Refinement of Community Discharge, Potentially Avoidable Readmission, and Functional Outcome SNF Quality Measures, for Fiscal Years 2011, 2012, and 2013

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Final Report

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I. INTRODUCTION

Objectively assessing the quality of care that Medicare beneficiaries receive from providers is fundamental to both public and private efforts to ensure that the Medicare program delivers high value to Americans who are elderly or living with a disability. As both empirical evidence and conceptual developments accumulate, the quality measures are routinely subject to refinement. In their 2014 Report to Congress, the Medicare Payment Advisory Commission (MedPAC) introduced one set of revised Skilled Nursing Facility (SNF) quality measures, and another set of new quality measures (MedPAC, 2014). For the revised set of measures—those targeting hospital readmissions--the modifications included using only the primary diagnosis, rather than primary and secondary diagnoses, from the hospital readmission to identify potentially avoidable readmissions; excluding readmissions that might create incentives to not hospitalize a SNF resident for elective or beneficial care; and including other types of readmissions from the literature that are potentially preventable in the SNF population. The new set of measures reported in the 2014 Report to Congress—those targeting functional change-- were developed to identify changes in mobility across a beneficiary's stay in the SNF, while simultaneously addressing applicability by accounting for the likelihood of change based on residents' differing cognitive functioning at the time of SNF admission.

In the March 2015 Report to Congress, MedPAC provided updated results for SNF quality measures to include Fiscal Year (FY) 2013. In addition, MedPAC has modified several of the quality measures, including the rate of community discharge, a composite measure of potentially avoidable readmissions either at the end or in the 30 days following the end of the SNF stay. In this contractor report, we provide methods and results of the full set of quality measures used in the 2015 Report to Congress, with particular emphasis on the modifications.

II. METHODS AND RESULTS

The methodology for calculating the set of potentially avoidable readmissions and functional measures was originally developed in last year's work (Kramer, et al, 2014). Following the receipt of feedback after the release of last year's report, along with altered regulatory requirements pertaining to the data which providers are required to collect and submit, we refined both sets of measures while extending the results for an additional year.

The analyses included in this report were conducted on Medicare SNF stays that occurred in fiscal year's 2011, 2012, and 2013. The Medicare-covered stays were determined by the dates contained in Medicare claims files and include beneficiaries in the fee-for-service program who utilized the Medicare SNF benefit from 10/1/2010 to 9/30/2013. Medicare beneficiaries who were enrolled in a managed care organization at any point in a fiscal year (FY) were excluded. To provide accountability for all of a resident's SNF stays in a particular year, the most granular level of analysis was the resident stay; thus, a resident could have multiple SNF stays in a particular FY. Stays were excluded if a SNF resident died during the stay, or if the stay occurred in a Swing Bed Hospital. As detailed in the following sections, each of the SNF quality measures required a minimum number of eligible stays for the measure to be reported at the facility level.

For the nearly 2 million stays included in each FY, SNF residents were predominantly female, aged 75 years or older, self-designated as white, and widowed (Table 1).

1 Potentially Avoidable Readmission and Community Discharge Methods

1.1 Measure Definitions

For FY2011-FY2013, a total of four readmission and community discharge-related quality measures were calculated annually for each facility. Each facility's observed and expected rates for the year were based upon stay-level information that was aggregated to the facility level. For each measure, using all Medicare SNF stays we calculated an observed facility rate, an expected facility rate, and finally a risk-adjusted facility rate for eligible facilities (Abt Associates, 2004; Min, et al, 2011). The specific definitions of the four measures were:

1.1.1 **100-Day Rate of Community Discharge:** A facility's rate of community discharge at the end of the Medicare SNF stay, within 100 days of a resident's admission to the SNF. Community discharge was defined as direct discharge from the SNF to a community setting, regardless of whether the Medicare beneficiary received home health care. This measure reflects a positive outcome because at the end of the skilled nursing stay, the Medicare SNF resident does not become a long-term nursing home resident in either the same or different nursing facility. Instead, community locations include a private home or residential care facility (e.g., assisted living) that offers independence. Community discharge rates were risk-adjusted based upon a Medical Comorbidity Index, the presence of a Mental Health Condition, the resident's Average Barthel Score, the resident's use of a walker, whether the resident has shortness of breath when sitting at rest, any falls after admission, the presence of

surgical wounds, and the number of changes in physician orders in the last fourteen days. Facility eligibility for this quality measure was determined by providing SNF care to 25 or more individual stays in the FY, excluding deaths during the SNF stay and swing-bed stays (Donelan-McCall, et al, 2006). Stays with a subsequent hospital readmission from the community greater than 30 days from the start of the SNF stay were retained in the numerator. This inclusion rule was changed from previous years in which all hospital readmissions among beneficiaries discharged to the community up to 100 days after the start of the SNF stay were excluded from the numerator.

1.1.2 **100-Day During SNF Stay Readmission Rate of Potentially Avoidable Conditions:** A facility's rate of direct SNF-to-hospital readmission among a nursing facility's SNF residents, within 100 days of SNF admission, with a hospital discharge diagnosis for any of thirteen potentially avoidable conditions. These thirteen conditions include: electrolyte imbalance, congestive heart failure, respiratory illnesses, sepsis, urinary tract / kidney infections, hypoglycemia / diabetic complications, anticoagulant complications, fractures / musculoskeletal injuries, adverse drug reactions, acute delirium, cellulitis / wound infection, pressure ulcers, and blood pressure management. Readmission rates during the SNF stay were risk adjusted for a Medical Comorbidity Index, the presence of an Arthritis Condition, the resident's average Barthel Score, the resident's use of a walker, whether the resident has shortness of breath while sitting at rest, the presence of a fever, and any falls after admission with major injury. Facility eligibility was determined by providing SNF care to 25 or more individual stays in the FY, excluding deaths during the SNF stay and swing-bed stays. Individuals who are readmitted to a hospital within one day of SNF discharge were included in the numerator.

1.1.3 **30-Day Post SNF Discharge Readmission Rate of Potentially Avoidable Conditions:** A facility's rate of hospital readmission within 30 days of SNF discharge with a hospital discharge diagnosis for any of thirteen potentially avoidable conditions. Readmission rates in this post-discharge period were risk adjusted for a Medical Comorbidity Index, the presence of an Arthritis Condition, the presence of a Mental Health Condition, the resident's Average Barthel Score, whether the resident had shortness of breath when sitting at rest, the presence of surgical wounds, and the number of changes in physician orders in the last fourteen days. Facility eligibility was determined by providing SNF care to 20 or more individual stays in the FY, excluding deaths during either the SNF stay or in the 30 days following the SNF discharge (Kramer, et al, 2013) and swing-bed stays.

1.1.4 **Combined 100-Day During SNF and 30-Days Post SNF Discharge Readmission Rate of Potentially Avoidable Conditions:** A facility's rate of direct SNF-to-hospital readmission among a nursing facility's SNF residents, within 100 days of SNF admission or hospital readmission within 30 days of SNF discharge for any of thirteen potentially avoidable conditions during the SNF stay or 30 days post SNF discharge. Readmission rates were risk adjusted for a Medical Comorbidity Index, the resident's Average Barthel Score, the resident's use of a walker, whether the resident has shortness of breath while sitting at rest, the presence of a fever, and the presence of surgical wounds. Facility eligibility was determined by providing SNF care to 25 or more individual stays in the FY, excluding deaths during either the SNF stay or in the 30 days following SNF discharge, and swing-bed stays.

1.2 SNF Measure Development

The facility-level quality measures used in this report focus on rates of community discharge and hospital readmission for Medicare FFS beneficiaries who were either receiving skilled nursing care, or had recently been discharged from a skilled nursing facility stay. Similar to last year's approach (Kramer, et al, 2014), community discharge rates are calculated by identifying each beneficiary's location immediately after the end of the SNF stay, including an acute care hospital, a nursing home, or the community. Beneficiaries who are discharged to a nursing home are not counted as community discharges even if the beneficiary resided in a nursing home prior to the qualifying hospitalization. Separate risk models with individualized covariates and weights are used to estimate expected rates for different discharge destinations (e.g., discharged to an acute care hospital, discharged home with home health care, discharged home without home health care, discharged to a nursing home).

The hospital readmission measures presented in this report rely on only the primary diagnosis at hospital discharge, with two exceptions described below. We excluded hospitalizations from our readmission definition that were likely to be planned, such as inpatient chemotherapy and radiation therapy. While certain readmissions are potentially avoidable for long-stay nursing home residents with chronic conditions, such as anemia or angina, readmission from post-acute care for these problems are as likely to be a result of the hospital care as the SNF care. Hence, these hospital readmissions were not included in the list of potentially avoidable conditions attributable to the SNF (Kramer, et al, 2014).

Two of the conditions included in the potentially avoidable readmission measures were defined using other information in addition to the primary diagnosis for hospital readmission because we believe it was valid in these cases. First, problems with management of anticoagulation leading to hospital readmission were classified as a potentially avoidable readmission if there was a combination of the MDS item indicating that a resident was actively receiving anticoagulant therapy and a hospital discharge diagnosis for a situation in which the individual had either a clot (cerebral or pulmonary) or a cerebral bleed. Second, we classified a hospitalization as a potentially avoidable hospital readmission in which delirium was listed as a secondary diagnosis as long as the primary diagnosis was some form of dementia.

1.3 Stay-Level Covariates

In order to develop a facility-level risk-adjusted rate, first we employed each SNF resident's characteristics from MDS assessments during the resident's stay to calibrate a stay-level expected probability for each of the four outcome measures. Subsequently, we aggregated the stay-level expected probabilities to the facility level by averaging the probabilities for all eligible stays in the FY, and then calculated a facility-level risk-adjusted rate for each outcome measure.

1.3.1 Comorbidity Index and Condition indicators

At the stay level, each resident's active diagnoses, gleaned from items in MDS 3.0 Section I, were used to construct a Medical Comorbidity Index, an Arthritis Condition indicator, a Cognitive Condition indicator, and a Mental Health Condition indicator. The MDS items for the comorbidity indices and the condition indicators are listed in Tables 2 and 4. Each of the covariates have an associated outcome-specific weight, developed through stay-level logistic regression models, that corresponds to the log odds of an outcome. The comorbidity index is a stay-specific measure that is a composite of active diagnoses that were present during the stay, while the conditions are binary indictors signifying the presence of at least one of the contributing diagnoses during the stay. Additional details of the Medical Comorbidity Indices are available in Table 6.

1.3.2 Other covariates

Other MDS-based resident characteristics were evaluated for possible inclusion as a covariate in the risk adjustment logistic regressions for readmission and community discharge (See Table 1). Demographic characteristics of age, race, gender, and marital status were not statistically significant risk factors, and were not included when calculating expected outcomes. In addition to the medical comorbidity index and the condition indicators, the final group of covariates used in at least one of the stay-level outcome models for risk adjustment included the average Barthel index, the resident's use of a walker during the SNF stay, whether the resident had shortness of breath when sitting at rest, the presence of a fever during the SNF stay, any falls since admission, any falls since admission with a major injury the presence of surgical wounds, and the number of changes in physician orders in the last fourteen days.

1.4 Resident Exclusions and Facility Eligibility

The majority of exclusions and facility eligibility criteria that were used in last year's MedPAC report (Kramer, et al, 2014) to generate stay-level and facility-level measures were carried over. Medicare beneficiaries who were enrolled in a managed care organization at any point in the year were excluded because managed care organizations are not required to submit inpatient claims. SNF residents who died in the SNF before day 100 of the stay were also excluded from the outcome measures, unless the SNF resident was rehospitalized at the end of the stay and died within one day of discharge. Residents who were readmitted to a hospital during the SNF stay were excluded from the 30-day post SNF discharge readmission measure. For the 30-day post SNF discharge readmission measure, all stays in which the resident was readmitted during the SNF stay, or died during either the SNF stay or within 30 days of SNF discharge were excluded. Both community discharge and potentially avoidable hospital readmission during the SNF stay outcome measures required a minimum of 25 stays for the measure to be calculated at the facility level. In contrast, for inclusion in the facility-level outcome measure for the 30-day post SNF discharge readmission rate the eligibility criterion was a minimum of 20 stays in the fiscal year (Kramer, et al, 2013). The final eligibility criterion was the exclusion of SNF stays occurring in a swing-bed facility.

A minor refinement to the community discharge measure was the inclusion of all stays where there was a readmission 31 to 100 days after the start of the SNF stay. Unlike in previous years for which readmissions within 100 days of the start of the stay were excluded, these stays were retained resulting in roughly a 2-3 percentage point increase in the community discharge rate.

1.5 Facility-Level Regressions

Each of the facility-level outcome measures was regressed on a set of independent variables to facilitate inferences about the characteristics associated with facility performance during this time period. We employed a pooled data set that contained all of the facility-level data in FYs 2011 and 2013. Covariates for each of the models included hospital-based (as opposed to free-standing), owned by a for-profit company (as opposed to a not-for-profit company), owned by a government agency (as opposed to a not-for-profit company), located in an urban setting (as opposed to a rural setting), facility size less than 50 certified beds (as opposed to 50 or more certified beds), and state-specific indicator variables (n.b., the reference group was the state with the lowest beta coefficient in each model). For the models of the 30-day post SNF discharge readmission rate, we controlled for the post-SNF discharge location, distinguishing between a community setting without home health services (the reference group), a community setting with home health, or a nursing home as a non-SNF resident. In addition, we developed additional regression models for sensitivity analysis that included staffing levels in the nursing facility. These included nurse staffing levels (RN hours per resident day, LPN/LVN hours per resident day, and CNA hours per resident day), and physical therapy staffing levels (PT hours per resident day) that are reported to CMS at the time of the annual survey. To assess change over time, we included an indicator variable for FY 2013, leaving FY 2011 as the reference group. We also included an indicator for facilities that were eligible in FY 2011 only, and another indicator for facilities that were eligible in FY 2013 only.

