U.S. Department of Health and Human Services
Assistant Secretary for Planning and Evaluation
Office of Disability, Aging and Long-Term Care Policy

ASSESSING HOME HEALTH CARE QUALITY FOR POST-ACUTE AND CHRONICALLY ILL PATIENTS:

FINAL REPORT

August 2008

Office of the Assistant Secretary for Planning and Evaluation

The Office of the Assistant Secretary for Planning and Evaluation (ASPE) is the principal advisor to the Secretary of the Department of Health and Human Services (HHS) on policy development issues, and is responsible for major activities in the areas of legislative and budget development, strategic planning, policy research and evaluation, and economic analysis.

ASPE develops or reviews issues from the viewpoint of the Secretary, providing a perspective that is broader in scope than the specific focus of the various operating agencies. ASPE also works closely with the HHS operating divisions. It assists these agencies in developing policies, and planning policy research, evaluation and data collection within broad HHS and administration initiatives. ASPE often serves a coordinating role for crosscutting policy and administrative activities.

ASPE plans and conducts evaluations and research--both in-house and through support of projects by external researchers--of current and proposed programs and topics of particular interest to the Secretary, the Administration and the Congress.

Office of Disability, Aging and Long-Term Care Policy

The Office of Disability, Aging and Long-Term Care Policy (DALTCP), within ASPE, is responsible for the development, coordination, analysis, research and evaluation of HHS policies and programs which support the independence, health and long-term care of persons with disabilities--children, working aging adults, and older persons. DALTCP is also responsible for policy coordination and research to promote the economic and social well-being of the elderly.

In particular, DALTCP addresses policies concerning: nursing home and community-based services, informal caregiving, the integration of acute and long-term care, Medicare post-acute services and home care, managed care for people with disabilities, long-term rehabilitation services, children's disability, and linkages between employment and health policies. These activities are carried out through policy planning, policy and program analysis, regulatory reviews, formulation of legislative proposals, policy research, evaluation and data planning.

This report was prepared under contract #HHS-100-03-0011 between HHS's ASPE/DALTCP and the Urban Institute. For additional information about this subject, you can visit the DALTCP home page at http://aspe.hhs.gov/_/office_specific/daltcp.cfm or contact the ASPE Project Officer, Hakan Aykan, at HHS/ASPE/DALTCP, Room 424E, H.H. Humphrey Building, 200 Independence Avenue, S.W., Washington, D.C. 20201. His e-mail address is: Hakan.Aykan@hhs.gov.

ASSESSING HOME HEALTH CARE QUALITY FOR POST-ACUTE AND CHRONICALLY ILL PATIENTS: Final Report

Christopher M. Murtaugh, Ph.D.
Timothy R. Peng, Ph.D.
Stanley Moore, B.S.
Gill A. Maduro, Ph.D.

Visiting Nurse Service of New York
Center for Home Care Policy and Research

August 2008

Prepared for
Office of Disability, Aging and Long-Term Care Policy
Office of the Assistant Secretary for Planning and Evaluation
U.S. Department of Health and Human Services
Contract #HHS-100-03-0011

TABLE OF CONTENTS

LIST OF FIGURES AND TABLES

ACKNOWLEDGEMENTS

We would like to thank the Centers for Medicare and Medicaid Services and staff at the University of Colorado Health Sciences Center for providing us with the Outcome and Assessment Information Set (OASIS) data necessary to conduct final analyses and advice on the use of the OASIS file. We are very grateful to the following individuals for reviewing preliminary results and their recommendations concerning key analytic issues, although the project investigators alone are responsible for final decisions: Kathryn Bowles, David Hittle, Dana Mukamel, D.E.B. Potter and Debra Saliba. We also would like to thank Shaymey Colon and Daniela Villar for assistance with manuscript preparation.

ABSTRACT

Background and Purpose. Home health agencies serve patients with a range of health care needs including those with short-term post acute needs and the chronically ill with more long-term needs. The purpose of this project was to examine the current approach to public reporting of Medicare home health agency quality with a particular focus on how quality measures perform for the diverse home health population. Four key analytic questions were addressed: (1) Can clinically meaningful groups of patients be identified (e.g., post acute, chronically ill); (2) To what extent do agencies serve different types of patients; (3) Do these patients differ in publicly-reported outcomes; and (4) To what extent does risk-adjustment reduce (eliminate) any differences in outcomes.

Methods. The Centers for Medicare and Medicaid Services' (CMS') Outcome and Assessment Information Set (OASIS) contractor drew the data from the OASIS National Repository. All OASIS discharge assessments in calendar years 2004 and 2005 were identified where there also was an admission OASIS assessment (6,493,623 discharges). Medicare and Medicaid provider numbers were used to determine the number discharges per agency during the two-year period and to obtain information on the characteristics of the 8,094 agencies represented on the file.

