility: *How patient moves to and from lying position, turns side to side, and positions body while in bed.*

<u>*Key Item Differences*</u>

- *Assessment Windows:* The assessment time frame for the CARE Item Set item is 2 calendar days (if admitted before 12 noon) or 3 calendar days (for patients admitted after 12 noon). In contrast, the MDS 2.0 assessment time frame is 7 calendar days.

- *Item Definitions:* The MDS 2.0 item Bed Mobility includes three different activities (lying to sitting on the side of the bed, roll left to right, and sit to lying) that the CARE Item Set assesses individually.

- *Scales*: As discussed previously, there are significant differences between the CARE and MDS 2.0 ADL Self-Performance scales.

<u>*Implications*</u>

- The CARE and MDS 2.0 assessments may be different due to differences in the assessment look-back periods. The function level on the MDS 2.0 may be higher than that reported on the CARE because the MDS 2.0 assessment may be occurring up to 7 days later than the first day of the CARE assessment.

- Additionally, the differing definitions may also generate item level of difficulty differences. For example, a patient who is able to manage lying to sitting at the side of the bed without assistance, but requires hands-on assistance for the task of rolling from side to side (e.g., due to a lateral hip wound) may achieve a more dependent score on MDS 2.0 Bed Mobility. The MDS 2.0 would include all three activities (lying to sitting on the side of the bed, roll left to right, and sit to lying) when scoring the patient. This would result in a lower score on the MDS 2.0 Bed Mobility than on

the CARE single task of lying to sitting. Each of the three tasks that made up the MDS 2.0 activity are assessed and scored separately on the CARE Item Set. This example of item definition differences may also explain in general the cross-tabulation results for Table 14-31c. This would result in the patient being rated more dependent on the MDS 2.0 Bed Mobility item when compared to the CARE lying to sitting item that would be scored at a higher rating of independence. The overall frequencies for these items are shown in Tables 14-31a and 14-31b, followed by the cross-tabulation of the CARE and MDS 2.0 ADL Self-Performance items in Table 14-31c. Tables 14-31d(1-4) show the cross-tabulation of the CARE and MDS 2.0 ADL Self-Performance ratings, controlling for different levels of MDS 2.0 ADL Support Provided.

Table 14-31a
CARE *admission* lying to sitting on side of bed 2-day *admission* assessment period

CARE: Lie to sit	Frequency	Percent
Missing	+	+
1 = Dependent	224	5.6
2 = Substantial/maximal assistance	736	18.5
3 = Partial/moderate assistance	1,355	34.1
4 = Supervision or touching assistance	981	24.7
5 = Setup or clean-up assistance	213	5.4
6 = Independent	404	10.2
A = Task attempted but not completed	+	+
M = Not attempted due to medical restrictions	38	1.0
N = Not applicable	+	+
P = Patient refused	+	+
S = Not attempted due to safety concerns	+	+

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-31b
MDS 2.0 *admission* bed mobility ADL self-performance *7-day* assessment period

MDS: Bed mobility	Frequency	Percent
Missing	+	+
0 = Independent	335	8.4
1 = Supervision	254	6.4
2 = Limited assistance	966	24.3
3 = Extensive assistance	2,230	56.1
4 = Total dependence	191	4.8

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-31c
CARE lying to sitting by MDS 2.0 bed mobility ADL self-performance

CARE: Lie to sit	Missing	0 = Independent	1 = Supervision	2 = Limited assistance	3 = Extensive assistance	4 = Total dependence	Total
Missing	+	+	+	+	+	+	+
1 = Dependent	+	+	+	+	50.4	44.2*	224
2 = Substantial assist.	+	+	+	12.1	79.8*	6.4	736
3 = Partial assist.	+	5.1	3.8	25.8*	64.1	1.3	1,355
4 = Supervision touching assist.	+	11.2	11.0*	32.2	45.1	+	981
5 = Setup assist.	+	15	15	25.8	43.7	+	213
6 = Independent	+	28.2*	13.1	35.9	22.5	+	404
L = Letter code	+	+	+	+	55.7	32.8	61
Total	+	335	254	966	2,230	191	3,977

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

The cross-tabulation results above indicate a fair degree of agreement between the two CARE and MDS 2.0 items with a somewhat wide range (11.0 percent to 79.8 percent). With respect to simple CARE–MDS 2.0 ADL Self-Performance cross-tabulation results, Table 14-31c shows strong agreement between CARE level 2 (Substantial Assistance) and MDS 2.0 level 3 (Extensive Assistance). Among the CARE Substantial Assistance responses, 79.8 percent map to Extensive Assistance in the MDS 2.0 and 12.1 percent map to Limited Assistance. Similarly, among the CARE Dependent responses in this table, 44.2 percent map to the Total Dependence

level in the MDS 2.0. Agreement among the remaining levels does not exceed 30 percent. This is likely due to only one task (CARE item lying to sitting) of the three tasks within the MDS 2.0 Bed Mobility activity are being compared. The MDS 2.0 Bed Mobility activity is comprised of three different activities (lying to sitting on the side of the bed, roll left to right, and sit to lying). The difference may also be due to the use of the MDS 2.0 Support Provided scale that would require the clinician to assess the patient's greatest amount of support required during the 7-day look-back period that is not considered (controlled for) in Table 14-31c.

Following is a rationale of how a more dependent ADL Support Provided rating may have impacted the results seen in Table 14-31c.

- CARE rating of 1–Independent was mapped to MDS 2.0, Self-Performance rating of 2–Limited Assistance 39.9 percent of the time. This may have occurred if the same patient assessed on the CARE rating scale during the first 2- to 3-day assessment period did not *usually* require supervision, setup, or any hands-on assistance. That same patient would have been rated on the MDS 2.0 Self-Performance scale as 2–Limited Assistance AND was either rated on the MDS 2.0 Support Provided rating scales as 2–One Person Physical Assist, or 3–Two+ Person Physical Assist. Because the MDS 2.0 rating scales are used over a 7-day look-back period, there may have been more times that the patient needed intermittent assistance at the one- or two-person level whereas the CARE's 2- to 3-day assessment look-back period may not have resulted in the same number (or "usual" need) of physical assistance noted for the MDS 2.0 assessment period.

The following tables illustrate the closest mapping of the functional item scale between CARE and MDS 2.0. The mapping incorporates the two MDS 2.0 functional items (i.e., Self-Performance and Support), matching them to the one CARE functional item (i.e., controlling for the MDS 2.0 Support item in a cross-tabular presentation). The cells marked with an asterisk indicate expected areas of functional item/scale agreement between the matched CARE–MDS 2.0 assessments.

Table 14-31d(1)
Controlling for MDS 2.0 bed mobility ADL support provided = 0 (no setup or physical help): CARE lying to sitting by MDS 2.0 bed mobility ADL self-performance

CARE: Lie to sit	Missing	0 = Independent	1 = Supervision	2 = Limited assistance	3 = Extensive assistance	4 = Total dependence	Total
Missing	+	+	+	+	+	+	+
1 = Dependent	+	+	+	+	+	+	+
2 = Substantial assist.	+	+	+	+	+	+	+
3 = Partial assist.	+	97.8	+	+	+	+	45
4 = Supervision touching assist.	+	98.7	+	+	+	+	76
5 = Setup assist.	+	86.4	+	+	+	+	22
6 = Independent	+	95.4*	+	+	+	+	87
Total	+	226	+	+	+	+	235

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-31d(2)
Controlling for MDS 2.0 bed mobility ADL support provided = 1 (setup help only): CARE lying to sitting by MDS 2.0 bed mobility ADL self-performance

CARE: Lie to sit	Missing	0 = Independent	1 = Supervision	2 = Limited assistance	3 = Extensive assistance	4 = Total dependence	Total
1 = Dependent	+	+	+	+	+	+	+
2 = Substantial assist.	+	+	+	+	+	+	+
3 = Partial assist.	+	35.1	64.9	+	+	+	37
4 = Supervision touching assist.	+	30.3	69.7*	+	+	+	99
5 = Setup assist.	+	35.5*	64.5*	+	+	+	31
6 = Independent	+	39.5	60.5	+	+	+	43
L = Letter code	+	+	+	+	+	+	+
Total	+	74	146	+	+	+	220

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-31d(3)
Controlling for MDS 2.0 bed mobility ADL support provided = 2 (one person physical assist): CARE lying to sitting by MDS 2.0 bed mobility ADL self-performance

CARE: Lie to sit	Missing	0 = Independent	1 = Supervision	2 = Limited assistance	3 = Extensive assistance	4 = Total dependence	Total
Missing	+	+	+	+	+	+	+
1 = Dependent	+	+	+	+	35*	55*	60
2 = Substantial assist.	+	+	+	26	66.4*	6.4	327
3 = Partial assist.	+	1.5	3.2	42.5*	51.7*	+	779
4 = Supervision touching assist.	+	+	6*	48.5*	44.1	+	614
5 = Setup assist.	+	+	+	43.9	46.3	+	123
6 = Independent	+	6.4	10	59.4	24.2	+	219
L = Letter code	+	+	+	+	+	+	14
Total	+	35	96	907	1,028	71	2,137

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-31d(4)
Controlling for MDS 2.0 bed mobility ADL support provided = 3 (two+ person physical assist): CARE lying to sitting by MDS 2.0 bed mobility ADL self-performance

CARE: Lie to sit	Missing	0 = Independent	1 = Supervision	2 = Limited assistance	3 = Extensive assistance	4 = Total dependence	Total
Missing	+	+	+	+	+	+	+
1 = Dependent	+	+	+	1.2*	57.1*	41*	161
2 = Substantial assist.	+	+	+	+	92.5	6.5	400
3 = Partial assist.	+	+	+	3.6	94.1	+	494
4 = Supervision touching assist.	+	+	+	9.4	89.1	+	192
5 = Setup assist.	+	+	+	+	97.3	+	37
6 = Independent	+	+	+	25.5	69.1	+	55
L = Letter code	+	+	+	+	64.4	33.3	45
Total	+	+	+	58	1,202	120	1,385

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Summary Results

- Tables 14-31d(1-4) generally show a fair amount of agreement between the CARE Lying to Sitting item and MDS 2.0 Bed Mobility ADL Self-Performance item when MDS 2.0 Support Level is controlled.

- For example, the data in Table 14-31d(3) demonstrate a relatively high amount of agreement between the CARE and MDS 2.0 items. Among the 779 patients who were evaluated as needing Partial Assistance on the CARE Item Set and required a One Person Physical Assist on the MDS 2.0, the majority of responses were seen in the expected MDS 2.0 levels (42.5 percent in Limited Assistance and 51.7 percent in Extensive Assistance). Similarly, CARE response level 2 (Substantial Assistance) maps well to MDS 2.0 Self-Performance level 3 (Extensive Assistance), showing 66.4 percent agreement.

- As shown in Table 14-31d(2), the majority of responses in the CARE Supervision or Setup categories also fall into the expected MDS 2.0 Self-Performance levels when Setup Help only is indicated in the MDS 2.0 Support variable.

- Although clinicians were instructed that any patient who required a Two+ Person Physical Assist in the MDS 2.0 should be scored as Dependent in CARE regardless of MDS 2.0 Self-Performance level, Table 14-31d(4) indicates that this may not have occurred. However, discrepancies showing more dependence on the MDS 2.0 might also be the result of differing item definitions and the effects of the different assessment time frames. The item definitions in this case are the CARE item lying to sitting being compared to the three tasks within the MDS 2.0 Bed Mobility activity (lying to sitting on the side of the bed, roll left to right, and sit to lying). The difference may also be due to the use of the MDS 2.0 Support Provided scale that would require the clinician to assess the patient's greatest amount of support required during the 7-day look-back period.

CARE Item: Sit to Stand (B2) vs. MDS 2.0 ADL Self-Performance Item: Transfer (G1Ab)

The *Functional Status* section of the CARE Item Set assesses a patient's most usual performance with Sit to Stand during the 2-day admission assessment window. The MDS 2.0 also assesses how a patient moves to a standing position as part of the Transfer item, but codes for the patient's self-performance over all shifts during the last 7 days. This comparison first reports basic statistics on the CARE and MDS 2.0 ADL Self-Performance rating scales, followed by a cross-tabulation of these two variables, modified by the MDS 2.0 ADL 2.0 Support rating scale. The definitions from the CARE and MDS 2.0 are included below.

CARE Definition:

B2. Sit to Stand: *The ability to safely come to a standing position from sitting in a chair or on the side of the bed.*

MDS 2.0 Definition:

G1(A)b. Transfer: *How patient moves between surfaces—to/from bed, chair, wheelchair, or to a standing position (EXCLUDE to/from bath/toilet).*

Key Item Differences

- *Assessment Windows:* The assessment time frame for the CARE Item Set item is 2 calendar days (if admitted before 12 noon) or 3 calendar days (for patients admitted after 12 noon). In contrast, the MDS 2.0 assessment time frame is 7 calendar days.

- *Item Definitions:* The MDS 2.0 item includes both sit to stand and to/from bed, chair and wheelchair transfers, whereas the CARE item focuses strictly on standing from a sitting position. In the CARE Item Set, other types of transfers are assessed separately.

- *Scales*: As discussed previously, there are significant differences between the CARE and MDS 2.0 ADL Self-Performance scales.

Implications

- The CARE and MDS 2.0 assessments may be different due to differences in the assessment windows. The function level on the MDS 2.0 may be higher than that reported on the CARE because the MDS 2.0 assessment may be occurring up to 7 days later than the CARE assessment.

- Additionally, each instrument's unique definitions may also generate rating scale differences for each of the instrument's functional activities. For example, a patient who is able to manage sitting to standing but not other types of transfers may score lower on the MDS 2.0 because that item includes other transfer abilities while the CARE item focuses exclusively on the task of sitting to standing.

The overall frequencies for these items are shown in Tables 14-32a and 14-32b, followed by the cross-tabulation of the CARE and MDS 2.0 ADL Self-Performance rating scales in Table 14-32c. Tables 14-32d(1-5) show the cross-tabulation of the CARE and MDS 2.0 ADL Self-Performance rating scale, controlling for different levels of the MDS 2.0 ADL Support Provided rating scale.

Table 14-32a
CARE *admission* sit to stand 2-day *admission* assessment period

CARE: Sit to stand	Frequency	Percent
Missing	+	+
1 = Dependent	211	5.31
2 = Substantial/maximal assistance	721	18.13
3 = Partial/moderate assistance	1,249	31.41
4 = Supervision or touching assistance	1,205	30.3
5 = Setup or clean-up assistance	184	4.63
6 = Independent	215	5.41
A = Task attempted but not completed	12	0.3
M = Not attempted due to medical restrictions	92	2.31
N = Not applicable	52	1.31
P = Patient refused	+	+
S = Not attempted due to safety concerns	29	0.73

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-32b
MDS 2.0 *admission* transfer ADL self-performance *7-day* assessment period

MDS: Transfer	Frequency	Percent
Missing	+	+
0 = Independent	146	3.67
1 = Supervision	243	6.11
2 = Limited assistance	1,144	28.77
3 = Extensive assistance	2,162	54.36
4 = Total dependence	232	5.83
8 = Activity did not occur	49	1.23

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-32c
CARE sit to stand by MDS 2.0 transfer ADL self-performance

CARE: Sit to stand	Missing	0 = Independent	1 = Supervision	2 = Limited assistance	3 = Extensive assistance	4 = Total dependence	8 = Activity did not occur	Total
Missing	+	+	+	+	+	+	+	+
1 = Dependent	+	+	+	+	46.4*	41.2*	8.1	211
2 = Substantial assist.	+	+	+	12.1	79.1*	6.5	+	721
3 = Partial assist.	+	1	4.2	30.3*	62.4*	1.6	+	1,249
4 = Supervision touching assist.	+	4.1	10*	40.7	44.7	+	+	1,205
5 = Setup assist.	+	8.7	17.4	44	29.3	+	+	184
6 = Independent	+	27.4*	14.9	40	17.2	+	+	215
L = Letter code	+	+	+	7.9	43.4	37	11.1	189
Total	+	146	243	1,144	2,162	232	49	3,977

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

The cross-tabulation results above (Tables 14-32a through 14-32c) indicate a relatively high degree of agreement between the two CARE and MDS 2.0 items. With respect to simple CARE–MDS 2.0 ADL Self-Performance cross-tabulation results, Table 14-32c shows a high degree of agreement overall, and particularly at the more dependent ends of the functional scale. For example, among the CARE Dependent responses, 41.2 percent map to Total Dependence in the MDS 2.0 and 46.4 percent map to Extensive Assistance. Similarly, among the CARE Substantial Assistance responses in this table, 79.1 percent map to the Extensive Assistance level in the MDS 2.0. However, it is noteworthy that the CARE Supervision level responses mapped mostly to either the MDS 2.0 Limited Assistance (40.7 percent) or Extensive Assistance (44.7 percent) responses. This may be a result of differing item definitions or the MDS 2.0 Support Provided variable, which is not considered in Table 14-32c.

The following tables illustrate the closest mapping of the functional item scale between CARE and MDS 2.0. The mapping incorporates the two MDS 2.0 functional status rating scales (i.e., Self-Performance and Support), matching them to the one CARE functional status rating scale (i.e., controlling for the MDS 2.0 Support item in a cross-tabular presentation). The cells marked with an asterisk indicate expected areas of functional status rating scale agreement between the matched CARE–MDS 2.0 assessments.

Table 14-32d(1)
Controlling for MDS 2.0 transfer ADL support provided = 0 (no setup or physical help): CARE sit to stand by MDS 2.0 transfer ADL self-performance

CARE: Sit to stand	Missing	0 = Independent	1 = Supervision	2 = Limited assistance	3 = Extensive assistance	4 = Total dependence	8 = Activity did not occur	Total
2 = Substantial assist.	+	+	+	+	+	+	+	+
3 = Partial assist.	+	+	+	+	+	+	+	+
4 = Supervision touching assist.	+	71.4	+	+	+	+	+	35
5 = Setup assist.	+	+	+	+	+	+	+	12
6 = Independent	+	91.8*	+	+	+	+	+	49
Total	+	80	20	+	+	+	+	100

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-32d(2)
Controlling for MDS 2.0 transfer ADL support provided = 1 (setup help only): CARE sit to stand by MDS 2.0 transfer ADL self-performance

CARE: Sit to stand	Missing	0 = Independent	1 = Supervision	2 = Limited assistance	3 = Extensive assistance	4 = Total dependence	8 = Activity did not occur	Total
Missing	+	+	+	+	+	+	+	+
1 = Dependent	+	+	+	+	+	+	+	+
2 = Substantial assist.	+	+	+	+	+	+	+	+
3 = Partial assist.	+	+	85.7	+	+	+	+	21
4 = Supervision touching assist.	+	25.3	73.4*	+	+	+	+	79
5 = Setup assist.	+	+	81.5*	+	+	+	+	27
6 = Independent	+	+	65	+	+	+	+	20
Total	+	38	113	+	+	+	+	152

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-32d(3)
Controlling for MDS 2.0 transfer ADL support provided = 2 (one person physical assist): CARE sit to stand by MDS 2.0 transfer ADL self-performance

CARE: Sit to stand	Missing	0 = Independent	1 = Supervision	2 = Limited assistance	3 = Extensive assistance	4 = Total dependence	8 = Activity did not occur	Total
Missing	+	+	+	+	+	+	+	+
1 = Dependent	+	+	+	+	44.1*	41.2*	+	34
2 = Substantial assist.	+	+	+	29.2	64.8*	+	+	253
3 = Partial assist.	+	+	4.3	43.4*	50.9*	+	+	786
4 = Supervision touching assist.	+	+	5.7*	53.9*	39.5	+	+	866
5 = Setup assist.	+	+	+	62	30.6	+	+	121
6 = Independent	+	+	12.5	65	16.7	+	+	120
L = Letter code	+	+	+	41.4	41.4	+	+	29
Total	+	23	106	1,052	992	38	+	2,211

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-32d(4)
Controlling for MDS 2.0 transfer ADL support provided = 3 (two+ person physical assist): CARE sit to stand by MDS 2.0 transfer self-performance

CARE: Sit to stand	Missing	0 = Independent	1 = Supervision	2 = Limited assistance	3 = Extensive assistance	4 = Total dependence	8 = Activity did not occur	Total
1 = Dependent	+	+	+	+	52.2*	45.9*	+	159
2 = Substantial assist.	+	+	+	2.8	88.6	7.9	+	458
3 = Partial assist.	+	+	+	8.8	87.6	3.5	+	434
4 = Supervision touching assist.	+	+	+	+	87.6	+	+	225
5 = Setup assist.	+	+	+	+	70.8	+	+	24
6 = Independent	+	+	+	+	65.4	+	+	26
L = Letter code	+	+	+	+	50.4	47.5	+	139
Total	+	+	+	91	1,170	194	+	1,465

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Summary Results

- Except for "activity did not occur" and "letter code," which had perfect agreement, cell sizes for ADL Support Provided = 8 (activity did not occur) were all smaller than 11, so results are not reported in a table here.

- Tables 14-32d(1-4) generally show a fair amount of agreement between the CARE Sit to Stand item and MDS 2.0 Transfer ADL Self-Performance item when MDS 2.0 Support Level is controlled.

- For example, Table 14-32d(2) indicates that of the 79 patients who were evaluated as needing Supervision on the CARE Item Set and required Setup Help Only on the MDS 2.0, 73.4 percent were assessed as needing Supervision in Self-Performance on the MDS 2.0.

- Additionally, Table 14-32d(3) also demonstrates a relatively high amount of agreement between these two items. For example, among the 1,652 patients who were evaluated as needing either Partial Assistance or Supervision on the CARE Item Set and required a One Person Physical Assist on the MDS 2.0, the majority of responses were seen in the expected MDS 2.0 rating levels. Unsurprisingly, there is also a bit of scatter outside the "predicted" area of Table 14-32d(3). Most of this occurs below and to the right of the area marked with asterisks, indicating a more dependent response on the MDS 2.0. This may be due to the differing item definitions.

- In Table 14-32d(4), the expected mapping agreement occurred between CARE 1–Dependent and MDS 2.0 rating scores 4–Total Dependence and 3–Extensive Assistance; however, there was greater than expected agreement between the MDS 2.0 3–Extensive Assistance scores and the CARE rating scores 6–Independent through 2–Substantial/Maximal Assistance. This may be attributable to the MDS 2.0 rule requiring physical assistance provided three or more times to reduce the patient's performance value to Extensive Assistance. The difference in the assessment look-back periods could have contributed to this outcome or the multiple types of transfers required by the MDS 2.0 Transfer item versus the CARE single item of sit to stand. Finally, sometimes these unexpected results were produced and it is unknown if these were due to clinician coding errors.

- Although clinicians were instructed that any patient who required a Two+ Person Physical Assist in the MDS 2.0 should be scored as Dependent in CARE regardless of MDS 2.0 Self-Performance level, Table 14-32d(4) indicates that this may not have occurred. However, discrepancies showing more dependence on the MDS 2.0 might also be the result of differing assessment time frames and item definitions as stated above.

CARE Item: Chair/Bed-to-Chair Transfer (B3) vs. MDS 2.0 ADL Self-Performance Item: Transfer (G1Ab)

The *Functional Status* section of the CARE Item Set assesses a patient's most usual performance with Chair/Bed-to-Chair Transfer during the 2-day admission assessment window. The MDS 2.0 also assesses how a patient transfers to/from bed to chair as part of the Transfer, but codes for the patient's self-performance are observed over all shifts during the last part of the 7-day assessment period. This comparison first reports basic statistics on the CARE and MDS 2.0 ADL Self-Performance rating scales, followed by a cross-tabulation of these two variables, modified by the MDS 2.0 ADL Support rating scale. The definitions from the CARE and MDS 2.0 are included below.

CARE Definition:

B3. Chair/Bed-to-Chair Transfer: *The ability to safely transfer to and from a chair (or a wheelchair). The chairs are placed at right angles to each other.*

MDS 2.0 Definition:

G1(A)b. Transfer: *How patient moves between surfaces—to/from bed, chair, wheelchair, standing position (EXCLUDE to/from bath/toilet).*

<u>*Key Item Differences*</u>

- *Assessment Windows:* The assessment time frame for the CARE Item Set item is 2 calendar days (if admitted before 12 noon) or 3 calendar days (for patients admitted after 12 noon). In contrast, the MDS 2.0 assessment time frame is 7 calendar days.

- *Item Definitions:* The MDS 2.0 item includes both chair-to-bed transfer and other types of transfers, whereas the CARE item focuses strictly transferring to/from bed to chair. In the CARE Item Set, other types of transfers are assessed separately.

- *Scales*: As discussed previously, there are significant differences between the CARE and MDS 2.0 ADL Self-Performance scales.

<u>*Implications*</u>

- The CARE and MDS 2.0 assessments may be different due to differences in the assessment windows. The function level on the MDS 2.0 may be higher than that reported on the CARE because the MDS 2.0 assessment may be occurring up to 7 days later than the CARE assessment (if completed on day 1).

- Additionally, the differing definitions may also generate item differences. For example, a patient who is able to manage chair-to-bed transfers but not other types of transfers may score lower on the MDS 2.0 because that item includes the ability to transfer to/from bed, chair, wheelchair, and a standing position while the CARE item focuses exclusively on chair-to-bed transfer.

The overall frequencies for these items are shown in Tables 14-33a and 14-33b below, followed by the cross-tabulation of the CARE and MDS 2.0 ADL Self-Performance rating scales in Table 14-33c. Tables 14-33d(1-5) show the cross-tabulation of the CARE and MDS 2.0 ADL Self-Performance rating scales, controlling for different levels of MDS 2.0 ADL Support Provided.