2 Potentially Avoidable Readmission and Community Discharge Results

2.1 Outcome Measures

2.1.1 Stay Level

Tables 2, 3, and 4 provide descriptive information about the Medicare SNF population and the stay-level measures that were used in creating facility-level outcome measures. Table 2 provides a list of MDS-based active diagnoses for the Medicare SNF population by FY. For 2013, Anemia (33.7%), depression (35.3%), heart failure (25.1%), and respiratory illnesses (27.2%) such as asthma and chronic obstructive pulmonary disease were present in more than a quarter of SNF residents. Pooling related illnesses, the Mental Health Conditions indicator, which included Anxiety Disorder, Depression, Manic Depression, Psychotic Disorder, and Schizophrenia, was present in nearly half (47.1%) of SNF residents, while a Cognitive Conditions indictor, which included Alzheimer's Disease and Non-Alzheimer's Dementia,

was also prevalent (25.2%). An Arthritis Conditions indicator was present in nearly a quarter (24.2%) of SNF residents.

Table 3 provides information on resident characteristics for FY 2013 based upon the SNF beneficiaries' location immediately following the SNF discharge. Excluding those SNF residents who died or were discharged directly to a hospital, most discharged SNF residents were discharged to a community setting rather than to a nursing home. However, nearly two-thirds of these residents (47.5% of all discharged SNF residents) received home health services in the 30 days following discharge. Tables 3 and 4 reveal differences in SNF beneficiaries' demographic characteristics and health conditions for different discharge locations. Older, unmarried, and more functionally impaired and frail SNF discharges went to long-term nursing home care. Cognitive conditions, mental health conditions, as well as most medical conditions, were substantially more prevalent in discharges to long-term nursing home care.

Table 5 demonstrates that medical conditions and functional characteristics were differentially associated with outcomes in different discharge locations, suggesting the need for different risk adjustment models to determine stay-specific expected values. These risk models for community discharge and during SNF readmission rate were relatively strong based upon model fit statistics (c-index = 0.77 and 0.75 respectively). These risk models were developed using a 40% random sample from FY 2011. Table 6 identifies the weights that were used in the Medical Comorbidity Index. They were modeled using all stays for FY 2011 and the same set of covariates was used for the community discharge and readmission measures.

2.1.2 Facility Level

Table 7 provides the averages for the SNF quality measures in FY's 2011, 2012, and 2013 across eligible facilities. Entirely new data files were used for all three FYs to insure uniform pull criteria for all files and correct several minor problems for the data pulls from prior work conducted (Kramer, et al, 2014). The risk-adjusted community discharge measure had an upward trend (good) rising from 33.2% in FY 2011 to 37.5% in FY 2013, a 4.2% absolute and 13.0% relative improvement. The risk-adjusted potentially avoidable readmission measure had a downward trend (good) falling from 12.4% in FY 2011 to 11.1% in FY 2013, a 1.3% absolute and 10.5% relative improvement. The risk-adjusted 30-day post SNF discharge potentially avoidable readmission measure had a downward trend (good) falling from 5.8% in FY 2011 to 5.5% in FY 2013, a 0.3% absolute and 5.2% relative improvement. The risk-adjusted combined during and 30-day post SNF discharge potentially avoidable readmission measure had a downward trend (good) falling from 16.5% in FY 2011 to 15.1% in FY 2013, a 1.4% absolute and 8.5% relative improvement.

The methodology to construct the combined during and 30-day post SNF discharge potentially avoidable readmission measure was improved from last year in that medical comorbidity index and risk models were constructed specifically for this outcome measure rather than using the component measures' models. Both methods have a similar trend line but the improved measure provided in this year's report was about 1 percentage point higher. It is important to note that the combined measure is not an arithmetic sum of the two

component measures due to differences in the component measures' denominator populations. Table 8 shows the variation across eligible facilities for outcome measures and selected facility characteristics for FY 2013. Between the 10th and 90th percentiles, risk-adjusted community discharge ranges from 20.1% to 53.0%, potentially avoidable readmission ranges from 5.6% to 17.1%, and 30-day post SNF discharge potentially avoidable readmission ranges from 1.8% to 9.4%. Most facilities are free standing (95.5%), for profit (72.3%), urban (73.6%), and have 50 or more Medicare certified beds (82.0%).

2.1.3 Facility Level Regression Analyses

Pooling both FY 2011 and FY 2013 data, we employed linear models, regressing the risk-adjusted outcome measures on facility and geographic characteristics to understand the effect of these characteristics on quality (Tables 9, 10, 11, 12, 13, 14, 15, and 16). The adjusted r-squared values for the community discharge rate and the during SNF potentially avoidable readmission rate models were reasonably good (0.219 and 0.128, respectively), but facility characteristics were not very predictive of the 30-day post SNF discharge potentially avoidable readmission rate (r-squared of 0.047). Compared to free-standing facilities, hospital-based facilities had community discharge rates that were higher by 6.6 percentage points and potentially avoidable readmission rates during the SNF stay that were lower by 2.6 percentage points. Not-for-profit facilities had higher community discharge rates (by 1.4 percentage points) and lower potentially avoidable readmission rates (by 1.1 percentage points) than for-profit facilities. Compared to urban facilities, rural SNFs had lower community discharge rates (by 2.8 percentage points) but no statistical difference between urban and rural facilities for potentially avoidable readmission rates. Small facilities had higher community discharge rates (by 5.3 percentage points) than facilities with at least 50 certified beds, and a 0.6 percentage points lower potentially avoidable readmission rate during the SNF stay.

Staffing levels were generally positively-associated with the various risk-adjusted outcomes and lent support for the validity of these outcome measures as indicators of SNF quality. For example, after risk adjustment the facilities with more physical therapy staff hours per resident day had significantly higher rates (beta coefficient=0.216) of community discharge. These higher physical therapy staffing levels may reflect a stronger rehabilitation orientation which was associated with a 2.3 % increase in community discharge rates per physical therapy hour per resident day. Similarly, after risk adjustment the facilities with more RN hours per resident day and CNA hours per resident day had lower rates of potentially avoidable readmissions. These associations support the utilization of the refined potentially avoidable readmission rates and community discharge rates as measures of facility quality.

With respect to changes over time, rates of community discharge improved from FY 2011 to FY 2013, increasing by 4.4 percentage points on average after controlling for facility-level and geographic characteristics. Potentially avoidable readmission rates also improved over time, decreasing 1.3 percentage points during the SNF stay, but only 0.3 percentage points on average in the 30-days post SNF discharge potentially avoidable readmission.

3 Functional Change Methods

The functional measures used in this year's analysis had two notable refinements from those included in last year's report (Kramer, et al, 2014): The methodology used only the Self-Performance ADLs rather than both Self Performance and Support ADL scores for risk adjustment because the discharge MDS assessment no longer captures Support ADLs. In addition, the average rate of improvement in mobility ADLs measure, which was constructed previously at the facility level, has been replaced with an improvement in mobility for one or more ADLs functional measures, which is now constructed at the stay level.

3.1 Selection of MDS Assessments for Functional Outcome Assessment

A SNF resident's functional change is measured by comparing the initial and discharge MDS assessments. Although the initial assessment may not adequately reflect improvement that occurred prior to the completion of the assessment, any measurement error should not affect our ability to examine trends in quality over time, unless there are changes from year to year related to when these assessments are conducted. Using the discharge assessment for a stay makes the implicit assumption that if a SNF resident was discharged to the community or long-term nursing home care or hospital (deaths were excluded), then he/she achieved the functional level that the SNF could provide for that stay. For stays in which the resident continues to reside in the nursing home after the end of the SNF stay, there are instances in which the discharge MDS is missing: the assessment the most immediately follows the SNF stay may be used in lieu of a missing discharge assessment so long as the assessment was completed within 30 days of the end of the SNF stay. For FY 2013, the resulting median interval from the first to last assessment was 19 days, with 23.3% at 7 days or less and 25% at 37 days or more. This variability in the time between the initial and discharge assessment was due largely to variability in the length of SNF stays.

3.2 Selection of ADL items and Scales for Functional Outcome Assessment

Three ADLs were selected for functional outcome measurement based on both conceptual and empirical grounds: Bed Mobility, Transfer, and Walk in Room (referred to as Ambulation). From a conceptual perspective, these three ADLs are hierarchical, representing a progression from being immobilized in bed, to transferring out of bed, to walking in the room (Katz, et al, 1963). At least one of these functions should be affected by recovery during most SNF stays, except for those residents recovering exclusively from speech and cognitive losses. The ADL Support Provided scale for these three items was originally chosen because it is more tangible and objective (e.g. One person assist), requiring less judgment. The ADL Support Provided scales are also less central to RUGs reimbursement, which is based primarily on the Self-performance scales (CMS et al, 2009), so they are less subject to payment bias.

From April 2012 on, MDS discharge assessments no longer captured the Support Provided ADLs causing a significant problem of missing data. While there were fewer missing outcomes in FY 2011 using Support Provided ADLs as opposed to Self-performance ADLs, by FY 2013 over 75% of the outcomes were missing if the Support Provided ADLs were used. New outcome measures were constructed using Self-performance ADLs that continue

to be captured on the MDS discharge assessment. The outcome measures were compared and while there were some changes in the outcomes, especially in selected strata, the methodology using Self-performance ADLs was sufficiently similar and robust compared to the Support Provided ADLs methodology to justify the change without altering the rest of the methodology developed last year (Kramer, et al, 2014).

In addition to capturing progressively higher functional levels, empirically, the Bed Mobility, Transfer, Ambulation ADL items demonstrated higher rates of change than most of the other ADL items. This was critical in that even these three ADLs each exhibited no change in about two-thirds of stays due to ceiling and floor effects. As mentioned earlier, for some SNF residents, maintaining function is the important outcome.

The ADL scales were recoded in two ways. First, the scales were reversed such that greater independence was denoted by higher values. Thus, good functional outcomes resulted in a positive difference from the first to last assessment. Second, the value "8" representing the activity was not performed was recoded to the most dependent level. This contrasts with the recoding for RUGs, in which the "8" is recoded to be the same as independent because from a resource perspective both an independent resident and one that cannot perform an activity require no services, whereas from an outcome perspective these are opposite ends of the scale. Thus the resultant 5-point scale for each of the three mobility ADLs was the following:

1- Total Dependence or ADL activity did not occur
2- Extensive Assistance or Minimal Activity
3- Limited Assistance
4- Supervision
5- Independent

3.3 Functional Measure Definitions

3.3.1 Stay-Level Measures

In summary, the above analysis led to the following decisions:

- The first and last MDS assessments were selected to define the outcome interval;
- Three ADL items were selected to measure the change in mobility: Bed Mobility, Transfer, and Walk in Room (referred to as Ambulation); and
- The Self-performance scales were chosen and adapted to measure functional change.

For each SNF stay, two measures as defined below were then created for each of these three ADL items. This yielded six different stay-level functional outcome measures (2 measures each for the 3 functions).

Improvement-Improved in the Self-performance Scale between the first assessment and the last assessment during the SNF stay. Stays that began at the highest level in the scale for each ADL were excluded from that ADL measure because they could not possibly improve in a measurable way.

No Decline-Either improved or maintained functional status in the Self-performance Scale between the first assessment and the last assessment for the SNF stay (the opposite of decline, which would be a negative outcome where higher values would have been worse).

Stays that began at the lowest level in the scale for each ADL were excluded from that ADL measure, because these individuals could not possibly decline in a measureable way.

The reason for collapsing the stay-level measures into dichotomous indicators of improvement or decline was that, for the most part, changes represented an observed change of one level in the ADL 5-point scale. Conceptually, given that the ADL scales are not designed as interval scales, dichotomizing them into improvement or decline makes fewer assumptions about linearity. However, the degree of improvement was captured to some extent if, during a stay, a beneficiary improved so much in one activity that they also improved in another of the three functions.

3.3.2 Facility-level Measures

The facility-level rates for improvement and no decline were determined for each of the three mobility ADLs. To ensure measure stability, a minimum of 25 SNF stays was required during the FY excluding any stays ending in deaths. Additionally, composite facility-level measures were created for Improvement and No Decline. The Improvement composite measure was defined at the stay level (changed from last year) as improvement in one or more of any of the ADLs. Some stays resulted in improvement in just one of the three ADLs because the first assessment was at the ceiling for one or more of the ADLs. Alternatively, because mobility improvement is hierarchical, with individuals progressing from bed mobility to transferring to ambulation, some stays resulted in improvement in all three functions over the course of the SNF stay. The No Decline composite was defined at the stay level as maintaining or improving function in all three of the individual ADLs during the stay. Thus the facility measures were defined as follows:

Improvement in Mobility for One or More ADLs: percentage of stays where one or more of the ADLs (Bed Mobility, Transfer, and Ambulation) improved between first and last assessments.

No Decline in Mobility for Any ADLs: percentage of stays where there was no decline in any of the three ADLs (Bed Mobility, Transfer, and Ambulation) between first and last assessments.

3.4 Risk Adjustment Method

3.4.1 Expected Rate Calculation

To take into consideration differences in potential to improve for each measure, Functional Outcome Groups (FOGs) were defined based on a combination of the resident's baseline function, and the potential to improve in function. FOGs stratify the population based on relative functional level from low to high and is the method used for risk-adjusting the population. Development and validation of the FOG stratification was completed in prior work (Kramer, et al, 2014). Rehabilitation potential was characterized by ability to perform the eating and dressing ADLs on the baseline MDS, using the Self-performance scale. The reason for using these ADLs is that they reflect cognitive functioning as it applies to ADLs and capture the range of the functional hierarchy from eating, which is one of the more basic

functions, to dressing, which is one of the most advanced functions (Katz et al, 1963). The reason for using Self-performance for these scales was that baseline Self-performance was considerably more variable than support because most individuals in SNFs received one person assist for performing these ADLs. The variation was in the type of assistance they received, which is captured in the Self-performance scale. The MDS lacks a uniform measure of cognition across both interviewable and non-interviewable residents so a direct measure of cognition is not available for all residents.