Results. Five mutually exclusive and exhaustive patient groups were identified. The groups differed in the relative distribution of sociodemographic and clinical characteristics on admission. The largest differences were between the group receiving "post acute restorative care" and "clinically complex community admissions." We found considerable variation in patients served by agencies that differ in size, ownership, and control. Large differences also were found in the relative distribution of the five types of patients among the nine Census divisions. The magnitude of differences in *unadjusted* health status outcomes among the five patient groups was more than 20 percentage points in some cases. The post acute restorative care group had the best outcome on all eight of the health status quality indicators while the two community admission groups had the worst outcomes. Results suggest that risk-adjustment at the *aggregate* level generally is good despite statistical measures indicating poor performance of some models. However, we also found evidence of systematic bias in risk-adjusted outcomes.

Conclusions. The results raise the possibility that public reporting is unfair to agencies admitting a relatively large share of patients who tend to have worse outcomes. In particular, agencies with a relatively large share of clinically complex community admissions could be disadvantaged compared to agencies serving a large share of post acute restorative care patients. Analyses at the agency level, which were outside the scope of this project, are needed to understand the extent and impact of bias in risk-adjusted outcomes at the agency level, as well as the relationship among

agency and geographic factors, the types of individuals served, and patient outcomes. While many questions remain to be answered, the findings from this project in several areas provide critical information needed by the Department in its efforts to assess and improve the quality of care provided to the diverse home health population.

EXECUTIVE SUMMARY

Background and Purpose

Home health agencies serve patients with a range of health care needs including those with relatively short-term post acute care needs as well as individuals who are chronically ill and have more long-term needs. None of the 12 quality measures Centers for Medicare and Medicaid Services (CMS) currently reports as part of the Home Health Quality Initiative (HHQI), however, is assessed and reported separately for clinically important subgroups of patients within the larger home health population. In contrast, all *nursing home* quality measures that CMS publicly reports are assessed separately for a nursing home's short-stay and long-stay residents. Because home health quality indicators are not reported separately for important subgroups of home health patients, risk-adjustment of HHQI outcomes takes on more importance. Without adequate risk-adjustment, public reporting could mislead consumers and be unfair to agencies admitting larger shares of patients who tend to do worse on some or all HHQI measures.

This project examines the current approach to public reporting of Medicare home health agency quality with a particular focus on how the current HHQI measures perform as quality indicators for the diverse home health population. Four key analytic questions are addressed: (1) Can clinically meaningful groups of home health patients be identified (e.g., post acute, chronically ill); (2) To what extent do agencies serve different types of patients; (3) Do these patient groups differ in publicly-reported outcomes; and (4) To what extent does risk-adjustment reduce (eliminate) any differences in outcomes. The project builds on an earlier Office of the Assistant Secretary for Planning and Evaluation-funded project where alternative risk-adjustment approaches were developed and tested to assess the quality of home health care. The results of the project are intended to help CMS and other Departmental agencies in their efforts to monitor and improve the quality of home health care.

Methods

There were two major phases of data analysis: (1) preliminary analyses conducted using files available at the beginning of the project developed for earlier studies; and (2) final analyses conducted using a file constructed and delivered by the CMS Outcome and Assessment Information Set (OASIS) contractor at the University of Colorado to address the research questions specific to this project. A file that included all home health discharges, regardless of when they were admitted, was requested to assure full representation of short and long-stay Medicare and Medicaid home health patients. Long-stay patients are a group of particular interest since they are expected to be disproportionately individuals who are chronically ill and are likely to be underrepresented in HHQI analytic files. Two years of home health discharges were requested to address a second perceived limitation of HHQI. A substantial number of

agencies care for relatively few Medicare or Medicaid beneficiaries in a year and do not meet the minimum sample size requirements for reporting some or all of the publicly-reported outcomes. (Currently, outcomes are not publicly-reported when an agency has fewer than 20 home care episodes with the *potential* to have an outcome.) Two years of data were combined to minimize the number of agencies excluded from project analyses.

The CMS contractor at the University of Colorado drew the data from the OASIS National Repository at CMS. All OASIS discharge assessments in calendar years 2004 and 2005 were identified where there also was an admission (i.e., Start of Care) OASIS assessment. The final analytic file includes a total of 6,493,623 home health episodes with one of three types of OASIS discharges in 2004 and 2005. Medicare and Medicaid provider numbers were used to identify the number discharges from the same agency during the two-year period and to link to the 2006 Provider of Services file to obtain information on agency characteristics.

Defining and Describing Different Types of Home Health Patients

The types of patients served by home health agencies are not well defined but include individuals with short-term post acute care needs as well as chronically ill persons with long-term health care needs. We relied primarily on the literature and advice of clinical experts to develop an algorithm for identifying subgroups of the home health population that differ in: (1) whether they are post acute; and (2) whether they are chronically ill. Differences on these dimensions plausibly affect home health care needs and, more importantly for this project, home health outcomes. A small Technical Advisory Group reviewed the preliminary algorithm and distributional data, and suggested refinements in our approach.