The cross-tabulation results above indicate a relatively high degree of agreement between the items in the two assessment instruments. With respect to simple CARE–MDS 2.0 ADL Self-Performance cross-tabulation results, Table 14-33c shows a high degree of agreement overall, and particularly at the more dependent ends of the scale. For example, among the CARE Dependent responses, 45.1 percent map to Total Dependence in the MDS 2.0. Similarly, among the CARE Substantial Assistance responses, 79.2 percent map to the Extensive Assistance level in the MDS 2.0, and in the CARE Partial Assistance responses, 30.6 percent map to Limited Assistance and 62.0 percent map to Extensive Assistance in the MDS 2.0.

The following tables illustrate the closest mapping of the functional item scale between CARE and MDS 2.0. The mapping incorporates the two MDS 2.0 functional items (i.e., Self-Performance and Support), matching them to the one CARE functional item (i.e., controlling for the MDS 2.0 Support item in a cross-tabular presentation). The cells marked with an asterisk indicate expected areas of functional item/scale agreement between the matched CARE–MDS 2.0 assessments.

Table 14-33a
CARE *admission* chair/bed-to-chair transfer 2-day *admission* assessment period

CARE: Chair/bed-to-chair transfer	Frequency	Percent
Missing	+	+
1 = Dependent	266	6.69
2 = Substantial/maximal assistance	739	18.58
3 = Partial/moderate assistance	1,265	31.81
4 = Supervision or touching assistance	1,221	30.7
5 = Setup or clean-up assistance	176	4.43
6 = Independent	171	4.3
A = Task attempted but not completed	11	0.28
M = Not attempted due to medical restrictions	66	1.66
N = Not applicable	21	0.53
P = Patient refused	12	0.3
S = Not attempted due to safety concerns	25	0.63

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-33b
MDS 2.0 *admission* transfer ADL self-performance *7-day* assessment period

MDS: Transfer self-performance	Frequency	Percent
Missing	+	+
0 = Independent	146	3.67
1 = Supervision	243	6.11
2 = Limited assistance	1,144	28.77
3 = Extensive assistance	2,162	54.36
4 = Total dependence	232	5.83
8 = Activity did not occur	49	1.23

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-33c
CARE chair/bed-to-chair transfer by MDS 2.0 transfer ADL self-performance

CARE: Chair/bed-to-chair transfer	Missing	0 = Independent	1 = Supervision	2 = Limited assistance	3 = Extensive assistance	4 = Total dependence	8 = Activity did not occur	Total
Missing	+	+	+	+	+	+	+	+
1 = Dependent	+	+	+	+	42.5	45.1*	8.6	266
2 = Substantial assist.	+	+	+	12.6	79.2*	6.2	+	739
3 = Partial assist.	+	1	4.4	30.6*	62*	1.6	+	1,265
4 = Supervision touching assist.	+	4.1	10.3*	41.5*	43.7	+	+	1,221
5 = Setup assist.	+	9.7	17.6	45.5	27.3	+	+	176
6 = Independent	+	32.7*	15.8	37.4	12.3	+	+	171
L = Letter code	+	+	+	+	56.3	28.1	10.4	135
Total	+	146	243	1,144	2,162	232	49	3,977

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-33d(1)
Controlling for MDS 2.0 transfer ADL support provided = 0 (no setup or physical help): CARE chair/bed-to-chair transfer by MDS 2.0 transfer ADL self-performance

CARE: Chair/bed-to-chair transfer	Missing	0 = Independent	1 = Supervision	2 = Limited assistance	3 = Extensive assistance	4 = Total dependence	8 = Activity did not occur	Total
3 = Partial assist.	+	+	+	+	+	+	+	+
4 = Supervision touching assist.	—	66.7	33.3	—	—	—	—	33
5 = Setup assist.	+	+	+	+	+	+	+	13
6 = Independent	+	91.8*	+	+	+	+	+	49
Total	—	80	20	—	—	—	—	100

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-33d(2)
Controlling for MDS 2.0 transfer ADL support provided = 1 (setup help only): CARE chair/bed-to-chair transfer by MDS 2.0 transfer ADL self-performance

CARE: Chair/bed-to-chair transfer	Missing	0 = Independent	1 = Supervision	2 = Limited assistance	3 = Extensive assistance	4 = Total dependence	8 = Activity did not occur	Total
Missing	+	+	+	+	+	+	+	+
1 = Dependent	+	+	+	+	+	+	+	+
2 = Substantial assist.	+	+	+	+	+	+	+	+
3 = Partial assist.	+	+	85.7	+	+	+	+	21
4 = Supervision touching assist.	+	+	72.6*	+	+	+	+	84
5 = Setup assist.	+	+	84.6*	+	+	+	+	26
6 = Independent	+	+	64.7	+	+	+	+	17
Total	—	38	113	+	—	—	—	152

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-33d(3)
Controlling for MDS 2.0 transfer ADL support provided = 2 (one person physical assist): CARE chair/bed-to-chair transfer by MDS 2.0 transfer ADL self-performance

CARE: Chair/bed-to-chair transfer	Missing	0 = Independent	1 = Supervision	2 = Limited assistance	3 = Extensive assistance	4 = Total dependence	8 = Activity did not occur	Total
Missing	+	+	+	+	+	+	+	+
1 = Dependent	+	+	+	+	37.8*	48.6*	+	37
2 = Substantial assist.	+	+	+	+	66.5*	+	+	266
3 = Partial assist.	+	+	+	+	49.9*	+	+	793
4 = Supervision touching assist.	+	+	+	+	38.8	+	+	884
5 = Setup assist.	+	+	+	+	25	+	+	112
6 = Independent	+	+	+	+	14.8	+	+	88
L = Letter code	+	+	+	+	67.9	+	+	28
Total	—	23	106	1,052	992	38	+	2,211

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-33d(4)
Controlling for MDS 2.0 transfer ADL support provided = 3 (two+ person physical assist): CARE chair/bed-to-chair transfer by MDS 2.0 transfer ADL self-performance

CARE: Chair/bed-to-chair transfer	Missing	0 = Independent	1 = Supervision	2 = Limited assistance	3 = Extensive assistance	4 = Total dependence	8 = Activity did not occur	Total
1 = Dependent	+	+	+	0.5*	48.3*	49.8*	+	205
2 = Substantial assist.	+	+	+	3.5	88.1	8	+	463
3 = Partial assist.	+	+	+	8.6	87.8	3.2	+	442
4 = Supervision touching assist.	+	+	+	11.4	86.4	+	+	220
5 = Setup assist.	+	+	+	+	80	+	+	25
6 = Independent	+	+	+	+	+	+	+	17
L = Letter code	+	+	+	+	61.3	38.7	+	93
Total	+	+	+	91	1,170	194	+	1,465

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-33d(5)
Controlling for MDS 2.0 transfer ADL support provided = 8 (did not occur): CARE chair/bed-to-chair transfer by MDS 2.0 transfer ADL self-performance

CARE: Chair/bed-to-chair transfer	Missing	0 = Independent	1 = Supervision	2 = Limited assistance	3 = Extensive assistance	4 = Total dependence	8 = Activity did not occur	Total
1 = Dependent	—	—	—	—	—	—	100	23
2 = Substantial assist.	+	+	+	+	+	+	+	+
3 = Partial assist.	+	+	+	+	+	+	+	+
L = Letter code	—	—	—	—	—	—	100*	14
Total	—	—	—	—	—	—	49	49

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Summary Results

- Tables 14-33d(1-5) show a fair amount of agreement between the CARE Chair/Bed-to-Chair Transfer item and MDS 2.0 Transfer ADL Self-Performance item when MDS 2.0 Support Level is controlled.

- For example, Table 14-33d(2) indicates that of the 84 patients who were evaluated as needing Supervision on the CARE Item Set and required Setup Help Only on the MDS 2.0, 72.6 percent were assessed as needing Supervision in Self-Performance on the MDS 2.0.

- Additionally, Table 14-33d(3) demonstrates a relatively high amount of agreement between these two items. For example, among the 793 patients who were evaluated as needing Partial Assistance on the CARE Item Set and required a One Person Physical Assist on the MDS 2.0, 93.4 percent were assessed in the predicted MDS 2.0 Self-Performance categories of either Limited Assistance or Extensive Assistance. Unsurprisingly, there is also a bit of scatter outside the "predicted" area of Table 14-33d(3). Most of this occurs below and to the right of the "predicted" area, indicating a more dependent response on the MDS 2.0. This may be due to the differing item definitions, but further analyses will be undertaken to explore such discrepancies.

- Although clinicians were instructed that any patient who required a Two+ Person Physical Assist in the MDS 2.0 should be scored as Dependent in CARE regardless of MDS 2.0 Self-Performance level, Table 14-33d(4) indicates that this may not have occurred. However, discrepancies showing more dependence on the MDS 2.0 might also be the result of differing assessment time frames and item definitions.

- Following is a rationale of how using assessments that were coded as 3–Two+ Person Physical Assist for the ADL Support Provided rating may have impacted the results seen in Table 14-33d(4):

  – The expected mapping agreement occurred between CARE 1–Dependent and MDS 2.0 rating scores 3–Extensive Assistance and 4–Total Dependence; however, there was greater than expected agreement between the MDS 2.0, 3–Extensive Assistance scores and the CARE rating scores 2–Substantial/Maximal Assistance (88.1 percent), 3–Partial/Moderate Assistance (87.8 percent), and 4–Supervision/Touching Assistance (86.4 percent). This may be attributable to the MDS 2.0 rule of physical assistance provided three or more times resulting in lowering the level of the independence, performance value to 3–Extensive Assistance. Finally, sometimes these unexpected results were produced and it is unknown if these were due to clinician coding errors.

CARE Item: Toilet Transfer (B4) vs. MDS 2.0 ADL Self-Performance Item: Toilet Use (G1Ai)

The *Functional Status* section of the CARE Item Set assesses a patient's most usual performance with Toilet Transfer during the 2-day admission assessment window. The MDS 2.0 also assesses toilet transfer abilities as part of the Toilet Use item, but codes for the patient's self-performance over all shifts during the last 7 days. This comparison first reports basic statistics on the CARE and MDS 2.0 ADL Self-Performance items, followed by a cross-tabulation of these two variables, modified by the MDS 2.0 ADL Support item. The definitions from the CARE and MDS 2.0 are included below.

CARE Definition:

B4. Toilet Transfer: *The ability to safely get on and off a toilet or commode.*

MDS 2.0 Definition:

G1(A)i. Toilet Use: *How patient uses the toilet room (or commode, bedpan, urinal); transfer on/off toilet, cleanses, changes pad, manages ostomy or catheter, or adjusts clothes.*

<u>*Key Item Differences*</u>

- *Assessment Windows:* The assessment time frame for the CARE Item Set item is 2 calendar days (if admitted before 12 noon) or 3 calendar days (for patients admitted after 12 noon). In contrast, the MDS 2.0 assessment time frame is 7 calendar days.

- *Item Definitions:* The MDS 2.0 item includes both toilet transfer and toilet hygiene, whereas the CARE item focuses strictly transferring to/from the toilet/commode. In the CARE Item Set, toilet hygiene is assessed separately.

- *Scales*: As discussed previously, there are significant differences between the CARE and MDS 2.0 ADL Self-Performance scales.

Implications

- The CARE and MDS 2.0 assessments may be different due to differences in the assessment windows. The function level on the MDS 2.0 may be higher than that reported on the CARE because the MDS 2.0 assessment may be occurring up to 7 days later than the CARE assessment.

- Additionally, the differing definitions may also generate item differences. For example, a patient who is able to manage toilet transfers but not toilet hygiene may score lower on the MDS 2.0 because that item includes hygiene activities while the CARE item focuses exclusively on transfer.

The overall frequencies for these items are shown in Tables 14-34a and 14-34b, followed by the cross-tabulation of the CARE and MDS 2.0 ADL Self-Performance items in Table 14-34c. Tables 14-34d(1-5) show the cross-tabulation of the CARE and MDS 2.0 ADL Self-Performance items, controlling for different levels of MDS 2.0 ADL Support Provided.

Table 14-34a
CARE *admission* toilet transfer 2-day *admission* assessment period

CARE: Toilet transfer	Frequency	Percent
Missing	+	+
1 = Dependent	255	6.41
2 = Substantial/maximal assistance	734	18.46
3 = Partial/moderate assistance	1,238	31.13
4 = Supervision or touching assistance	1,111	27.94
5 = Setup or clean-up assistance	186	4.68
6 = Independent	166	4.17
A = Task attempted but not completed	11	0.28
M = Not attempted due to medical restrictions	100	2.51
N = Not applicable	76	1.91
P = Patient refused	20	0.5
S = Not attempted due to safety concerns	77	1.94

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-34b
MDS 2.0 *admission* toilet use ADL self-performance *7-day* assessment period

MDS: Toilet use self-performance	Frequency	Percent
0 = Independent	153	3.85
1 = Supervision	261	6.56
2 = Limited assistance	1,044	26.25
3 = Extensive assistance	2,137	53.73
4 = Total dependence	380	9.55
8 = Activity did not occur	+	+

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-34c
CARE toilet transfer by MDS 2.0 toilet ADL self-performance

CARE: Toilet transfer	0 = Independent	1 = Supervision	2 = Limited assistance	3 = Extensive assistance	4 = Total dependence	8 = Activity did not occur	Total
Missing	+	+	+	+	+	+	+
1 = Dependent	+	+	4.3	47.1	47.1*	+	255
2 = Substantial assist.	+	+	10.5	76*	12.4	+	734
3 = Partial assist.	1.2	4.8	26.8*	63.7*	3.6	+	1,238
4 = Supervision touching assist.	4.9	11.6*	41.1*	41	1.4	+	1,111
5 = Setup assist.	13.4	17.2	44.1	24.2	+	+	186
6 = Independent	31.3*	17.5	35.5	13.3	+	+	166
L = Letter code	+	+	9.2	51.8	36.3	+	284
Total	153	261	1,044	2,137	380	+	3,977

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

The cross-tabulation results above indicate a high degree of agreement between the items when the two assessment instruments are compared. With respect to simple CARE–MDS 2.0 ADL Self-Performance cross-tabulation results, there is a high degree of agreement overall, and particularly at the more dependent ends of the scale. For example, among the CARE Dependent responses, 47.1 percent map to Total Dependence in the MDS 2.0. Similarly, among the CARE Substantial Assistance responses, 76.0 percent map to the Extensive Assistance level in the MDS

2.0; in the CARE Partial Assistance responses, 26.8 percent map to Limited Assistance and 63.7 percent map to Extensive Assistance in the MDS 2.0.

The following tables illustrate the closest mapping of the functional item scale between CARE and MDS 2.0. The mapping incorporates the two MDS 2.0 functional items (i.e., Self-Performance and Support), matching them to the one CARE functional item (i.e., controlling for the MDS 2.0 Support item in a cross-tabular presentation). The cells marked with an asterisk indicate expected areas of functional item/scale agreement between the matched CARE–MDS 2.0 assessments.

Table 14-34d(1)
Controlling for MDS 2.0 toilet ADL support = 0 (no setup or physical assistance): CARE toilet transfer by MDS 2.0 toilet use ADL self-performance

CARE: Toilet transfer	0 = Independent	1 = Supervision	2 = Limited assistance	3 = Extensive assistance	4 = Total dependence	8 = Activity did not occur	Total
1 = Dependent	+	+	+	+	+	+	+
3 = Partial assist.	+	+	+	+	+	+	+
4 = Supervision touching assist.	83.9	+	+	+	+	+	31
5 = Setup assist.	+	+	+	+	+	+	14
6 = Independent	85.4*	+	+	+	+	+	41
L = Letter code	+	+	+	+	+	+	+
Total	75	18	+	+	+	+	93

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-34d(2)
Controlling for MDS 2.0 toilet support provided = 1 (setup help only): CARE toilet transfer by MDS 2.0 toilet use ADL self-performance

CARE: Toilet transfer	0 = Independent	1 = Supervision	2 = Limited assistance	3 = Extensive assistance	4 = Total dependence	8 = Activity did not occur	Total
Missing	+	+	+	+	+	+	+
2 = Substantial assist.	+	+	+	+	+	+	+
3 = Partial assist.	+	65.2	+	+	+	+	23
4 = Supervision touching assist.	23.6	76.4*	+	+	+	+	89
5 = Setup assist.	30.6*	69.4*	+	+	+	+	36
6 = Independent	+	61.9	+	+	+	+	21
L = Letter code	+	+	+	+	+	+	+
Total	51	122	+	+	+	+	176

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-34d(3)
Controlling for MDS 2.0 toilet use support provided = 2 (one person physical assist): CARE toilet transfer by MDS 2.0 toilet ADL self-performance

CARE: Toilet transfer	0 = Independent	1 = Supervision	2 = Limited assistance	3 = Extensive assistance	4 = Total dependence	8 = Activity did not occur	Total
Missing	+	+	+	+	+	+	+
1 = Dependent	+	+	7.9	34.3*	57.1*	+	140
2 = Substantial assist.	+	+	18	65.3*	15.5	+	400
3 = Partial assist.	+	4.5	34.4*	56.1*	4.3	+	931
4 = Supervision touching assist.	+	6.2*	49.6*	41.9	1.5	+	904
5 = Setup assist.	+	+	62.3	30.8	+	+	130
6 = Independent	+	+	62.4	16.1	+	+	93
L = Letter code	+	+	13.1	42.1	42.6	+	183
Total	27	121	1,014	1,344	277	+	2,783

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-34d(4)
Controlling for MDS 2.0 toilet use ADL support provided = 3 (two+ person physical assist): CARE toilet transfer by MDS 2.0 toilet use ADL self-performance

CARE: Toilet transfer	0 = Independent	1 = Supervision	2 = Limited assistance	3 = Extensive assistance	4 = Total dependence	8 = Activity did not occur	Total
1 = Dependent	+	+	—	64.3*	35.7*	+	112
2 = Substantial assist.	+	+	+	89.7	8.8	+	330
3 = Partial assist.	+	+	+	95	+	+	280
4 = Supervision touching assist.	+	+	+	87.4	+	+	87
5 = Setup assist.	+	+	+	+	+	+	+
6 = Independent	+	+	+	+	+	+	11
L = Letter code	+	+	+	72.2	25.8	+	97
Total	+	+	28	792	103	+	923

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-34d(5)
Controlling for MDS 2.0 toilet use ADL support provided = 8 (did not occur): CARE toilet transfer by MDS 2.0 toilet ADL self-performance

CARE: Toilet transfer	0 = Independent	1 = Supervision	2 = Limited assistance	3 = Extensive assistance	4 = Total dependence	8 = Activity did not occur	Total
1 = Dependent	+	+	+	+	+	+	+
Total	+	+	+	+	+	+	+

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Summary Results

- Tables 14-34d(1-4) demonstrate a fair amount of agreement between the CARE Toilet Transfer item and MDS 2.0 Toilet Use ADL Self-Performance item when MDS 2.0 Support Level is controlled.

- For example, Table 14-34d(2) indicates that of the 89 patients who were evaluated as needing Supervision on the CARE Item Set and required Setup Help Only on the MDS 2.0, 76.4 percent were assessed as needing Supervision in Self-Performance on the MDS 2.0.

- Additionally, Table 14-34d(3) demonstrates a relatively high amount of agreement between these two items. For example, among the 931 patients who were evaluated as needing Partial Assistance on the CARE Item Set and required a One Person Physical Assist on the MDS 2.0, 90.5 percent were assessed in the predicted MDS 2.0 Self-Performance categories of either Limited Assistance or Extensive Assistance. Unsurprisingly, there is also a bit of scatter outside the "predicted" area of Table 14-34d(3). Most of this occurs below and to the right of the "predicted" area, indicating a more dependent response on the MDS 2.0. This may be due to the differing item definitions. Sometimes these unexpected results were produced and it is unknown if these were due to clinician coding errors.

- Although clinicians were instructed that any patient who required a Two+ Person Physical Assist in the MDS 2.0 should be scored as Dependent in CARE regardless of MDS 2.0 Self-Performance level, Table 14-34d(4) indicates that this may not have occurred. However, discrepancies showing more dependence on the MDS 2.0 might also be the result of differing assessment time frames and item definitions.

- Following is a rationale of how using assessments that were coded as 3–Two+ Person Physical Assist for the ADL Support Provided rating may have impacted the results seen in Table 14-34d(4).

  – The expected mapping agreement occurred between CARE 1–Dependent and MDS 2.0 rating scores 3–Extensive Assistance and 4–Total Dependence; however there was greater than expected agreement between the MDS 2.0, 3–Extensive Assistance scores and the CARE rating scores 2–Substantial/Maximal Assistance (89.7 percent), 3–Partial/Moderate Assistance (95 percent), and 4–Supervision/Touching Assistance (87.4 percent). This may be attributable to the MDS 2.0 rule of physical assistance provided three or more times results in lowering the level of the independence, performance value to 3–Extensive Assistance. Finally, sometimes these unexpected results were produced and it is unknown if these were due to clinician coding errors.

CARE Item: Roll Left and Right (C3) vs. MDS 2.0 ADL Self-Performance Item: Bed Mobility (G1Aa)

The *Functional Status* section of the CARE Item Set assesses a patient's most usual performance with Roll Left and Right during the 2-day admission assessment window. The MDS 2.0 also assesses roll left and right abilities as part of the Bed Mobility item, but codes for the patient's self-performance over all shifts during the last 7 days. This comparison first reports basic statistics on the CARE and MDS 2.0 ADL Self-Performance items, followed by a cross-tabulation of these two variables, modified by the MDS 2.0 ADL Support item. The definitions from the CARE and MDS 2.0 are included below.

CARE Definition:

C3. Roll Left and Right: *The ability to roll from lying on back to left and right, and roll back to back.*

MDS 2.0 Definition:

G1(A)a. Bed Mobility: *How patient moves to and from lying position, turns side to side, and positions body while in bed.*

Key Item Differences

- *Assessment Windows:* The assessment time frame for the CARE Item Set item is 2 calendar days (if admitted before 12 noon) or 3 calendar days (for patients admitted after 12 noon). In contrast, the MDS 2.0 assessment time frame is 7 calendar days.

- *Item Definitions:* The MDS 2.0 Bed Mobility item includes rolling left and right as well as other bed mobility activities, whereas the CARE item focuses strictly on rolling left to right. In the CARE Item Set, other bed mobility functions are assessed separately.

- *Scales*: As discussed previously, there are significant differences between the CARE and MDS 2.0 ADL Self-Performance scales.

Implications

- The CARE and MDS 2.0 assessments may be different due to differences in the assessment windows. The function level on the MDS 2.0 may be higher than that reported on the CARE because the MDS 2.0 assessment may be occurring up to 7 days later than the CARE assessment.

- Additionally, the differing definitions may also generate item differences. For example, a patient who is able to manage rolling left to right but not manage other bed mobility activities may score lower on the MDS 2.0 because that item includes multiple mobility activities while the CARE item focuses exclusively on rolling left and right.

The overall frequencies for these items are shown in Tables 14-35a and 14-35b, followed by the cross-tabulation of the CARE and MDS 2.0, ADL Self-Performance items in Table 14-35c. Tables 14-35d(1-4) show the cross-tabulation of the CARE and MDS 2.0 ADL Self-Performance items, controlling for different levels of MDS 2.0 ADL Support Provided.

Table 14-35a
CARE *admission* roll left and right 2-day *admission* assessment period

CARE: Roll left and right	Frequency	Percent
Missing	90	2.26
1 = Dependent	178	4.48
2 = Substantial/maximal assistance	542	13.63
3 = Partial/moderate assistance	1,108	27.86
4 = Supervision or touching assistance	951	23.91
5 = Setup or clean-up assistance	246	6.19
6 = Independent	717	18.03
A = Task attempted but not completed	+	+
E = Not attempted due to environmental constraints	+	+
M = Not attempted due to medical restrictions	104	2.62
N = Not applicable	18	0.45
P = Patient refused	+	+
S = Not attempted due to safety concerns	+	+

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-35b
MDS 2.0 *admission* bed mobility ADL self-performance *7-day* assessment period

MDS: Bed mobility	Frequency	Percent
Missing	+	+
0 = Independent	335	8.42
1 = Supervision	254	6.39
2 = Limited assistance	966	24.29
3 = Extensive assistance	2,230	56.07
4 = Total dependence	191	4.8

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-35c
CARE roll left and right by MDS 2.0 bed mobility ADL self-performance

CARE: Roll left and right	Missing	0 = Independent	1 = Supervision	2 = Limited assistance	3 = Extensive assistance	4 = Total dependence	Total
Missing	+	15.6	+	20	45.6	+	90
1 = Dependent	+	+	+	+	44.9	50*	178
2 = Substantial assist.	+	+	+	8.1	79.3*	10	542
3 = Partial assist.	+	4	4	22.8*	67.2	2	1,108
4 = Supervision touching assist.	+	7	8.8*	27.8	55.2	1.2	951
5 = Setup assist.	+	14.6	7.3	31.7	45.9	+	246
6 = Independent	+	23.3*	11.4	36	29.1	+	717
L = Letter code	+	+	+	32.4	60	+	145
Total	+	335	254	966	2,230	191	3,977

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

The cross-tabulation results above indicate a relatively high degree of agreement between the items when the two assessment instruments are compared. With respect to simple CARE–MDS 2.0, ADL Self-Performance cross-tabulation results, there is a high degree of agreement at the more dependent levels. Among the CARE Dependent responses, 50 percent map to Total Dependence in the MDS 2.0. Similarly, among the CARE Substantial Assistance responses, 79.3 percent map to the Extensive Assistance level in the MDS 2.0.

The following tables illustrate the closest mapping of the functional item scale between CARE and MDS 2.0. The mapping incorporates the two MDS 2.0 functional items (i.e., Self-Performance and Support) matching them to the one CARE functional item (i.e., controlling for the MDS 2.0 Support item in a cross-tabular presentation). The cells marked with an asterisk indicate expected areas of functional item/scale agreement between the matched CARE–MDS 2.0 assessments.