Stratification into FOGs was used to determine expected rates for the purpose of risk adjustment. For each SNF stay, residents were classified using the first assessment to determine baseline function (e.g. Ultra High Mobility, Very High Mobility, and Moderately Low Mobility). This classification does not parallel the RUGs categories for therapy use; rather, it represents the level of baseline function on the three functional measures (bed mobility, transferring, and ambulation using the Support provided scale). These baseline functional categories were then further classified based on rehabilitation potential using the eating and dressing ADL scales (using the Self-performance scales). For the purpose of classifying beneficiaries into a FOG based on the first assessment, the initial 5-point Support provided scales and 7-point Self-performance scales were collapsed into three levels, with each level representing a minimum of 6% of the stays (Kramer, et al, 2014, Appendix E). These three-level scales were then used to define the FOGs in the following order based on factor analysis: Bed Mobility, Transfer, Ambulation, Eating, and Dressing (Kramer, et al, 2014, Appendix F). Ultimately, a minimum group size for a FOG was set at 1% of the SNF stays so that no FOG would be too small.

It should be noted that the Support provided scale used in prior work (Kramer, et al, 2014) continues to be utilized in the stratification methodology because only the first assessment is utilized in the stratification. There are no missing data problems with the first assessment due to the regulatory changes. However, as described earlier, the Support provided scale cannot be used to calculate the change in function outcome because that requires both a first and second assessment, and the second assessment is often a discharge assessment which no longer captures the Support provided information.

A total of 22 mutually exclusive FOGs were specified. The average rate of all Improvement and No Decline measures was calculated for each FOG across a 40% random sample of stays in FY 2011, independent of facility. These values provided the expected rate for each stay with baseline function in each FOG. The expected rate for a facility was then calculated as the sum of the expected rates for all stays divided by the number of stays in each FY based on the distribution of stays across the FOGs.

3.4.2 Risk-adjusted rate calculation

The SNF quality measures are facility-level measures that correspond to each facility's ratio of observed to expected rates of no decline or improvement for a given FY multiplied by the national rate. The national, observed, and expected rates were logarithmically transformed to manage outliers caused by highly variable estimates for SNFs with low volumes.

A test of validity of the risk-adjusted facility rates was also conducted. The association between these functional outcomes and average physical therapy and nursing staff hours per resident day were assessed using these risk-adjusted facility rates. We would hypothesize that physical therapy hours per resident day would be associated with improved functional outcomes, and to a lesser extent CNA hours per resident day would be associated with no decline in function.

4 Functional Change Results

4.1 Validity of the Functional Outcome Groups

Table 17 provides information on the average outcome rates for 40% random sample of eligible stays in FY 2011which were ultimately used as expected rates. Baseline function according to the three mobility ADLs is represented by the group name (e.g. Ultra High, Moderately High, and Ultra Low). Within these groups the letters (A, B, C ...) represent the rehabilitation potential categories from highest rehabilitation potential to lowest. The baseline functional group classifies resident stays into groups that are homogenous with respect to baseline mobility status to control for facility differences in the level of functional disability of their SNF admissions. The rehabilitation potential categories further break down the groups according to expected outcomes.

The first test of the classification validity was to determine if groups that were expected to have greater rehabilitation potential, defined based on the eating and dressing ADLs, generally demonstrated more positive functional outcomes. The results of average improvement rates for all stays within each baseline functional group monotonously progressed in general confirming that the groups do predict rehabilitation potential. For example, Ultra High Mobility A had rates of Bed Mobility No Decline of 91.7% and Bed Mobility Improvement of 38.7% whereas Ultra High Mobility B had rates of 88.6% and 16.8%, respectively. Similar progressions are apparent for the other Groups across the rehabilitation potential categories, particularly for the improvement measures where there was greater variation across stays.

Table 18 provides the facility distribution of the percentage of SNF admissions in each one of the FOGs based on their baseline assessment. SNF stays occurred for residents with a wide range of baseline function from those who had difficulty mobilizing in bed to those who could ambulate in their room. On average, 37% (sum of appropriate mean values in Table 18, i.e. 1.1% +8.1%, etc.) of facility SNF stays were for residents in the baseline function group, Ultra Low Mobility, which means that they were significantly impaired in bed mobility. The next most prevalent group was Moderately High Mobility, with a moderate degree of Bed Mobility impairment, Transfer Impairment, and Ambulation impairment, represented an average of another 29% of facility stays. Most importantly, variability in the mix of groups was apparent ranging from a minimum of 0% for some facilities to maximums up to 95% capturing the variability across facilities in baseline function and rehabilitation potential.

Thus, the FOGs offer a classification system based on both baseline function and rehabilitation potential that explains variation in rehabilitation outcome measures. In

addition, they capture the variability that exists in SNF case mix so that facilities treating more dependent residents with worse potential will have their functional outcomes assessed relative to expected rates for such beneficiaries. Facilities treating beneficiaries with higher potential will be assessed relative to expected rates for these beneficiaries, minimizing the incentive for admitting SNF residents with greater potential for improvement.

4.2 Facility-Level Functional Outcome Rates

Table 19 provides the averages for the SNF Quality Measures in FY's 2011, 2012, and 2013. Table 20 illustrates that there is substantial variation in the facility composite rates with a 10.2 percentage point interquartile range in the No Decline composite measure, and a 16.9 percentage point interquartile range in the Improvement composite measure. Maximums in both cases were 100%, although the measures reflect relative quality and facilities should not be expected to achieve 100%, similar to not expecting 0% readmission rates or 100% community discharge rates.

Averaging across all eligible facilities, both the risk-adjusted improvement in mobility for one or more ADLs and the risk-adjusted no decline in mobility for any ADLs measures were stable across all three FYs with essentially no change. Improvement and No Decline rates for each of the three ADL (Bed Mobility, Transfer, and Ambulation) components in the composite functional outcome measures were also essentially stable between FY2011 and FY2013 with no absolute of more than 0.3%.

4.3 Association Between Functional Outcomes and both Facility Characteristics and Staffing

Tables 21 and 22 provide the relationship between facility characteristics and the improvement in mobility for one or more ADLs composite measure for the pooled FY 2011 and FY 2013 population. Hospital-based facilities had a 3.9 percentage point lower Improvement rate than freestanding providers, suggesting that the shorter more intensive stays did not result in the same amount of functional recovery by the time SNF beneficiaries were discharged. While government and for-profit facilities had a 3.3 / 3.0 percentage point lower Improvement rate, smaller facilities had a 2.0 percentage point higher Improvement rate and substantial geographic variation existed for improvement in function. Providing validation for the improvement in mobility for one or more ADLs measure, positive associations were found with facility staffing levels. A 1.1 percentage point increase in the Improvement rate was found per CNA hour per resident day and a 9.4 percentage point increase in the Improvement rate was found per Physical Therapy hour per resident day. One would hypothesize that greater involvement of both CNAs and PTs should reduce the rate of functional decline.

Tables 23 and 24 provide the relationship between facility characteristics and the no decline in mobility for any ADLs composite measure for a pooled FY 2011 and FY 2013 population. Again, government and for-profit facilities had lower rates of No Decline (1.6 and 1.0 percentage points respectively), and smaller facilities had higher rates of No Decline (2.2 percentage points) after controlling for the substantial geographic effects. Providing validation for the no decline in mobility for any ADLs composite measure, an increase of 5.8

percentage points was associated with physical therapy staffing hours per resident day. More physical therapy hours per resident day may reflect a stronger facility orientation towards rehabilitation in addition to the important role of physical therapy in functional No Decline. CNA hours per resident day had a 1.1 percentage point association with the No Decline measure, which is not surprising since they probably play a bigger role in providing range of motion and restorative care to prevent decline than they do in providing rehabilitation for mobility improvement that is more dependent on the skills of a PT.

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Section III
Report Tables

TABLE 1: Resident Characteristics

	Fiscal Year		
Demographics	2011[1]	2012[2]	2013[3]
Female	63.4%	63.0%	62.4%
Age at End of First SNF Stay (Years)	79.6	79.3	79.1
Age, Less Than 65 Years	9.1%	9.6%	9.9%
Age, 65 to Less Than 75 Years	20.0%	20.9%	21.7%
Age, 75 to Less Than 85 Years	35.4%	34.6%	33.9%
Age, 85 Years or Greater	35.5%	34.9%	34.5%
Never Married	11.0%	11.5%	11.9%
Married	32.0%	32.3%	32.7%
Widowed	45.5%	44.2%	43.0%
Separated	1.1%	1.1%	1.1%
Divorced	10.4%	10.9%	11.2%
Race/Ethnicity: White	84.4%	84.0%	83.9%
Race/Ethnicity: African American	10.0%	10.3%	10.4%
Race/Ethnicity: Hispanic	3.8%	3.8%	3.8%
Race/Ethnicity: Other	1.8%	1.8%	1.9%
Selected Functional and Other			
Average Barthel Index, 0(Bad) to 90(Good)	38.0	36.2	35.1
Uses Walker	66.5%	63.3%	61.1%
Shortness of Breath When Sitting at Rest	10.0%	10.1%	10.0%
Fever	5.6%	5.4%	5.3%
Falls Since Admission, Any	12.9%	13.6%	14.0%
Falls Since Admission, Any with Major Injury	1.1%	0.9%	0.8%
Surgical Wounds	28.8%	29.6%	29.6%
Number of changes in Physician Orders in Past 14 Days	3.6	3.7	3.6

[1] Includes 1,894,851 SNF stays. Excludes SNF stays ending in death (N=82,558, 4.2%).
[2] Includes 1,908,679 SNF stays. Excludes SNF stays ending in death (N=79,028, 4.0%).
[3] Includes 1,914,199 SNF stays. Excludes SNF stays ending in death (N=82,032, 4.1%).

TABLE 2: Prevalence of MDS Diagnoses During SNF Stay

Item	Active Diagnoses	Fiscal Year 2011[1]	2012[2]	2013[3]
Medical Comorbidity Index Conditions				
I0200	Anemia	34.3%	34.7%	33.7%
I0600	Heart Failure	25.5%	25.1%	25.1%
I1550	Neurogenic Bladder	1.5%	1.5%	1.7%
I1700	Multidrug-Resistant Organism	3.9%	3.5%	3.2%
I2000	Pneumonia	13.7%	13.2%	13.6%
I2100	Septicemia	2.6%	2.7%	2.6%
I2300	Urinary Tract Infection (Last 30 Days)	23.3%	23.1%	21.3%
I2900	Diabetes Mellitus	34.9%	35.2%	35.5%
I4500	Cerebrovascular Accident	14.2%	13.5%	13.1%
I4900	Hemiplegia or Hemiparesis	5.0%	5.1%	4.9%
I5100	Quadriplegia	0.2%	0.2%	0.2%
I5400	Seizure Disorder or Epilepsy	6.1%	6.3%	6.3%
I6200	Asthma, COPD, or Chronic Lung Disease	27.1%	26.9%	27.2%
I6300	Respiratory Failure	3.1%	3.3%	3.8%
Arthritis Conditions		23.8%	24.2%	24.2%
I3700	Arthritis (e.g., degenerative joint disease, …)	18.7%	19.5%	19.8%
I3800	Osteoporosis	9.1%	8.6%	8.1%
Cognitive Conditions		27.3%	26.0%	25.2%
I4200	Alzheimer's Disease	6.2%	6.0%	5.7%
I4800	Non-Alzheimer's Dementia	24.2%	22.9%	21.9%
Mental Health Conditions		46.4%	47.0%	47.1%
I5700	Anxiety Disorder	20.8%	22.0%	23.0%
I5800	Depression (other than bipolar)	36.0%	35.8%	35.3%
I5900	Manic Depression (bipolar disease)	2.5%	2.8%	3.0%
I5950	Psychotic Disorder (other than schizophrenia)	4.7%	5.0%	5.1%
I6000	Schizophrenia (e.g. schizoaffective …)	2.2%	2.4%	2.5%

[1] Includes 1,894,851 SNF stays. Excludes SNF stays ending in death (N=82,558, 4.2%).
[2] Includes 1,908,679 SNF stays. Excludes SNF stays ending in death (N=79,028, 4.0%).
[3] Includes 1,914,199 SNF stays. Excludes SNF stays ending in death (N=82,032, 4.1%).

TABLE 3: Resident Characteristics for SNF Discharge Locations, FY2013[1]

	SNF Discharge Stays[1]	30 Days Post SNF Discharge Location		
		Nursing Home	Home Health	Community or Other
Number of Stays	1,390,421	394,605	660,097	335,719
Percent of Stays	100.0%	28.4%	47.5%	24.1%
Demographics				
Female	64.3%	64.2%	66.4%	60.5%
Age (Years), End of First SNF Stay	79.1	80.0	79.5	77.1
Age, Less Than 65 Years	9.8%	10.9%	8.0%	11.9%
Age, 65 to Less Than 75 Years	22.0%	17.9%	21.8%	27.1%
Age, 75 to Less Than 85 Years	34.0%	30.5%	36.2%	34.0%
Age, 85 Years or Greater	34.2%	40.7%	34.0%	27.0%
Never Married	11.7%	15.8%	9.4%	11.5%
Married	32.6%	22.8%	35.4%	38.0%
Widowed	43.4%	47.4%	43.9%	37.9%
Separated	1.1%	1.4%	1.0%	1.1%
Divorced	11.2%	12.6%	10.3%	11.5%
White	85.0%	80.5%	86.3%	87.7%
African American	9.5%	12.5%	8.8%	7.4%
Hispanic	3.6%	4.8%	3.3%	3.0%
Other	1.9%	2.2%	1.6%	1.9%
Characteristics				
Average Barthel Index, 0 to 90	38.4	28.9	40.3	45.7
Uses Walker	66.6%	52.1%	73.0%	71.8%
Shortness of Breath at Rest	6.6%	8.3%	5.9%	5.8%
Fever	3.6%	4.5%	3.2%	3.4%
Falls Since Admission, Any	13.2%	20.7%	10.8%	9.0%
Falls Since Admission, Any with Major Injury	0.5%	1.1%	0.2%	0.2%
Surgical Wounds	32.4%	16.6%	38.2%	39.7%
Number of changes in Physician Orders in Past 14 Days	3.6	3.1	3.9	3.5

[1] Includes 1,390,421 SNF stays. Excludes SNF stays ending in death (N=82,032, 4.1%), deaths 30 days post SNF discharge (N=83,187, 4.3%), and readmissions during the SNF stay (N=440,591, 23.0%).