Differences in the sociodemographic, payer and clinical characteristics of the patient groups were examined as part of the final analyses. No statistical tests of the significance of differences were estimated because we examined a census of all discharges during 2004 and 2005. In addition, given the very large number of observations, even trivial differences would be statistically significant. We focused instead on the magnitude of observed differences among the groups.

Analysis of Types of Patients Served by Home Health Agencies

The agency is the unit of analysis when examining agency characteristics and the extent to which agencies serve different types of patients. There were a total of 8,094 agencies with at least one OASIS discharge in 2004 or 2005. All agencies were included in descriptive analyses of agency characteristics. We excluded agencies with too few discharges during the two-year study period to estimate reliable statistics (i.e., agencies with fewer than 100 discharges) when examining the extent to which agencies serve patients classified into the final five patient groups. The 6,113 agencies with 100 or more OASIS discharges in 2004 or 2005 represent agencies included in analyses of whether agencies serve different types of patients.

Whether agency characteristics differ by size was examined first. For this analysis we grouped all agencies (i.e., all 8,094 agencies with at least one OASIS discharge) into quintiles by size as measured by the number of OASIS discharges in 2004 and 2005 at each agency. Then, to determine whether agencies serve different types of patients, we examined the relative distribution of the five patient groups among agencies with at least 100 discharges (6,113 agencies) that differ in size, ownership and geographic location.

Analysis of Performance of Publicly-Reported Quality Indicators

The unit of analysis when examining the performance of the 12 HHQI measures was the home health episode. All discharges in the two-year period were included in these analyses. However, when determining the proportion of episodes improving in an HHQI quality measure, CMS excludes episodes that are not eligible to have a particular outcome. The criteria we used to evaluate each HHQI measure include: (1) the share of each patient group with the potential to have the outcome; (2) the extent to which each unadjusted outcome varied among the patient groups; and (3) the skewness of the quality indicator (i.e., whether a very high proportion of eligible episodes either had or did not have the outcome regardless of patient group).

The extent to which risk-adjustment reduced differences in unadjusted outcomes across the five patient groups then was examined. Logistic regression, the statistical method currently used by CMS to risk-adjust HHQI outcomes, was used to estimate risk-adjustment models for all 12 publicly-reported measures. The theory and evidence-based logistic regression models developed for risk-adjusting outcomes in the earlier project were employed here. For each outcome we estimated a *core model* with a common set of risk factors used to risk-adjust each HHQI quality measure, and then a *full model* where the common set of risk factors is supplemented by additional risk factors specific to each outcome. We also estimated a full risk-adjustment model for all outcomes that included as explanatory variables binary indicators defining the five patient groups. The magnitudes of the parameters for the patient group indicators are measures of potential bias in the risk-adjustment models.

Results

Can Clinically Meaningful Groups of Patients Be Identified?

The final algorithm classifies all home health episodes into five mutually exclusive and exhaustive groups based on OASIS data recorded at home health admission. The algorithm first divides episodes into those where patients have chronic conditions that are not well controlled in two or more body systems (i.e., “clinically complex” patients) versus all others. The algorithm then divides each of these two groups into: (1) “post acute care” admissions (i.e., patients with an inpatient stay in a hospital, inpatient rehabilitation facility, or skilled nursing facility (SNF) in the 14 days prior to home health

admission); and (2) all others (i.e., "community" admissions). The post acute care group is further divided into: (1) "restorative care" admissions (i.e., patients with a surgical wound, a diagnosis of injury or trauma, or a surgical or orthopedic aftercare diagnosis); and (2) all others.

The five mutually exclusive and exhaustive groups are listed below with the percent of all episodes they represent and the average home health length of stay (LOS) for each group.

1. Community Admission: Clinically Complex -- 8.8 percent of all admissions and average LOS of 90.0 days.

2. Community Admission: Other -- 21.7 percent of all admissions and average LOS of 66.0 days.

3. Post Acute: Clinically Complex -- 17.6 percent of all admissions and average LOS of 58.7 days.

4. Post Acute: Restorative Care -- 41.2 percent of all admissions and average LOS of 40.1 days.

5. Post Acute: Other -- 10.7 percent of all admissions and average LOS of 55.4 days.

The five groups differed in the relative distribution of sociodemographic and clinical characteristics on admission as well as LOS and publicly-reported outcomes. The starkest difference among the five groups was between the "clinically complex community admission" and the "post acute restorative care" groups. Patients in the former group were much more likely to have sensory and communication impairments as well as cognitive deficits on admission relative to the latter group. The diagnostic profile of these two groups also differed markedly. Diabetes and hypertension were common problems among clinically complex community admissions and a significant minority had Alzheimer's disease or other types of dementia. These diagnoses were reported far less often among patients in the post acute restorative care group. Instead, 42.2 percent had an orthopedic primary diagnosis that affected the score on the clinical dimension of the original Medicare prospective payment system (in place beginning in October 2000) including 29.1 percent with "abnormal gait or other symptoms involving nervous and musculoskeletal systems." Given differences in clinical condition on admission it is not surprising that the mean LOS for clinically complex community admissions was over twice that of the post acute restorative care group (90.0 versus 40.1 days, respectively).