Table 14-35d(1)
Controlling for MDS 2.0 bed mobility ADL support provided = 0 (no setup or physical help): CARE roll left and right by MDS 2.0 bed mobility ADL self-performance

CARE: Roll left and right	Missing	0 = Independent	1 = Supervision	2 = Limited assistance	3 = Extensive assistance	4 = Total dependence	Total
Missing	+	92.3	+	+	+	+	13
1 = Dependent	+	+	+	+	+	+	+
2 = Substantial assist.	+	+	+	+	+	+	+
3 = Partial assist.	+	96.7	+	+	+	+	30
4 = Supervision touching assist.	+	95.2	+	+	+	+	42
5 = Setup assist.	+	96.8	+	+	+	+	31
6 = Independent	+	96.5*	+	+	+	+	115
Total	+	226	+	+	+	+	235

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-35d(2)
Controlling for MDS 2.0 bed mobility ADL support provided = 1 (setup help only): CARE roll left and right by MDS 2.0 bed mobility ADL self-performance

CARE: Roll left and right	Missing	0 = Independent	1 = Supervision	2 = Limited assistance	3 = Extensive assistance	4 = Total dependence	Total
Missing	+	+	+	+	+	+	+
1 = Dependent	+	+	+	+	+	+	+
2 = Substantial assist.	+	+	+	+	+	+	+
3 = Partial assist.	+	+	75.8	+	+	+	33
4 = Supervision touching assist.	+	30.5	69.5*	+	+	+	59
5 = Setup assist.	+	+	75*	+	+	+	16
6 = Independent	+	46.5	53.5	+	+	+	86
L = Letter code	+	+	+	+	+	+	+
Total	+	74	146	+	+	+	220

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-35d(3)
Controlling for MDS 2.0 bed mobility ADL support provided = 2 (one person physical assist): CARE roll left and right by MDS 2.0 bed mobility ADL self-performance

CARE: Roll left and right	Missing	0 = Independent	1 = Supervision	2 = Limited assistance	3 = Extensive assistance	4 = Total dependence	Total
Missing	+	+	+	47.2	44.4	+	36
1 = Dependent	+	+	+	+	32.5*	60*	40
2 = Substantial assist.	+	+	+	18.6	67.9*	12.7	221
3 = Partial assist.	+	+	2.8	40*	54.6*	+	608
4 = Supervision touching assist.	+	+	6.9*	42.5*	48.2	+	577
5 = Setup assist.	+	+	+	48.4	46.4	+	153
6 = Independent	+	4	7.7	59	29.4	+	405
L = Letter code	+	+	+	46.4	50.5	+	97
Total	+	35	96	907	1,028	71	2,137

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Table 14-35d(4)
Controlling for MDS 2.0 bed mobility ADL support provided = 3 (two+ person physical assist): CARE roll left and right by MDS 2.0 bed mobility ADL self-performance

CARE: Roll left and right	Missing	0 = Independent	1 = Supervision	2 = Limited assistance	3 = Extensive assistance	4 = Total dependence	Total
Missing	+	+	+	+	80.6	+	31
1 = Dependent	+	+	+	+	50.4	48.9	133
2 = Substantial assist.	+	+	+	+	90.3	8.4	310
3 = Partial assist.	+	+	+	2.3	94.5	3	437
4 = Supervision touching assist.	+	+	+	+	90.5	+	273
5 = Setup assist.	+	+	+	+	91.3	+	46
6 = Independent	+	+	+	+	81.1	+	111
L = Letter code	+	+	+	+	86.4	+	44
Total	+	+	+	58	1202	120	1,385

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and MDS 2.0 assessment data, 2008-2009.

Summary Results

- Tables 14-35d(1-4) generally show a fair amount of agreement between the CARE Roll Left and Right item and MDS 2.0 Bed Mobility ADL Self-Performance item when MDS 2.0 Support Level is controlled.

- For example, Table 14-35d(1) indicates that of the 115 patients who were evaluated as Independent on the CARE Item Set and did not require Setup or Physical Help on the MDS 2.0, 96.5 percent were assessed as Independent in Self-Performance on the MDS 2.0. One would expect patients to be more dependent on the CARE Item Set as a result of being assessed within a 2-day window as opposed to the 7-day MDS 2.0 window.

- Table 14-35d(3) also demonstrates a relatively high amount of agreement between these two items. For example, among patients who were evaluated as needing Substantial Assistance on the CARE Item Set and required a One Person Physical Assist on the MDS 2.0, 67.9 percent were assessed as needing Extensive Assistance in Self-Performance on the MDS 2.0, which is the predicted response. Similarly high levels of agreement are also shown within the CARE levels for Dependent, Partial Assistance, and Supervision in this table. Unsurprisingly, there is also a bit of scatter outside the "predicted" area of Table 14-35d(3). Most of this occurs below and to the right of the "predicted" area, indicating a more dependent response on the MDS 2.0. This may be due to the differing item definitions, but further analyses will be undertaken to explore such discrepancies further.

- Although clinicians were instructed that any patient who required a Two+ Person Physical Assist in the MDS 2.0 should be scored as Dependent in CARE regardless of MDS 2.0 Self-Performance level, Table 14-35d(4) indicates that this may not have occurred. However, discrepancies showing more dependence on the MDS 2.0 might also be the result of differing assessment time frames and item definitions.

- Following is a rationale of how using assessments that were coded as 3–Two+ Person Physical Assist for the ADL Support Provided rating may have impacted the results seen in Table 14-35d(4).

  – The expected mapping agreement occurred between CARE 1–Dependent and MDS 2.0 rating scores 3–Extensive Assistance and 4–Total Dependence; however, there was greater than expected agreement between the MDS 2.0, 3–Extensive Assistance scores and the CARE rating scores 2–Substantial/Maximal Assistance (90.3 percent), 3–Partial/Moderate Assistance (94.5 percent), and 4–Supervision/Touching Assistance (90.5 percent). This may be attributable to the MDS 2.0 rule of physical assistance provided 3 or more times results in lowering the level of the independence, performance value to 3–Extensive Assistance. Finally, sometimes these unexpected results were produced and it is unknown if these were due to clinician coding errors.

14.4 CARE–MDS 2.0 Comparison Next Steps

These analyses present an initial step in measuring the level of agreement between selected CARE Item Sets and the MDS 2.0 instrument items. While direct one-to-one item comparisons between the two instruments is not possible due to differences in, for example, assessment time frames, item ratings scales, and the sometimes unique definitions for similar items used to assess function, this mapping of selected items and associated scales presents an important first look at how selected CARE items are assessed and aligned vis-à-vis similar MDS 2.0 items. These findings indicated a high to moderate level of agreement between the two assessment instruments with respect to selected items. Furthermore, and perhaps most instructive, is the absence of any large and/or unexpected association(s) between the two instruments. That is, while the functional item scale percent agreement between paired instruments was sometimes modest (e.g., approximately 50 percent), an off-setting or higher percent agreement between opposite ends of the functional scale alignment was not observed (e.g., a negative correlation after accounting for reversed scales was not observed). The highest percent agreement between instruments was observed when CARE functional item level 2 (e.g., substantial/maximal assistance) was mapped to MDS 2.0 ADL Self-Performance item level 3 (e.g., Extensive assistance), regardless of ADL Support Provided.

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SECTION 15
OASIS-B–CARE COMPARISONS

15.1 Overview

In parallel with the efforts to compare Continuity Assessment Record and Evaluation (CARE) items with their analogs on the Inpatient Rehabilitation Facility Patient Assessment Instrument (IRF-PAI)/ FIM® and Minimum Data Set (MDS) 2.0, additional analyses were undertaken to address the CARE item performance relative to the Outcome and Assessment Information Set (OASIS)-B prospective payment items.

Analyses are based on finalized CARE Item Set admission assessments matched with OASIS-B "start of care" or "resumption of care" assessments. To begin, we merged home health agency (HHA) admission assessment data from the January 2010 CARE extract data (n = 4,996) with OASIS-B assessment data available through December 31, 2009,[7] by beneficiary Medicare identification number (HICN), gender, and birth date. This resulted in 95.8 percent of CARE admission assessments being matched with an OASIS-B assessment, not taking into account assessment date. For the remaining HHA CARE assessments without an OASIS-B match, two additional matches were undertaken. For the first, we generated a CARE proxy social security number (SSN) using the first nine digits of the HICNs on CARE and looked for matches using this variable and the OASIS-B SSN, gender, and birth date variables. Second, following advice of HHA researchers who had observed agencies erroneously recording HICN in the OASIS-B Medicaid ID field, another match was performed between the CARE HICN and OASIS-B Medicaid ID number, in addition to gender and birth date. However, only one additional match was identified using this strategy. After these additional matches, which do not take into account assessment date, 96.3 percent of CARE assessments were matched to OASIS-B assessments (n = 4,810 pairs of assessments).

The final refinement to the CARE Item Set–OASIS-B merge was to take into account assessment dates. Large differences between CARE and OASIS-B assessment time frames would increase variation between paired CARE Item Set–OASIS-B assessment items; therefore, we restricted our final sample of matched assessments to those with a gap between the OASIS-B start of care (or resumption of care) date and CARE Item Set admission date of no more than 4 days. The final data set containing CARE admission assessments matched to either an OASIS-B "Start of Care" or "Resumption of Care" assessment yielded 4,587 observations (representing 91.8 percent of finalized CARE admission assessments from HHAs). The vast majority of assessment pairs in the final sample had the same OASIS-B start of care and CARE admission date (96 percent) or only 1-day difference (an additional 3 percent).

Similar to the comparisons with the IRF-PAI and MDS above, the purpose of this analysis is to assess the concurrent validity of the CARE Item Set.

[7] CARE extract date 01/28/2010. Data shown in this chapter were generated with programs CAREREL041, CAREREL040, CAREREL037, and CAREREL036.

15.2 Differences between CARE Item Set and OASIS-B

While many CARE items have close analogs to OASIS-B items, there are several key differences between the two assessment instruments that may result in variation in patient assessment and associated variation between assessment instrument items. Differences related to an instrument's item definition and assessment scales are addressed individually below, under item-by-item comparisons. Major differences between the two assessment instruments, affecting all item-by-item comparisons include:

- Differences between CARE and OASIS-B regarding assessment instructions:
  - **Time Frame:** The assessment time frame for the CARE Item Set is 2 calendar days (if admitted before 12 noon) or 3 calendar days (for patients admitted after 12 noon). The time frame for most items in the OASIS-B (evaluated below) refers to the patient's status the day of the assessment visit, or the patient's *usual status.* The CARE Item Set does instruct clinicians to report the usual (or typical) performance but with a slightly longer time frame. A few of the OASIS-B items regarding prior service use and conditions require a 14-day look-back period immediately preceding the assessment. The CARE Item Set uses a 14-day look-back period for a few items as well.
  - **Implication:** In general, we expect that differences in assessment time period should play little role in differences between OASIS-B and CARE Item Set responses. It is likely that the data for both assessments were collected simultaneously the majority of the time.
- Differences between CARE and OASIS-B Instruments exist regarding alignment of scales.
- Although comparable concepts are used in the comparison for this analysis, specific item definitions may not be identical.
- **Error:** As noted in prior sections, some disagreement between the CARE and OASIS-B items may be attributable to clinician reporting errors on one of the tools. As noted in the interrater reliability section in Volume 2, and in prior evaluations of OASIS-B items, there are some items that have lower reliability than others.

15.3 Results: CARE–OASIS-B Comparisons

A. Current Medical Information: Major Treatments

CARE Item: Major Treatments: Total Parenteral Nutrition (item III.D3a)
OASIS-B Item: Therapies that the Patient Receives at Home (item M0250)

The *Current Medical Information-Major Treatments* section of the CARE Item Set assesses whether the patient received Total Parenteral Nutrition (TPN) (item III.D3a) during the 2-day admission assessment period. The OASIS-B assesses whether a patient received therapy at the home (item M0250) and allows for up to three nutritional approaches items to be checked. The definitions from the CARE and OASIS-B are:

CARE Definition:

D3a. Total Parenteral Nutrition: Which of the following treatments did the patient receive during the 2-day assessment period? For treatments such as blood transfusions, dialysis, or IV chemotherapy, is the patient currently receiving them as part of their treatment plan? Check all that apply: Total Parenteral Nutrition.

OASIS-B Definition:

M0250. Therapies the Patient Receives at Home: Identifies whether the patient is receiving intravenous, parenteral nutrition, or enteral nutrition therapy at home, whether or not the HHA is administering the therapy. Therapies the patient receives at home: (Mark all that apply.) [2] Parenteral nutrition (TPN or lipids).

Key Item Differences

- *Assessment Windows:* The assessment time frame for the CARE Item Set item is 2 calendar days (if admitted before 12 noon) or 3 calendar days (for patients admitted after 12 noon). The OASIS-B assessment identifies if the patient receives the therapy in the home. The general instructions imply that the response on the OASIS-B should be for the day of the assessment, though it can include patient history and referral orders.
- *Item Definitions:* The CARE and OASIS-B definitions for this therapy, parenteral nutrition, are similar. Note, though, that the OASIS-B definition specifically includes lipids and explicitly includes services received in the home whether or not the HHA is administering the therapy.
- *Scales:* Neither the CARE nor OASIS-B assessment use a scale for this item, yet both assess whether the patient receives/received it in his/her current setting.

Implications

- We would expect close agreement between OASIS-B and CARE on this item.

Given the very low frequency of TPN administration in the Post-Acute Care Payment Reform Demonstration (PAC-PRD) HHA sample, it is not feasible to present results from item frequencies for CARE and OASIS-B and cross-tabulation of the items by instrument.

Agreement

CARE Items: Multiple Types of IV Antibiotic Administration (item III.D25a)
IV Vasoactive Medications (item III. D26a)
IV Anti-Coagulants (item III. D27a)
IV Chemotherapy (item III. D28a)
OASIS-B Item: Therapies that the Patient Receives at Home (item M0250)

To obtain a single measure comparable to OASIS-B intravenous or infusion therapy indicator, we combined multiple items from the *Current Medical Information-Major Treatments* section of the CARE assessment which indicate whether the patient received the following types of IV therapy during the 2-day admission assessment period:

- Multiple Types of IV Antibiotic Administration (item III.D25a)
- IV Vasoactive Medications (e.g., pressors, dilators, medications for pulmonary edema) (item III. D26a)
- IV Anti-Coagulants (item III. D27a)
- IV Chemotherapy (item III. D28a)

The OASIS-B assesses whether a patient received therapy at the home (item M0250) and allows for up to three nutritional approach items to be checked, one of which is *1–Intravenous or infusion therapy (excludes TPN).*

In order to compare these items, a new CARE variable was created to indicate whether any of the items for Multiple Types of IV Antibiotic Administration, IV Vasoactive Medications, IV Anti-Coagulants, or IV Chemotherapy were checked. This CARE variable indicating Any IV Therapy Use was compared to the OASIS-B M0250 Therapies item responses.

The definitions from the CARE and OASIS-B are:

CARE Definitions:
Which of the following treatments did the patient receive during the 2-day assessment period? For treatments such as blood transfusions, dialysis, or IV chemotherapy, is the patient currently receiving them as part of their treatment plan?

D25a. Multiple Types of IV Antibiotic Administration
D26a. IV Vasoactive Medications (e.g., pressors, dilators, medications for pulmonary edema)
D27a. IV Anti-Coagulants
D28a. IV Chemotherapy

OASIS-B Definition:
M0250. Therapies that the Patient Receives at Home: Identifies whether the patient is receiving intravenous, parenteral nutrition, or enteral nutrition therapy at home, whether or not the HHA is administering the therapy. Therapies the patient receives at home: (Mark all that apply.) [1] Intravenous or infusion therapy (excludes TPN).

Key Item Differences

- *Assessment Windows:* The assessment time frame for the CARE Item Set is 2 calendar days (if admitted before 12 noon) or 3 calendar days (for patients admitted after 12 noon). As discussed for TPN above, the OASIS-B assessment identifies if the patient receives the therapy in the home. The general instructions imply that the response on the OASIS-B should be for the day of the assessment, though it can include patient history and referral orders.
- *Item Definitions:* The CARE and OASIS-B definitions for this therapy are similar, but the OASIS-B definition for the item is broader because it includes infusion therapy, too.

- *Scales:* Neither the CARE nor OASIS-B assessments use a scale for this item-instead, a binary response of whether patient receives/received the therapy or not in his/her current setting.

Implications

- The time frame for data collection on the OASIS-B and CARE assessments would appear to have little impact on agreement across the tools.
- Because the OASIS-B item is more inclusive, with the more general category of IV therapy in addition to infusion therapy, we anticipate more patients with IV or infusion therapy indicated on the OASIS-B tool than the CARE Item Set. Though it has been suggested that the counts will be higher based on the CARE Item Set because clinicians may be more likely to recognize that one of the more specific items applies to the patient they are evaluating than the single, more general OASIS-B item.
- Additionally, the CARE assesses whether a patient receives multiple antibiotics intravenously, which might only detect a smaller set of patients who have greater patient acuity while OASIS-B only assesses whether or not a patient receives any type of intravenous or infusion therapy.

The overall frequencies for these items are shown in Tables 15-1a and 15-1b below, followed by the cross-tabulation of the items in Table 15-1c.

Table 15-1a
CARE *admission* major treatments: IV therapy (any listed)

CARE: Major treatments: IV therapy*	Frequency	Percent
0 = No	4,546	99.1
1 = Yes	41	0.9

* Takes into account responses from the following CARE items: III.D25a through D28a.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Table 15-1b
OASIS-B *start of care* therapies the patient receives at home: IV therapy (M0250) intravenous or infusion therapy

OASIS-B: IV therapy	Frequency	Percent
0 = No	4,507	98.3
1 = Yes	80	1.7

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Table 15-1c
CARE *admission* IV therapy item by OASIS-B *start of care* IV therapy

CARE: IV therapy	0 = No	1= Yes	Total
0 = No	98.6*	1.4	4,546
1= Yes	63.4	36.6*	41
Total	4,507	80	4,587

*Expected areas of agreement are marked with an asterisk.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Summary Results

- Of the patients with no IV therapy reported on CARE, 98.6 percent also had no intravenous or infusion therapy indicated on OASIS-B, indicating a high level of agreement in item responses.
- More patients were reported with IV therapy on OASIS-B (n = 80) than were reported on CARE (n = 41).
- Among patients who did report IV therapy on CARE, 63.4 percent did not indicate intravenous or infusion therapy on OASIS-B. It may be that the more explicit list of IV therapies on the CARE Item Set resulted in more patients being detected receiving these therapies than OASIS-B.

B. Current Medical Information: Skin Integrity

CARE Item: Number of Stage 2 Pressure Ulcers (item III.G2a)
OASIS-B Item: Number of Stage 2 Ulcers (item M0450b)

The *Skin Integrity* section of the CARE Item Set asks how many Stage 2 pressure ulcers (item III.G2a) were present during the 2-day admission assessment window, while the OASIS-B asks how many Stage 2 ulcers were present (M0450b) in the last 24-hour period and the time during the visit. The definitions from the CARE and OASIS-B are included below.

CARE Definition:
G2a. Stage 2: Partial thickness loss of dermis presenting as a shallow open ulcer with red pink wound bed, without slough. May also present as an intact or open/ruptured serum-filled blister (excludes those resulting from skin tears, tape stripping, or incontinence associated dermatitis).

OASIS-B Definition:
M0450b. Stage 2: Partial thickness skin loss involving epidermis and/or dermis. The ulcer is superficial and presents clinically as an abrasion, blister, or shallow crater.

Key Item Differences

- *Assessment Windows:* The assessment time frame for the CARE Item Set is 2 calendar days (if admitted before 12 noon) or 3 calendar days (for patients admitted after 12 noon). The OASIS-B assessment time frame is the day of the assessment visit.
- *Item Definitions:* The CARE and OASIS-B definitions for Stage 2 pressure ulcers are similar. However, it should be noted that OASIS-B includes an additional item requesting a count of Stage 1 pressure ulcers.
- *Scales:* While the CARE item scale plateaus at 8 (8 = eight or more ulcers), the OASIS-B item scale plateaus at 4 (4 = four or more ulcers).

Implications

- It is not likely that any differences in OASIS-B and CARE assessments would be due to the difference in assessment time frame.
- Additionally, category 4 on the OASIS-B tool (four or more ulcers) will incorporate CARE categories 4 (four ulcers), 5 (five or more ulcers), 6 (six or more ulcers), 7 (seven or more ulcers), and 8 (eight or more ulcers).
- Because the CARE does not include an item for counts of Stage 1 ulcers, while the OASIS-B does, we hypothesized it might be possible that there will be more ulcers reported in the CARE counts because some ulcers reported as Stage 1 on OASIS-B are being reported as Stage 2 on CARE.

The overall frequencies for these items are shown in Tables 15-2a and 15-2b below, followed by the cross-tabulation of the items in Table 15-2c.

Table 15-2a
CARE *admission* frequency of stage 2 pressure ulcers (G02a) at assessment

CARE: Frequency of stage 2 pressure ulcers	Frequency	Percent
Missing	+	+
0 = 0 ulcers*	4,390	95.7
1 = 1 ulcers	138	3.0
2 = 2 ulcers	40	0.9
3 = 3 ulcers	+	+
4 = 4 ulcers	+	+
5 = 5 ulcers	+	+
6 = 6 ulcers	+	+
7 = 7 ulcers	+	+
Unknown	+	+

+ Cells based on a sample size of n < 11 are not shown.

*Assessments with no unhealed pressure ulcers at Stage 2 or higher or unstageable (III.G2) were coded as having zero pressure ulcers on this item.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Table 15-2b
OASIS-B *start of care* frequency of stage 2 ulcers

OASIS-B: Frequency of stage 2 ulcers	Frequency	Percent
0 = 0 ulcers	4,388	95.7
1 = 1 ulcers	142	3.1
2 = 2 ulcers	40	0.9
3 = 3 ulcers	+	+
4 = 4 or more	+	+

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Table 15-2c
CARE *admission* stage 2 pressure ulcer item by OASIS-B *start of care* stage 2 pressure ulcer item

CARE: Frequency of stage 2 pressure ulcers	OASIS-B: 0 = 0 ulcers	OASIS-B: 1 = 1 ulcers	OASIS-B: 2 = 2 ulcers	OASIS-B: 3 = 3 ulcers	OASIS-B: 4 = 4 or more ulcers	OASIS-B: Total
0 = 0 ulcers	99.3*	0.6	+	+	+	4,390
1 = 1 ulcers	16.7	79.7*	+	+	+	138
2 = 2 ulcers	+	+	85.0*	+	+	40
3 = 3 ulcers	+	+	+	+	+	+
4 = 4 ulcers	+	+	+	+	+	+
6 = 6 ulcers	+	+	+	+	+	+
7 = 7 ulcers	+	+	+	+	+	+
9 = Unknown	+	+	+	+	+	+
Total	4,388	142	40	+	+	4,587

* Indicates area of anticipated overlap between the CARE and OASIS-B instrument responses.

+ Cells based on a sample size of n < 11 are not shown.

NOTE: Missing = 3. Values refer to row percents.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Summary Results

- As indicated by the areas marked with an asterisk in Table 15-2c, there is a high degree of agreement where expected between the CARE and OASIS-B items for numbers of Stage 2 pressure ulcers.
- Among those patients with "no" Stage 2 pressure ulcers indicated in CARE, 99.3 percent also had "no" Stage 2 pressure ulcers indicated in OASIS-B.
- Similarly, among those patients with one Stage 2 pressure ulcer recorded in CARE, 79.7 percent also had one Stage 2 pressure ulcer recorded in OASIS-B.
- It does look like there were more ulcers being reported on CARE than on OASIS-B, but the count of assessments where this occurs is quite small.

CARE Item: Number of Stage 3 Pressure Ulcers (item III.G2b)
OASIS-B Item: Number of Stage 3 Ulcers (item M0450c)

The *Skin Integrity* section of the CARE Item Set asks how many Stage 3 pressure ulcers (item III.G2b) were present during the 2-day admission assessment window, while the OASIS-B asks how many Stage 3 ulcers were present (M0450c) on the day of the assessment visit. The definitions from the CARE and OASIS-B are included below.

CARE Definition:
G2b. Stage 3: Full-thickness tissue loss. Subcutaneous fat may be visible but bone, tendon, or muscles are not exposed. Slough may be present but does not obscure the depth of tissue loss. May include undermining and tunneling.

OASIS-B Definition:
M0450c. Stage 3: Full-thickness skin loss involving damage or necrosis of subcutaneous tissue which may extend down to, but not through, underlying fascia. The ulcer presents clinically as a deep crater with or without undermining of adjacent tissue.

Key Item Differences

- *Assessment Windows:* The assessment time frame for the CARE Item Set is 2 calendar days (if admitted before 12 noon) or 3 calendar days (for patients admitted after 12 noon). The OASIS-B assessment time frame is the day of the assessment visit.
- *Item Definitions:* The CARE and OASIS-B definitions for Stage 3 pressure ulcers are similar.
- *Scales:* While the CARE item scale plateaus at 8 (8 = eight or more ulcers), the OASIS-B item scale plateaus at 4 (4 = four or more ulcers).

Implications

- It is not likely that any differences in OASIS-B and CARE assessments on this item would be due to the difference in assessment time frame.
- The presence of a Stage 1 item on OASIS-B that is not on CARE should probably not impact the agreement observed on the Stage 3 items.

The overall frequencies for these items are shown in Tables 15-3a and 15-3b below, followed by the cross-tabulation of the items in Table 15-3c.

Table 15-3a
CARE *admission* frequency of stage 3 pressure ulcers (G02b) at assessment

CARE: Frequency of stage 3 pressure ulcers	Frequency	Percent
Missing	+	+
0 = 0 ulcers*	4,526	98.7
1 = 1 ulcers	39	0.9
2 = 2 ulcers	11	0.2
3 = 3 ulcers	+	+
4 = 4 ulcers	+	+
Unknown	+	+

+ Cells based on a sample size of n < 11 are not shown.