TABLE 4: Prevalence of MDS Diagnoses for SNF Discharge Locations, FY2013[1]

Item	Active Diagnoses	SNF Discharge Stays[1]	30 Days Post SNF Discharge Location: Nursing Home	Home Health	Community or Other
	Number of Stays	1,390,421	394,605	660,097	335,719
	Percent of Stays	100.0%	28.4%	47.5%	24.1%
Medical Comorbidity Index					
I0200	Anemia	32.4%	35.6%	31.9%	29.7%
I0600	Heart Failure	22.6%	26.3%	22.1%	19.2%
I1550	Neurogenic Bladder	1.6%	2.7%	1.2%	1.0%
I1700	Multidrug-Resistant Organism	2.8%	3.5%	2.6%	2.4%
I2000	Pneumonia	12.3%	15.5%	11.3%	10.6%
I2100	Septicemia	2.3%	3.0%	2.0%	2.1%
I2300	Urinary Tract Infection	20.9%	27.0%	19.7%	16.1%
I2900	Diabetes	33.6%	35.6%	33.5%	31.5%
I4500	Stroke	12.6%	18.2%	11.1%	9.1%
I4900	Hemiplegia or Hemiparesis	4.6%	8.1%	3.5%	2.6%
I5100	Quadriplegia	0.2%	0.5%	0.1%	0.1%
I5400	Seizure Disorder or Epilepsy	6.1%	9.5%	4.7%	4.8%
I6200	Asthma	25.7%	26.8%	25.5%	24.7%
I6300	Respiratory Failure	3.0%	3.6%	2.8%	2.7%
Arthritis Conditions		27.3%	23.4%	29.6%	27.4%
I3700	Arthritis	22.4%	18.5%	24.3%	24.3%
I3800	Osteoporosis	9.1%	9.1%	9.6%	9.6%
Cognitive Conditions		24.6%	45.1%	17.4%	14.8%
I4200	Alzheimer's Disease	5.6%	11.9%	3.3%	3.0%
I4800	Non-Alzheimer's Dementia	21.4%	39.1%	15.2%	12.8%
Mental Health Conditions		46.9%	60.3%	42.2%	40.2%
I5700	Anxiety Disorder	22.8%	28.4%	20.9%	20.0%
I5800	Depression (other than bipolar)	35.5%	46.9%	31.7%	29.5%
I5900	Manic Depression	3.1%	4.7%	2.3%	2.7%
I5950	Psychotic Disorder	4.9%	10.9%	2.5%	2.6%
I6000	Schizophrenia	2.5%	5.5%	1.0%	1.6%

[1] Includes 1,390,421 SNF stays. Excludes SNF stays ending in death (N=82,032, 4.1%), deaths 30 days post SNF discharge (N=83,187, 4.3%), and readmissions during the SNF stay (N=440,591, 23.0%).

TABLE 5: Risk Models for During SNF Stay and 30-Day Post SNF Discharge Outcomes, FY2011

	During SNF Stay At 100 Days		Potentially Avoidable Readmission 30 Days Post SNF Discharge			Combined During and Post SNF
Model Covariates	Community Discharge	Potentially Avoidable Readmission	Nursing Home	Home Health	Community or Other	Potentially Avoidable Readmission
Intercept	-1.956	-0.061	0.163	0.232	0.105	0.129
Medical Comorbidity Index	0.497	0.529	1.006	0.859	0.761	0.581
Arthritis Condition		-0.437	-0.259			
Mental Health Condition	-0.408		-0.185			
Average Barthel Index	0.028	-0.025	-0.006	-0.011	-0.011	-0.019
Uses Walker	0.850	-0.352				-0.310
Shortness of Breath When Sitting at Rest	-0.761	0.998	0.203			0.847
Fever		0.860				0.668
Falls after admission	-0.474					
Falls after admission with major injury		1.359				
Surgical Wounds	0.570		-0.260	-0.569	-0.801	-0.382
Average Number of Physician Change Orders	0.069		0.050			
c-index	0.77	0.75	0.61	0.67	0.68	0.71

[1] Medical Comorbidity Index model detail is provided in Table 6

TABLE 6: Medical Comorbidity Index Models for During SNF Stay and 30-Day Post SNF Discharge Outcomes, FY 2011

	During SNF Stay at 100 Days		30 Day Post SNF Discharge Potentially Avoidable Readmission			Combined During and Post SNF
Model Covariates	Community Discharge	Potentially Avoidable Readmission	Potentially Avoidable Readmission	From Community with Home Health Care	From Community without Home Health Care	Potentially Avoidable Readmission
Intercept	0.273	-2.536	-3.038	-3.359	-3.217	-2.119
I0200: Anemia	-0.130	0.079	-0.015	0.038	0.043	0.054
I0600: Heart Failure	-0.398	0.447	0.256	0.547	0.575	0.472
I1550: Neurogenic Bladder	-0.421	0.090	0.097	0.167	0.338	0.104
I1700: Multidrug-Resistant Organism	-0.328	0.239	0.253	0.270	0.309	0.243
I2000: Pneumonia	-0.377	0.484	0.134	0.331	0.324	0.463
I2100: Septicemia	-0.294	0.354	0.223	0.164	0.185	0.320
I2300: Urinary Tract Infection	-0.309	0.145	0.005	0.228	0.334	0.165
I2900: Diabetes Mellitus	-0.186	0.230	0.196	0.224	0.291	0.216
I4500: Stroke	-0.295	0.130	-0.086	0.071	0.100	0.100
I4900: Hemiplegia / Hemiparesis	-0.410	0.136	-0.091	-0.076	0.148	0.081
I5100: Quadriplegia	-0.865	0.493	0.302	0.195	0.542	0.442
I5400: Seizure Disorder / Epilepsy	-0.476	0.103	0.016	0.101	0.235	0.089
I6200: Asthma / COPD	-0.129	0.257	0.278	0.417	0.466	0.303
I6300: Respiratory Failure	-0.410	0.507	0.240	0.190	0.150	0.434
c-index	0.61	0.63	0.57	0.63	0.64	0.63

Note: Grayed out estimates have p-values > .05 and are not statistically significant.

TABLE 7: Facility Average Community Discharge and Potentially Avoidable Readmission Rates During and 30 Days Post SNF Discharge

Outcome Measure	Rate		
During SNF Stay[1]	FY 2011	FY 2012	FY 2013
Community Discharge			
Observed	37.8%	39.1%	40.1%
Risk Adjusted	33.2%	35.6%	37.5%
Potentially Avoidable Readmission			
Observed	12.5%	11.9%	11.7%
Risk Adjusted	12.4%	11.5%	11.1%
30-Day Post SNF Discharge Potentially Avoidable Readmission[2]			
Observed	5.9%	5.8%	5.7%
Risk Adjusted	5.8%	5.6%	5.5%
Combined During and 30-Day Post SNF Discharge Potentially Avoidable Readmission[1]			
Observed	17.2%	16.4%	16.2%
Risk Adjusted	16.5%	15.5%	15.1%

[1] Includes SNFs with 25 or more SNF stays excluding deaths during the SNF stay (Fiscal Year 2011 N=12,935, Fiscal Year 2012 N=13,005, Fiscal Year 2013 N=13,063).

[2] Includes SNFs with 20 or more SNF stays excluding deaths during the SNF stay, 30 days post SNF discharge stay, and readmissions during the SNF stay (Fiscal Year 2011 N=12,573, Fiscal Year 2012 N=12,706, Fiscal Year 2013 N=12,758).

TABLE 8: SNF Variation in Risk-Adjusted Outcome Measures and Facility Characteristics, FY 2013

All SNFs	N	Mean	Min	10th Pctl	25th Pctl	50th Pctl	75th Pctl	90th Pctl	Max
100-Day Community Discharge Rate[1]	13,063	37.5%	0.0%	20.1%	29.2%	38.5%	46.6%	53.0%	83.0%
100-Day During SNF Readmission Rate of Potentially Avoidable Conditions[1]	13,063	11.1%	0.0%	5.6%	8.0%	10.7%	13.9%	17.1%	47.1%
30-Day Post SNF Discharge Readmission Rate of Potentially Avoidable Conditions[2]	12,758	5.5%	0.0%	1.8%	3.4%	5.2%	7.2%	9.4%	29.9%
Combined During and 30-Day Post SNF Discharge Potentially Avoidable Readmission[1]	13,063	16.2%	0.0%	8.5%	11.7%	15.7%	20.0%	24.6%	61.5%
Hospital-Based Indicator[1]	13,061	4.5%							
Free Standing Indicator[1]	13,061	95.5%							
For Profit Ownership[1]	13,061	72.3%							
Not For Profit Ownership[1]	13,061	23.6%							
Government or Other Ownership[1]	13,061	4.0%							
Rural Indicator[1]	13,061	26.4%							
Urban Indicator[1]	13,061	73.6%							
Less than 50 Certified Beds[1]	13,063	8.0%							
CNA Staff Hours/Resident Day[1]	12,803	2.45	0.00	1.86	2.08	2.38	2.75	3.16	7.59
LPN Staff Hours/Resident Day[1]	12,803	0.85	0.00	0.43	0.63	0.83	1.02	1.24	6.00
RN Staff Hours/Resident Day[1]	12,803	0.83	0.03	0.39	0.53	0.71	0.95	1.28	10.85
PT Staff Hours/Resident Day[1]	12,800	0.11	0.00	0.02	0.04	0.08	0.13	0.22	3.75

[1] Includes SNFs with 25 or more SNF stays excluding SNF stays ending in death.
[2] Includes SNFs with 20 or more SNF stays excluding all deaths during and 30 days post SNF discharge and all readmissions during the SNF stay.

Table 9: Association Between Community Discharge Rate and Facility Characteristics[1]

Variable	Coefficient	p-value
INTERCEPT	0.182	<.0001
CHANGE FROM 2011 TO 2013	0.044	<.0001
FACILITY ELIGIBLE BOTH 2011/2013	Referent	-
FACILITY ELIGIBLE 2011 ONLY	-0.080	<.0001
FACILITY ELIGIBLE 2013 ONLY	-0.060	<.0001
HOSPITAL-BASED INDICATOR	0.066	<.0001
NON-PROFIT OWNERSHIP	Referent	-
FOR PROFIT OWNERSHIP	-0.014	<.0001
GOVERNMENT OWNERSHIP	-0.063	<.0001
POS URBAN INDICATOR	0.028	<.0001
LESS THAN 50 CERTIFIED BEDS	0.053	<.0001
UT(46)-UTAH	0.260	<.0001
HI(12)-HAWAII	0.259	<.0001
OR(38)-OREGON	0.256	<.0001
AK(02)-ALASKA	0.254	<.0001
AZ(03)-ARIZONA	0.223	<.0001
ID(13)-IDAHO	0.222	<.0001
NV(29)-NEVADA	0.206	<.0001
WA(50)-WASHINGTON	0.200	<.0001
MT(27)-MONTANA	0.199	<.0001
VT(47)-VERMONT	0.199	<.0001
ME(20)-MAINE	0.192	<.0001
MD(21)-MARYLAND	0.191	<.0001
NM(32)-NEW MEXICO	0.186	<.0001
VA(49)-VIRGINIA	0.184	<.0001
CO(06)-COLORADO	0.179	<.0001
AL(01)-ALABAMA	0.176	<.0001
DE(08)-DELAWARE	0.174	<.0001
NC(34)-NORTH CAROLINA	0.168	<.0001
TN(44)-TENNESSEE	0.167	<.0001
MN(24)-MINNESOTA	0.165	<.0001
FL(10)-FLORIDA	0.164	<.0001
SC(42)-SOUTH CAROLINA	0.161	<.0001
MI(23)-MICHIGAN	0.161	<.0001
NJ(31)-NEW JERSEY	0.159	<.0001
NH(30)-NEW HAMPSHIRE	0.158	<.0001
WI(52)-WISCONSIN	0.148	<.0001
OH(36)-OHIO	0.148	<.0001
IN(15)-INDIANA	0.141	<.0001
DC(09)-DISTRICT OF COLUMBIA	0.138	<.0001
WV(51)-WEST VIRGINIA	0.138	<.0001
MA(22)-MASSACHUSETTS	0.136	<.0001
CT(07)-CONNECTICUT	0.135	<.0001
CA(05)-CALIFORNIA	0.135	<.0001
PA(39)-PENNSYLVANIA	0.129	<.0001
TX(45)-TEXAS	0.127	<.0001

[1] All eligible SNFs for FYs 2011 and 2013 (N=25,981).

(Continued)

Table 9: Association Between Community Discharge Rate and Facility Characteristics[1]

Variable	Coefficient	p-value
NY(33)-NEW YORK	0.126	<.0001
GA(11)-GEORGIA	0.125	<.0001
MS(25)-MISSISSIPPI	0.122	<.0001
KY(18)-KENTUCKY	0.118	<.0001
WY(53)-WYOMING	0.115	<.0001
OK(37)-OKLAHOMA	0.109	<.0001
NE(28)-NEBRASKA	0.091	<.0001
RI(41)-RHODE ISLAND	0.088	<.0001
MO(26)-MISSOURI	0.088	<.0001
IL(14)-ILLINOIS	0.083	<.0001
KS(17)-KANSAS	0.077	<.0001
AR(04)-ARKANSAS	0.073	<.0001
IA(16)-IOWA	0.073	<.0001
SD(43)-SOUTH DAKOTA	0.055	0.0003
LA(19)-LOUISIANA	0.007	0.5642
ND(35)-NORTH DAKOTA	Referent	-

Adjusted $R^2 = 0.219$

[1] All eligible SNFs for FYs 2011 and 2013 (N=25,981).