To What Extent Do Agencies Serve Different Types of Patients?

We found considerable variation in patients served by agencies that differ in size, ownership, control and geographic location. Perhaps the most surprising result is the

strong relationship between agency size and the relative share of two of the five types of patients served. Specifically, as agency size increased, the proportion of clinically complex community admissions typically decreased and the proportion of post acute restorative care admissions increased. We also found that hospital-based agencies were more likely to care for post acute home health patients -- in particular, post acute restorative care patients -- relative to other agencies, and that for-profit agencies were more likely to serve community admissions compared to other agencies.

Large differences also were found in the relative distribution of the five types of patients among the nine Census divisions. It is possible that some of this variation reflects differences in the Medicare and Medicaid populations in different areas of the country. However, the magnitude of some of the differences (e.g., the three-fold difference between the New England and West South Central Divisions in the share of clinically complex community admissions) suggests other factors may contribute to these differences. These could include differences in home health agency characteristics, variation in the supply of other types of providers that are potential substitutes for home health care (e.g., SNFs), differences in physician practice patterns, and differences in how OASIS fields used to define patient groups (e.g., admission diagnoses and their severity) are recorded.

Do the Five Patient Groups Differ in Publicly-Reported Outcomes?

The share of each group's discharges that had the potential to have the 12 HHQI outcomes varied substantially; however, at least half of the discharges in each group had the potential to have most outcomes. The magnitude of differences in *unadjusted* health status outcomes among the five patient groups was more than 20 percentage points in some cases. The post acute restorative care group had the best outcome on all eight of the health status quality indicators (i.e., the largest percent improving among those eligible to improve) while the two community admission groups had the worst outcomes. The generally worse clinical condition on admission of the individuals in the two community admission groups, relative to the post acute restorative care group, clearly appears to affect their rate of improvement over the course of the home health episode.

The percent of episodes with the three utilization outcomes, as well as the one adverse event outcome were highly skewed across all groups. Less than 10 percent of all admissions were hospitalized, received emergent care for any reason, or emergent care for a wound infection; while over 95 percent were discharge to the community. This result partly reflects the approach we chose to defining home health episodes relative to the approach used to by CMS to define episodes for public reporting of home health quality. In any case, while the magnitude of the utilization outcomes that we report is not large for hospitalization or emergent care, the relative differences among the groups were substantial. The highest rates of hospitalization and emergent care were found among two of the three post acute care groups (i.e., the clinically complex and the "other" groups) while the lowest and second lowest rates of hospitalization and emergent care, respectively, were among post acute restorative care admissions.

To What Extent Does Risk-Adjustment Reduce Differences in Outcomes?

Models developed in an earlier project were employed in this project to estimate risk-adjustment models for the 12 HHQI outcomes. We found that the risk-adjusted outcomes were remarkably similar to the unadjusted outcomes regardless of group suggesting that risk-adjustment at the aggregate level is good. This is not surprising for the HHQI outcomes where the summary statistics for the risk-adjustment models indeed were good. It is more surprising for outcomes where the summary statistics for the risk-adjustment models were mediocre to poor. The *unadjusted* outcomes for the latter group, however, generally do not vary as much across the five patient groups; weak risk-adjustment is likely to result in risk-adjusted values close to the overall mean which will not differ that much from unadjusted values.

The potential for bias in the risk-adjustment models, at the same time, was found to be substantial although the actual bias at the *aggregate* level does not appear to be large. Nevertheless, the direction of the bias is of concern. In particular, agencies admitting a relatively large share of community admission could have publicly-reported health status outcomes that are too low (i.e., the adjusted proportion improving is under-reported), while agencies that admit a relatively large share of post acute restorative care patients could have publicly-reported outcomes that are too high. Risk-adjusted utilization outcomes also appear to favor agencies admitting a relatively large share of post acute restorative care patients. An analysis of individual agency outcomes, which is beyond the scope of this project, is required to better understand the extent of bias and impact on actual agency outcomes and rankings.

Conclusions and Implications

The results raise the possibility that HHQI is unfair to agencies admitting a relatively large share of patients who tend to have worse outcomes. In particular, agencies with a relatively large share of clinically complex community admissions could be disadvantaged relative to agencies serving a relatively large share of post acute restorative care patients. Because there are differences in the types of patients served by agencies that vary in size, ownership and geographic location, some of the differences in outcomes observed across the five patient groups could be caused by systematic differences in the quality of care provided by different types of agencies. It seems more likely, however, that important risk-adjusters are omitted from current models.