*Assessments with no unhealed pressure ulcers at Stage 2 or higher or unstageable (III.G2) were coded as having zero pressure ulcers on this item.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Table 15-3b
OASIS-B *start of care* frequency of stage 3 ulcers

OASIS-B: Frequency of stage 3 ulcers	Frequency	Percent
0 = 0 ulcers	4,527	98.7
1 = 1 ulcers	41	0.1
2 = 2 ulcers	15	0.3
3 = 3 ulcers	+	+
4 = 4 or more	+	+

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Table 15-3c
CARE *admission* number of stage 3 pressure ulcers and OASIS-B *start of care* number of stage 3 ulcers

CARE: Frequency of stage 3 pressure ulcers	OASIS-B: 0 = 0 ulcers	OASIS-B: 1 = 1 ulcers	OASIS-B: 2 = 2 ulcers	OASIS-B: 3 = 3 ulcers	OASIS-B: 4 = 4 or more ulcers	OASIS-B: Total
0 = 0 ulcers	99.7*	0.2	+	+	+	4,526
1 = 1 ulcers	+	84.6*	+	+	+	39
2 = 2 ulcers	+	+	+	+	+	11
3 = 3 ulcers	+	+	+	+	+	+
4 = 4 ulcers	+	+	+	+	+	+
9 = Unknown	+	+	+	+	+	+
Total	4,527	41	15	+	+	4,587

* Indicates area of anticipated overlap between the CARE and OASIS-B instrument responses.

+ Cells based on a sample size of n < 11 are not shown.

NOTE: Missing = 4. Values refer to row percents.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Summary Results

- As indicated by the areas marked with an asterisk in Table 15-3c, there is a high degree of agreement between the CARE and OASIS-B items where predicted for numbers of Stage 3 pressure ulcers.
- Among those patients with no Stage 3 pressure ulcers indicated in CARE, 99.7 percent also had no Stage 3 pressure ulcers indicated in OASIS-B.
- Similarly, among those with one Stage 3 pressure ulcer recorded in CARE, 84.6 percent also had one Stage 3 pressure ulcer recorded in OASIS-B.
- The very small cell sizes for three or four Stage 3 pressure ulcers (n = 3 and n = 1, respectively) recorded on either tool mitigate any concern over the low agreement between CARE and OASIS-B on these items.

CARE Item: Number of Stage 4 Pressure Ulcers (item III.G2c)
OASIS-B Item: Number of Stage 4 Ulcers (item M0450d)

The *Skin Integrity* section of the CARE Item Set asks how many Stage 4 pressure ulcers (G2c) were present during the 2-day admission assessment window, while the OASIS-B asks how many Stage 4 ulcers were present (M0450d) on the day of the home visit and time during the home visit. The definitions from the CARE and OASIS-B are included below.

CARE Definition:
G2c. Stage 4: Full-thickness tissue loss with visible bone, tendon, or muscle. Slough or eschar may be present on some parts of the wound bed. Often includes undermining and tunneling.

OASIS-B Definition:
M0450d. Stage 4: Full-thickness skin loss with extensive destruction, tissue necrosis, or damage to muscle, bone, or supporting structures (e.g., tendon, joint capsule, etc.).

Key Item Differences

- *Assessment Windows:* The assessment time frame for the CARE Item Set is 2 calendar days (if admitted before 12 noon) or 3 calendar days (for patients admitted after 12 noon). The OASIS-B assessment time frame is day of the assessment visit.
- *Item Definitions:* The CARE and OASIS-B definitions for Stage 4 pressure ulcers are similar.
- *Scales:* While the CARE item scale plateaus at 8 (8 = eight or more ulcers), the OASIS-B item scale plateaus at 4 (4 = four or more ulcers).

Implications

- It is not likely that any differences in OASIS-B and CARE assessments on this item would be due to the difference in assessment time frame.
- Additionally, category 4 on the OASIS-B tool (four or more ulcers) will incorporate CARE categories 4 (four ulcers), 5 (five or more ulcers), 6 (six or more ulcers), 7 (seven or more ulcers), and 8 (eight or more ulcers).

The overall frequencies for these items are shown in Tables 15-4a and 15-4b below, followed by the cross-tabulation of the items in Table 15-4c.

Table 15-4a
CARE *admission* frequency of stage 4 pressure ulcers (G02b) at assessment

CARE: Frequency of stage 4 pressure ulcers	Frequency	Percent
Missing	+	+
0 = 0 ulcers*	4,563	99.5
1 = 1 ulcers	17	0.4
2 = 2 ulcers	+	+
Unknown	+	+

+ Cells based on a sample size of n < 11 are not shown.

* Assessments with no unhealed pressure ulcers at Stage 2 or higher or unstageable (III.G2) were coded as having zero pressure ulcers on this item.

NOTE: Missing = 4.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Table 15-4b
OASIS-B *start of care* frequency of stage 4 ulcers

OASIS-B: Frequency of stage 4 ulcers	Frequency	Percent
0 = 0 ulcers	45.7	99.6
1 = 1 ulcers	17	0.4
2 = 2 ulcers	+	+
3 = 3 ulcers	+	+
4 = 4 or more	+	+

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Summary Results

- There is a high degree of agreement between the CARE and OASIS-B items for numbers of Stage 4 pressure ulcers. There were very few Stage 4 ulcers at admission in this sample. These results are not shown in a table.
- Among those with no Stage 4 pressure ulcers indicated in CARE, 100 percent also had no Stage 4 pressure ulcers indicated in OASIS-B.
- Similarly, among those with one Stage 4 pressure ulcer recorded in CARE, 88.2 percent also had one Stage 4 pressure ulcer recorded in OASIS-B.
- It is not possible to draw any conclusions about the agreement between the CARE and OASIS-B item for any of the responses indicating more than one Stage 4 pressure ulcer.

CARE Item: Number of Unstageable Pressure Ulcers (item III.G2d)
OASIS-B Item: Number of Unobservable Pressure Ulcers (item M0450e)

The *Skin Integrity* section of the CARE Item Set asks how many unstageable pressure ulcers (item III.G2d) were present during the 2-day admission assessment window, while the OASIS-B asks if the patient has at least one pressure ulcer that cannot be observed (M0450e) on the day of the home visit and time during the home visit. The definitions from the CARE and OASIS-B are included below.

CARE Definition:
G2d. Unstageable: Full-thickness tissue loss in which the base of the ulcer is covered by slough (yellow, gray, green, or brown) or eschar (tan, brown, or black) in the wound bed. Include ulcers that are known or likely, but are not stageable due to non-removable dressing, device, cast, or suspected deep tissue injury in evolution.

OASIS-B Definition:
M0450e. Unobservable Pressure Ulcers: In addition to the above, is there at least one pressure ulcer that cannot be observed due to the presence of eschar or a non-removable dressing, including casts?

Key Item Differences

- *Assessment Windows:* The assessment time frame for the CARE Item Set is 2 calendar days (if admitted before 12 noon) or 3 calendar days (for patients admitted after 12 noon). The OASIS-B assessment time frame is the day of the visit.
- *Item Definitions:* The CARE definition includes unstageable ulcers but also includes ulcers that are known or likely but not stageable due to a non-removable dressing, device, cast, or suspected deep tissue injury in evolution, while OASIS-B only indicates the presence or absence of any pressure ulcers that cannot be observed due to the presence of an eschar or a non-removable dressing, including casts, rather than a count.
- *Scales:* While the CARE item scale plateaus at 8 (8 = eight or more ulcers), the OASIS-B item identifies whether at least one pressure ulcer in this category is present or not.

Implications

- It is not likely that any differences in OASIS-B and CARE assessments on this item would be due to the difference in assessment time frame.

The overall frequencies for these items are shown in Tables 15-5a and 15-5b below, followed by the cross-tabulation of the items in Table 15-5c.

Table 15-5a
CARE *admission* frequency of unstageable unhealed pressure ulcers (G02d) at assessment

CARE: Unstageable unhealed pressure ulcer at assessment count	Frequency	Percent
0 = 0 ulcers*	4,557	99.4
1 = 1 ulcers	18	0.4
2 = 2 ulcers	+	+
3 = 3 ulcers	+	+
9 = Unknown	+	+

+ Cells based on a sample size of n < 11 are not shown.

*Assessments with no unhealed pressure ulcers at Stage 2 or higher or unstageable (III.G2) were coded as having zero pressure ulcers on this item.

NOTE: Missing = 4.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Table 15-5b
OASIS-B *start of care* presence of at least one unobservable ulcer

OASIS-B: Unobservable pressure ulcer	Frequency	Percent
0 = No	4,563	99.5
1 = Yes	24	0.5

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Table 15-5c
CARE *admission* unstageable ulcer item by OASIS-B *start of care* presence of at least one unobservable pressure ulcer item

CARE: Admission unstageable ulcer	0 = No	1 = Yes	Total
0 = 0 ulcers	99.9*	0.1	4,557
1 = 1 ulcers	44.4	55.6*	18
2 = 2 ulcers	+	+	+
3 = 3 ulcers	+	+	+
9 = Unknown	+	+	+
Total	4,563	24	4,587

* Indicates area of anticipated overlap between the CARE and OASIS-B instrument responses.

+ Cells based on a sample size of n < 11 are not shown.

NOTE: Missing = 4. Values refer to row percents.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Summary Results

- As indicated by the areas marked with an asterisk in Table 15-5c, there is a fair degree of agreement where it was predicted between the CARE item for number of unstageable/unobservable pressure ulcers and the OASIS-B items for any unobservable pressure ulcers.
- Among those patients with "no" unstageable/unobservable pressure ulcers indicated in CARE, 99.9 percent also had no unobservable pressure ulcers indicated in OASIS-B.
- The low prevalence of any unstageable/unobservable pressure ulcers in the sample make it difficult to interpret the few cases where CARE reports an ulcer but OASIS-B does not.

CARE Item: Number of Surgical Wounds with Delayed Healing (item III.G5a)
OASIS-B Item: Status of Most Problematic (Observable) Surgical Wound (item M0488)

The *Skin Integrity* section of the CARE Item Set asks how many surgical wounds with delayed healing (item III.G5a) were present during the 2-day admission assessment window, while the OASIS-B identifies the degree of healing visible in the most problematic surgical wound (M0488) on the day of the visit. The definitions from the CARE and OASIS-B are included below.

In order to compare these items, a new binary CARE variable was created to indicate whether any surgical wounds were recorded in item III G5a. This CARE variable indicating Any Surgical Wounds Present was compared to the OASIS-B M0488 Status of Most Problematic Surgical Wound item responses.

CARE Definition:
G5a. Delayed Healing of Surgical Wound: A major wound that requires ongoing care from delayed healing.

OASIS-B Definition:
M0488. Status of Most Problematic (Observable) Surgical Wound: Identifies the degree of healing visible in the most problematic surgical wound. The "most problematic" wound is the one that may be complicated by the presence of infection, location of wound, large size, difficult management of drainage, or slow healing. [1] Fully granulating; [2] Early/partial granulation; [3] Not-healing; [NA] No observable surgical wound.

Key Item Differences

- *Assessment Windows:* The assessment time frame for the CARE Item Set is 2 calendar days (if admitted before 12 noon) or 3 calendar days (for patients admitted after 12 noon). The OASIS-B assessment time frame is the day of the assessment visit.
- *Item Definitions:* The CARE definition asks for the number of major surgical wounds with delayed healing while OASIS-B identifies the degree of healing visible in the most problematic surgical wound.
- *Scales:* While the CARE item scale for this item is based on the number of wounds, the OASIS-B item assesses the status of the most problematic wound and moves from fully granulating (1) to not healing (3).

Implications

- The differences in item definitions, in particular the classification of a wound as "unhealed" for CARE versus "fully granulating" for OASIS-B is likely to result in some inconsistencies between the two tools for less severe surgical wounds. Fully granulating wounds on OASIS-B may or may not get counted on CARE.

The overall frequencies for these items are shown in Tables 15-6a, 15-6b, and 15-6c below, followed by the cross-tabulation of the items in Tables 15-6d and 15-6e.

Table 15-6a
CARE *admission* count of delayed healing surgical wounds

CARE: Major wound count: Delayed healing surgical wound	Frequency	Percent
0*	4,315	94.1
1	219	4.8
2	26	0.6
3	+	+
4	+	+
5	+	+
6	+	+
7	+	+

*Responses for patients with no major wounds that require ongoing care because of draining, infection, or delayed healing (III.G5) were coded as zeros on this item.

+ Cells based on a sample size of n < 11 are not shown.

NOTE: Missing = 13.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Table 15-6b
CARE *admission* indicator of delayed healing surgical wounds

CARE: Surgical wound > 0	Frequency	Percent
0*	4,315	94.07
1	259	5.65

*Responses for patients with no major wounds that require ongoing care because of draining, infection, or delayed healing (III.G5) were coded as zeros on this item.

NOTE: Missing = 13.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Table 15-6c
OASIS-B *start of care* status of most problematic (observable) surgical wound

OASIS-B: Surgical wound indicator	Frequency	Percent
No observable surgical wound	3,303	72.0
1 = Fully granulating	305	6.7
2 = Early/partial granulation	799	17.4
3 = Not healing	180	3.9

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Table 15-6d
CARE *admission* count of unhealed surgical wounds at admission item by OASIS-B *start of care* status of most problematic (observable) surgical wound

CARE: Count of unhealed surgical wounds	No observable surgical wound	1 = Fully granulating	2 = Early/partial granulation	3 = Not healing	Total
0	75.9*	6.8*	14.9	2.4	4,315
1	7.8	+	58.9*	29.7*	219
2	+	+	61.5*	+	26
3	+	+	+	+	+
4	+	+	+	+	+
5	+	+	+	+	+
6	+	+	+	+	+
7	+	+	+	+	+
Total	3,303	305	799	180	4,587

* Indicates area of anticipated overlap between the CARE and OASIS-B instrument responses.

+ Cells based on a sample size of n < 11 are not shown.

NOTE: Missing = 13. Values refer to row percents.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Table 15-6e
CARE indicator of unhealed surgical wounds at *admission* item by OASIS-B *start of care* status of most problematic (observable) surgical wound

CARE: Unhealed surgical wound	No observable surgical wound	1 = Fully granulating	2 = Early/partial granulation	3 = Not healing	Total
0	75.9*	6.8*	14.9	2.4	4,315
1	7.3	+	59.5*	29.7*	259
Total	3,303	305	799	180	4,587

* Indicates area of anticipated overlap between the CARE and OASIS-B instrument responses.

+ Cells based on a sample size of n < 11 are not shown.

NOTE: Missing = 13. Values refer to row percents.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Summary Results

Comparison of number of surgical wounds in CARE with most problematic surgical wound in OASIS-B:

- As indicated by the areas marked with an asterisk in Table 15-6d, there is substantial agreement between the CARE item for number of surgical wounds with delayed healing and the OASIS-B items for most problematic surgical wound.
- Among those patients with no delayed healing surgical wounds indicated in CARE, 82.7 percent had either no problematic surgical wounds or fully granulated surgical wounds indicated in OASIS-B.
- Similarly the agreement for those with one delayed healing surgical wound in CARE is relatively high at 88.6 percent (either partial granulation or not healing in OASIS-B). The same level of agreement is evident when two delayed healing surgical wounds are indicated in CARE.

Comparison of any surgical wounds in CARE with most problematic surgical wound in OASIS-B:

- As indicated by the areas marked with an asterisk in Table 15-6e, there is substantial agreement between the CARE indicator for any surgical wounds with delayed healing and the OASIS-B items for most problematic surgical wound.
- Similar to the pattern observed in the previous comparison, there is a high degree of agreement between patients with no delayed healing of a surgical wound in CARE with those who had no surgical wounds (75.9 percent) or fully granulated surgical wounds (6.8 percent) in OASIS-B.

- Among those with at least one delayed healing surgical wounds indicated in CARE, 89.2 percent had either partially granulated or not healing surgical wounds in OASIS-B.

CARE Item: Number of Diabetic Foot Ulcer(s) (item III.G05c) and Number of Vascular Ulcer(s) (Arterial or Venous Including Diabetic Ulcers not Located on the Foot) (item III.G05d)

OASIS-B Item: Current Number of Observable Stasis Ulcer(s) (M0470)

To be able to compare CARE items with the OASIS-B item Number of Observable Stasis Ulcers that is used in HHA prospective payment system (PPS), it was necessary to combine two CARE items. The *Skin Integrity* section of the CARE Item Set asks how many diabetic foot ulcers (item III.G5c) and vascular ulcers (item III.G5d) were present during the 2-day admission assessment window, while the OASIS-B identifies the current number of observable stasis ulcers (M0470) in the day of the assessment visit. The definitions from the CARE and OASIS-B are included below.

A new CARE variable was created to indicate the number of either diabetic foot ulcers and/or vascular ulcers, with 4 representing four or more of these ulcers. This CARE variable indicating Number of Diabetic or Vascular Ulcers Present (S03_G05DiabeticPlusVascular) was compared to the OASIS-B M0470 Number of Current Observable Stasis Ulcer item responses.

CARE Definition:
G5c. Diabetic Foot Ulcer(s): Diabetic Foot Ulcer(s)

CARE Definition:
G5d. Vascular Ulcer(s): Arterial or venous, including diabetic ulcers not located on the foot.

OASIS-B Definition:
M0470. Number of Observable Stasis Ulcer(s): Identifies the number of visible (observable) stasis ulcers. [0] Zero; [1] One; [2] Two; [3] Three; [4] Four or more.

Key Item Differences

- *Assessment Windows:* The assessment time frame for the CARE Item Set is 2 calendar days (if admitted before 12 noon) or 3 calendar days (for patients admitted after 12 noon). The OASIS-B assessment time frame is the day of the assessment visit.
- *Item Definitions:* Combined, items III.G5c and III.G5d on CARE are similar in definition to the definition of M0470.
- *Scales:* While the scales for the CARE items do not have an upper bound, the new combined variable was scaled to match the OASIS-B item which is truncated at 4 (4 = four or more stasis ulcers).

Implications

- The OASIS-B and CARE assessments are not likely to indicate that a patient has different numbers of stasis ulcers, including diabetic foot ulcers and vascular ulcers, due to the difference in assessment time frame.
- Additionally, category 4 on the OASIS-B tool (four or more ulcers) will incorporate any score on CARE on III.G5c and III.G5d, combined, that is greater than or equal to 4.
- Combining two items on CARE may result in higher counts than OASIS-B because of the potential that clinicians double-counted wounds responding to each item, but also because the more explicit list on the CARE Item Set might result in better detection of existing wounds.

The overall frequencies for these items are shown in Tables 15-7a and 15-7b below, followed by the cross-tabulation of the items in Table 15-7c.

Table 15-7a
CARE *admission* count of diabetic and vascular ulcers at assessment

CARE: Diabetic and vascular ulcers	Frequency	Percent
0	4,442	96.8
1	82	1.8
2	23	0.5
3	+	+
4 or more	16	0.4

+ Cells based on a sample size of n < 11 are not shown.

NOTE: Missing = 15.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Table 15-7b
OASIS-B *start of care* count of stasis ulcers at assessment

OASIS-B: Stasis ulcer	Frequency	Percent
Missing	461	10.1
0*	4,039	88.1
1	47	1.0
2	12	0.3
3	+	+
4 or more	19	0.4

+ Cells based on a sample size of n < 11 are not shown.

*Responses for patients with no current observable stasis ulcers (M0470 = 0) were coded as zeros on this item.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Table 15-7c
CARE *admission* count of diabetic and vascular ulcers at assessment item by OASIS-B *start of care* count of stasis ulcers

CARE: Diabetic plus vascular	Missing	0	1	2	3	4 or more	Total
0	10.4	89.1*	0.4	+	+	+	4,442
1	+	61.0	30.5*	+	+	+	82
2	+	47.8	+	+	+	+	23
3	+	+	+	+	+	+	+
4 or more	+	+	+	+	+	+	16
Total	461	4,039	47	12	+	19	4,587

* Indicates area of anticipated overlap between the CARE and OASIS-B instrument responses.

+ Cells based on a sample size of n < 11 are not shown.

NOTE: Missing CARE Item = 15. Values refer to row percents.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Summary Results

- As indicated by the areas marked with an asterisk in Table 15-7c, there is a high level of agreement between the CARE variable for number of diabetic foot ulcers or vascular ulcers and the OASIS-B items for number of observable stasis ulcers.
- CARE Item Set tended to have higher counts of ulcers than OASIS-B.

- Among patients with no diabetic or vascular ulcers on CARE Item Set, 89.1 percent had no stasis ulcers reported in OASIS-B.

C. Cognitive Status, Mood, and Pain: Pain

CARE Item: Pain Effect on Activities (item IV.G05)

OASIS-B Item: Frequency of Pain Interfering with Patient's Activity or Movement (item M0420)

The *Pain* section of the CARE Item Set asks if the patient has limited his/her activities because of pain during the 2-day admission assessment window (item IV.G5), while the OASIS-B item identifies the frequency with which pain interferes with patient's activity or movement (M0420) during the visit. The definitions from the CARE and OASIS-B instruments are included below.

CARE Definition:
G5. Pain Effect on Activities: During the past 2 days, have you limited your activities because of pain?

OASIS-B Definition:
M0420. Frequency of Pain: Identifies frequency with which pain interferes with patient's activities, with treatment if prescribed. Frequency of Pain interfering with patient's activity or movement: [0] Patient has no pain or pain does not interfere with activity or movement; [1] Less often than daily; [2] Daily, but not constantly; [3] All of the time.

Key Item Differences

- *Assessment Windows:* The assessment time frame for the CARE Item Set is 2 calendar days (if admitted before 12 noon) or 3 calendar days (for patients admitted after 12 noon). The OASIS-B assessment time frame is the day of the assessment visit. Both tools employ interviews. The OASIS-B manual also suggests the use of history and referral information if responses are not available through interviews.
- *Item Definitions:* The CARE and OASIS-B definitions for the effect of pain on activities are similar.
- *Scales:* While the CARE scale assesses the patient with either no (0), yes (1), or unable to answer or no response (8), the OASIS-B scale is more subdivided, including patient has no pain or pain does not interfere with activity or movement (0), less often than daily (1), daily, but not constantly (2), or all of the time (3).

Implications

- The OASIS-B and CARE assessments may indicate that a patient has different effects of pain on activities due to the difference in assessment time frame and sources of information if referral information and history are used for OASIS-B items.
- The OASIS-B items include responses indicating that the patient has pain daily, which may be difficult to assess reliably in the span of the assessment window and

therefore may result in increased variability between the OASIS-B responses and the CARE responses.

- Additionally, a score of 1 on the CARE Item Set may incorporate any score of 1, 2, or 3 on OASIS-B.

The overall frequencies for these items are shown in Tables 15-8a and 15-8b below, followed by the cross-tabulation of the items in Table 15-8c.

Table 15-8a
CARE *admission* presence of pain effect on activities

CARE: Pain interview: Pain effect on activities	Frequency	Percent
No pain or hurting in last 2 days or missing	1,580	34.5
0 = No	913	19.9
1 = Yes	2,084	45.4
8 = Unable to respond	+	+

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Table 15-8b
OASIS-B *start of care* frequency of pain effect on activities

OASIS-B: Frequency of pain effect on activities	Frequency	Percent
0 = Patient has no pain or pain does not interfere with activity or movement	1,326	28.9
1 = Less often than daily	595	13.0
2 = Daily, but not constantly	2,133	46.5
3 = All of the time	533	11.6

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Table 15-8c
CARE *admission* presence of pain effect on activities by OASIS-B *start of care* pain effect on activities items

CARE: Pain effect on activities	0 = Patient has no pain or pain does not interfere with activity or movement	1 = Less often than daily	2 = Daily, but not constantly	3 = All of the time	Total
No pain or hurting in last 2 days or missing	69.6*	14.8	14.2	1.4	1,580
0 = No	14.9*	18.3*	59.5	7.3	913
1 = Yes	4.3	9.2*	65.3*	21.3*	2,084
8 = Unable to respond	+	+	+	+	+
Total	1,326	595	2,133	533	4,587

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Summary Results

- As indicated by the areas marked with an asterisk in Table 15-8c, there was good agreement between the CARE item for pain effect on activities and the OASIS-B item for frequency of pain.
- Note that only the patients who responded "Yes" to an initial question about the presence of pain were assessed for pain's effect on activities. Therefore, we have viewed the 69.6 percent of patients with a missing value in CARE but no pain in OASIS-B as a potential area of agreement.
- A surprising finding is that among patients who responded "Yes" to any pain present but who reported that pain does not limit their activities on CARE, the majority (59.5 percent) had daily (but not constant) pain interfering with activity or movement reported on OASIS-B.
- Among patients who responded "Yes" to any pain present *and* reported that pain limits their activities on CARE, 95.8 percent indicated that pain impacts their movement or activities at some frequency (ranging from less often than daily to all of the time) on OASIS-B.
- The discrepancies between these items may result for multiple reasons. For example, while the CARE item is an interview item, the OASIS-B item is not set up as a direct interview item, although it may be assessed that way. In addition, differing item definitions or differing assessment windows may also result in discrepancies, but additional analyses may be undertaken to explore this further.

D. Impairments: Bladder and Bowel Management

CARE Item: External or Indwelling Device or Require Intermittent Catheterization – Bladder (item V.A02a)

CARE Item: Frequency of incontinence – Bladder (item V.A03a)

OASIS-B Item: Urinary Incontinence or Urinary Catheter Presence (item M0520)

The *Bladder and Bowel Management* section of the CARE Item Set asks if the patient uses an external or indwelling device or requires intermittent catheterization for the bladder (item V.A2a) and the frequency of incontinence (item V.A3a) during the 2-day admission assessment window, while the OASIS-B asks about the presence of urinary incontinence or a condition that requires urinary catheterization (M0520). The definitions from the CARE and OASIS-B are included below.