Table 10: Association Between Community Discharge Rate and Staffing Controlling for Facility Characteristics[1]

Variable	Coefficient	p-value
INTERCEPT	0.135	<.0001
CHANGE FROM 2011 TO 2013	0.044	<.0001
FACILITY ELIGIBLE BOTH 2011/2013	Referent	-
FACILITY ELIGIBLE 2011 ONLY	-0.070	<.0001
FACILITY ELIGIBLE 2013 ONLY	-0.056	<.0001
NON-PROFIT OWNERSHIP	Referent	-
FOR PROFIT OWNERSHIP	-0.009	<.0001
GOVERNMENT OWNERSHIP	-0.057	<.0001
POS URBAN INDICATOR	0.016	<.0001
LESS THAN 50 CERTIFIED BEDS	-0.008	0.0050
CNA STAFF HOURS/RESIDENT DAY	0.007	<.0001
RN STAFF HOURS/RESIDENT DAY	0.030	<.0001
PHYSICAL THERAPY STAFF HRS/RES DAY	0.216	<.0001
HI(12)-HAWAII	0.249	<.0001
AK(02)-ALASKA	0.226	<.0001
OR(38)-OREGON	0.224	<.0001
UT(46)-UTAH	0.206	<.0001
ID(13)-IDAHO	0.200	<.0001
AZ(03)-ARIZONA	0.195	<.0001
NV(29)-NEVADA	0.182	<.0001
AL(01)-ALABAMA	0.182	<.0001
VA(49)-VIRGINIA	0.178	<.0001
VT(47)-VERMONT	0.177	<.0001
MD(21)-MARYLAND	0.176	<.0001
NM(32)-NEW MEXICO	0.175	<.0001
MT(27)-MONTANA	0.174	<.0001
WA(50)-WASHINGTON	0.174	<.0001
ME(20)-MAINE	0.172	<.0001
TN(44)-TENNESSEE	0.164	<.0001
NC(34)-NORTH CAROLINA	0.163	<.0001
DE(08)-DELAWARE	0.162	<.0001
MN(24)-MINNESOTA	0.158	<.0001
CO(06)-COLORADO	0.157	<.0001
SC(42)-SOUTH CAROLINA	0.153	<.0001
FL(10)-FLORIDA	0.152	<.0001
MI(23)-MICHIGAN	0.150	<.0001
OH(36)-OHIO	0.145	<.0001
WI(52)-WISCONSIN	0.137	<.0001
NJ(31)-NEW JERSEY	0.137	<.0001
WV(51)-WEST VIRGINIA	0.137	<.0001
NH(30)-NEW HAMPSHIRE	0.137	<.0001
GA(11)-GEORGIA	0.135	<.0001
IN(15)-INDIANA	0.131	<.0001
MA(22)-MASSACHUSETTS	0.129	<.0001
TX(45)-TEXAS	0.128	<.0001
NY(33)-NEW YORK	0.127	<.0001

[1] All eligible SNFs for FYs 2011 and 2013 (N=25,342).

(Continued)

Table 10: Association Between Community Discharge Rate and Staffing Controlling for Facility Characteristics[1]

Variable	Coefficient	p-value
DC(09)-DISTRICT OF COLUMBIA	0.121	<.0001
CT(07)-CONNECTICUT	0.121	<.0001
PA(39)-PENNSYLVANIA	0.120	<.0001
CA(05)-CALIFORNIA	0.119	<.0001
MS(25)-MISSISSIPPI	0.118	<.0001
OK(37)-OKLAHOMA	0.113	<.0001
KY(18)-KENTUCKY	0.112	<.0001
WY(53)-WYOMING	0.102	<.0001
MO(26)-MISSOURI	0.087	<.0001
RI(41)-RHODE ISLAND	0.084	<.0001
NE(28)-NEBRASKA	0.078	<.0001
KS(17)-KANSAS	0.077	<.0001
AR(04)-ARKANSAS	0.075	<.0001
IA(16)-IOWA	0.074	<.0001
IL(14)-ILLINOIS	0.067	<.0001
SD(43)-SOUTH DAKOTA	0.062	<.0001
LA(19)-LOUISIANA	0.015	0.2262
ND(35)-NORTH DAKOTA	Referent	-

Adjusted R^2 = 0.294

[1] All eligible SNFs for FYs 2011 and 2013 (N=25,342).

Table 11: Association Between Readmission Rate for Potentially Avoidable Conditions During SNF Stay and Facility Characteristics[1]

Variable	Coefficient	p-value
INTERCEPT	0.081	<.0001
CHANGE FROM 2011 TO 2013	-0.013	<.0001
FACILITY ELIGIBLE BOTH 2011/2013	Referent	-
FACILITY ELIGIBLE 2011 ONLY	-0.006	0.0015
FACILITY ELIGIBLE 2013 ONLY	-0.003	0.1076
HOSPITAL-BASED INDICATOR	-0.026	<.0001
NON-PROFIT OWNERSHIP	Referent	-
FOR PROFIT OWNERSHIP	0.011	<.0001
GOVERNMENT OWNERSHIP	-0.007	<.0001
LESS THAN 50 CERTIFIED BEDS	-0.006	<.0001
HI(12)-HAWAII	Referent	-
UT(46)-UTAH	0.001	0.9288
DC(09)-DISTRICT OF COLUMBIA	0.008	0.4064
AK(02)-ALASKA	0.009	0.5669
ID(13)-IDAHO	0.009	0.2014
MT(27)-MONTANA	0.010	0.2234
CO(06)-COLORADO	0.010	0.1289
VT(47)-VERMONT	0.013	0.1325
OR(38)-OREGON	0.015	0.0282
AL(01)-ALABAMA	0.018	0.0052
MA(22)-MASSACHUSETTS	0.018	0.0039
WA(50)-WASHINGTON	0.019	0.0036
WI(52)-WISCONSIN	0.024	0.0002
NH(30)-NEW HAMPSHIRE	0.024	0.0011
ND(35)-NORTH DAKOTA	0.024	0.0019
MN(24)-MINNESOTA	0.024	0.0002
NV(29)-NEVADA	0.025	0.0017
ME(20)-MAINE	0.025	0.0003
AZ(03)-ARIZONA	0.027	<.0001
NM(32)-NEW MEXICO	0.027	0.0002
MD(21)-MARYLAND	0.028	<.0001
WY(53)-WYOMING	0.029	0.0018
SD(43)-SOUTH DAKOTA	0.029	0.0001
RI(41)-RHODE ISLAND	0.031	<.0001
WV(51)-WEST VIRGINIA	0.031	<.0001
GA(11)-GEORGIA	0.032	<.0001
OH(36)-OHIO	0.032	<.0001
VA(49)-VIRGINIA	0.033	<.0001
CT(07)-CONNECTICUT	0.033	<.0001
PA(39)-PENNSYLVANIA	0.035	<.0001
SC(42)-SOUTH CAROLINA	0.035	<.0001
CA(05)-CALIFORNIA	0.037	<.0001
TN(44)-TENNESSEE	0.037	<.0001
NC(34)-NORTH CAROLINA	0.037	<.0001
NJ(31)-NEW JERSEY	0.038	<.0001

[1] All eligible SNFs for FYs 2011 and 2013 (N=25,981).

(Continued)

Table 11: Association Between Readmission Rate for Potentially Avoidable Conditions During SNF Stay and Facility Characteristics[1]

Variable	Coefficient	p-value
NY(33)-NEW YORK	0.038	<.0001
IA(16)-IOWA	0.039	<.0001
FL(10)-FLORIDA	0.039	<.0001
TX(45)-TEXAS	0.039	<.0001
DE(08)-DELAWARE	0.040	<.0001
AR(04)-ARKANSAS	0.040	<.0001
NE(28)-NEBRASKA	0.042	<.0001
MI(23)-MICHIGAN	0.043	<.0001
KS(17)-KANSAS	0.046	<.0001
KY(18)-KENTUCKY	0.048	<.0001
IN(15)-INDIANA	0.049	<.0001
MS(25)-MISSISSIPPI	0.052	<.0001
MO(26)-MISSOURI	0.052	<.0001
OK(37)-OKLAHOMA	0.054	<.0001
IL(14)-ILLINOIS	0.065	<.0001
LA(19)-LOUISIANA	0.083	<.0001

Adjusted R^2 = 0.128

[1] All eligible SNFs for FYs 2011 and 2013 (N=25,981).

Table 12: Association Between Readmission Rate for Potentially Avoidable Conditions During SNF Stay and Staffing Controlling for Facility Characteristics[1]

Variable	Coefficient	p-value
INTERCEPT	0.091	<.0001
CHANGE FROM 2011 TO 2013	-0.013	<.0001
FACILITY ELIGIBLE BOTH 2011/2013	Referent	-
FACILITY ELIGIBLE 2011 ONLY	-0.009	<.0001
FACILITY ELIGIBLE 2013 ONLY	-0.002	0.1865
HOSPITAL-BASED INDICATOR	-0.020	<.0001
NON-PROFIT OWNERSHIP	Referent	-
FOR PROFIT OWNERSHIP	0.010	<.0001
GOVERNMENT OWNERSHIP	-0.007	<.0001
LESS THAN 50 CERTIFIED BEDS	-0.003	0.0149
CNA STAFF HOURS/RESIDENT DAY	-0.003	<.0001
LPN STAFF HOURS/RESIDENT DAY	0.003	<.0001
RN STAFF HOURS/RESIDENT DAY	-0.004	<.0001
HI(12)-HAWAII	Referent	-
UT(46)-UTAH	0.005	0.4883
DC(09)-DISTRICT OF COLUMBIA	0.009	0.3842
CO(06)-COLORADO	0.012	0.0932
ID(13)-IDAHO	0.012	0.1217
MT(27)-MONTANA	0.013	0.1426
VT(47)-VERMONT	0.014	0.1270
AL(01)-ALABAMA	0.017	0.0149
MA(22)-MASSACHUSETTS	0.018	0.0080
OR(38)-OREGON	0.019	0.0108
WA(50)-WASHINGTON	0.022	0.0020
AK(02)-ALASKA	0.024	0.1652
MN(24)-MINNESOTA	0.025	0.0005
ND(35)-NORTH DAKOTA	0.025	0.0024
WI(52)-WISCONSIN	0.026	0.0002
NV(29)-NEVADA	0.026	0.0022
NH(30)-NEW HAMPSHIRE	0.026	0.0010
AZ(03)-ARIZONA	0.028	0.0001
GA(11)-GEORGIA	0.028	<.0001
MD(21)-MARYLAND	0.028	<.0001
NM(32)-NEW MEXICO	0.029	0.0003
WY(53)-WYOMING	0.029	0.0025
WV(51)-WEST VIRGINIA	0.029	<.0001
SD(43)-SOUTH DAKOTA	0.029	0.0002
ME(20)-MAINE	0.030	<.0001
VA(49)-VIRGINIA	0.031	<.0001
OH(36)-OHIO	0.031	<.0001
CT(07)-CONNECTICUT	0.033	<.0001
RI(41)-RHODE ISLAND	0.033	<.0001
PA(39)-PENNSYLVANIA	0.034	<.0001
SC(42)-SOUTH CAROLINA	0.035	<.0001
TN(44)-TENNESSEE	0.035	<.0001

[1] All eligible SNFs for FYs 2011 and 2013 (N=25,348).

(Continued)

Table 12: Association Between Readmission Rate for Potentially Avoidable Conditions During SNF Stay and Staffing Controlling for Facility Characteristics[1]

Variable	Coefficient	p-value
NC(34)-NORTH CAROLINA	0.036	<.0001
NY(33)-NEW YORK	0.037	<.0001
TX(45)-TEXAS	0.038	<.0001
CA(05)-CALIFORNIA	0.038	<.0001
NJ(31)-NEW JERSEY	0.038	<.0001
IA(16)-IOWA	0.039	<.0001
FL(10)-FLORIDA	0.040	<.0001
DE(08)-DELAWARE	0.040	<.0001
AR(04)-ARKANSAS	0.040	<.0001
MI(23)-MICHIGAN	0.043	<.0001
NE(28)-NEBRASKA	0.044	<.0001
KS(17)-KANSAS	0.047	<.0001
IN(15)-INDIANA	0.048	<.0001
KY(18)-KENTUCKY	0.048	<.0001
MO(26)-MISSOURI	0.051	<.0001
MS(25)-MISSISSIPPI	0.051	<.0001
OK(37)-OKLAHOMA	0.054	<.0001
IL(14)-ILLINOIS	0.066	<.0001
LA(19)-LOUISIANA	0.081	<.0001

Adjusted R^2 = 0.128

[1] All eligible SNFs for FYs 2011 and 2013 (N=25,348).