There are two straightforward approaches to improving current risk-adjustment, each having important drawbacks. One approach is to separately risk-adjust and report outcomes for the patient groups developed here or other groupings of chronically ill and post acute home health patients. This would permit comparison of the quality of care provided to important subgroups of patients across different agencies. As noted above, CMS currently assesses publicly-reported nursing home quality indicators separately for

a nursing home's short-stay and long-stay residents although there is only limited risk-adjustment that mainly is operationalized through exclusion rules (Mukamel et al., 2008). The major drawback of separately risk-adjusting and reporting outcomes for subgroups of home health patients is that far fewer agencies than currently is the case would have the minimum number of episodes with the potential to have HHQI outcomes (i.e., 20 episodes).

The other approach is to estimate models that allow risk-adjusters to vary in their effect on outcomes depending on key measures defining patient groups (e.g., community versus post acute admission). The drawback to developing risk-adjustment models that include interaction terms is that the substantial increase in the complexity of the models limits the ability of providers and consumers to understand risk-adjustment. This may undermine trust in and support for risk-adjusting patient outcomes.

Before exploring alternative approaches to risk-adjustment, however, we strongly recommend that analyses be conducted at the agency level. More work is needed to understand the extent and impact of bias in risk-adjusted outcomes at the agency level as well as the relationship among agency and geographic factors, the types of individuals served, and patient outcomes. While the risk-adjustment models currently used by CMS are likely to produce results similar to those reported here, this also should be evaluated at the agency level.

Project results provide important insights into the types of patients served by home health agencies and differences in their outcomes on publicly-reported measures. Multiple chronic conditions, as in other health care settings, were found to be important contributors to outcomes. Given the limitations of current reporting of medical conditions on OASIS, new ways of insuring better information about chronic conditions need to be developed to improve patient care and the risk-adjustment of outcomes. While many questions remain to be answered, the findings from this project in several areas provide critical information needed by the Department in its efforts to assess and improve the quality of care provided to the diverse home health population.

I. INTRODUCTION

One of the central goals of the U.S. Department of Health and Human Services (HHS) is to improve the quality of health care received by all Americans. In the home health care area, the Department has two key initiatives developed and implemented by the Centers for Medicare and Medicaid Services (CMS) to assess, improve, and report quality. The Outcome-Based Quality Improvement (OBQI) program provides periodic reports to all Medicare-certified home health agencies so they can identify potential quality problems and devise appropriate strategies to address them. The Home Health Quality Initiative (HHQI) uses a subset of the OBQI quality measures for public reporting. The purpose of HHQI is to provide useful information to potential home health consumers for making informed decisions when choosing home health agencies, as well as to provide agencies with an incentive to improve care quality (CMS, 2001).

Home health agencies serve patients with a range of health care needs including those with relatively short-term post acute care needs, as well as individuals who are chronically ill and have more long-term needs. None of the current 12 HHQI measures, however, is reported separately for clinically important subgroups of patients within the larger home health population. This is in contrast to the approach used to measure and report the quality of nursing home care. CMS currently publicly reports 19 nursing home quality measures. They are assessed separately for a nursing home's short-stay and long-stay residents. While some measures are the same for both types of patients, others are unique to one group or the other (CMS, 2006). Because home health quality indicators are not reported separately for important subgroups of home health patients, risk-adjustment of HHQI outcomes takes on more importance. Without adequate risk-adjustment, public reporting could mislead consumers, and be unfair to agencies admitting larger shares of patients who tend to do worse on some or all HHQI measures.

This project examines the current approach to public reporting of Medicare home health agency quality with a particular focus on how the current HHQI measures perform as quality indicators for the diverse home health population. Four key analytic questions are addressed: (1) Can clinically meaningful groups of home health patients be identified (e.g., post acute, chronically ill); (2) To what extent do agencies serve different types of patients; (3) Do these patient groups differ in publicly-reported outcomes; and (4) To what extent does risk-adjustment reduce (eliminate) any differences in outcomes. The source of the data used to define different patient groups and address the study questions is the Outcome and Assessment Information Set (OASIS). Since July 1999, home health agencies participating in the Medicare or Medicaid programs have been required to collect OASIS on all patients age 18 or older admitted to Certified Home Health Agencies. The two exceptions are persons receiving pre or post-partum maternity services and those receiving only personal care, chore or housekeeping services. OASIS data subsequently are submitted to State Survey Agencies which in turn send the data to CMS where they become part of a National Repository. The Medicare Prescription Drug, Improvement and Modernization Act of

2003 suspended OASIS requirements, beginning December 2003, for patients *not* covered by either Medicare or Medicaid.

The project builds on an earlier Office of the Assistant Secretary for Planning and Evaluation-funded project where alternative risk-adjustment approaches were developed and tested to assess the quality of home health care. A theory and evidence-based approach was used to develop risk-adjustment models for OBQI quality indicators (Murtaugh et al., 2007; Murtaugh et al., 2006a). We will examine how this alternative risk-adjustment approach developed in the previous ASPE study performs when risk-adjusting outcomes in this study.