CARE Definitions:
A2a. External or Indwelling Device or Require Intermittent Catheterization - Bladder: Does the patient use an external or indwelling device or require intermittent catheterization?
A3a. Indicate the Frequency of Incontinence - Bladder: [0] Continent (no documented incontinence); [1] Stress incontinence only (bladder only); [2] Incontinent less than daily (only once during the 2-day assessment period); [3] Incontinent daily (at least once a day); [4] Always incontinent; [5] No urine/bowel output (e.g., renal failure); [9] Not applicable (e.g., indwelling catheter)

OASIS-B Definition:
M0520. Urinary Incontinence or Urinary Catheter Presence: Identifies presence of urinary incontinence or condition that requires urinary catheterization of any type, including intermittent or indwelling. The etiology of incontinence is not addressed in this item. Urinary incontinence or urinary catheter presence: [0] No incontinence or catheter (includes anuria or ostomy for urinary drainage); [1] Patient is incontinent; [2] Patient requires a urinary catheter (i.e., external, indwelling, intermittent, suprapubic).

Key Item Differences

- *Assessment Windows:* The assessment time frame for the CARE Item Set is 2 calendar days (if admitted before 12 noon) or 3 calendar days (for patients admitted after 12 noon). The OASIS-B assessment time frame is the day of the assessment visit.
- *Item Definitions:* The CARE item A2a is defined by the use of an external or indwelling device or the requirement of intermittent catheterization while the OASIS-B item is defined by urinary incontinence and the presence of a urinary catheter.
- *Scales:* The CARE scale assesses the patient with either no (0), or yes (1), the OASIS-B scale is divided by no incontinence or catheter (0), patient is incontinent (1), or patient requires a urinary catheter (2).

Implications

- The OASIS-B and CARE assessments are not likely to differ due to differences in assessment time frames.
- Because the OASIS-B item incorporates both incontinence and device use, it is not possible to perfectly align the item scales.

The overall frequencies for these items are shown in Tables 15-9a(1), 15-9a(2), 15-9b(1), and 15-9b(2) below, followed by the cross-tabulation of the items in Table 15-9c(1) and 15-9c(2).

Table 15-9a(1)
CARE *admission* presence of external or internal bladder device

CARE: Bladder: Device use	Frequency	Percent
0 = No*	4,329	94.38
1 = Yes	257	5.6

* Patients with no impairments in bowel or bladder management (V.A1) were coded as having no bladder device use on this item.

\+ Cells based on a sample size of n < 11 are not shown.

NOTE: Missing = 1.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Table 15-9a(2)
CARE *admission* frequency of bladder incontinence

CARE: Frequency of bladder incontinence	Frequency	Percent
0 = Continent*	2,456	53.54
1 = Stress incontinence only	404	8.81
2 = Incontinent less than daily	336	7.33
3 = Incontinence daily	904	19.71
4 = Always incontinent	325	7.09
5 = No urine output	+	+
9 = Not applicable	151	3.29

* Patients with no impairments in bowel or bladder management (V.A1) were coded as continent on this item.

\+ Cells based on a sample size of n < 11 are not shown.

NOTE: Missing = 1.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Table 15-9b
OASIS-B *start of care* urinary incontinence or catheter present

OASIS-B: Urinary incontinence	Frequency	Percent
0 = No incontinence or catheter (includes anuria or ostomy for urinary drainage)	2,382	51.93
1 = Patient is incontinent	2,022	44.08
2 = Patient requires a urinary catheter (i.e., external, indwelling, intermittent, suprapubic)	183	3.99

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Table 15-9c(1)
CARE *admission* presence of bladder device by OASIS-B *start of care* urinary incontinence or catheter present

CARE: Presence of bladder device	0 = No incontinence or catheter (includes anuria or ostomy for urinary drainage)	1 = Patient is incontinent	2 = Patient requires a urinary catheter (i.e., external, indwelling, intermittent, suprapubic)	Total
0 = No	54.4*	45.3*	0.3	4,329
1 = Yes	9.3	23.7	66.9*	257
Total	2,382	2,022	183	4,587

***** Indicates area of anticipated overlap between the CARE and OASIS-B instrument responses.

+ Cells based on a sample size of n < 11 are not shown.

NOTE: Missing = 1. Values refer to row percents.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Table 15-9c(2)
CARE *admission* frequency of urinary incontinence by OASIS-B urinary incontinence or catheter present

CARE: Frequency of urinary incontinence	0 = No incontinence or catheter (includes anuria or ostomy for urinary drainage)	1 = Patient is incontinent	2 = Patient requires a urinary catheter (i.e., external, indwelling, intermittent, suprapubic)	Total
0 = Continent	92.5*	6.5	1.0	2,456
1 = Stress incontinence only	9.9	89.6*	+	404
2 = Incontinent less than daily	5.7	93.5*	+	336
3 = Incontinence daily	3.0	96.3*	+	904
4 = Always incontinent	+	94.8*	3.7	325
5 = No urine output	+	+	+	+
9 = Not applicable	7.9	+	88.7*	151
Total	2,382	2,022	183	4,587

* Indicates area of anticipated overlap between the CARE and OASIS-B instrument responses.

+ Cells based on a sample size of n < 11 are not shown.

NOTE: Missing = 1. Values refer to row percents.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Summary Results

Comparison of CARE presence of external/internal device vs. OASIS-B frequency of incontinence or catheter:

- As indicated by the areas marked with an asterisk in Table 15-9c(1), there was a fair amount of agreement where expected between the CARE item for presence of internal or external bladder device and OASIS-B frequency of incontinence or urinary catheter.
- Among patients who were assessed as no external or internal urinary device on CARE, 54.4 percent reported no urinary incontinence or catheter on OASIS-B. Notably, an additional 45.3 percent who did not need a device on CARE were recorded as incontinent but not requiring a catheter on OASIS-B. This suggests that for patients without a bladder device recorded on the CARE Item Set, approximately 99.7 percent of responses were in agreement with the corresponding OASIS-B assessment.
- Among patients who were assessed as having an external or internal urinary device on CARE, 66.9 percent were reported as requiring a urinary catheter on OASIS-B.

- The existence of some discrepancies between these items is not unexpected given that the CARE item focuses exclusively on presence of a bladder device, while the OASIS-B item combines information about incontinence and bladder devices. This creates multiple areas of expected agreement as exhibited in Table 15-9c(1).

Comparison of CARE frequency of bladder incontinence vs. OASIS-B frequency of incontinence or catheter:

- As indicated by the areas marked with an asterisk in Table 15-9c(2), there was a high amount of agreement between the CARE item for frequency of bladder incontinence and OASIS-B frequency of incontinence or urinary catheter.
- Among patients who were assessed as continent on the CARE Item Set, 92.5 percent reported no urinary incontinence or catheter on OASIS-B.
- Similarly, among patients who were assessed as either having stress incontinence, incontinence less than daily, incontinence daily, or always incontinent, between 89.6 percent and 96.3 percent were reported to also be incontinent on OASIS-B, indicating a high level of agreement.
- In general, there were very few discrepancies between these items; those that occurred may largely be due to differing item definitions. For example, while CARE counts "stress incontinence" as a form of incontinence, this may not always be considered incontinent in the OASIS-B though instructions state that if a patient is incontinent at all (example given: "Sometimes I leak a bit") the patient should be included in the Incontinent category.

CARE Item: External or Indwelling Device or Require Intermittent Catheterization – Bowel (item V.A02b)

OASIS-B Item: Ostomy for Bowel Elimination (item M0550)

The *Bladder and Bowel Management* section of the CARE Item Set asks if the patient uses an external or indwelling device or requires intermittent catheterization for bowel management (item V.A2b) during the 2-day admission assessment window, while the OASIS-B asks about the presence of an ostomy for bowel elimination (M0550) and whether it is related to a recent inpatient stay or a change in medical treatment plan in the last 14 days. The definitions from CARE and OASIS-B are included below.

CARE Definition:
A2b. External or Indwelling Device or Require Intermittent Catheterization – Bowel: Does the patient use an external or indwelling device or require intermittent catheterization?

OASIS-B Definition:
M0550. Ostomy for Bowel Elimination: Identifies whether the patient has an ostomy for bowel elimination and, if so, whether the ostomy was related to a recent inpatient stay or a change in medical treatment plan. Ostomy for Bowel Elimination: Does this patient have an ostomy for bowel elimination that (within the last 14 days): a) was related to an inpatient facility stay, or b) necessitated a change in medical or treatment regimen? [0] Patient does not have an ostomy for bowel elimination; [1] Patient's ostomy was not related to an inpatient stay and did not necessitate change in medical or treatment regiment; [2] The

ostomy was related to an inpatient stay or did necessitate change in medical or treatment regimen.

Key Item Differences

- *Assessment Windows:* The assessment time frame for the CARE Item Set is 2 calendar days (if admitted before 12 noon) or 3 calendar days (for patients admitted after 12 noon). The OASIS-B assessment time frame is the day of the assessment visit as well as the last 14 days.
- *Item Definitions:* The CARE definition for item A2b is broader in scope than the OASIS-B definition for M0550, incorporating both external and internal devices and intermittent catheterization; OASIS-B subdivides the definition for ostomy as it is related to an inpatient stay or a change in regimen.
- *Scales:* The CARE item category of 1 (1 = yes) incorporates the OASIS-B item categories of 1 (ostomy not related to an inpatient stay and did not necessitate change in a medical or treatment program) and 2 (ostomy related to an inpatient stay or did necessitate change in a medical condition).

Implications

- The OASIS-B and CARE assessments may differ in reported use of an ostomy for bowel elimination due to the difference in scales, and differences in the period of time that the clinician can use to assess the patient. The longer assessment period on the OASIS-B might result in a higher rate of use when examining the results from this tool.
- However, the CARE item is also more inclusive than the OASIS-B, including intermittent catheterization in addition to both external and internal devices. It would be expected that the data for these two items when compared would indicate patients who have no ostomy use on the OASIS-B would show device use on the CARE item.

The overall frequencies for these items are shown in Tables 15-10a and 15-10b below, followed by the cross-tabulation of the items in Table 15-10c.

Table 15-10a
CARE *admission* presence of external or internal bowel device

CARE: Bowel: Device use	Frequency	Percent
0 = No*	4,515	98.4
1 = Yes	71	1.6

* Patients with no impairments in bowel or bladder management (V.A1) were coded as having no bowel device use on this item.

NOTE: Missing = 1.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Table 15-10b
OASIS-B *start of care* presence of ostomy for bowel elimination

OASIS-B: Ostomy for bowel elimination	Frequency	Percent
0 = Patient does not have an ostomy for bowel elimination.	4,501	98.1
1 = Patient's ostomy was not related to an inpatient stay and did not necessitate change in medical or treatment regimen.	58	1.3
2 = The ostomy was related to an inpatient stay or did necessitate change in medical or treatment regimen.	28	0.6

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Table 15-10c
CARE *admission* presence of external or internal bowel device by OASIS-B *start of care* presence of device for bowel elimination

CARE: Bowel device use	0 = Patient does not have an ostomy for bowel elimination	1 = Patient's ostomy was not related to an inpatient stay and did not necessitate change in medical or treatment regimen	2 = The ostomy was related to an inpatient stay or did necessitate change in medical or treatment regimen	Total
0 = No	99.2*	0.6	0.2	4,515
1 = Yes	29.6	46.5	23.9	71
Total	4,501	58	28	4,587

* Indicates area of anticipated overlap between the CARE and OASIS-B instrument responses.

NOTE: Missing = 1. Values refer to row percents.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Summary Results

- As indicated by the areas marked with an asterisk in Table 15-10c, there was a relatively high amount of agreement between the CARE item for presence of an internal or external bowel device and OASIS-B presence of ostomy.
- Among patients who reported no external or internal bowel device on the CARE Item Set, 99.2 percent reported no ostomy on OASIS-B, which follows the expected response pattern.
- Similarly, it is also notable that the majority of patients reported to have an internal or external bowel device on the CARE Item Set were assessed as having an ostomy that either was (23.9 percent) or was not (46.5 percent) related to an inpatient stay or change in treatment regimen on OASIS-B. As mentioned above, it is not unexpected that patients with device use on the CARE Item Set are assessed in the data as having "No ostomy" on OASIS-B, likely attributable to the more inclusive definition on the CARE Item Set.

CARE Item: Indicate the Frequency of Incontinence – Bowel (item V.A03b)

OASIS-B Item: Bowel Incontinence Frequency (item M0540)

The *Bladder and Bowel Management* section of the CARE Item Set indicates the frequency of bowel incontinence (item V.A3b) present during the 2-day admission assessment window, while the OASIS-B asks about weekly frequency of bowel incontinence (M0540) during the visit. The definitions from the CARE and OASIS-B instruments are included below.

CARE Definition:
A3b. Indicate the Frequency of Incontinence – Bowel: Indicate the frequency of incontinence – bowel.

OASIS-B Definition:
M0540. Bowel Incontinence Frequency: Identifies how often the patient experiences bowel incontinence. Refers to the frequency of a symptom (bowel incontinence), not to the etiology (cause) of that symptom. This item does not address treatment of incontinence or constipation (e.g., a bowel program). Bowel Incontinence Frequency: [0] Very rarely or never has bowel incontinence; [1] Less than once weekly; [2] One to three times weekly; [3] Four to six times weekly; [4] On a daily basis; [5] More often than once daily; [NA] Patient has ostomy for bowel elimination; [UK] Unknown.

Key Item Differences

- *Assessment Windows:* The assessment time frame for the CARE Item Set is 2 calendar days (if admitted before 12 noon) or 3 calendar days (for patients admitted after 12 noon). The OASIS-B assessment time frame is the day of the assessment visit.
- *Item Definitions:* The CARE definition for item A3b is equivalent to the OASIS-B definition for M0550.
- *Scales:* The CARE item categories of frequency, which are generally based on daily units, differ in comparison to the categories of frequency for the OASIS-B, which are based on weekly *and* daily units**.**

Implications

- The OASIS-B and CARE assessments may indicate a difference in frequency of bowel incontinence due to the difference in assessment scales and the assessment time frame.
- Additionally, most of the CARE item categories are equivalent to more than one OASIS-B item category (i.e., a 2–Incontinent Less Than Daily on CARE is equivalent to either a 1–Less Than Once Weekly or a 2–One to Three Times Weekly for the OASIS-B item).

The overall frequencies for these items are shown in Tables 15-11a and 15-11b below, followed by the cross-tabulation of the items in Table 15-11c.

Table 15-11a
CARE *admission* frequency of bowel incontinence

CARE: Frequency of bowel incontinence	Frequency	Percent
0 = Continent*	3,886	84.72
2 = Incontinent less than daily	335	7.30
3 = Incontinence daily	156	3.40
4 = Always incontinent	114	2.49
5 = No bowel output	+	+
9 = Not applicable	88	1.92

* Patients with no impairments in bowel or bladder management (V.A1) were coded as continent on this item (V.A2b).

+ Cells based on a sample size of n < 11 are not shown.

NOTE: Missing = 1.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Table 15-11b
OASIS-B *start of care* frequency of bowel incontinence

OASIS-B: Bowel incontinence frequency	Frequency	Percent
0 = Very rarely or never has bowel incontinence	3,933	85.74
1 = Less than once weekly	164	3.58
2 = One to three times weekly	175	3.82
3 = Four to six times weekly	77	1.68
4 = On a daily basis	115	2.51
5 = More often than once daily	34	0.74
NA = Patient has ostomy for bowel elimination	86	1.87
Unknown	+	+

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Table 15-11c
CARE *admission* frequency of bowel incontinence by OASIS-B *start of care* frequency of bowel incontinence

CARE: Frequency of bowel incontinence	0 = Very rarely or never has bowel incontinence	1 = Less than once weekly	2 = One to three times weekly	3 = Four to six times weekly	4 = On a daily basis	5 = More often than once daily	NA = Patient has ostomy for bowel elimination	Unknown	Total
0 = Continent	96.2*	1.6	0.7	+	+	+	1.0	+	3,886
2 = Incontinent less than daily	29.9*	26.9*	31.9*	8.1*	+	+	+	+	335
3 = Incontinence daily	19.9	+	17.9	17.9*	33.3*	5.1*	+	+	156
4 = Always incontinent	+	+	9.6	14.0	40.4*	17.5*	9.6	+	114
5 = No bowel output	+	+	+	+	+	+	+	+	+
9 = Not applicable	53.4*	+	+	+	+	+	39.8*	+	88
Total	3,933	164	175	77	115	34	86	+	4,587

* Indicates area of anticipated overlap between the CARE and OASIS-B instrument responses.

+ Cells based on a sample size of n < 11 are not shown.

NOTE: Missing = 1. Values refer to row percents.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Summary Results

- As indicated by the areas marked with an asterisk in Table 15-11c, there was a high amount of agreement between the CARE item for frequency of bowel incontinence and OASIS-B frequency of bowel incontinence.
- Specifically, there was a relatively high amount of agreement for patients who were reported to have bowel incontinence less than daily on the CARE. Of patients with incontinence less than daily indicated on the CARE Item Set, 96.8 percent were reported to have OASIS-B responses that indicate incontinence less than daily: "No or very rare bowel incontinence", "Incontinence less than weekly", "Incontinence one to three times weekly" or "Incontinence four to six times weekly."
- Similarly, it is also notable that the majority of patients reported as always incontinent of bowel on the CARE Item Set were assessed as incontinent either daily (40.4 percent) or more than daily (17.5 percent) on OASIS-B.
- The majority of patients (71.4 percent) assessed with "No bowel output" on the CARE Item Set were reported as having no incontinence or very rare incontinence on OASIS-B.
- The "Not applicable" responses on the CARE Item Set were split between the "Very rarely or never has bowel incontinence" and "Not applicable" on OASIS-B. There were 53.4 percent of the 88 patients who were rated as "Very rarely or never has bowel incontinence," and 39.8 percent were coded as "Not applicable" on the OASIS-B instrument.

E. Impairments: Hearing, Vision, and Communication

CARE Item: Ability to See in Adequate Light (item V.C1c)

OASIS-B Item: Vision (item M0390)

The *Hearing, Vision, and Communication* section of the CARE Item Set assesses the patient's usual ability to see in adequate light (item V.C1c), during the 2-day admission assessment window. The OASIS-B similarly identifies the patient's ability to see and function within his/her environment. The definitions from the CARE and OASIS-B are included below.

CARE Definition:
C1c. Ability to See in Adequate Light (with Glasses or Other Visual Appliances).

OASIS-B Definition:
M0390. Vision: Identifies the patient's ability to see and visually manage (function) within his/her environment, wearing corrective lenses if these are usually worn. Vision with corrective lenses if the patient usually wears them: [0] Normal vision: see adequately in most situations; can see medication labels or newsprint; [1] Partially impaired: cannot see medication labels or newsprint, but can see obstacles in path and the surrounding layout; can count fingers at arm's length; [2] Severely impaired: cannot locate objects without hearing or touching them or patient nonresponsive.

Key Item Differences

- *Assessment Windows:* The assessment time frame for the CARE Item Set is 2 calendar days (if admitted before 12 noon) or 3 calendar days (for patients admitted after 12 noon). The OASIS-B assessment time frame is the day of the assessment visit.
- *Item Definitions:* The CARE and OASIS-B definitions for ability to see in light or vision are similar. Both include the use of corrective lenses; however, they do use slightly different terminology to define the levels. The least impaired category on CARE is defined as "adequate" as compared to "normal" on OASIS-B.
- *Scales:* While the CARE item scale ascends to demonstrate the ability to see in adequate light, the OASIS-B item scale ascends to demonstrate the impact of the patient's vision impairment on the ability to read or see objects.

Implications

- The least impaired category on CARE, being defined as "adequate," appears to be more easily achieved than "normal" on OASIS-B, so we might anticipate some discrepancies at this level, with more patients being assessed in the least impaired category on the CARE Item Set than on the OASIS-B instrument.

The overall frequencies for these items are shown in Tables 15-12a and 15-12b below, followed by the cross-tabulation of the items in Table 15-12c.

Table 15-12a
CARE *admission* ability to see in adequate light

CARE: Vision: Ability to see in adequate light	Frequency	Percent
1 = Severely impaired	117	2.6
2 = Mildly to moderately impaired	890	19.4
3 = Adequate*	3,536	77.1
8 = Unable to assess	38	0.8
9 = Unknown	+	+

* Patients with no impairments with hearing, vision, or communication (V.C1) were coded as having adequate vision on this item (V.C1c).

+ Cells based on a sample size of n < 11 are not shown.

NOTE: Missing = 1.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Table 15-12b
OASIS-B *start of care* vision ability

OASIS-B: Vision	Frequency	Percent
0 = Normal vision: sees adequately in most situations; can see medication labels, newsprint.	3,605	78.6
1 = Partially impaired: cannot see medication labels or newsprint, but can see obstacles in path, and the surrounding layout; can count fingers at arm's length.	915	20.0
2 = Severely impaired: cannot locate objects without hearing or touching them or patient nonresponsive.	67	1.5

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Table 15-12c
CARE *admission* ability to see in adequate light by OASIS-B *start of care* ability to see

OASIS-B: Vision	0 = Normal vision: sees adequately in most situations; can see medication labels, newsprint	1 = Partially impaired: cannot see medication labels or newsprint, but can see obstacles in path, and the surrounding layout; can count fingers at arm's length	2 = Severely impaired: cannot locate objects without hearing or touching them or patient nonresponsive	Total
1 = Severely impaired	+	47.9	49.6*	117
2 = Mildly to moderately impaired	28.8	70.9*	+	890
3 = Adequate	93.8*	6.2	+	3,536
8 = Unable to assess	68.4	+	+	38
9 = Unknown	+	+	+	+
Total	3,605	915	67	4,587

* Indicates area of anticipated overlap between the CARE and OASIS-B instrument responses.

+ Cells based on a sample size of n < 11 are not shown.

NOTE: Missing = 1. Values refer to row percents.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Summary Results

- As indicated by the areas marked with an asterisk in Table 15-12c, there is a fairly high degree of agreement between the CARE and OASIS-B items at the unimpaired or slightly impaired levels, although this decreases to only moderate agreement at the most severely impaired categories.
- Among those with adequate vision reported in CARE, 93.8 percent also had normal vision indicated in OASIS-B. Similarly, among those with mildly to moderately impaired vision in CARE, 70.9 percent were assessed as partially impaired in OASIS-B.
- Notably, of the patients identified as severely impaired in CARE, there was an approximately even distribution of responses between the expected OASIS-B response, severely impaired (49.6 percent), and the next less severe category, partially impaired (47.9 percent). Since the descriptions for "severely impaired" in CARE and OASIS-B are quite similar, we would expect greater agreement in responses. The scoring for these two categories of severity is the opposite in comparison to the other instrument's scoring. The unexpected result of the even distribution of responses for these two items may be the result of clinical error when scoring these items.

F. Impairments: Respiratory Status

CARE Item: Respiratory Status – Short of Breath (item V.F1a-b)

OASIS-B Item: Short of Breath (item M0490)

The *Respiratory Status* section of the CARE Item Set assesses whether the patient is dyspneic or noticeably short of breath with and without supplemental oxygen (item V.F1a-b) during the 2-day admission assessment window. The OASIS-B similarly identifies the patient's level of shortness of breath during the time of the visit. The definitions from the CARE and OASIS-B are included below. CARE assesses the patient on respiratory status with supplemental oxygen and without supplemental oxygen separately, while the OASIS-B does not differentiate whether the patient is on oxygen or not. Therefore, the use of an additional respiratory status item on OASIS-B would allow stratification of the analyses to see how well the items on the respective tools compare once the OASIS-B item for oxygen is controlled.

For this analysis, three distinct comparisons were conducted:

1. Comparison of CARE item F1a. *Respiratory Status with Supplemental Oxygen* with the OASIS-B item M0490 *Short of Breath* using the full CARE–OASIS-B analytic sample (see Table 15-13c(1)).

2. Comparison of CARE item F1a. *Respiratory Status with Supplemental Oxygen* with the OASIS-B item M0490 *Short of Breath* using only patients from the CARE–OASIS-B analytic sample who had "Oxygen Use" reported on OASIS-B item M0500 *Respiratory Treatments* (see Table 15-13c(2)).

3. Comparison of CARE item F1b. *Respiratory Status without Supplemental Oxygen* with the OASIS-B item M0490 *Short of Breath* including only those patients where no oxygen use is indicated on the CARE–OASIS-B (see Table 15-13c(3)).

CARE Definition:
F1a. Respiratory Status with Supplemental Oxygen: Was the patient dyspneic or noticeably short of breath?

CARE Definition:
F1b. Respiratory Status without Supplemental Oxygen: Was the patient dyspneic or noticeably short of breath?

OASIS-B Definition:
M0490. Short of Breath: Identifies the patient's level of shortness of breath. When is the patient dyspneic or noticeably short of breath? [0] Never, patient is not short of breath; [1] When walking more than 20 feet, climbing stairs; [2] With moderate exertion (e.g., while dressing, using commode or bedpan, walking distances less than 20 feet); [3] With minimal exertion (e.g., while eating, talking, or performing other activities of daily living (ADLs)) or with agitation; [4] At rest (during the day or night).

OASIS-B Definition:
M0500. Respiratory Treatments Utilized at Home: Oxygen (intermittent or continuous), ventilator (continually or at night), continuous airway pressure, or none of the above.

Key Item Differences

- *Assessment Windows:* The assessment time frame for the CARE Item Set is 2 calendar days (if admitted before 12 noon) or 3 calendar days (for patients admitted after 12 noon). The OASIS-B assessment time frame is the day of the assessment visit.
- *Item Definitions:* The CARE and OASIS-B definitions for respiratory status, including whether the patient is dyspneic or short of breath, are similar.
- *Scales:* The CARE and OASIS-B item scales are similar, but the OASIS-B category of 4 (at rest during the day or night) incorporates the CARE categories of 5 (severe, with evidence that patient is struggling to breathe at rest) and 4 (mild at rest during day or night).
- The scales between the CARE and OASIS-B also differ in that the CARE respiratory status item has two assessment scores that are entered for the respiratory status of the patient who *requires oxygen*.
- The CARE's first score is "with supplemental oxygen" and the second is "without the use of supplemental oxygen." Patients who might be assessed on both items include those who can use oxygen intermittently or are actively being weaned.
- The OASIS-B item M0490 Short of Breath requires the clinician to assess the patient's respiratory status *without distinguishing* the patient's respiratory status with or without the use of supplemental oxygen. The OASIS-B asks the clinician to include the respiratory treatment the patient utilizes at home in a separate item (M0500).