Table 13:Association Between Potentially Avoidable Readmission Rates 30 Days Post SNF Discharge and Facility Characteristics[1]

Variable	Coefficient	p-value
INTERCEPT	0.019	0.0697
CHANGE FROM 2011 TO 2013	-0.003	<.0001
FACILITY ELIGIBLE BOTH 2011/2013	Referent	-
FACILITY ELIGIBLE 2011 ONLY	0.000	0.8643
FACILITY ELIGIBLE 2013 ONLY	0.000	0.8644
HOSPITAL-BASED INDICATOR	0.007	<.0001
NON-PROFIT OWNERSHIP	Referent	-
FOR PROFIT OWNERSHIP	0.004	<.0001
GOVERNMENT OWNERSHIP	0.000	0.9453
POS URBAN INDICATOR	0.002	0.0006
TO COMMUNITY LOCATION	Referent	-
TO NURSING HOME LOCATION	0.021	<.0001
TO HOME HEALTH LOCATION	0.008	0.0002
AK(02)-ALASKA	Referent	-
UT(46)-UTAH	0.006	0.5621
HI(12)-HAWAII	0.006	0.5756
MT(27)-MONTANA	0.008	0.4725
ID(13)-IDAHO	0.009	0.4271
SD(43)-SOUTH DAKOTA	0.010	0.3816
WI(52)-WISCONSIN	0.012	0.2648
VT(47)-VERMONT	0.012	0.2806
NE(28)-NEBRASKA	0.014	0.1895
WY(53)-WYOMING	0.015	0.2133
OR(38)-OREGON	0.015	0.1759
IA(16)-IOWA	0.015	0.1687
CO(06)-COLORADO	0.016	0.1421
NH(30)-NEW HAMPSHIRE	0.016	0.1451
ND(35)-NORTH DAKOTA	0.016	0.1480
WA(50)-WASHINGTON	0.017	0.1210
DC(09)-DISTRICT OF COLUMBIA	0.017	0.1604
KS(17)-KANSAS	0.019	0.0815
SC(42)-SOUTH CAROLINA	0.019	0.0792
AL(01)-ALABAMA	0.019	0.0728
CT(07)-CONNECTICUT	0.020	0.0645
IN(15)-INDIANA	0.020	0.0624
PA(39)-PENNSYLVANIA	0.020	0.0597
VA(49)-VIRGINIA	0.020	0.0586
NY(33)-NEW YORK	0.021	0.0549
ME(20)-MAINE	0.021	0.0570
MN(24)-MINNESOTA	0.022	0.0452
NC(34)-NORTH CAROLINA	0.022	0.0422
OH(36)-OHIO	0.022	0.0389
TN(44)-TENNESSEE	0.023	0.0359
OK(37)-OKLAHOMA	0.023	0.0347
RI(41)-RHODE ISLAND	0.023	0.0380

[1] All eligible SNFs for FYs 2011 and 2013 (N=25,314).

(Continued)

Table 13: Association Between Potentially Avoidable Readmission Rates 30 Days Post SNF Discharge and Facility Characteristics[1]

Variable	Coefficient	p-value
MA(22)-MASSACHUSETTS	0.023	0.0305
MI(23)-MICHIGAN	0.024	0.0285
WV(51)-WEST VIRGINIA	0.024	0.0301
DE(08)-DELAWARE	0.024	0.0338
NV(29)-NEVADA	0.024	0.0321
GA(11)-GEORGIA	0.024	0.0247
NM(32)-NEW MEXICO	0.024	0.0276
MO(26)-MISSOURI	0.025	0.0200
MS(25)-MISSISSIPPI	0.025	0.0192
TX(45)-TEXAS	0.025	0.0172
CA(05)-CALIFORNIA	0.026	0.0136
KY(18)-KENTUCKY	0.027	0.0132
IL(14)-ILLINOIS	0.027	0.0113
FL(10)-FLORIDA	0.027	0.0114
NJ(31)-NEW JERSEY	0.028	0.0101
AZ(03)-ARIZONA	0.028	0.0104
MD(21)-MARYLAND	0.028	0.0098
AR(04)-ARKANSAS	0.032	0.0027
LA(19)-LOUISIANA	0.037	0.0005

Adjusted $R^2 = 0.047$

[1] All eligible SNFs for FYs 2011 and 2013 (N=25,314).

Table 14: Association Between Potentially Avoidable Readmission Rate 30 Days Post SNF Discharge and Staffing Controlling for Facility Characteristics[1]

Variable	Coefficient	p-value
INTERCEPT	0.030	<.0001
CHANGE FROM 2011 TO 2013	-0.003	<.0001
FACILITY ELIGIBLE BOTH 2011/2013	Referent	-
FACILITY ELIGIBLE 2011 ONLY	0.000	0.8982
FACILITY ELIGIBLE 2013 ONLY	0.001	0.6545
HOSPITAL-BASED INDICATOR	0.006	<.0001
NON-PROFIT OWNERSHIP	Referent	-
FOR PROFIT OWNERSHIP	0.004	<.0001
GOVERNMENT OWNERSHIP	0.001	0.6502
POS URBAN INDICATOR	0.002	0.0013
TO COMMUNITY LOCATION	Referent	-
TO NURSING HOME LOCATION	0.020	<.0001
TO HOME HEALTH LOCATION	0.008	0.0002
CNA STAFF HOURS/RESIDENT DAY	-0.002	<.0001
LPN STAFF HOURS/RESIDENT DAY	0.002	0.0007
UT(46)-UTAH	Referent	-
AK(02)-ALASKA	0.001	0.9167
ID(13)-IDAHO	0.002	0.6703
HI(12)-HAWAII	0.002	0.7451
MT(27)-MONTANA	0.002	0.6285
SD(43)-SOUTH DAKOTA	0.003	0.4336
VT(47)-VERMONT	0.005	0.3118
WI(52)-WISCONSIN	0.005	0.0825
WY(53)-WYOMING	0.006	0.2814
NE(28)-NEBRASKA	0.007	0.0627
IA(16)-IOWA	0.008	0.0160
OR(38)-OREGON	0.009	0.0124
CO(06)-COLORADO	0.009	0.0072
NH(30)-NEW HAMPSHIRE	0.009	0.0219
ND(35)-NORTH DAKOTA	0.009	0.0429
WA(50)-WASHINGTON	0.010	0.0023
DC(09)-DISTRICT OF COLUMBIA	0.010	0.1131
SC(42)-SOUTH CAROLINA	0.011	0.0004
IN(15)-INDIANA	0.012	<.0001
KS(17)-KANSAS	0.012	0.0003
AL(01)-ALABAMA	0.012	0.0002
PA(39)-PENNSYLVANIA	0.012	<.0001
VA(49)-VIRGINIA	0.012	<.0001
CT(07)-CONNECTICUT	0.013	<.0001
NY(33)-NEW YORK	0.013	<.0001
OH(36)-OHIO	0.014	<.0001
MN(24)-MINNESOTA	0.014	<.0001
TN(44)-TENNESSEE	0.014	<.0001
WV(51)-WEST VIRGINIA	0.015	<.0001
NC(34)-NORTH CAROLINA	0.015	<.0001

[1] All eligible SNFs for FYs 2011 and 2013 (N=24,707).

(Continued)

Table 14: Association Between Potentially Avoidable Readmission Rate 30 Days Post SNF Discharge and Staffing Controlling for Facility Characteristics[1]

Variable	Coefficient	p-value
ME(20)-MAINE	0.015	<.0001
MA(22)-MASSACHUSETTS	0.016	<.0001
NM(32)-NEW MEXICO	0.016	0.0001
MI(23)-MICHIGAN	0.016	<.0001
OK(37)-OKLAHOMA	0.016	<.0001
GA(11)-GEORGIA	0.016	<.0001
DE(08)-DELAWARE	0.016	0.0005
NV(29)-NEVADA	0.017	<.0001
RI(41)-RHODE ISLAND	0.017	0.0002
MS(25)-MISSISSIPPI	0.018	<.0001
MO(26)-MISSOURI	0.018	<.0001
TX(45)-TEXAS	0.018	<.0001
KY(18)-KENTUCKY	0.019	<.0001
CA(05)-CALIFORNIA	0.019	<.0001
NJ(31)-NEW JERSEY	0.020	<.0001
FL(10)-FLORIDA	0.020	<.0001
IL(14)-ILLINOIS	0.020	<.0001
AZ(03)-ARIZONA	0.020	<.0001
MD(21)-MARYLAND	0.020	<.0001
AR(04)-ARKANSAS	0.025	<.0001
LA(19)-LOUISIANA	0.030	<.0001

Adjusted R^2 = 0.047

[1] All eligible SNFs for FYs 2011 and 2013 (N=24,707).

Table 15: Association Between Readmission Rate for Potentially Avoidable Conditions Combined During SNF Stay/30 Days Post SNF Discharge and Facility Characteristics[1]

Variable	Coefficient	p-value
INTERCEPT	0.111	<.0001
CHANGE FROM 2011 TO 2013	-0.014	<.0001
FACILITY ELIGIBLE BOTH 2011/2013	Referent	-
FACILITY ELIGIBLE 2011 ONLY	-0.006	0.0053
FACILITY ELIGIBLE 2013 ONLY	-0.003	0.0782
HOSPITAL-BASED INDICATOR	-0.012	<.0001
NON-PROFIT OWNERSHIP	Referent	-
FOR PROFIT OWNERSHIP	0.013	<.0001
GOVERNMENT OWNERSHIP	-0.006	0.0003
POS URBAN INDICATOR	0.002	0.0242
AK(02)-ALASKA	Referent	-
UT(46)-UTAH	0.000	0.9841
HI(12)-HAWAII	0.000	0.9780
MT(27)-MONTANA	0.009	0.6029
ID(13)-IDAHO	0.011	0.4891
VT(47)-VERMONT	0.013	0.4418
DC(09)-DISTRICT OF COLUMBIA	0.017	0.3553
CO(06)-COLORADO	0.018	0.2668
SD(43)-SOUTH DAKOTA	0.021	0.2017
WI(52)-WISCONSIN	0.023	0.1438
OR(38)-OREGON	0.024	0.1458
WA(50)-WASHINGTON	0.024	0.1345
AL(01)-ALABAMA	0.025	0.1258
ND(35)-NORTH DAKOTA	0.027	0.1119
NH(30)-NEW HAMPSHIRE	0.027	0.0964
MA(22)-MASSACHUSETTS	0.029	0.0697
MN(24)-MINNESOTA	0.033	0.0414
ME(20)-MAINE	0.035	0.0307
NV(29)-NEVADA	0.037	0.0284
OH(36)-OHIO	0.038	0.0167
WY(53)-WYOMING	0.038	0.0290
PA(39)-PENNSYLVANIA	0.039	0.0142
VA(49)-VIRGINIA	0.039	0.0137
CT(07)-CONNECTICUT	0.041	0.0114
WV(51)-WEST VIRGINIA	0.041	0.0125
MD(21)-MARYLAND	0.041	0.0105
RI(41)-RHODE ISLAND	0.041	0.0117
SC(42)-SOUTH CAROLINA	0.041	0.0099
NM(32)-NEW MEXICO	0.041	0.0120
IA(16)-IOWA	0.043	0.0079
AZ(03)-ARIZONA	0.043	0.0083
GA(11)-GEORGIA	0.043	0.0071

[1] All eligible SNFs for FYs 2011 and 2013 (N=25,981).

(Continued)

Table 15: Association Between Readmission Rate for Potentially Avoidable Conditions Combined During SNF Stay/30 Days Post SNF Discharge and Facility Characteristics[1]

Variable	Coefficient	p-value
TN(44)-TENNESSEE	0.043	0.0067
NE(28)-NEBRASKA	0.044	0.0067
NY(33)-NEW YORK	0.046	0.0041
NC(34)-NORTH CAROLINA	0.047	0.0033
MI(23)-MICHIGAN	0.048	0.0027
DE(08)-DELAWARE	0.048	0.0042
TX(45)-TEXAS	0.049	0.0022
KS(17)-KANSAS	0.050	0.0020
CA(05)-CALIFORNIA	0.050	0.0018
FL(10)-FLORIDA	0.050	0.0017
NJ(31)-NEW JERSEY	0.051	0.0014
IN(15)-INDIANA	0.052	0.0011
AR(04)-ARKANSAS	0.055	0.0006
KY(18)-KENTUCKY	0.056	0.0005
MS(25)-MISSISSIPPI	0.057	0.0004
MO(26)-MISSOURI	0.059	0.0002
OK(37)-OKLAHOMA	0.062	0.0001
IL(14)-ILLINOIS	0.069	<.0001
LA(19)-LOUISIANA	0.091	<.0001

Adjusted R^2 = 0.106

[1] All eligible SNFs for FYs 2011 and 2013 (N=25,981).

Table 16: Association Between Readmission Rate for Potentially Avoidable Conditions Combined During SNF Stay/30 Days Post SNF Discharge and Staffing, Controlling for Facility Characteristics[1]

Variable	Coefficient	p-value
INTERCEPT	0.124	<.0001
CHANGE FROM 2011 TO 2013	-0.015	<.0001
FACILITY ELIGIBLE BOTH 2011/2013	Referent	-
FACILITY ELIGIBLE 2011 ONLY	-0.009	0.0001
FACILITY ELIGIBLE 2013 ONLY	-0.003	0.1868
HOSPITAL-BASED INDICATOR	-0.010	<.0001
NON-PROFIT OWNERSHIP	Referent	-
FOR PROFIT OWNERSHIP	0.011	<.0001
GOVERNMENT OWNERSHIP	-0.007	0.0002
POS URBAN INDICATOR	0.002	0.0261
CNA STAFF HOURS/RESIDENT DAY	-0.005	<.0001
LPN STAFF HOURS/RESIDENT DAY	0.005	<.0001
RN STAFF HOURS/RESIDENT DAY	-0.002	0.0041
HI(12)-HAWAII	Referent	-
UT(46)-UTAH	0.000	0.9979
MT(27)-MONTANA	0.009	0.3581
VT(47)-VERMONT	0.010	0.2969
ID(13)-IDAHO	0.011	0.2084
DC(09)-DISTRICT OF COLUMBIA	0.014	0.2320
CO(06)-COLORADO	0.016	0.0456
AK(02)-ALASKA	0.018	0.3410
SD(43)-SOUTH DAKOTA	0.019	0.0282
AL(01)-ALABAMA	0.020	0.0089
WI(52)-WISCONSIN	0.022	0.0043
WA(50)-WASHINGTON	0.023	0.0032
ND(35)-NORTH DAKOTA	0.024	0.0077
OR(38)-OREGON	0.024	0.0024
MA(22)-MASSACHUSETTS	0.025	0.0010
NH(30)-NEW HAMPSHIRE	0.025	0.0030
MN(24)-MINNESOTA	0.029	0.0002
WY(53)-WYOMING	0.033	0.0016
OH(36)-OHIO	0.033	<.0001
NV(29)-NEVADA	0.033	0.0003
WV(51)-WEST VIRGINIA	0.034	<.0001
VA(49)-VIRGINIA	0.034	<.0001
PA(39)-PENNSYLVANIA	0.034	<.0001
GA(11)-GEORGIA	0.036	<.0001
ME(20)-MAINE	0.037	<.0001
CT(07)-CONNECTICUT	0.037	<.0001
MD(21)-MARYLAND	0.037	<.0001
SC(42)-SOUTH CAROLINA	0.037	<.0001
TN(44)-TENNESSEE	0.037	<.0001
NM(32)-NEW MEXICO	0.038	<.0001

[1] All eligible SNFs for FYs 2011 and 2013 (N=25,348).