The results of the project are intended to help CMS and other Departmental agencies in their efforts to monitor and improve the quality of home health care. The guiding principle when proposing any potential modifications to the existing approaches to public reporting of home health quality is to improve the measurement of the quality of care received by the diverse home care population while minimizing the data collection and reporting burden on home health agencies.

II. BACKGROUND

There are 41 home health patient outcome measures in the context of the OBQI framework and 13 adverse event measures. The 41 outcomes include functional, physiologic, emotional/behavioral, cognitive, and health care utilization (e.g., hospitalization) outcomes. (See Table 1 for a list of the 41 measures.) The 13 adverse events are markers for *potential* problems in care because of their negative nature and relatively low frequency. They include direct measures of a change in health status (e.g., increase in number of pressure ulcers) as well as the occurrence of emergent care for specific reasons (e.g., emergent care for injury caused by fall or accident at home) (CMS, 2001). Currently, 11 of the 41 OBQI outcome measures and one of the 13 adverse event indicators are publicly-reported for each Medicare-certified home health agency under the HHQI. (See Table 2 for a list of the 12 measures.)

None of the HHQI measures, as noted above, is reported separately for clinically important subgroups of patients within the larger home health population. The types of patients served by home health agencies are not well defined but include individuals with short-term post acute care needs as well as chronically ill persons with long-term health care needs. We relied primarily on the literature and advice of clinical experts to develop an algorithm for identifying subgroups of the home health population that differ in: (1) whether they are post acute; and (2) whether they are chronically ill. Differences on these dimensions plausibly affect home health care needs and, more importantly for this project, home health outcomes.

Post acute care, in the context of the Medicare program, generally refers to medical services provided to beneficiaries immediately following or soon after a short-term hospital stay. These services are assumed to be related to the reason for hospitalization or sequelae of the hospital stay. Distinguishing post acute home health patients from others, therefore, appears relatively straightforward (i.e., they have a hospital stay shortly before home health admission). The approach we developed to classify home health episodes as post acute based on OASIS data, including whether patients have post-operative care needs, is described below in Section IV. A separate challenge is how to identify home health patients who are chronically ill. These individuals may or may not have a hospital stay preceding home health admission. The approaches used in surveys and other studies to identify persons who are chronically ill are summarized below.

Also included in this section is a description of alternative definitions of home health care episodes and their implications for evaluating the performance of publicly-reported home health care quality indicators. The section ends with a brief description of the role of risk-adjustment when comparing the outcomes of patients served by different agencies, and a description of the new approach to risk-adjustment of home health outcomes developed in a prior project funded by ASPE (Murtaugh et al., 2007; Murtaugh et al., 2006a).

Approaches to Identifying Persons with a Chronic Illness

Despite an abundance of research focusing on specific chronic diseases, the literature defining persons with chronic illness is surprisingly limited. Seven studies were identified that included lists of chronic conditions or, in one case, medical conditions thought to predict nursing home admission among those with chronic disability (Liu et al., 1994). The populations of interest and sources of data differed across the studies. They included analyses of the entire population based on Surveillance Epidemiology and End Results cause-of-death data (Centers for Disease Control and Prevention, 2004), households participating in the RAND health insurance experiment with a health care claim (Brook et al., 1984), Medicare beneficiaries with health care claims (Ellis et al., 1996), Medicare beneficiaries with chronic disability (Liu et al., 1994), persons discharged from California hospitals (Iezzoni et al., 1994), and persons receiving ambulatory care from physicians surveyed by the British Columbia Ministry of Health Services (Government of British Columbia, 2004)

Table 3 lists the medical diagnoses analyzed in the six studies by the Major Diagnostic Categories (MDCs) of the International Classification of Diseases, 9th revision, Clinical Modification (ICD-9-CM). There was considerable variability in the conditions identified. The most common *specific* medical condition was diabetes (five out of six studies). All six studies identified one or more chronic respiratory or lung diseases. A range of conditions was identified in the broad Circulatory System MDC including heart failure (four out of six studies) and hypertension (three out of six studies). Four of six studies identified chronic renal disease or renal failure, and a similar number identifed one or more types of cancer. None of the studies identified chronic conditions in four of the 17 MDCs: Complications of Pregnancy; Congenital Anomalies; Perinatal Conditions; and Symptoms, Signs, and Ill-defined Conditions. Table 3 served as the starting point for developing the list of medical conditions identifying persons who are chronically ill in this project.[1]

Comorbidity

There is growing evidence that comorbidity, also referred to as multimorbidity, influences health outcomes above and beyond the effect of any single condition. Gijsen and colleagues (2001) conducted a comprehensive literature review of the causes and consequences of comorbidity. They identified studies that examined its impact on mortality; functional status or quality of life; health care utilization; health care treatment strategy; health care complications of treatment; and health care disposition or readiness. With relatively few exceptions, comorbidity measured as an index or count of chronic somatic diseases had a significant effect on mortality, functional status, quality of life, and different aspects of health care, often after adjustment for a large

[1] A CMS-funded study conducted by Liu and colleagues (2007) proposed refinements in the current Medicare *nursing home* payment system to take into account differences between patients with acute versus more long-term needs. Rather than identifying patients with chronic conditions, however, the investigators chose to identify a relatively short list of acute conditions for potential use in a revised nursing home payment system.

variety of clinical and other covariates. They concluded that comorbidity, in general, does affect health outcomes in studies conducted in a range of settings with different designs and outcome measures, and after adjustment for other factors.