Implications

- Since the OASIS-B item does not specify whether the patient should be assessed with or without oxygen, but the CARE items do, we controlled for oxygen use in the comparison of the two assessments in the two sub-analyses by using the OASIS-B item to stratify the cross-tabulation of the CARE and OASIS-B items by whether the patient has oxygen use reported on the OASIS-B (M0500). We anticipate that the agreement between the two assessments may be lower for these items than others because patients who only intermittently use oxygen, or who are being weaned, may or may not have been using oxygen when they were assessed on the OASIS-B respiratory status item.

The overall frequencies for these items are shown in Tables 15-13a(1-3) and 15-13b(1-3) below, followed by the cross-tabulation of the items in Tables 15-13c(1-3).

Table 15-13a(1)
CARE *admission* respiratory status with supplemental oxygen, all patients

CARE: Respiratory: With supplemental O_2 was patient dyspneic or short of breath	Frequency	Percent
0 = Never	99	2.16
1 = When climbing stairs	52	1.13
2 = With moderate exertion	259	5.65
3 = With minimal exertion	180	3.92
4 = Mild at rest	94	2.05
5 = Severe	24	0.52
8 = Not assessed	162	3.53
9 = Not applicable*	3,714	80.97

* Patients with no impairments with respiratory status (V.F1) were coded as "Not applicable" on this item.

NOTE: Missing = 3.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Table 15-13a(2)
CARE *admission* respiratory status with supplemental oxygen, when oxygen use is indicated on OASIS-B

CARE: Respiratory: With supplemental O_2 was patient dyspneic or short of breath	Frequency	Percent
0 = Never	36	4.91
1 = When climbing stairs	32	4.37
2 = With moderate exertion	210	28.65
3 = With minimal exertion	167	22.78
4 = Mild at rest	92	12.55
5 = Severe	22	3.0
8 = Not assessed	44	6.0
9 = Not applicable*	130	17.74

* Patients with no impairments with respiratory status (V.F1) were coded as "Not applicable" on this item.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Table 15-13a(3)
CARE *admission* respiratory status without supplemental oxygen, when oxygen use is not indicated on OASIS-B

CARE: Respiratory: Without supplemental O_2 was patient dyspneic or short of breath	Frequency	Percent
0 = Never*	2,170	56.31
1 = When climbing stairs	285	7.39
2 = With moderate exertion	946	24.55
3 = With minimal exertion	348	9.03
4 = Mild at rest	46	1.19
5 = Severe	+	+
8 = Not assessed	+	+
9 = Not applicable	43	1.16

* Patients with no impairments with respiratory status (V.F1) were coded as "Never" dyspneic on this item.

+ Cells based on a sample size of n < 11 are not shown.

NOTE: Missing = 2.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Table 15-13b(1)
OASIS-B *start of care* when patient is dyspneic or noticeably short of breath, all patients

OASIS-B: Patient dyspneic/short of breath	Frequency	Percent
0 = Never, patient is not short of breath	1,389	30.28
1 = When walking more than 20 feet, climbing stairs	1,161	25.31
2 = With moderate exertion (e.g., while dressing, using commode or bedpan, walking distances less than 20 feet)	1,331	29.02
3 = With minimal exertion (e.g., while eating, talking, or performing other ADLs) or with agitation	565	12.32
4 = At rest (during day or night)	141	3.07

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Table 15-13b(2)
OASIS-B *start of care* when patient is short of breath, for patients where oxygen use is indicated on OASIS-B

OASIS-B: Patient dyspneic/short of breath	Frequency	Percent
0 = Never, patient is not short of breath	22	3.00
1 = When walking more than 20 feet, climbing stairs	123	16.78
2 = With moderate exertion (e.g., while dressing, using commode or bedpan, walking distances less than 20 feet)	261	35.61
3 = With minimal exertion (e.g., while eating, talking, or performing other ADLs) or with agitation	228	31.11
4 = At rest (during day or night)	99	13.51

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Table 15-13b(3)
OASIS-B *start of care* when patient is short of breath, for patients where oxygen use is not indicated on OASIS-B

OASIS-B: Patient dyspneic/short of breath	Frequency	Percent
0 = Never, patient is not short of breath	1,367	35.47
1 = When walking more than 20 feet, climbing stairs	1,038	26.93
2 = With moderate exertion (e.g., while dressing, using commode or bedpan, walking distances less than 20 feet)	1,070	27.76
3 = With minimal exertion (e.g., while eating, talking, or performing other ADLs) or with agitation	337	8.74
4 = At rest (during day or night)	42	1.09

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Table 15-13c(1)
CARE *admission* respiratory status with oxygen by OASIS-B *start of care* when patient is short of breath, all patients

CARE: Admission respiratory status with oxygen	0 = Never, patient is not short of breath	1 = When walking more than 20 feet, climbing stairs	2 = With moderate exertion (e.g., while dressing, using commode or bedpan, walking distances less than 20 feet)	3 = With minimal exertion (e.g., while eating, talking, or performing other ADLs) or with agitation	4 = At rest (during day or night)	Total
0 = Never	+	39.4	42.4	+	+	99
1 = When climbing stairs	+	55.8*	34.6	+	+	52
2 = With moderate exertion	+	17.0	58.7*	17.8	4.2	259
3 = With minimal exertion	+	6.7	16.1	61.7*	15.0	180
4 = Mild at rest	+	+	+	31.9	48.9*	94
5 = Severe	+	+	+	+	62.5*	24
8 = Not assessed	+	33.3	48.1	11.7	+	162
9 = Not applicable	36.7	26.2	26.9	9.3	0.9	3,714
Total	1,389	1,161	1,331	565	141	4,587

* Indicates area of anticipated overlap between the CARE and OASIS-B instrument responses.

+ Cells based on a sample size of n < 11 are not shown.

NOTE: Missing = 3. Values refer to row percents.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Table 15-13c(2)
CARE *admission* respiratory status with oxygen compared with OASIS-B *start of care* when patient is short of breath, where oxygen use indicated on OASIS-B

CARE: Admission respiratory status with oxygen	0 = Never, patient is not short of breath	1 = When walking more than 20 feet, climbing stairs	2 = With moderate exertion (e.g., while dressing, using commode or bedpan, walking distances less than 20 feet)	3 = With minimal exertion (e.g., while eating, talking, or performing other ADLs) or with agitation	4 = At rest (during day or night)	Total
0 = Never	+	33.3	47.2	+	+	36
1 = When climbing stairs	+	56.3*	37.5	+	+	32
2 = With moderate exertion	+	15.2	59.0*	20.0	+	210
3 = With minimal exertion	+	+	15.6	62.9*	16.2	167
4 = Mild at rest	+	+	+	32.6	47.8*	92
5 = Severe	+	+	+	+	59.1*	22
8 = Not assessed	+	+	50.0	+	+	44
9 = Not applicable	8.5	24.6	38.5	24.6	+	130
Total	22	123	261	228	99	733

* Indicates area of anticipated overlap between the CARE and OASIS-B instrument responses.

+ Cells based on a sample size of n < 11 are not shown.

NOTE: Values refer to row percents.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Table 15-13c(3)
CARE *admission* respiratory status without oxygen by OASIS-B *start of care* when patient is short of breath, where no oxygen use is indicated on OASIS-B

CARE: Admission respiratory status without oxygen	0 = Never, patient is not short of breath	1 = When walking more than 20 feet, climbing stairs	2 = With moderate exertion (e.g., while dressing, using commode or bedpan, walking distances less than 20 feet)	3 = With minimal exertion (e.g., while eating, talking, or performing other ADLs) or with agitation	4 = At rest (during day or night)	Total
0 = Never	60.6*	23.3	13.6	2.2	+	2,170
1 = When climbing stairs	6.0	83.2*	9.5	1.4	+	285
2 = With moderate exertion	2.4	27.2	65.8*	4.3	+	946
3 = With minimal exertion	1.1	6.6	25.6	64.4*	+	348
4 = Mild at rest	+	+	21.7	26.1	34.8*	46
5 = Severe	+	+	+	+	+*	+
8 = Not assessed	+	+	+	+	+	+
9 = Not applicable	+	+	46.5	11.6	14.8	43
Total	1,367	1,038	1,070	337	42	3,854

* Indicates area of anticipated overlap between the CARE and OASIS-B instrument responses.

+ Cells based on a sample size of n < 11 are not shown.

NOTE: Missing = 2. Values refer to row percents.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Summary Results

Table 15-13c(1) – *Comparison of CARE Patient's Respiratory Status Using Supplemental Oxygen vs. When the OASIS-B Patient is Short of Breath (Who May or May Not Use Oxygen)*

- As indicated by the areas marked with an asterisk in Table 15-13c(1), there was a moderate amount of agreement between the CARE and the OASIS-B items for shortness of breath when any type of respiratory status impairment was present. Table 15-13c(1) indicates that when the patient who was assessed using oxygen for the CARE rating 1 (When climbing stairs) was compared to the OASIS-B rating 1 (When walking more than 20 feet, climbing stairs) the agreement level was 55.8 percent; CARE rating 2 (With moderate exertion) compared to OASIS-B rating 2 (With moderate exertion) resulted in 58.7 percent agreement. The two OASIS-B levels overlap with the CARE levels, demonstrating a moderate level of agreement.
- Also on Table 15-13c(1), among patients with more severe respiratory impairment on the CARE tool ranging from 4–Mild at Rest to 5–Severe, the levels of agreement with the corresponding OASIS-B response 4–At Rest (this is the most severe OASIS-B rating) were 48.9 percent to 62.5 percent, respectively.

Table 15-13c(2) – *Comparison of CARE Patient's Respiratory Status when Using Supplemental Oxygen vs. OASIS-B Respiratory Status Item "When short of breath" (M0490) Who Use Oxygen (per OASIS-B item M0500)*

- Approximately 16 percent of patients (n = 733) in the sample used oxygen in the home.
- Similar to the previous comparison, the areas marked with an asterisk in Table 15-13c(2) indicate a moderate amount of agreement between the CARE and OASIS-B items for shortness of breath when any type of impairment was present. The sample size for the CARE and OASIS-B instrument rating of "Never short of breath" was less that 11; therefore, it is not included in this table.

Table 15-13c(3) – *Comparison of CARE Patient's Respiratory Status without Supplemental Oxygen vs. OASIS-B Item "When Short of Breath" for Patients Who Do Not Use Oxygen*

- As indicated by the areas marked with an asterisk in Table 15-13c(3), there was high agreement between the CARE respiratory status item for patients assessed without supplemental oxygen and the OASIS-B item for shortness of breath whether M0500 indicated oxygen was not used by the patient in the home. Indeed, the agreement between these two items is much higher than that found in the other two comparisons and the importance of the agreement is enhanced by the large number of patient assessments included in the "never" through "severe/at rest" scale ratings.
- The percentage of agreement in the areas of expected overlap ranged from 34.8 percent to 83.2 percent among CARE patients who were assessed with respiratory impairment that included the levels "when climbing stairs" through "severe/at rest" when compared to the corresponding OASIS-B responses.

- The lower agreement percentages (for *expected* cross-tabulation ratings) were observed primarily between the two highest CARE impairment levels (mild at rest and severe) and the correspondingly highest impairment level on OASIS-B (at rest).
- In contrast to the other respiratory comparisons, there was also agreement at the "no impairment" levels. Among patients who reportedly never had respiratory impairment on the CARE Item Set, 60.6 percent were reported to never be short of breath on OASIS-B.

G. Functional Status

The functional status section of the CARE Item Set is composed of three major sections: Core Self Care (Section A), Core Functional Mobility (Section B), and Supplemental Functional Ability (Section C). The results below are organized by these three CARE sections. Alignment between the OASIS-B and CARE functional item scales is variable for multiple reasons:

1. Since the CARE functional items were patterned more closely after the science underlying IRF-PAI/FIM® functional items, the CARE Item Set may align more closely with the IRF-PAI/FIM® definitions.

2. The OASIS-B items have variable scales from one item to the next.

3. The CARE functional status rating scale includes two dimensions within the scale: whether help was provided to the patient and, if so, the level of assistance provided.

The OASIS-B ADL/instrumental activities of daily living (IADL) items collect data on patient's prior functional status in addition to current; however, in these analyses, we are focusing on the responses for patients' current functional status so the effects of time frame differences are likely minimal. Similarities and differences between the CARE Item Set functional items and the OASIS-B functional items are discussed below.

- Functional rating scales:
  - **CARE Functional Scale vs. OASIS-B ADL/IADL Functional Scale:** The CARE functional item rating is a six-category scale, ranging from 6-1, while the OASIS-B ADL/IADL scale includes varied categories and can range from 0-2, 0-3, 0-4, or 0-5 per item. Each group of rating scales included UK–unknown.
    - The item scale order in the two instruments is reversed. For example, a patient who is independent is scored as a 6 on the CARE Item Set, whereas the same patient is scored as a 0 on the OASIS-B instrument.
    - Both instrument scales assess for usual performance.
    - Scale category definition differences exist between the two instruments. Specifically, the CARE Item Set discriminates between a level 3–Partial/Moderate Assistance and a level 2–Substantial/Maximum Assistance by assessing whether the helper did *more than half the effort.* The OASIS-B does not distinguish between these two levels (recall the order is reversed) and

only identifies if someone must help the patient to complete the activity. The level descriptions that vary per item for the OASIS-B will be included in detail below. Differences between the instruments (e.g., the assessment time frame window and the rating scales) are important considerations in interpreting the mapping results. Because the OASIS-B items vary, we have not included a mapping here as in the prior comparisons with the MDS and IRF-PAI.

Core Self Care and Supplemental Functional Ability – Usual Performance

CARE Item: Upper Body Dressing (item VI.A5)

OASIS-B Item: Ability to Dress Upper Body (item M0650)

The *Functional Status* section of the CARE Item Set assesses a patient's usual performance regarding upper body dressing (item VI.A5) during the 2-day admission assessment period. The OASIS-B also assesses upper body dressing (M0650). The definitions from the CARE and OASIS-B are also included below for easy reference.

CARE Definition:
A5. Upper Body Dressing: The ability to put on and remove shirt or pajama top. Includes buttoning if applicable.

OASIS-B* Definition*:
M0650. Ability to Dress Upper Body: Identifies the patient's ability to dress upper body, including the ability to obtain, put on, and remove upper body clothing. The prior column should describe the patient's ability 14 days prior to the start (or resumption) of care visit. The focus for today's assessment—the "current" column—is on what the patient is able to do today. Ability to dress upper body (with or without dressing aids) including undergarments, pullovers, front-opening shirts and blouses, managing zippers, buttons, and snaps: [0] Able to get clothes out of closets and drawers, put them on and remove them from the upper body without assistance; [1] Able to dress upper body without assistance if clothing is laid out or handed to the patient; [2] Someone must help the patient with upper body clothing; [3] Patient depends entirely upon another person to dress the upper body; [UK] Unknown.

Key Item Differences

- *Assessment Windows:* The assessment time frame for the CARE Item Set is 2 calendar days (if admitted before 12 noon) or 3 calendar days (for patients admitted after 12 noon). The OASIS-B assessment time frame is the day of the assessment visit.
- *Item Definitions:* The CARE and OASIS-B definitions for upper body dressing are similar.
- *Scales:* The CARE scale for this item ascends to demonstrate independence, while the OASIS-B scale for this item descends to demonstrate independence. In addition, the CARE scale is more subdivided to demonstrate if helper assistance is required by the patient and at what amount of assistance is required. The OASIS-B items vary in the rating scale depending on the functional status or ADL/IADL. The rating scale does

not always measure the specific amount of the helper's physical assistance; rather, it measures that physical assistance was needed. The OASIS-B uses a specific rating scale to indicate a patient's total dependence for the most dependent level of assistance.

Implications

- It is not likely that any differences in OASIS-B and CARE assessments on this item would be due to the difference in assessment time frame.
- Additionally for the upper body dressing item, there would be expected agreement when comparing the OASIS-B *single* rating level 2, with *three different* CARE rating levels 4, 3, and 2. To clarify, OASIS-B level 2 (Someone Must Help the Patient Put On Upper Body Clothing) would be expected to map to CARE levels 4–Supervision or Touching Assistance, 3–Partial/Moderate Assistance, and 2–Substantial/Maximal Assistance for the upper body dressing item.

Item frequencies by instrument are shown in Tables 15-14a and 15-14b below, followed by the cross-tabulation of the CARE and OASIS-B upper body dressing items in Table 15-14c.

Table 15-14a
CARE *admission* upper body dressing

CARE: Core self care: Upper body dressing	Frequency	Percent
1 = Dependent	252	5.49
2 = Substantial/maximal assistance	281	6.13
3 = Partial/moderate assistance	661	14.41
4 = Supervision or touching assistance	593	12.93
5 = Setup or clean-up assistance	763	16.63
6 = Independent	2,023	44.1
M = Not attempted due to medical restrictions	+	+
N = Not applicable	+	+
P = Patient refused	+	+
S = Not attempted due to safety concerns	+	+

+ Cells based on a sample size of n < 11 are not shown.

NOTE: Missing = 2.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Table 15-14b
OASIS-B *start of care* upper body dressing

OASIS-B: Current ability to dress upper body	Frequency	Percent
0 = Able to get clothes out of closets & drawers, put them on, and remove them from the upper body w/out assistance	1,664	36.28
1 = Able to dress upper body w/out assistance if clothing is laid out or handed to the patient	1,323	28.84
2 = Someone must help the patient put on upper body clothing	1,272	27.73
3 = Patient depends entirely upon another person to dress the upper body	328	7.15

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Table 15-14c
CARE *admission* upper body dressing by OASIS-B *start of care* upper body dressing

CARE: Upper body dressing	0 = Able to get clothes out of closets & drawers, put them on and remove them from the upper body w/out assistance	1 = Able to dress upper body w/out assistance if clothing is laid out or handed to the patient	2 = Someone must help the patient put on upper body clothing	3 = Patient depends entirely upon another person to dress the upper body	Total
1 = Dependent	+	+	12.7	86.1*	252
2 = Substantial assist.	+	+	70.5*	25.6	281
3 = Partial assist.	+	17.7	77.5*	3.5	661
4 = Supervision touching assist.	6.4	40.8	51.8*	+	593
5 = Setup assist.	12.5	71.7*	15.1	+	763
6 = Independent	75.0*	19.8	5.0	+	2023
L = Letter code	+	+	+	+	12
Total	1,664	1,323	1,272	328	4,587

* Indicates area of anticipated overlap between the CARE and OASIS-B instrument responses.

+ Cells based on a sample size of n < 11 are not shown.

NOTE: Missing = 2. Values refer to row percents.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Summary Results

- As indicated by the areas marked with an asterisk in Table 15-14c, overall there was a high amount of agreement between the CARE and OASIS-B items for upper body dressing.
- Among patients who were assessed as Dependent on the CARE Item Set, 86.1 percent were similarly assessed as "Patient depends entirely on another person to dress the upper body" on OASIS-B, which is the expected result.
- Similarly high levels of agreement were observed between the other levels of the CARE scale and their corresponding OASIS-B levels; indeed, in most cases it exceeded 70.0 percent.
- The expected agreement occurred between OASIS-B level 2 (Someone Must Help the Patient Put On Upper Body Clothing) when compared to CARE levels 4–Supervision or Touching Assistance, 3–Partial/Moderate Assistance, and 2–Substantial/Maximal Assistance for the upper body dressing item (agreement percentages, respectively, are 70.5 percent, 77.5 percent, and 51.8 percent).

CARE Items: Lower Body Dressing (item VI.A6) and Putting On/Taking Off Footwear (item VI.C6)

OASIS-B Item: Ability to Dress Lower Body (item M0660)

The *Functional Status* section of the CARE Item Set assesses a patient's usual performance regarding lower body dressing (item VI.A6) and ability to put on and take off footwear (item VI.C6) during the 2-day admission assessment period. The corresponding OASIS-B item combines the assessment of lower body dressing and putting on footwear by grouping these two activities into one item. For this reason, both the CARE lower body dressing and footwear items are compared individually with the OASIS-B item. The definitions from the CARE and OASIS-B instruments are also included below for easy reference.

CARE Definition:
A6. Lower Body Dressing: The ability to dress and undress below the waist, including fasteners. Does not include footwear.

CARE Definition:
C6. Putting On/Taking Off Footwear: The ability to put on and take off socks and shoes or other footwear that are appropriate for safe mobility.

OASIS-B Definition:
M0660. Ability to Dress Lower Body: Identifies the patient's ability to dress lower body, including the ability to obtain, put on, and remove lower body clothing. The prior column should describe the patient's ability 14 days prior to the start (or resumption) of care visit. The focus for today's assessment—the "current" column—is on what the patient is able to do today. Ability to dress lower body (with or without dressing aids) including undergarments, slacks, socks, or nylons, shoes: [0] Able to obtain, put on, and remove clothing and shoes without assistance; [1] Able to dress lower body without assistance if clothing is laid out or handed to the patient; [2] Someone must help the patient on undergarments, slacks, socks,

nylons, and shoes; [3] Patient depends entirely upon another person to dress the lower body; [UK] Unknown.

Key Item Differences

- *Assessment Windows:* The assessment time frame for the CARE Item Set is 2 calendar days (if admitted before 12 noon) or 3 calendar days (for patients admitted after 12 noon). The OASIS-B assessment time frame is the day of the assessment visit.
- *Item Definitions:* The combined definitions for CARE items VI.A6 and VI.C6 is approximately equivalent to the OASIS-B definition for lower body dressing. The two items on CARE are combined to include the ability of putting on and taking off shoes in the definition of lower body dressing. Both CARE and OASIS-B user manuals direct the clinician to include lower extremity prostheses as lower extremity apparel (if used).
- *Scales:* The CARE scale order for this item ascends to demonstrate independence, while the OASIS-B scale for this item descends to demonstrate independence. In addition, the CARE's six-level scale is more subdivided to demonstrate if helper assistance is required by the patient and at what amount, while the OASIS-B's scale for this item considers four levels of assessing the patient's ability to complete this activity: independent, requires clothing laid out/handed to the patient, a helper assists with this activity, or the patient is entirely dependent on another person for this activity. Both instruments retain the same scores with or without the patient's use of dressing aides.

Implications

- It is not likely that any differences in OASIS-B and CARE assessments on this item would be due to the difference in assessment time frame.
- Additionally, for the lower body dressing item, there would be expected agreement when comparing the OASIS-B *single* rating level 2, with *three different* CARE rating levels 4, 3, and 2. To clarify, OASIS-B level 2 (Someone Must Help the Patient Put On Upper Body Clothing) would be expected to map to CARE levels 4–Supervision or Touching Assistance, 3–Partial/Moderate Assistance, and 2–Substantial/Maximal Assistance for the lower body dressing item.
- We anticipated that agreement may be closer between the CARE footwear item and the OASIS-B item (combines CARE's lower body dressing and footwear items) than the CARE's lower body dressing item, as the footwear item is expected to be the more difficult of these two CARE items.

Item frequencies by instrument are shown in Tables 15-15a(1-2) and 15-15b below, followed by the cross-tabulation of the CARE and OASIS-B lower body dressing and footwear items in Tables 15-15c(1-2).

Table 15-15a(1)
CARE *admission* lower body dressing

CARE: Core self care: Lower body dressing	Frequency	Percent
1 = Dependent	388	8.5
2 = Substantial/maximal assistance	477	10.4
3 = Partial/moderate assistance	934	20.4
4 = Supervision or touching assistance	685	14.9
5 = Setup or clean-up assistance	551	12.0
6 = Independent	1,531	33.4
M = Not attempted due to medical restrictions	+	+
N = Not applicable	+	+
P = Patient refused	+	+
S = Not attempted due to safety concerns	+	+

+ Cells based on a sample size of n < 11 are not shown.

NOTE: Missing = 3.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Table 15-15a(2)
CARE *admission* put on/take off footwear

CARE: Supplemental function: Put on/take off footwear	Frequency	Percent
Missing	196	4.3
1 = Dependent	673	14.7
2 = Substantial/maximal assistance	458	10.0
3 = Partial/moderate assistance	720	15.7
4 = Supervision or touching assistance	563	12.3
5 = Setup or clean-up assistance	400	8.7
6 = Independent	1,463	31.9
A = Task attempted but not completed	+	+
E = Not attempted due to environmental constraints	+	+
M = Not attempted due to medical restrictions	47	1.0
N = Not applicable	28	0.6
P = Patient refused	+	+
S = Not attempted due to safety concerns	25	0.6

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Table 15-15b
OASIS-B *start of care* ability to dress lower body

OASIS-B: Current ability to dress lower body	Frequency	Percent
0 = Able to obtain, put on, and remove clothing and shoes w/out assistance	1,242	27.1
1 = Able to dress lower body w/out assistance if clothing and shoes are laid out or handed to the patient	821	17.9
2 = Someone must help the patient put on undergarments, slacks, socks or nylons, and shoes	1,978	43.1
3 = Patient depends entirely upon another person to dress lower body	546	11.9

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Table 15-15c(1)
CARE *admission* put on/take off footwear by OASIS-B *start of care* lower body dressing

CARE: Lower body dressing	0 = Able to obtain, put on, and remove clothing and shoes w/out assistance	1 = Able to dress lower body w/out assistance if clothing and shoes are laid out or handed to the patient	2 = Someone must help the patient put on undergarments, slacks, socks or nylons, and shoes	3 = Patient depends entirely upon another person to dress lower body	Total
1 = Dependent	+	+	12.6	86.1*	388
2 = Substantial assist.	+	+	71.1*	27.0	477
3 = Partial assist.	2.5	12.1	80.9*	4.5	934
4 = Supervision touching assist.	6.1	22.9	67.3*	3.6	685
5 = Setup assist.	8.5	58.3*	32.7*	+	551
6 = Independent	73.3*	14.1	12.0	+	1,531
L = Letter code	+	+	+	+	18
Total	1,242	821	1,978	546	4,587

* Indicates area of anticipated overlap between the CARE and OASIS-B instrument responses.