(Continued)

Table 16: Association Between Readmission Rate for Potentially Avoidable Conditions Combined During SNF Stay/30 Days Post SNF Discharge and Staffing, Controlling for Facility Characteristics[1]

Variable	Coefficient	p-value
AZ(03)-ARIZONA	0.039	<.0001
IA(16)-IOWA	0.040	<.0001
NY(33)-NEW YORK	0.041	<.0001
RI(41)-RHODE ISLAND	0.041	<.0001
NE(28)-NEBRASKA	0.041	<.0001
NC(34)-NORTH CAROLINA	0.043	<.0001
TX(45)-TEXAS	0.043	<.0001
DE(08)-DELAWARE	0.044	<.0001
MI(23)-MICHIGAN	0.044	<.0001
CA(05)-CALIFORNIA	0.047	<.0001
IN(15)-INDIANA	0.047	<.0001
NJ(31)-NEW JERSEY	0.047	<.0001
FL(10)-FLORIDA	0.047	<.0001
KS(17)-KANSAS	0.048	<.0001
AR(04)-ARKANSAS	0.052	<.0001
KY(18)-KENTUCKY	0.052	<.0001
MS(25)-MISSISSIPPI	0.053	<.0001
MO(26)-MISSOURI	0.055	<.0001
OK(37)-OKLAHOMA	0.059	<.0001
IL(14)-ILLINOIS	0.066	<.0001
LA(19)-LOUISIANA	0.086	<.0001

Adjusted R^2 = 0.109

[1] All eligible SNFs for FYs 2011 and 2013 (N=25,348).

TABLE 17: Average Mobility Functional Outcome Rates by Functional Outcome Group for Available SNF Stays[1]

	Bed Mobility		Transfer		Ambulation		Mobility	
	No Decline	Improve	No Decline	Improve	No Decline	Improve	No Decline	Improve
Functional Outcome Group[2]	N=1,508,372	N=1,526,343	N=1,447,918	N=1,575,087	N=964,889	N=1,562,080	N=1,528,197	N=1,594,595
Ultra High Mobility A (UHA)	91.7%	38.7%	91.9%	41.4%	92.1%	33.0%	86.6%	39.3%
Ultra High Mobility B (UHB)	88.6%	16.8%	89.6%	22.1%	90.2%	15.9%	83.0%	23.8%
Very High Mobility A (VHA)	84.6%	26.5%	92.7%	40.9%	94.7%	43.0%	81.2%	45.3%
Moderately High Mobility A (MHA)	95.5%	47.3%	95.4%	44.6%	94.3%	42.0%	90.4%	55.3%
Moderately High Mobility B (MHB)	97.0%	49.7%	97.0%	49.7%	93.4%	46.5%	90.6%	59.9%
Moderately High Mobility C (MHC)	94.2%	40.2%	94.0%	38.8%	92.7%	35.9%	87.8%	50.2%
Moderately High Mobility D (MHD)	96.3%	43.6%	96.6%	43.8%	91.8%	41.6%	88.5%	55.2%
Moderately High Mobility E (MHE)	92.8%	34.0%	93.2%	33.6%	91.7%	31.6%	85.8%	44.2%
Moderately High Mobility F (MHF)	96.0%	32.8%	95.7%	32.8%	89.2%	32.6%	85.6%	44.0%
Moderately Low Mobility A (MLA)	93.3%	41.5%	93.2%	39.0%	93.7%	46.0%	90.3%	58.7%
Moderately Low Mobility B (MLB)	96.0%	40.4%	96.0%	40.1%	92.5%	42.1%	93.7%	56.8%
Moderately Low Mobility C (MLC)	95.2%	35.2%	95.1%	34.0%	91.1%	41.1%	92.8%	53.6%
Moderately Low Mobility D (MLD)	93.4%	21.7%	92.3%	21.3%	88.4%	26.5%	89.4%	37.5%
Very Low Mobility A (VLA)	94.5%	35.5%	96.5%	39.4%	90.9%	35.1%	89.6%	51.3%
Very Low Mobility B (VLB)	94.9%	29.9%	96.5%	33.5%	87.5%	32.4%	88.3%	46.5%
Very Low Mobility C (VLC)	94.5%	18.8%	94.5%	21.0%	84.7%	23.3%	87.2%	34.4%
Very Low Mobility D (VLD)	85.3%	17.1%	80.7%	17.2%	80.5%	7.9%	78.3%	24.8%
Ultra Low Mobility A (ULA)	97.1%	47.5%	95.4%	45.5%	92.8%	41.2%	89.9%	59.5%
Ultra Low Mobility B (ULB)	98.2%	31.0%	96.9%	34.4%	91.1%	38.3%	92.2%	49.9%
Ultra Low Mobility C (ULC)	98.1%	26.7%	96.6%	29.4%	88.5%	35.0%	90.7%	45.7%
Ultra Low Mobility D (ULD)	96.5%	14.5%	94.4%	17.3%	84.4%	24.3%	88.2%	32.5%
Ultra Low Mobility E (ULE)	87.1%	17.0%	81.1%	16.2%	79.3%	8.2%	78.6%	24.2%

[1] Includes SNF stays for FY 2011 excluding SNF stays ending in death.

[2] Baseline function, according to the three mobility ADLs, is represented by the group name (e.g. Ultra High, Moderately High). Within these groups the letters (A,B, C …) represent the rehabilitation potential categories from highest rehabilitation potential to lowest.

TABLE 18: Facility Variation in Distribution of Functional Outcome Groups[1]

Functional Outcome Group[2]	Mean	Minimum	1st Percentile	25th Percentile	50th Percentile	75th Percentile	99th Percentile	Maximum
Ultra High Mobility A (UHA)	4.8%	0.0%	0.0%	0.0%	2.5%	6.9%	28.4%	82.1%
Ultra High Mobility B (UHB)	2.1%	0.0%	0.0%	0.0%	0.5%	2.4%	19.2%	94.1%
Very High Mobility A (VHA)	5.0%	0.0%	0.0%	0.5%	2.6%	6.8%	31.0%	67.6%
Moderately High Mobility A (MHA)	7.2%	0.0%	0.0%	0.9%	4.6%	10.6%	36.7%	77.2%
Moderately High Mobility B (MHB)	6.5%	0.0%	0.0%	0.0%	3.6%	9.7%	35.9%	83.5%
Moderately High Mobility C (MHC)	5.1%	0.0%	0.0%	0.2%	2.7%	7.3%	28.8%	60.2%
Moderately High Mobility D (MHD)	5.9%	0.0%	0.0%	1.0%	3.6%	8.5%	31.6%	65.9%
Moderately High Mobility E (MHE)	1.1%	0.0%	0.0%	0.0%	0.0%	1.4%	11.9%	47.0%
Moderately High Mobility F (MHF)	2.9%	0.0%	0.0%	0.0%	1.6%	3.8%	20.3%	58.2%
Moderately Low Mobility A (MLA)	1.1%	0.0%	0.0%	0.0%	0.0%	1.3%	10.9%	30.9%
Moderately Low Mobility B (MLB)	2.8%	0.0%	0.0%	0.0%	1.0%	3.7%	21.3%	63.3%
Moderately Low Mobility C (MLC)	3.5%	0.0%	0.0%	0.0%	1.5%	4.6%	24.6%	52.8%
Moderately Low Mobility D (MLD)	3.2%	0.0%	0.0%	0.0%	1.4%	4.1%	23.3%	58.1%
Very Low Mobility A (VLA)	2.8%	0.0%	0.0%	0.0%	1.5%	4.1%	16.7%	57.0%
Very Low Mobility B (VLB)	2.7%	0.0%	0.0%	0.0%	1.8%	3.9%	14.8%	57.9%
Very Low Mobility C (VLC)	2.6%	0.0%	0.0%	0.0%	1.5%	3.5%	16.4%	58.5%
Very Low Mobility D (VLD)	1.7%	0.0%	0.0%	0.0%	0.0%	1.7%	18.9%	94.6%
Ultra Low Mobility A (ULA)	1.1%	0.0%	0.0%	0.0%	0.0%	1.1%	13.0%	41.7%
Ultra Low Mobility B (ULB)	8.1%	0.0%	0.0%	0.3%	4.1%	11.8%	46.0%	79.4%
Ultra Low Mobility C (ULC)	10.5%	0.0%	0.0%	2.3%	6.8%	15.1%	50.8%	93.0%
Ultra Low Mobility D (ULD)	11.7%	0.0%	0.0%	3.6%	8.7%	16.4%	55.2%	94.6%
Ultra Low Mobility E (ULE)	5.6%	0.0%	0.0%	1.1%	3.4%	7.7%	32.3%	79.4%

[1] Includes 12,935 SNFs with 25 or more SNF stays for FY 2011 excluding SNF stays ending in death based on a total of 1,894,851 contributing stays.

[2] Baseline function, according to the three mobility ADLs, is represented by the group name (e.g. Ultra High, Moderately High). Within these groups the letters (A,B, C …) represent the rehabilitation potential categories from highest rehabilitation potential to lowest.

TABLE 19: Average SNF Facility Functional Outcome Rates for Mobility ADLs

Outcome Measure	Rate		
	FY2011[1]	FY2012[2]	FY2012[3]
Bed Mobility Improvement			
Observed	31.3%	30.8%	31.0%
Risk Adjusted	31.1%	31.3%	31.4%
Bed Mobility No Decline			
Observed	94.2%	94.7%	94.8%
Risk Adjusted	94.1%	94.2%	94.2%
Transfer Improvement			
Observed	32.5%	32.6%	33.1%
Risk Adjusted	31.9%	32.1%	32.2%
Transfer No Decline			
Observed	94.0%	94.3%	94.3%
Risk Adjusted	94.1%	94.1%	94.1%
Ambulate Improvement			
Observed	32.7%	33.7%	34.7%
Risk Adjusted	31.8%	31.8%	31.9%
Ambulate No Decline			
Observed	90.1%	89.7%	89.3%
Risk Adjusted	90.6%	90.6%	90.5%
Improvement in Mobility for One or More ADLs			
Observed	44.3%	44.5%	46.2%
Risk Adjusted	43.6%	43.6%	43.7%
No Decline in Mobility for Any ADLs			
Observed	87.7%	87.7%	87.6%
Risk Adjusted	87.2%	87.2%	87.2%

[1] Includes 12,935 SNFs with 25 or more SNF stays excluding SNF stays ending in death.
[2] Includes 13,005 SNFs with 25 or more SNF stays excluding SNF stays ending in death.
[3] Includes 13,063 SNFs with 25 or more SNF stays excluding SNF stays ending in death.

TABLE 20: Variation in Distribution of Risk-Adjusted Functional Outcome Measures for All SNFs, FY2013

All SNFs[1]	N	Mean	Min	10th Pctl	25th Pctl	50th Pctl	75th Pctl	90th Pctl	Max
Improvement in Mobility for One or More ADLs[1]	13,063	43.7%	0.0%	26.5%	35.6%	44.2%	52.5%	60.2%	100.0%
No Decline in Mobility for Any ADLs[1]	13,063	87.2%	0.0%	77.1%	82.7%	88.2%	92.9%	96.1%	100.0%

[1] Includes SNFs with 25 or more SNF stays excluding SNF stays ending in death.

Table 21: Association Between Improvement in Mobility for One or More ADLs and Facility Characteristics[1]

Variable	Coefficient	p-value
INTERCEPT	0.370	<.0001
CHANGE FROM 2011 TO 2013	0.000	0.9255
FACILITY ELIGIBLE BOTH 2011/2013	Referent	-
FACILITY ELIGIBLE 2011 ONLY	-0.040	<.0001
FACILITY ELIGIBLE 2013 ONLY	-0.010	0.0416
HOSPITAL-BASED INDICATOR	-0.039	<.0001
NON-PROFIT OWNERSHIP	Referent	-
FOR PROFIT OWNERSHIP	-0.030	<.0001
GOVERNMENT OWNERSHIP	-0.033	<.0001
POS URBAN INDICATOR	-0.008	<.0001
LESS THAN 50 CERTIFIED BEDS	0.020	<.0001
OR(38)-OREGON	0.210	<.0001
AK(02)-ALASKA	0.197	<.0001
VT(47)-VERMONT	0.186	<.0001
NH(30)-NEW HAMPSHIRE	0.179	<.0001
WI(52)-WISCONSIN	0.175	<.0001
MT(27)-MONTANA	0.175	<.0001
UT(46)-UTAH	0.175	<.0001
MN(24)-MINNESOTA	0.171	<.0001
WA(50)-WASHINGTON	0.167	<.0001
ID(13)-IDAHO	0.165	<.0001
CO(06)-COLORADO	0.160	<.0001
RI(41)-RHODE ISLAND	0.156	<.0001
WY(53)-WYOMING	0.153	<.0001
AZ(03)-ARIZONA	0.152	<.0001
SD(43)-SOUTH DAKOTA	0.151	<.0001
DE(08)-DELAWARE	0.145	<.0001
NE(28)-NEBRASKA	0.144	<.0001
MI(23)-MICHIGAN	0.139	<.0001
ME(20)-MAINE	0.126	<.0001
CA(05)-CALIFORNIA	0.125	<.0001
CT(07)-CONNECTICUT	0.123	<.0001
IA(16)-IOWA	0.123	<.0001
VA(49)-VIRGINIA	0.118	<.0001
HI(12)-HAWAII	0.118	<.0001
NY(33)-NEW YORK	0.117	<.0001
IN(15)-INDIANA	0.111	<.0001
FL(10)-FLORIDA	0.110	<.0001
MD(21)-MARYLAND	0.110	<.0001
OH(36)-OHIO	0.107	<.0001
KS(17)-KANSAS	0.105	<.0001
NM(32)-NEW MEXICO	0.103	<.0001
NC(34)-NORTH CAROLINA	0.102	<.0001
ND(35)-NORTH DAKOTA	0.094	<.0001
NV(29)-NEVADA	0.093	<.0001
SC(42)-SOUTH CAROLINA	0.092	<.0001

[1] All eligible SNFs for FYs 2011 and 2013 (N=25,981).