In an earlier study, Tinetti and colleagues (1995) examined the effect of multiple *chronic* conditions. They analyzed data on a large cohort of elders in New Haven, Connecticut, with one year of follow-up to determine whether a range of factors predispose elders to falling, incontinence, or functional dependence. They found that two or more chronic conditions were associated with a higher risk of each of the three outcomes in simple bivariate analyses. They concluded that impairments in two or more domains predispose elders to geriatric syndromes.

The findings from these studies influenced the approach used to identify persons who are chronically ill and likely to have the worst home health outcomes. Specific details are provided below in Section IV where the final algorithm used to identify distinct groups of post acute and chronically ill home health patients is presented.

Home Health Episode Definitions

CMS defines home health episodes differently when determining Medicare payment than when evaluating and reporting quality of care. Medicare pays prospectively for 60-day "episodes" of care with five or more visits when reimbursing agencies for covered services provided to eligible beneficiaries in the traditional fee-for-service Medicare program. Payment is based on patient characteristics and the planned number of therapy services at the beginning of each 60-day interval (***Federal Register*** 65 FR 41128, July 3, 2000). HHQI, in contrast, currently is based on an agency's "episodes" of home health care that both *begin and end* in a one-year time period with a *new* HHQI episode created each time a patient is transferred to a hospital (or other inpatient facility) and returns to the same agency.

Neither definition is the same as what agencies (and other health care providers) traditionally think of as a complete episode of care: the period from admission to final discharge from the agency. Relative to this traditional definition, the HHQI approach to defining episodes leads to underrepresentation of *long* home health stays that are not interrupted by inpatient care, and overrepresentation of stays that *are* interrupted by inpatient stays. Since long-stay patients are expected to be disproportionately individuals who are chronically ill, a group of particular interest in this project, we did not use the HHQI definition of home health episodes due to the underrepresentation of certain types of long-stay patients. Rather, we analyzed all *discharges* from home health care during a two-year period regardless of when patients were admitted. Our approach is described in detail in Section III.

Risk-Adjustment of Home Health Outcomes

Risk-adjustment is a critical tool in the evaluation of health care quality. Its aim is to "level the playing field" so that providers serving different types of patients can be meaningfully compared (Johnson, 2003). Many of the risk-adjustment methods developed and implemented to date are designed to account for differences in patients' health status when determining payment rates in public programs. The limited diffusion of risk-adjustment methods for assessing the quality of health care may be due to the multiple dimensions of quality, cost of appropriate data, and technical complexity of risk-adjustment methods.

The modeling approach currently used in OBQI for risk-adjustment of home health quality measures is a data-driven "stepwise" approach in which a separate set of risk factors is used for each quality measure. In fiscal year 2003, ASPE at HHS funded a study to develop and test alternative risk-adjustment modeling approaches to assessing the quality of home health care. This study developed a "theory and evidence-based" modeling approach in which a common set of risk factors was used for all OBQI quality measures, supplemented by additional risk factors specific for each indicator where needed and appropriate. Results from these analyses indicate that this alternative modeling approach has several advantages. First, it greatly simplifies the risk-adjustment, making it possible for home health providers to be able to understand it and incorporate it into their internal quality improvement efforts. Second, it relies on a smaller number of OASIS data elements, contributing to the Department's efforts to streamline the OASIS instrument. Third, it presents a more stable and consistent approach to risk-adjustment because the currently used stepwise approach is data-driven, and thus, the model specification for each quality indicator may differ when applied to new data sets. Finally, the loss in explanatory power, which is expected since a stepwise approach maximizes the explanatory power of models developed on a given data set, tends to be very modest (Murtaugh et al., 2007; Murtaugh et al., 2006a).

This project employs the risk-adjustment models of home health outcomes developed in the earlier ASPE-funded project. We examine how this alternative risk-adjustment approach performs when risk-adjusting HHQI outcomes for major subgroups of the home health population.

III. METHODS

There were two major phases of data analysis: (1) preliminary data analyses conducted using files available at the beginning of the project developed for earlier studies; and (2) final data analyses conducted using a file constructed and delivered by the CMS OASIS contractor at the University of Colorado to address the research questions specific to this project. Including short and long-stay Medicare and Medicaid home health patients with OASIS assessments in our analytic file was important to achieving project objectives. Long-stay patients are a group of particular interest since they are expected to be disproportionately individuals who are chronically ill. These patients, as noted above, are likely to be underrepresented in HHQI analytic files. For this reason, the project team requested a file that included all home health discharges during a two-year period regardless of when they were admitted.