+ Cells based on a sample size of n < 11 are not shown.

NOTE: Missing = 3. Values refer to row percents.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Table 15-15c(2)
CARE *admission* putting on footwear by OASIS-B *start of care* lower body dressing

CARE: Putting on/taking off footwear	0 = Able to obtain, put on, and remove clothing and shoes w/out assistance	1 = Able to dress lower body w/out assistance if clothing and shoes are laid out or handed to the patient	2 = Someone must help the patient put on undergarments, slacks, socks or nylons, and shoes	3 = Patient depends entirely upon another person to dress lower body	Total
Missing	34.7	14.8	44.4	6.1	196
1 = Dependent	+	1.8	42.9*	53.8*	673
2 = Substantial assist.	3.5	7.6	73.6*	15.3	458
3 = Partial assist.	5.0	16.4	74.9*	3.8	720
4 = Supervision touching assist.	10.1	26.8	59.1*	3.9	563
5 = Setup assist.	15.0	47.5*	35.3	+	400
6 = Independent	67.0*	18.5	14.0	+	1,463
L = Letter code	13.2	13.2	41.2	32.5	114
Total	1,242	821	1,978	546	4,587

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Summary Results

Table 15-15c(1) – *Comparison of CARE Lower Body Dressing vs. OASIS-B Lower Body Dressing Items*

- As indicated by the areas in Table 15-15c(1), overall there was a high amount of agreement between the CARE lower body dressing and OASIS-B lower body dressing items.
- Among patients who were assessed as Dependent on the CARE Item Set, 86.1 percent were similarly assessed as "Patient depends entirely on another person to dress the lower body" on OASIS-B, which is the expected result.
- Similarly high levels of agreement were observed between the other levels of the CARE scale and their corresponding OASIS-B levels, ranging from 58.3 percent for agreement in "Setup" responses to 80.9 percent agreement between the CARE level "Partial assistance" and OASIS-B level "Someone must help put on undergarment, socks, and shoes."

Table 15-15c(2) – *Comparison of CARE Putting On/Taking Off Footwear vs. OASIS-B Lower Body Dressing Items*

- As indicated by the areas marked with an asterisk in Table 15-15c(2), overall there was good agreement between the CARE putting on/taking off footwear and OASIS-B lower body dressing items, although it was not quite as good as for the CARE versus OASIS-B lower body dressing comparison.
- Among patients who were assessed as Independent on the CARE Item Set, 67.0 percent were similarly assessed as "able to obtain, put on, and remove clothing and shoes without assistance" on OASIS-B, which is the expected result.
- Similarly, relatively high levels of agreement were observed between the other levels of the CARE scale and their corresponding OASIS-B levels, ranging from 47.5 percent for agreement in "setup" responses to 74.9 percent agreement between the CARE level "partial assistance" and OASIS-B level "someone must help put on undergarment, socks, and shoes."
- There appears to be more agreement between the CARE lower body dressing item and the OASIS-B item on identifying dependent patients than when looking at the CARE footwear item. However, because the OASIS-B item includes lower body dressing and footwear management, it was expected that more patients were rated as dependent on the CARE footwear item than were not dependent on the OASIS-B item (42 percent of patients dependent in CARE footwear item were only a level 2 [Someone Must Help the Patient Put On Undergarments, Slacks, Socks or Nylons, and Shoes] on OASIS-B). This was expected because footwear is a more difficult activity than lower body dressing, thus the 42.9 percent agreement seen in Table 15-15c(2).

Core Functional Mobility and Supplemental Functional Ability – Usual Performance

CARE Item: Chair/Bed-to-Chair Transfer (item VI.B3)

OASIS-B Item: Transferring (item M0690)

The *Functional Status* section of the CARE Item Set assesses a patient's usual performance regarding a chair/bed-to-chair transfer (item VI.B3) during the 2-day admission assessment period. The OASIS-B also assesses transferring (M0690). The definitions from the CARE and OASIS-B are also included below for easy reference.

CARE Definition:
B3. Chair/Bed-to-Chair Transfer: The ability to safely transfer to and from a chair (or wheelchair). The chairs are placed at right angles to each other.

OASIS-B Definition:
M0690. Transferring: Identifies the patient's ability to safely transfer in a variety of situations. The prior column should describe the patient's ability 14 days prior to the start (or resumption) of care visit. The focus for today's assessment—the "current" column—is on what the patient is able to do today. Transferring: Ability to move from bed to chair, on and off toilet or commode, into and out of tub or shower, and ability to turn and position self in

bed if patient is bedfast. [0] Able to independently transfer; [1] Transfers with minimal human assistance or with use of an assistive device; [2] Unable to transfer self but is able to bear weight and pivot during the transfer process; [3] Unable to transfer self and is unable to bear weight or pivot when transferred by another person; [4] Bedfast, unable to transfer but is able to turn and position self in bed; [5] Bedfast, unable to transfer and is unable to turn and position self; [UK] Unknown.

Key Item Differences

- *Assessment Windows:* The assessment time frame for the CARE Item Set is 2 calendar days (if admitted before 12 noon) or 3 calendar days (for patients admitted after 12 noon). The OASIS-B assessment time frame is the day of the assessment visit.
- *Item Definitions:* The CARE and OASIS-B item definitions are moderately similar on one of the four parts of the OASIS-B assessment item. The OASIS-B definition combines several concepts that are measured as separate items on CARE. The OASIS-B item includes the ability to transfer on and off toilet or commode, into and out of the tub or shower, and ability to turn and position self in bed if patient is bedfast. The OASIS-B item also includes the ability to bear weight. The CARE Item Set includes the following as separate items: Chair/Bed to Chair Transfer, Toilet Transfer, Rolling Left to Right. The CARE Item Set does not include shower/bath transfers.
- *Scales:* The CARE rating scale for this item ascends to demonstrate independence, while the OASIS-B scale for this item descends to demonstrate independence. The scales are generally not equivalent since the OASIS-B item includes use of an assistive device, weight bearing, and turning/positioning self in bed as part of the assessment scale. The OASIS-B ability to bear weight is related to patient transfer rating scale, whereas the CARE does not include this task as a part of the rating scale or the description of the transfer items comparable to the OASIS-B transfer item.

Implications

- It is not likely that any differences in OASIS-B and CARE assessments on this item would be due to the difference in assessment time frame.
- Additionally, the OASIS-B scores may demonstrate a lower level of patient ability since the assessment scale scores the patient on more functional tasks and several that may be more difficult to perform than other tasks that are included in this one OASIS-B item as compared to a similar CARE item.

Item frequencies by instrument are shown in Tables 15-16a and 15-16b below, followed by the cross-tabulation of the CARE and OASIS-B ADL items in Table 15-16c.

Table 15-16a
CARE *admission* chair/bed-to-chair transfer

CARE: Core mobility: Chair/bed-to-chair transfer	Frequency	Percent
1 = Dependent	149	3.25
2 = Substantial/maximal assistance	207	4.51
3 = Partial/moderate assistance	396	8.63
4 = Supervision or touching assistance	765	16.68
5 = Setup or clean-up assistance	332	7.24
6 = Independent	2,492	54.33
A = Task attempted but not completed	+	+
M = Not attempted due to medical restrictions	59	1.29
N = Not applicable	128	2.79
P = Patient refused	24	0.52
S = Not attempted due to safety concerns	30	0.65

+ Cells based on a sample size of n < 11 are not shown.

NOTE: Missing = 2.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Table 15-16b
OASIS-B *start of care* current transferring

OASIS-B: Current transferring	Frequency	Percent
0 = Able to independently transfer	898	19.58
1 = Transfers with minimal human assistance or with use of an assistive device	3,086	67.28
2 = Unable to transfer self but is able to bear weight and pivot during the transfer process	407	8.87
3 = Unable to transfer self and is unable to bear weight or pivot when transferred by another person	117	2.55
4 = Bedfast, unable to transfer but is able to turn and position self in bed	25	0.55
5 = Bedfast, unable to transfer and is unable to turn and position self	54	1.18

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Table 15-16c
CARE *admission* chair/bed-to-chair transfer by OASIS-B *start of care* current transferring

CARE: Chair/bed-to-chair transfer	0 = Able to independently transfer	1 = Transfers with minimal human assistance or with use of an assistive device	2 = Unable to transfer self but is able to bear weight and pivot during the transfer process	3 = Unable to transfer self and is unable to bear weight or pivot when transferred by another person	4 = Bedfast, unable to transfer but is able to turn and position self in bed	5 = Bedfast, unable to transfer and is unable to turn and position self	Total
1 = Dependent	+	+	30.2*	37.6*	7.4*	14.1*	149
2 = Substantial assist.	+	35.7	51.2*	8.7*	+	+	207
3 = Partial assist.	0.3	72.5*	23.2*	3.5	0.3	0.3	396
4 = Supervision touching assist.	2.9	85.5*	10.5	0.9	+	+	765
5 = Setup assist.	6.3	87.0*	5.4	+	+	+	332
6 = Independent	32.6*	65.5*	1.6	+	+	+	2,492
L = Letter code	13.5	56.6	10.2	5.7	+	10.2	244
Total	898	3,086	407	117	25	54	4,587

* Indicates area of anticipated overlap between the CARE and OASIS-B instrument responses.

+ Cells based on a sample size of n < 11 are not shown.

NOTE: Missing = 2. Values refer to row percents.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Summary Results

- Although there are substantial differences in item definitions, the trends exhibited in Table 15-16c nonetheless indicate a high degree of agreement between these items, suggesting they are measuring similar concepts.
- Among patients who were assessed as Dependent on the CARE Item Set, 89.3 percent were assessed in one of several potential matching categories in OASIS-B: 2–Unable to Transfer Self but Able to Bear Weight (30.2 percent), 3–Unable to Transfer Self and Unable to Bear Weight (37.6 percent), 4–Bedfast but Able to Position Self (7.4 percent), and 5–Bedfast and Unable to Position Self (14.1 percent).
- Similarly, patients who were assessed as either "partial assistance," "supervision," or "setup" in CARE had approximately 73 percent to 87 percent of responses falling in the expected OASIS-B category of 1–Transfers with Minimal Human Assistance.

CARE Item: Shower/Bathe Self (item VI.C2)

OASIS-B Item: Bathing (item M0670)

The *Functional Status* section of the CARE Item Set assesses a patient's usual performance regarding the patient's ability to shower and bathe self (item VI.C2) during the 2-day admission assessment period. The OASIS-B also assesses bathing (M0670). The definitions from the CARE and OASIS-B are also included below for easy reference.

CARE Definition:
C2. Shower/Bathe Self: The ability to bathe self in shower or tub, including washing, rinsing, and drying self. Does not include transferring in/out of tub/shower.

OASIS-B Definition:
M0670. Bathing: Identifies the patient's ability to bathe entire body and the assistance which may be required to safely bathe in shower or tub. The prior column should describe the patient's ability 14 days prior to the start (or resumption) of care visit. The focus for today's assessment—the "current" column—is on what the patient is able to do today. Bathing: Ability to wash entire body. Excludes grooming (washing face and hands only). [0] Able to bathe self in shower or tub independently; [1] With the use of devices, is able to bathe self in shower or tub independently; [2] Able to bathe in shower or tub with the assistance of another person: (a) for intermittent supervision or encouragement or reminders, (b) to get in and out of the shower or tub, or (c) for washing difficult-to-reach areas; [3] Participates in bathing self in shower or tub, but requires presence of another person throughout the bath for assistance or supervision; [4] Unable to use the shower or tub and is bathed in bed or bedside chair; [5] Unable to effectively participate in bathing and is totally bathed by another person; [UK] Unknown.

Key Item Differences

- *Assessment Windows:* The assessment time frame for the CARE Item Set is 2 calendar days (if admitted before 12 noon) or 3 calendar days (for patients admitted after 12 noon). The OASIS-B assessment time frame is the day of the assessment visit.
- *Item Definitions:* The CARE and OASIS-B item definitions are similar, but the CARE definition is more detailed since it includes washing, rinsing, and drying. A key difference between the two items, however, is that the OASIS-B item includes getting in and out of the shower or tub, while the CARE item does not.
- *Scales:* The CARE scale for this item ascends to demonstrate independence, while the OASIS-B scale for this item descends to demonstrate independence. The scales are generally not equivalent. Example of instrument differences: A score of 2 on the OASIS-B assessment includes assistance of another person with getting in and out of the shower or tub. The task of getting in and out of the shower or tub is not a task included in the CARE item.

Implications

- It is not likely that any differences in OASIS-B and CARE assessments on this item would be due to the difference in assessment time frame.
- The OASIS-B item inclusion of getting in and out of the shower or tub makes the OASIS-B item more difficult and therefore should result in patients having lower levels of independence on the OASIS-B item than they have on the CARE's comparable item.

Item frequencies by instrument are shown in Tables 15-17a and 15-17b below, followed by the cross-tabulation of the CARE and OASIS-B ADL items in Table 15-17c.

Table 15-17a
CARE *admission* shower/bathe self

CARE: Supplemental function: Shower/bathe self	Frequency	Percent
Missing	196	4.27
1 = Dependent	305	6.65
2 = Substantial/maximal assistance	421	9.18
3 = Partial/moderate assistance	919	20.03
4 = Supervision or touching assistance	969	21.12
5 = Setup or clean-up assistance	467	10.18
6 = Independent	890	19.40
A = Task attempted but not completed	+	+
E = Not attempted due to environmental constraints	18	0.39
M = Not attempted due to medical restrictions	142	3.10
N = Not applicable	167	3.64
P = Patient refused	30	0.65
S = Not attempted due to safety concerns	60	1.31

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Table 15-17b
OASIS-B *start of care* current bathing

OASIS-B: Current bathing	Frequency	Percent
0 = Able to bathe self in shower or tub independently	296	6.45
1 = With the use of devices, is able to bathe self in shower or tub independently	641	13.97
2 = Able to bathe in shower or tub with assistance of another person: (a) for intermittent supervision or encouragement or reminders, OR (b) to get in and out of the shower or tub, OR (c) for washing difficult-to-reach areas	1,286	28.04
3 = Participates in bathing self in shower or tub, but requires presence of another person throughout the bath for assistance or supervision	1,351	29.45
4 = Unable to use the shower or tub and is bathed in bed or bedside chair	800	17.44
5 = Unable to effectively participate in bathing and is totally bathed by another person	213	4.64

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Table 15-17c
CARE *admission* shower/bathe self by OASIS-B *start of care* bathing

CARE: Supplemental function: Shower/bathe self	0 = Able to bathe self in shower or tub independently	1 = With the use of devices, is able to bathe self in shower or tub independently	2 = Able to bathe in shower or tub with assistance of another person: (a) for intermittent supervision or encouragement or reminders, OR (b) to get in and out of the shower or tub, OR (c) for washing difficult-to-reach areas	3 = Participates in bathing self in shower or tub, but requires presence of another person throughout the bath for assistance or supervision	4 = Unable to use the shower or tub and is bathed in bed or bedside chair	5 = Unable to effectively participate in bathing and is totally bathed by another person	Total
Missing	+	16.8	26.0	21.4	27.0	+	196
1 = Dependent	+	+	+	23.0	27.2*	47.2*	305
2 = Substantial assist.	+	+	9.3	62.9*	20.9	6.2	421
3 = Partial assist.	+	2.8	34.7*	50.3*	10.9	+	919
4 = Supervision touching assist.	1.1	7.1	49.7*	34.1*	7.8	+	969
5 = Setup assist.	2.4	24.8	42.8*	18.8	10.9	+	467
6 = Independent	28.1*	42.0*	17.4*	6.2	6.2	+	890
L = Letter code	+	4.8	7.9	9.3	70.0	6.4	420
Total	296	641	1,286	1,351	800	213	4,587

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Summary Results

- As indicated by the areas marked with an asterisk in Table 15-17c, overall there was fair to high agreement between the CARE shower/bathe self and OASIS-B bathing items when combining percentages from expected agreement cross-tabulations (see example below).
- Among patients who were assessed as Dependent on the CARE Item Set, 74.4 percent were assessed as 5–Unable to Effectively Participate in Bathing and Is Totally Bathed by Another Person or 4–Unable to Use the Shower or Tub and Is Bathed in Bed or Bedside Chair, which are the predicted levels where agreement was anticipated between the OASIS-B and CARE instrument levels.
- Discrepancies on patients rated on CARE as needing 2–Substantial/Maximal Assistance or 3–Partial/Moderate Assistance did tend to be skewed toward higher dependency on the OASIS-B item. The higher percentage of agreement between the instruments across the more assistance/dependency OASIS-B scales was predicted due to the OASIS-B instrument's inclusion of shower/bath transfer in the Bathing item.

Similarly, high levels of agreement were observed between the other levels of the CARE scale and their corresponding OASIS-B levels, ranging from 87.5 percent for agreement between CARE "independent" and across the three OASIS-B levels (where agreement was anticipated between the instruments) to 42.8 percent agreement between the CARE level "Setup" and OASIS-B level "Able to bathe in shower or tub with assistance of another person" (the latter includes help getting in and out of the shower or tub).

CARE Items: Mode of Mobility – Select the Longest Distance the Patient Walks and Code Level of Independence (item VI.B5a)

OASIS-B Item: Ambulation/Locomotion (item M0700)

The *Functional Status* section of the CARE Item Set assesses a patient's usual performance regarding his/her mode of mobility depending if the patient primarily uses a wheelchair (items VI.B5a-b) during the 2-day admission assessment period. The OASIS-B also assesses a similar function item, ambulation and locomotion (M0700). The definitions from the CARE and OASIS-B are included below for easy reference.

Considerations

The clinician using the CARE Item Set is instructed to choose the patient's primary mode of mobility, whereas the OASIS-B instructs clinicians to focus on the patient's ability to ambulate when determining how to score the patient. Even if the patient uses a wheelchair 75 percent of the time, the focus for the clinician using the OASIS-B instrument is the patient's ability to walk.

For the activity of mobility, the CARE Item Set has two distinct categories of assessment items (walking or wheeling). On the CARE Item Set the clinician must choose either the walking OR the wheelchair category, and then choose which one of the four distances is appropriate to select when assessing the patient's level of independence (6-1). For example, if

the clinician selects the walking category, the clinician then chooses one of four CARE items that best represents the farthest distance the patient walks (i.e., 150, 100, 50, or 10 feet). Finally, the clinician assesses the amount of assistance the patient is required to walk, for that specifically selected distance. The same method is also used for assessing the CARE wheelchair item if chosen, instead of walking.

The challenge in presenting the data for this section was quite great due to there being a single OASIS-B ambulation/locomotion item, whereas the CARE Item Set asks the clinician to select between four separate mobility distances or four separate wheeling distances to measure the patient's walking or wheeling ability. In addition, the OASIS-B combines stair climbing and walking on uneven surfaces with the OASIS-B ambulation/locomotion item, whereas the CARE measures the patient's ability for these as two separate and distinct items (ability to go up and down steps and walking on uneven surfaces).

Ultimately, only two of the four CARE distances were chosen per walking and two CARE distance items for wheeling were used in comparison to the single OASIS-B ambulation/locomotion item. This resulted in individual frequency tables for the four chosen CARE items (two for walking and two for wheeling) and one frequency table for OASIS-B (shown twice) and four separate cross-tabulation tables to compare the agreement between the four CARE variables and one OASIS-B variable.

In this comparison, both the responses to the CARE "Walk 150 feet" and "Walk in Room Once Standing" items are compared to the OASIS-B ambulation/locomotion item.

CARE Definition:
B5a. Mode of Mobility: If the patient does not primarily use a wheelchair for mobility, select the longest distance the patient walks and code his/her level of independence (Level 1-6) on that distance. Observe performance. (Select only one.) Walk 150 ft (45 m): Once standing, can walk at least 150 feet (45 meters) in corridor or similar place. Walk 100 ft (30 m): Once standing, can walk at least 100 feet (30 meters) in corridor or similar space. Walk 50 ft (15 m): Once standing, can walk at least 50 feet (15 meters) in corridor or similar space. Walk in Room Once Standing: Once standing, can walk at least 10 feet (3 meters) in room, corridor, or similar space.

OASIS-B Definition:
M0700. Ambulation/Locomotion: Identifies the patient's ability and the type of assistance required to safely ambulate or propel self in a wheelchair over a variety of surfaces. The prior column should describe the patient's ability 14 days prior to the start (or resumption) of care visit. The focus for today's assessment—the "current" column—is on what the patient is able to do today. Ambulation/Locomotion: Ability to safely walk, once in a standing position, or use a wheelchair once in a seated position, on a variety of surfaces. [0] Able to independently walk on even and uneven surfaces and climb stairs with or without railings (i.e., needs no human assistance or assistive device); [1] Requires use of a device (e.g., cane, walker) to walk alone or requires human supervision or assistance to negotiate stairs or steps or uneven surfaces; [2]Able to walk only with the supervision or assistance of another person at all times; [3] Chairfast, unable to ambulate but is able to wheel self independently; [4] Chairfast, unable to ambulate and is unable to wheel self; [5] Bedfast, unable to ambulate or be up in a chair; [UK] Unknown.

Key Item Differences

- *Assessment Windows:* The assessment time frame for the CARE Item Set is 2 calendar days (if admitted before 12 noon) or 3 calendar days (for patients admitted after 12 noon). The OASIS-B assessment time frame is the day of the assessment visit.
- *Item Definitions:* The items have several important differences. The clinician using the CARE Item Set must choose between assessing the patient's walking or wheeling ability, whereas the OASIS-B instructs clinicians to focus on the patient's ability to ambulate when determining how to score the patient. The OASIS-B item assesses the patient's abilities for both ambulation/locomotion within the single ambulation/ locomotion item. On the CARE Item Set, the clinician must choose either the walking OR the wheelchair category, and then choose which one of the four distances is appropriate to select when assessing the patient's level of independence (6-1).
- *Rating Scales:* The rating scales for the OASIS-B extend the definition of this item beyond ambulation/locomotion and include several other items that are assessed separately on the CARE Item Set.
- The OASIS-B includes the item of stair climbing and walking on uneven surfaces, whereas the ability to go up and down steps and walking on uneven surfaces are two separate items on the CARE Item Set.
- The CARE items assess the patient level of independence for a specific range of distances. The clinician selects the distance (item) that reflects the greatest distance a patient can ambulate safely, whereas OASIS-B does not specifically consider distance within its rating scale.

Implications

- The OASIS-B items will not differentiate levels of functioning in ambulation or locomotion in as much detail as the CARE.
- Because the OASIS-B item includes both walking and wheeling, we expect that the CARE distribution of responses will not cover the full range of OASIS-B responses. Patients rated as highly dependent on the CARE walking items will appear in the more independent end of the OASIS-B scale because of the scale's combination of walking and wheeling items.
- Because the OASIS-B item includes steps and stairs, in addition to the ability to walk on uneven surfaces, we expect that many patients rated independent or at higher levels of independence ratings on the CARE items will be rated with some level of dependency on the OASIS-B items.

Item frequencies by instrument are shown in Tables 15-18a(1-2) and 15-18b below, followed by the cross-tabulation of the CARE and OASIS-B ADL items in Tables 15-18c(1-2).