(Continued)

Table 21: Association Between Improvement in Mobility for One or More ADLs and Facility Characteristics[1]

Variable	Coefficient	p-value
PA(39)-PENNSYLVANIA	0.090	<.0001
NJ(31)-NEW JERSEY	0.089	<.0001
MO(26)-MISSOURI	0.086	<.0001
TN(44)-TENNESSEE	0.070	<.0001
IL(14)-ILLINOIS	0.064	<.0001
DC(09)-DISTRICT OF COLUMBIA	0.062	0.0068
WV(51)-WEST VIRGINIA	0.061	<.0001
AL(01)-ALABAMA	0.054	<.0001
MA(22)-MASSACHUSETTS	0.050	<.0001
AR(04)-ARKANSAS	0.048	<.0001
GA(11)-GEORGIA	0.045	<.0001
OK(37)-OKLAHOMA	0.044	<.0001
MS(25)-MISSISSIPPI	0.039	<.0001
TX(45)-TEXAS	0.033	<.0001
KY(18)-KENTUCKY	0.029	0.0002
LA(19)-LOUISIANA	Referent	-

Adjusted R^2 = 0.121

[1] All eligible SNFs for FYs 2011 and 2013 (N=25,981).

Table 22: Association Between Improvement in Mobility for One or More ADLs and Staffing Controlling for Facility Characteristics[1]

Variable	Coefficient	p-value
INTERCEPT	0.347	<.0001
CHANGE FROM 2011 TO 2013	0.000	0.9283
FACILITY ELIGIBLE BOTH 2011/2013	Referent	-
FACILITY ELIGIBLE 2011 ONLY	-0.035	<.0001
FACILITY ELIGIBLE 2013 ONLY	-0.009	<.0001
HOSPITAL-BASED INDICATOR	-0.054	<.0001
NON-PROFIT OWNERSHIP	Referent	-
FOR PROFIT OWNERSHIP	-0.026	<.0001
GOVERNMENT OWNERSHIP	-0.033	<.0001
POS URBAN INDICATOR	-0.013	<.0001
CNA STAFF HOURS/RESIDENT DAY	0.011	<.0001
LPN STAFF HOURS/RESIDENT DAY	-0.009	<.0001
RN STAFF HOURS/RESIDENT DAY	0.006	0.0010
PHYSICAL THERAPY STAFF HRS/RES DAY	0.094	<.0001
AK(02)-ALASKA	0.216	<.0001
OR(38)-OREGON	0.184	<.0001
VT(47)-VERMONT	0.170	<.0001
NH(30)-NEW HAMPSHIRE	0.164	<.0001
WI(52)-WISCONSIN	0.161	<.0001
MN(24)-MINNESOTA	0.160	<.0001
MT(27)-MONTANA	0.155	<.0001
WA(50)-WASHINGTON	0.148	<.0001
WY(53)-WYOMING	0.146	<.0001
ID(13)-IDAHO	0.146	<.0001
CO(06)-COLORADO	0.143	<.0001
SD(43)-SOUTH DAKOTA	0.143	<.0001
RI(41)-RHODE ISLAND	0.142	<.0001
NE(28)-NEBRASKA	0.137	<.0001
AZ(03)-ARIZONA	0.136	<.0001
DE(08)-DELAWARE	0.135	<.0001
UT(46)-UTAH	0.132	<.0001
MI(23)-MICHIGAN	0.129	<.0001
IA(16)-IOWA	0.118	<.0001
VA(49)-VIRGINIA	0.111	<.0001
NY(33)-NEW YORK	0.111	<.0001
CT(07)-CONNECTICUT	0.111	<.0001
CA(05)-CALIFORNIA	0.110	<.0001
ME(20)-MAINE	0.105	<.0001
IN(15)-INDIANA	0.105	<.0001
HI(12)-HAWAII	0.103	<.0001
OH(36)-OHIO	0.102	<.0001
NM(32)-NEW MEXICO	0.098	<.0001
MD(21)-MARYLAND	0.097	<.0001
FL(10)-FLORIDA	0.096	<.0001

[1] All eligible SNFs for FYs 2011 and 2013 (N=25,342).

(Continued)

Table 22: Association Between Improvement in Mobility for One or More ADLs and Staffing Controlling for Facility Characteristics[1]

Variable	Coefficient	p-value
KS(17)-KANSAS	0.096	<.0001
NC(34)-NORTH CAROLINA	0.091	<.0001
ND(35)-NORTH DAKOTA	0.086	<.0001
PA(39)-PENNSYLVANIA	0.083	<.0001
SC(42)-SOUTH CAROLINA	0.079	<.0001
MO(26)-MISSOURI	0.078	<.0001
NV(29)-NEVADA	0.078	<.0001
NJ(31)-NEW JERSEY	0.074	<.0001
TN(44)-TENNESSEE	0.064	<.0001
WV(51)-WEST VIRGINIA	0.058	<.0001
IL(14)-ILLINOIS	0.050	<.0001
AL(01)-ALABAMA	0.049	<.0001
DC(09)-DISTRICT OF COLUMBIA	0.046	0.0411
GA(11)-GEORGIA	0.043	<.0001
MA(22)-MASSACHUSETTS	0.041	<.0001
OK(37)-OKLAHOMA	0.040	<.0001
AR(04)-ARKANSAS	0.039	<.0001
MS(25)-MISSISSIPPI	0.033	0.0002
TX(45)-TEXAS	0.027	<.0001
KY(18)-KENTUCKY	0.021	0.0065
LA(19)-LOUISIANA	Referent	-
Adjusted R2 = 0.135		

[1] All eligible SNFs for FYs 2011 and 2013 (N=25,642).

Table 23: Association Between No Decline in Mobility for Any ADLs and Facility Characteristics[1]

Variable	Coefficient	p-value
INTERCEPT	0.826	<.0001
CHANGE FROM 2011 TO 2013	0.000	0.6857
FACILITY ELIGIBLE BOTH 2011/2013	Referent	-
FACILITY ELIGIBLE 2011 ONLY	-0.007	0.0155
FACILITY ELIGIBLE 2013 ONLY	-0.005	0.0608
NON-PROFIT OWNERSHIP	Referent	-
FOR PROFIT OWNERSHIP	-0.010	<.0001
GOVERNMENT OWNERSHIP	-0.016	<.0001
LESS THAN 50 CERTIFIED BEDS	0.022	<.0001
NJ(31)-NEW JERSEY	0.093	<.0001
CA(05)-CALIFORNIA	0.092	<.0001
OR(38)-OREGON	0.092	<.0001
DC(09)-DISTRICT OF COLUMBIA	0.087	<.0001
NY(33)-NEW YORK	0.085	<.0001
UT(46)-UTAH	0.079	<.0001
IA(16)-IOWA	0.079	<.0001
FL(10)-FLORIDA	0.077	<.0001
WA(50)-WASHINGTON	0.077	<.0001
OH(36)-OHIO	0.075	<.0001
AL(01)-ALABAMA	0.074	<.0001
MT(27)-MONTANA	0.072	<.0001
HI(12)-HAWAII	0.070	<.0001
RI(41)-RHODE ISLAND	0.069	<.0001
ID(13)-IDAHO	0.068	<.0001
OK(37)-OKLAHOMA	0.067	<.0001
WI(52)-WISCONSIN	0.066	<.0001
MI(23)-MICHIGAN	0.063	<.0001
MA(22)-MASSACHUSETTS	0.063	<.0001
IL(14)-ILLINOIS	0.062	<.0001
AK(02)-ALASKA	0.062	0.0073
CT(07)-CONNECTICUT	0.062	<.0001
MO(26)-MISSOURI	0.056	<.0001
NH(30)-NEW HAMPSHIRE	0.053	<.0001
AZ(03)-ARIZONA	0.053	<.0001
MN(24)-MINNESOTA	0.052	<.0001
VT(47)-VERMONT	0.048	<.0001
NE(28)-NEBRASKA	0.048	<.0001
ME(20)-MAINE	0.048	<.0001
KS(17)-KANSAS	0.048	<.0001
DE(08)-DELAWARE	0.047	<.0001
CO(06)-COLORADO	0.047	<.0001
MD(21)-MARYLAND	0.044	<.0001
NM(32)-NEW MEXICO	0.044	<.0001
TN(44)-TENNESSEE	0.044	<.0001
SC(42)-SOUTH CAROLINA	0.041	<.0001
AR(04)-ARKANSAS	0.039	<.0001

[1] All eligible SNFs for FYs 2011 and 2013 (N=25,981).

(Continued)

Table 23: Association Between No Decline in Mobility for Any ADLs and Facility Characteristics[1]

Variable	Coefficient	p-value
GA(11)-GEORGIA	0.037	<.0001
VA(49)-VIRGINIA	0.033	<.0001
SD(43)-SOUTH DAKOTA	0.027	0.0010
MS(25)-MISSISSIPPI	0.027	<.0001
WY(53)-WYOMING	0.025	0.0339
IN(15)-INDIANA	0.024	<.0001
ND(35)-NORTH DAKOTA	0.022	0.0148
KY(18)-KENTUCKY	0.016	0.0070
TX(45)-TEXAS	0.012	0.0220
NV(29)-NEVADA	0.009	0.3221
NC(34)-NORTH CAROLINA	0.005	0.3540
PA(39)-PENNSYLVANIA	0.002	0.6412
LA(19)-LOUISIANA	0.001	0.8945
WV(51)-WEST VIRGINIA	Referent	-

Adjusted R^2 = 0.150

[1] All eligible SNFs for FYs 2011 and 2013 (N=25,981).

Table 24: Association Between No Decline in Mobility for Any ADLs and Staffing Controlling for Facility Characteristics[1]

Variable	Coefficient	p-value
INTERCEPT	0.795	<.0001
CHANGE FROM 2011 TO 2013	0.000	0.7031
FACILITY ELIGIBLE BOTH 2011/2013	Referent	
FACILITY ELIGIBLE 2011 ONLY	-0.003	0.3850
FACILITY ELIGIBLE 2013 ONLY	-0.004	0.1231
NON-PROFIT OWNERSHIP	Referent	
FOR PROFIT OWNERSHIP	-0.005	<.0001
GOVERNMENT OWNERSHIP	-0.016	<.0001
POS URBAN INDICATOR	-0.003	0.0133
LESS THAN 50 CERTIFIED BEDS	0.009	<.0001
CNA STAFF HOURS/RESIDENT DAY	0.011	<.0001
PHYSICAL THERAPY STAFF HRS/RES DAY	0.058	<.0001
NJ(31)-NEW JERSEY	0.091	<.0001
CA(05)-CALIFORNIA	0.087	<.0001
NY(33)-NEW YORK	0.086	<.0001
IA(16)-IOWA	0.081	<.0001
DC(09)-DISTRICT OF COLUMBIA	0.080	<.0001
OR(38)-OREGON	0.079	<.0001
HI(12)-HAWAII	0.079	<.0001
OH(36)-OHIO	0.076	<.0001
AL(01)-ALABAMA	0.073	<.0001
WA(50)-WASHINGTON	0.072	<.0001
FL(10)-FLORIDA	0.071	<.0001
RI(41)-RHODE ISLAND	0.068	<.0001
MT(27)-MONTANA	0.067	<.0001
OK(37)-OKLAHOMA	0.067	<.0001
UT(46)-UTAH	0.065	<.0001
WI(52)-WISCONSIN	0.065	<.0001
AK(02)-ALASKA	0.063	0.0133
MA(22)-MASSACHUSETTS	0.063	<.0001
IL(14)-ILLINOIS	0.061	<.0001
ID(13)-IDAHO	0.060	<.0001
MI(23)-MICHIGAN	0.060	<.0001
CT(07)-CONNECTICUT	0.059	<.0001
MO(26)-MISSOURI	0.055	<.0001
MN(24)-MINNESOTA	0.052	<.0001
NH(30)-NEW HAMPSHIRE	0.051	<.0001
DE(08)-DELAWARE	0.048	<.0001
AZ(03)-ARIZONA	0.047	<.0001
KS(17)-KANSAS	0.047	<.0001
NE(28)-NEBRASKA	0.047	<.0001
VT(47)-VERMONT	0.044	<.0001
NM(32)-NEW MEXICO	0.044	<.0001
CO(06)-COLORADO	0.044	<.0001
TN(44)-TENNESSEE	0.043	<.0001
MD(21)-MARYLAND	0.042	<.0001

[1] All eligible SNFs for FYs 2011 and 2013 (N=25,342).

(Continued)

Table 24: Association Between No Decline in Mobility for Any ADLs and Staffing Controlling for Facility Characteristics[1]

Variable	Coefficient	p-value
GA(11)-GEORGIA	0.040	<.0001
ME(20)-MAINE	0.039	<.0001
SC(42)-SOUTH CAROLINA	0.038	<.0001
AR(04)-ARKANSAS	0.035	<.0001
VA(49)-VIRGINIA	0.032	<.0001
SD(43)-SOUTH DAKOTA	0.031	0.0002
MS(25)-MISSISSIPPI	0.027	<.0001
WY(53)-WYOMING	0.027	0.0238
IN(15)-INDIANA	0.026	<.0001
ND(35)-NORTH DAKOTA	0.022	0.0162
KY(18)-KENTUCKY	0.014	0.0160
TX(45)-TEXAS	0.011	0.0317
NV(29)-NEVADA	0.005	0.5672
PA(39)-PENNSYLVANIA	0.004	0.4628
LA(19)-LOUISIANA	0.003	0.6714
NC(34)-NORTH CAROLINA	0.002	0.7831
WV(51)-WEST VIRGINIA	Referent	-

Adjusted $R^2 = 0.166$

[1] All eligible SNFs for FYs 2011 and 2013 (N=25,342).