Table 15-18a(1)
CARE *admission* walk 150 feet once standing

CARE: Core mobility: Walk 150 feet	Frequency	Percent
Selected another item or missing	3,580	78.05
1 = Dependent	45	0.98
2 = Substantial/maximal assistance	+	+
3 = Partial/moderate assistance	32	0.70
4 = Supervision or touching assistance	162	3.53
5 = Setup or clean-up assistance	60	1.31
6 = Independent	484	10.55
A = Task attempted but not completed	+	+
M = Not attempted due to medical restrictions	111	2.42
N = Not applicable	23	0.50
P = Patient refused	11	0.24
S = Not attempted due to safety concerns	68	1.48

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Table 15-18a(2)
CARE *admission* walk in room once standing

CARE: Core mobility: Walk once standing	Frequency	Percent
Selected another item or missing	3,696	80.58
1 = Dependent	+	+
2 = Substantial/maximal assistance	35	0.76
3 = Partial/moderate assistance	97	2.11
4 = Supervision or touching assistance	287	6.26
5 = Setup or clean-up assistance	58	1.26
6 = Independent	363	7.91
A = Task attempted but not completed	+	+
M = Not attempted due to medical restrictions	15	0.33
N = Not applicable	+	+
P = Patient refused	+	+
S = Not attempted due to safety concerns	+	+

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Table 15-18b
OASIS-B *start of care* ambulation/locomotion

OASIS-B: Current ambulation/locomotion	Frequency	Percent
0 = Able to independently walk on even and uneven surfaces and climb stairs with or without railings (i.e., needs no human assistance or assistive device)	339	7.39
1 = Requires use of a device to walk alone or requires human supervision or assistance to negotiate stairs or steps or uneven surfaces	2,564	55.90
2 = Able to walk only with the supervision or assistance of another person at all times	1,256	27.38
3 = Chairfast, unable to ambulate but is able to wheel self independently	212	4.62
4 = Chairfast, unable to ambulate and is unable to wheel self	180	3.92
5 = Bedfast, unable to ambulate or be up in a chair	36	0.78

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Table 15-18c(1)
CARE *admission* walk 150 feet by OASIS-B *start of care* ambulation/locomotion

CARE: Core mobility: Walk 150 feet	0 = Able to independently walk on even and uneven surfaces and climb stairs with or without railings (i.e., needs no human assistance or assistive device)	1 = Requires use of a device to walk alone or requires human supervision or assistance to negotiate stairs or steps or uneven surfaces	2 = Able to walk only with the supervision or assistance of another person at all times	3 = Chairfast, unable to ambulate but is able to wheel self indepen-dently	4 = Chairfast, unable to ambulate and is unable to wheel self	5 = Bedfast, unable to ambulate or be up in a chair	Total
Selected another item or missing	5.3	53.2	30.1	5.9	4.9	0.6	3,580
1 = Dependent	+	80.0	+	+	+	+	45
2 = Substantial assist.	+	+	+	+	+	+	+
3 = Partial assist.	+	56.3	40.6	+	+	+	32
4 = Supervision touching assist.	+	64.8	32.7	+	+	+	162
5 = Setup assist.	+	73.3	+	+	+	+	60
6 = Independent	26.0	68.2	5.8	+	+	+	484
L = Letter code	+	55.8	32.1	+	+	6	215
Total	339	2,564	1,256	212	180	36	4,587

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Table 15-18c(2)
CARE *admission* walk in room once standing by OASIS-B *start of care* ambulation/locomotion

CARE: Core mobility: Walk once standing	0 = Able to independently walk on even and uneven surfaces and climb stairs with or without railings (i.e., needs no human assistance or assistive device)	1 = Requires use of a device to walk alone or requires human supervision or assistance to negotiate stairs or steps or uneven surfaces	2 = Able to walk only with the supervision or assistance of another person at all times	3 = Chairfast, unable to ambulate but is able to wheel self independently	4 = Chairfast, unable to ambulate and is unable to wheel self	5 = Bedfast, unable to ambulate or be up in a chair	Total
Selected another item or missing	8.1	56.2	24.6	5.6	4.7	0.8	3,696
1 = Dependent	+	+	+	+	+	+	+
2 = Substantial assist.	+	+	91.4	+	+	+	35
3 = Partial assist.	+	25.8	72.2	+	+	+	97
4 = Supervision touching assist.	+	40.1	57.1	+	+	+	287
5 = Setup assist.	+	69	29.3	+	+	+	58
6 = Independent	8.8	78.8	12.4	+	+	+	363
L = Letter code	+	39	31.7	+	+	+	41
Total	339	2,564	1,256	212	180	36	4,587

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Summary Results

Table 15-18c(1) – *Comparison of CARE Walk 150 Feet vs. OASIS-B Ambulation/Locomotion Items*

- As expected, Table 15-18c(1) shows that no patient who was able to walk 150 feet was categorized as either chairfast or bedfast in OASIS-B (response levels 3, 4, and 5).
- Among patients who were assessed as "independent" on the CARE Item Set, 94.2 percent were assessed as either "able to walk independently on even and uneven surfaces" or "requires use of a device to walk alone" on OASIS-B, which are the expected areas of overlap.
- Similarly high levels of agreement were observed between the CARE "supervision" category and the corresponding OASIS-B levels: 64.8 percent in the OASIS-B

category of 1–Requires Use of Device or Requires Human Supervision and 32.7 percent in the OASIS-B category of 2–Able to Walk Only with the Supervision or Assistance of Another Person at All Times.

Table 15-18c(2) – *Comparison of CARE Walk In Room Once Standing vs. OASIS-B Ambulation/Locomotion Items*

- As expected, Table 15-18c(2) shows that very few patients who were able to walk in room once standing were categorized as either chairfast or bedfast in OASIS-B (response levels 3, 4, and 5).
- Among patients who were assessed as "independent" on the CARE Item Set, 87.6 percent were assessed as either "able to walk independently on even and uneven surfaces" or "requires use of a device to walk alone" on OASIS-B, which are the expected areas of overlap.
- Similarly high levels of agreement were observed between the CARE "supervision" category and the corresponding OASIS-B levels: 40.1 percent in the OASIS-B category of 1–Requires Use of Device or Requires Human Supervision and 57.1 percent in the OASIS-B category of 2–Able to Walk Only with the Supervision or Assistance of Another Person at All Times.

CARE Items: Mode of Mobility – Select the Longest Distance the Patient Wheels and Code Level of Independence (item VI.B5b)

OASIS-B Item: Ambulation/Locomotion (item M0700)

The *Functional Status* section of the CARE Item Set assesses a patient's usual performance regarding his/her mode of mobility depending if the patient primarily uses a wheelchair (items VI.B5a-b) during the 2-day admission assessment period. The OASIS-B also assesses a similar function item, ambulation and locomotion (M0700). The definitions from the CARE and OASIS-B are also included below for easy reference.

In this comparison, both the responses to the CARE "Wheel 150 Feet" and "Wheel in Room Once Seated" items are compared to the OASIS-B Ambulation/Locomotion item.

CARE Definition:
B5b. Mode of Mobility: If the patient does primarily use a wheelchair for mobility, select the longest distance the patient wheels and code his/her level of independence (Level 1-6) on that distance. Observe performance. (Select only one.) Wheel 150 ft (45 m): Once sitting, can wheel at least 150 feet (45 meters) in corridor or similar place. Wheel 100 ft (30 m): Once sitting, can wheel at least 100 feet (30 meters) in corridor or similar space. Wheel 50 ft (15 m): Once sitting, can wheel at least 50 feet (15 meters) in corridor or similar space. Wheel in Room Once Sitting: Once sitting, can wheel at least 10 feet (3 meters) in room, corridor, or similar space.

OASIS-B Definition:
M0700. Ambulation/Locomotion: Identifies the patient's ability and the type of assistance required to safely ambulate or propel self in a wheelchair over a variety of surfaces. The prior column should describe the patient's ability 14 days prior to the start (or resumption) of care visit. The focus for today's assessment—the "current" column—is on what the patient

is able to do today. Ambulation/Locomotion: Ability to safely walk, once in a standing position, or use a wheelchair once in a seated position, on a variety of surfaces. [0] Able to independently walk on even and uneven surfaces and climb stairs with or without railings (i.e., needs no human assistance or assistive device); [1] Requires use of a device (e.g., cane, walker) to walk alone or requires human supervision or assistance to negotiate stairs or steps or uneven surfaces; [2] Able to walk only with the supervision or assistance of another person at all times; [3] Chairfast, unable to ambulate but is able to wheel self independently; [4] Chairfast, unable to ambulate and is unable to wheel self; [5] Bedfast, unable to ambulate or be up in a chair; [UK] Unknown.

Key Item Differences

- *Assessment Windows:* The assessment time frame for the CARE Item Set is 2 calendar days (if admitted before 12 noon) or 3 calendar days (for patients admitted after 12 noon). The OASIS-B assessment time frame is the day of the assessment visit.
- *Item Definitions:* The items have several important differences. While the CARE Item Set has separate items for those able to walk versus those who are primarily in a wheelchair, in OASIS-B both are considered in the ambulation/locomotion item. As well, while the CARE items assess levels of ability within a given distance (the greatest distance a patient can walk safely), OASIS-B does not consider distance.

Implications

- Because the OASIS-B item includes both walking and wheeling, we expect that the CARE distribution of responses will not cover the full range of OASIS-B responses.
- Patients rated as independent on the CARE wheeling items will still end up in the more dependent end of the OASIS-B items because walking has been included in the OASIS-B item.

Item frequencies by instrument are shown in Tables 15-19a(1-2) and 15-19b below, followed by the cross-tabulation of the CARE and OASIS-B ADL items in Tables 15-19c(1-2).

Table 15-19a(1)
CARE *admission* wheel 150 feet

CARE: Core mobility: Wheel 150 feet	Frequency	Percent
Selected another item or missing	4,340	94.62
1 = Dependent	56	1.22
2 = Substantial/maximal assistance	11	0.24
3 = Partial/moderate assistance	+	+
4 = Supervision or touching assistance	+	+
5 = Setup or clean-up assistance	+	+
6 = Independent	90	1.96
A = Task attempted but not completed	+	+
M = Not attempted due to medical restrictions	31	0.68
N = Not applicable	18	0.39
P = Patient refused	+	+
S = Not attempted due to safety concerns	+	+

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Table 15-19a(2)
CARE *admission* wheel in room

CARE: Core mobility: Wheel in room	Frequency	Percent
Selected another item or missing	4,324	94.27
1 = Dependent	93	2.03
2 = Substantial/maximal assistance	16	0.35
3 = Partial/moderate assistance	17	0.37
4 = Supervision or touching assistance	31	0.68
5 = Setup or clean-up assistance	+	+
6 = Independent	69	1.5
A = Task attempted but not completed	+	+
M = Not attempted due to medical restrictions	15	0.33
N = Not applicable	+	+
P = Patient refused	+	+
S = Not attempted due to safety concerns	+	+

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Table 15-19b
OASIS-B *start of care* current ambulation

OASIS-B: Current ambulation/locomotion	Frequency	Percent
0 = Able to independently walk on even and uneven surfaces and climb stairs with or without railings (i.e., needs no human assistance or assistive device)	339	7.39
1 = Requires use of a device to walk alone or requires human supervision or assistance to negotiate stairs or steps or uneven surfaces	2,564	55.90
2 = Able to walk only with the supervision or assistance of another person at all times	1,256	27.38
3 = Chairfast, unable to ambulate but is able to wheel self independently	212	4.62
4 = Chairfast, unable to ambulate and is unable to wheel self	180	3.92
5 = Bedfast, unable to ambulate or be up in a chair	36	0.78

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Summary Results

Table 15-19c(1) – ***Comparison of CARE Wheel 150 Feet vs. OASIS-B Ambulation/Locomotion Items***

- As expected, Table 15-19c(1) shows that very few patients who were able to wheel 150 feet were categorized as bedfast in OASIS-B (response level 5).
- Among patients who were assessed as "independent" in wheeling 150 feet on the CARE tool, the majority (45.6 percent) were categorized as 3 (chairfast, unable to ambulate but is able to wheel self independently) in OASIS-B. This is where the majority of responses were expected to fall. Table 15-19c(1) revealed 25.6 percent agreement between the instruments for patients who were independent in wheeling 150 feet and on the CARE Item Set were assessed as 1 (requires use of device to walk alone or requires human supervision or assistance) on the OASIS-B. Sometimes it is not clear why the data take unexpected patterns such as in this cross-tabulation. Clinician error in reporting the data can also cause these unexpected patterns.
- High levels of agreement (44.6 percent) were observed between the CARE Dependent category and the OASIS-B category for 4 (chairfast, unable to ambulate and is unable to wheel self), which was the expected area of overlap.

Table 15-19c(1)
CARE *admission* wheel 150 feet by OASIS-B *start of care* ambulation/locomotion

CARE: Core mobility: Wheel 150 feet	0 = Able to independently walk on even and uneven surfaces and climb stairs with or without railings (i.e., needs no human assistance or assistive device)	1 = Requires use of a device to walk alone or requires human supervision or assistance to negotiate stairs or steps or uneven surfaces	2 = Able to walk only with the supervision or assistance of another person at all times	3 = Chairfast, unable to ambulate but is able to wheel self independently	4 = Chairfast, unable to ambulate and is unable to wheel self	5 = Bedfast, unable to ambulate or be up in a chair	Total
Selected another item or missing	7.8	58.2	27.7	2.9	2.7	0.6	4,340
1 = Dependent	+	+	+	23.2	44.6	+	56
2 = Substantial assist.	+	+	+	+	+	+	11
3 = Partial assist.	+	+	+	+	+	+	+
4 = Supervision touching assist.	+	+	+	+	+	+	+
5 = Setup assist.	+	+	+	+	+	+	+
6 = Independent	+	25.6	20	45.6	+	+	90
L = Letter code	+	+	20	30	37.1	+	70
Total	339	2,564	1,256	212	180	36	4,587

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Table 15-19c(2) – *Comparison of CARE Wheel In Room Once Seated vs. OASIS-B Ambulation/Locomotion Items*

- As expected, Table 15-19c(2) shows that very few patients who were able to wheel in room once seated were categorized as bedfast in OASIS-B (response level 5).
- Among patients who were assessed as "independent" in wheeling in room once seated on the CARE Item Set, the majority (44.9 percent) were categorized as 3 (chairfast, unable to ambulate but is able to wheel self independently) in OASIS-B. This is where the majority of responses were expected to fall. Table 15-19c(2) revealed 18.8 percent agreement between the instruments for patients who were "independent in wheeling in room once seated" on the CARE Item Set and patients who were assessed as 1 (requires use of device to walk alone or requires human supervision or assistance) on the OASIS-B. Sometimes it is not clear why the data take unexpected patterns such as in this cross-tabulation. Clinician error in reporting the data can also cause these unexpected patterns.

- High levels of agreement (64.5 percent) were observed between the CARE Dependent category and the OASIS-B category for 4 (chairfast, unable to ambulate and is unable to wheel self), which is the expected area of overlap.

Table 15-19c(2)
CARE *admission* wheel in room by OASIS-B *start of care* ambulation/locomotion

CARE: Core mobility: Wheel in room	0 = Able to independently walk on even and uneven surfaces and climb stairs with or without railings (i.e., needs no human assistance or assistive device)	1 = Requires use of a device to walk alone or requires human supervision or assistance to negotiate stairs or steps or uneven surfaces	2 = Able to walk only with the supervision or assistance of another person at all times	3 = Chairfast, unable to ambulate but is able to wheel self independently	4 = Chairfast, unable to ambulate and is unable to wheel self	5 = Bedfast, unable to ambulate or be up in a chair	Total
Selected another item or missing	7.8	58.6	27.3	3.7	2	0.6	4,324
1 = Dependent	+	+	15.1	+	64.5	+	93
2 = Substantial assist.	+	+	+	+	+	+	16
3 = Partial assist.	+	+	+	+	+	+	17
4 = Supervision touching assist.	+	+	64.5	+	+	+	31
5 = Setup assist.	+	+	+	+	+	+	+
6 = Independent	+	18.8	29	44.9	+	+	69
L = Letter code	+	+	+	+	43.3	+	30
Total	339	2,564	1,256	212	180	36	4,587

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Supplemental Functional Ability – Usual Performance

CARE Item: Medication Management-Injectable Medications (item VI.C12)

OASIS-B Item: Management of Injectable Medications (item M0800)

The *Functional Status* section of the CARE Item Set assesses a patient's usual performance regarding the patient's ability to manage injectable medications (item VI.C12) during the 2-day admission assessment period. The OASIS-B also assesses the management of injectable medications (M0800). The definitions from the CARE and OASIS-B are also included below for easy reference.

CARE Definition:
C12. Medication Management-Injectable Medications: The ability to prepare and take all prescribed injectable medications reliability and safely, including administration of the correct dosage at the appropriate times/intervals.

OASIS-B Definition:
M0800. Management of Injectable Medications: Identifies the patient's ability to prepare and take all injectable medications reliably and safely and the type of assistance required to administer the correct dosage at the appropriate time/intervals. The focus is on what the patient is able to do, not on the patient's compliance or willingness. The prior column should describe the patient's ability 14 days prior to the start (or resumption) of care visit. The focus for today's assessment—the "current" column—is on what the patient is able to do today. Management of Injectable Medications: Patient's ability to prepare and take all prescribed injectable medication reliably and safely, including administration of correct dosage at the appropriate times/intervals. Excludes IV medications. [0] Able to independently take the correct medication and proper dosage at the correct times; [1] Able to take injectable medications at correct times if: (a) individual syringes are prepared in advance by another person, or (b) given daily reminders; [2] Unable to take injectable medications unless administered by someone else; [NA] No injectable medications prescribed; [UK] Unknown.

Key Item Differences

- *Assessment Windows:* The assessment time frame for the CARE Item Set is 2 calendar days (if admitted before 12 noon) or 3 calendar days (for patients admitted after 12 noon). The OASIS-B assessment time frame is the 24-hour period prior to the visit and the time during the visit.
- *Item Definitions:* The CARE and OASIS-B definitions for management of injectable medications are similar.
- *Scales:* The CARE scale for this item ascends to demonstrate independence, while the OASIS-B scale for this item descends to demonstrate independence. The scales are generally not equivalent since OASIS-B does not distinguish if someone provides more than or less than half the assistance in the management of injectable medications.

Implications

- It is not likely that any differences in OASIS-B and CARE assessments on this item would be due to the difference in assessment time frame.
- Category 1–"Able to take injectable medications at correct times if (a) individual syringes are prepared in advance by another person, or (b) given daily reminders" on the OASIS-B tool will incorporate CARE categories 2–Substantial/Maximal Assistance, 3–Partial/Moderate Assistance, 4–Supervision or Touching Assistance, and 5–Setup or Clean-up Assistance.

Item frequencies by instrument are shown in Tables 15-20a and 15-20b below, followed by the cross-tabulation of the CARE and OASIS-B ADL items in Table 15-20c.

Table 15-20a
CARE *admission* manage injectable medications

CARE: Supplemental function: Injectable drug management	Frequency	Percent
Missing	197	4.29
1 = Dependent	360	7.85
2 = Substantial/maximal assistance	23	0.50
3 = Partial/moderate assistance	50	1.09
4 = Supervision or touching assistance	72	1.57
5 = Setup or clean-up assistance	87	1.90
6 = Independent	300	6.54
A = Task attempted but not completed	20	0.44
E = Not attempted due to environmental constraints	+	+
M = Not attempted due to medical restrictions	13	0.28
N = Not applicable	3,462	75.47
P = Patient refused	+	+

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Table 15-20b
OASIS-B *start of care* manage injectable medications

OASIS-B: Current management of injectable medications	Frequency	Percent
0 = Able to independently take the correct oral medication(s) and proper dosage(s) at the correct times.	319	6.95
1 = Able to take medication(s) at the correct times if (a) individual dosages are prepared in advance by another person; OR (b) given daily reminders; OR (c) someone develops a drug diary or chart.	187	4.08
2 = Unable to take medication unless administered by someone else.	420	9.16
NA = No injectable medications prescribed.	3,661	79.81

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Table 15-20c
CARE *admission* manage injectable medications by OASIS-B *start of care* manage injectable medications

CARE: Supplemental function: Injectable drug management	0 = Able to independently take the correct oral medication(s) and proper dosage(s) at the correct times	1 = Able to take medication(s) at the correct times if (a) individual dosages are prepared in advance by another person; OR (b) given daily reminders; OR (c) someone develops a drug diary or chart	2 = Unable to take medication unless administered by someone else	NA = No oral medications prescribed	Total
Missing	5.6	+	7.1	84.8	197
1 = Dependent	+	5.3	80.3*	13.9	360
2 = Substantial assist.	+	+	65.2*	+	23
3 = Partial assist.	+	62.0	26.0*	+	50
4 = Supervision touching assist.	20.8	50.0	18.1*	+	72
5 = Setup assist.	24.1	58.6*	+	12.6	87
6 = Independent	77.3*	7.0	+	12.7	300
L = Letter code	1.1	0.5	1.8	96.6	3,498
Total	319	187	420	3,661	4,587

*Expected areas of agreement are marked with an asterisk.

+ Cells based on a sample size of n < 11 are not shown.

SOURCE: RTI analysis of CARE and OASIS-B assessment data, 2008-2009.

Summary Results

- As indicated by the areas marked with an asterisk in Table 15-20c, overall there was relatively high agreement between the CARE and OASIS-B managing injectable medications items.
- Among patients who were assessed as "independent" on the CARE Item Set, 77.3 percent were assessed using the OASIS-B as "0–able to independently take the correct medication and proper dosage at the correct times," where agreement was anticipated between the instruments.
- A relatively high level of agreement (58.6 percent) was also observed between the CARE level for "setup" and the OASIS-B level for "1–able to take injectable medication at correct times if (a) individual syringes are prepared in advance by another person OR (b) given daily reminders."
- The CARE levels for "substantial assistance" and "dependent" seemed to match most closely with the OASIS-B level of "2–unable to take injectable medications unless

administered by someone else," at 65.2 percent and 84.8 percent of responses, respectively.

15.4 Summary

While a direct one-to-one item comparison between the two instruments is not possible due to differences in, for example, item scale categories, and the number of items and combination of items per instrument activity assessed to assess function, this mapping of items and associated scales presents an important examination of how CARE items compare to similar OASIS-B items associated with current payment policy where equivalent items were available. Assessment time frames are unlikely to have a large impact given that both instruments were likely completed at the same time. Please note that some HHA PPS items were not possible to evaluate because of the lack of an equivalent CARE item such as count of therapy visits, or an indicator of which HHA episode it is for a patient who has a sequence of HHA episodes. Preliminary findings indicate a medium level of agreement between the two assessment instruments.

SECTION 16
CONCLUSIONS

The findings in this report are critical to understanding the applicability of using standardized versions of items in place of historical items on the three mandated patient assessment tools: Inpatient Rehabilitation Facility Patient Assessment Instrument (IRF-PAI), Minimum Data Set (MDS), and Outcome and Assessment Information Set (OASIS). The tools measure similar concepts of medical, functional, and cognitive health status but use different items to measure these concepts. The differences among these assessments make it impossible to compare patients across settings, examine the adequacy of the access to care in different parts of the country, and monitor the quality of care similar patients may receive in different settings.

The standardized items were based on an extensive stakeholder process that took into account the existing items on the mandated assessment tools, the current scientific approaches for determining patient complexity, and methodological issues in using items in different settings with differing staff mix. The items tested in the Continuity Assessment Record and Evaluation (CARE) assessment were based on the current science in each of the fields of care. Most of the concepts were applicable to patients treated in more than one setting. For example, pressure ulcers are present in patients across the continuum of provider types. While more severe pressure ulcers may be more prevalent in one setting type than another, the approach for measuring the pressure ulcer should be consistent. Using the input of the national pressure ulcer experts to define the best way to measure a pressure ulcer, the CARE Item Set was able to test one item's use in different settings. The results showed that after training on an item, a standardized measurement approach could be used that would allow patients to be measured consistently across all settings.

Item selection was based on numerous technical expert panels to weigh the strengths and weaknesses of current approaches and to determine the best items for measuring case complexity across the continuum of care. Consideration of the granularity of an item and its ability to measure changes at both the high end and the low end of severity was important if a standardized item would be able to measure care across the continuum. The selection process also recognized the importance of clinical input from each of the five settings—the acute and post-acute settings—and the variation in the types of clinicians involved in each setting. Item development was based on the expertise of the medical community, including the physicians, nurses, respiratory therapists, and other specialists working with medical patients; the expertise of the physical rehabilitation community in working with physical functional status, including physiatrists, physical therapists, occupational therapists, speech pathologists, rehabilitation nursing specialists, and others specializing in these areas; and the expertise of the cognitive status community, including psychologists, geriatricians, speech pathologists, occupational therapists, and others working in this area. These specialists were included from each of the different levels of care to recognize that a clinician working in one setting may view a patient differently or have different expectations regarding a patient's status than those working in other settings.

This multiclinical input was important for ensuring that all stages of the demonstration and the use and testing of the reliability of the items could apply across all settings. The reliability tests reported in Volume 2 of this work were important for determining the feasibility

of using standardized items across settings. The results showed that most items, with the exception of several instrumental activities of daily living, such as laundry and shopping, were reliable, returning consistent results in paired interrater reliability testing and also when clinicians across all participating setting types rated a set of standard video patients using the CARE assessment. Comparisons with earlier tests of the mandated assessment items showed that the standardized items were at least equal to, and in some cases more reliable than, items in the existing assessment tools. The goal of these tests was to at least match the reliability of items currently in use. The reliability tests included in Volume 2 showed that moving to standardized items will not affect the reliability of the information collected in the different settings. Testing also demonstrated that items elicited consistent responses across provider types and clinician discipline when rating standard patients.

The work in Sections 13-15 helps explain some of the differences between the standardized items and each of the analogous current assessment items on each tool. Each of the three mandated tools had different rules that they followed in measuring the concepts. The assessment windows and look-back periods differed across tools. For some concepts, entirely different items were used to measure a concept, whereas for other concepts, the item definitions varied only slightly. However, these differences resulted in broader or narrower definitions of the condition being measured. In most cases, the CARE item used the most granular or most focused item. In other cases, CARE was replacing a multidimensional item with two unidimensional items to better define the factor being studied. For example, the toileting item in CARE includes only toileting hygiene and excludes clothing or other factors more related to mobility and self-care than perineal hygiene. Those skills are measured in their respective physical function sections of dressing. In areas of major treatments and respiratory status, CARE was designed to focus on patients with more complex needs than the average nursing needs seen across post-acute care, rather than including items that covered the entire range of complex impaired patients to noncomplex, unimpaired patients.

The comparisons in these later sections of the report are useful for helping understand how patients were rated differently using the standardized and setting-specific mandated assessment items. Differences between items on the two assessment items being compared were provided, comparing assessment time frames, differences in rating scales if applicable, and differences in item definitions and instructions, in addition to other potential sources of variation between the two assessments. Paired ratings for cases in the CARE sample were shown as cross-tabulations of the items being compared between the two assessments. Where items differed, the differences were largely as expected, with existing assessment items collapsing some of the less severe or less impaired cases with some of the more complex. CARE items were designed to measure differences in complexity, especially those associated with differences in the intensity of services needed. Some concepts had more than one measure in order to examine whether certain measures of a concept worked better in certain populations.

The standardized item set tested in this volume from the CARE tool was selected to reflect the basic items used in payment or case-mix measurement. Missing are more specific items applicable to groups with specialized cognitive issues, such as the traumatic brain injury populations or the more demented populations, to name a few. However, the items tested in the Post-Acute Care Payment Reform Demonstration show that standardized items can be used across the Medicare program to measure patient complexity. While every item may not be

relevant for every patient, it is an important first step to have consistent ways of measuring items that are relevant, independent of site of care. Having reliable standardized items is necessary to allow examination of the patients' clinical changes at different points in their episode, regardless of site of care. This information is particularly important in today's world as payers examine the value of care provided in each setting and across a continuum of care.

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REFERENCES

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