Two years of home health discharges was requested to address a second perceived limitation of HHQI. A substantial number of agencies care for relatively few Medicare or Medicaid beneficiaries in a year and do not meet the minimum sample size requirements for reporting some or all of the publicly-reported outcomes. (Currently, outcomes are not publicly-reported when an agency has fewer than 20 home care episodes with the *potential* to have an outcome.) Two years of data were combined to minimize the number of agencies excluded from our analyses.

Source of Data

OASIS, as noted above, is the source of the data used in OBQI and HHQI. Agencies are required to collect OASIS at different points in time over a patient's stay. The reason for an assessment is recorded on the OASIS instrument from among the following categories:

- 01 = Start of Care (SOC) -- further visits planned.
- 02 = Start of Care (SOC) -- no further visits planned (discontinued December 2002).
- 03 = Resumption of Care (ROC) (after inpatient stay).
- 04 = Recertification (Follow-Up) assessment (every 60 days).
- 05 = Significant Change in Patient Condition (SCIC) (discontinued January 2008).
- 06 = Transferred to an Inpatient Provider -- patient not discharged from agency.
- 07 = Transferred to an Inpatient Provider -- patient discharged from agency.
- 08 = Death at Home.
- 09 = Discharged from Agency to the Community.
- 10 = Discharged from Agency -- no visits completed after SOC/ROC assessment (discontinued December 2002).

There is some variation in the data items collected depending on the reason for the assessment. *Baseline* data for the health status quality indicators and risk-adjustment are from SOC, ROC and SCIC assessments. Data from assessment types 06-09 are used to determine changes in health status as well as utilization outcomes. OASIS is described in detail at http://www.hhs.gov/oasis.

The data analyzed in this project were obtained from the CMS contractor at the University of Colorado. They drew the data from the OASIS National Repository at CMS. All OASIS discharge assessments in calendar years 2004 and 2005 were identified. We requested discharges where the OASIS reason for assessment was 07 (Transferred to an Inpatient Provider -- patient discharged from agency), 08 (Death at Home), or 09 (Discharged from Agency to the Community), and there was an SOC OASIS assessment associated with the discharge. We did not count OASIS assessment type 06 (Transferred to an Inpatient Provider -- patient not discharged from agency) as a discharge in our analyses although prior work with Medicare claims data suggests that some patients with this type of assessment never return to the home health agency. The implications of this decision are discussed below. Over six million OASIS discharges met our specifications.

Analytic File

Sampling Plan

A sampling plan was developed by the project team during the first year of the project to minimize the burden on the CMS contractor providing the files necessary to conduct project analyses, and because of concern about data processing requirements for very large files. The initial two-stage plan called for sampling agencies in the first stage and then sampling patients in a second stage from large agencies drawn into the sample. A small Technical Advisory Group (TAG) was convened to review the preliminary two-stage sampling plan and provide comments during a telephone conference call. Ultimately, it was not necessary to implement the final sampling plan reflecting the input of the TAG. The University of Colorado decided that it was easiest to deliver the universe of eligible discharges and to leave it to the project team to determine at a later date whether sampling would be necessary when using software packages (e.g., SAS) to conduct final data analyses.

Final Number of Observations and Definition of a Home Health Episode of Care

The total number of observations in our analytic file is 6,493,623 home health discharges in calendar years 2004 and 2005. This is a census of all eligible discharges in this time period with an associated SOC assessment in the OASIS National

Repository.[2] In addition to the SOC OASIS assessment, all intervening OASIS assessments were linked to each discharge. In most analyses (i.e., the descriptive analyses of patient groups and analyses of whether home health agencies serve different types of patients) a home health episode is defined as starting with admission (i.e., the SOC OASIS) and ending with discharge (i.e., OASIS assessment types 07, 08 or 09). However, when examining the performance of the HHQI indicators, the ROC assessment immediately preceding discharge (if there was one) was used to determine patient status at baseline and the value of all risk-adjusters instead of the SOC assessment. Further details are provided below.

Analytic Methods

Three distinct analyses were conducted. The first focused on defining and describing patient groups. The second examined the extent to which agencies serve different types of patients. The third examined differences in publicly-reported outcomes among patient groups and the extent to which risk-adjustment reduces or eliminates any differences in HHQI outcomes. The methods used in preliminary and final analyses are indicated within the sections for each of the three distinct analyses.

Defining and Describing Different Types of Home Health Patients

Patient clinical data from the admission OASIS assessment were used to define the patient groups. Both primary (M0230) and "other" (M0240) medical diagnoses were examined to identify persons who were chronically ill, along with the severity rating associated with each medical diagnosis. The OASIS severity rating scale has five levels:

- 0 = Asymptomatic, no treatment needed at this time.
- 1 = Symptoms well controlled with current therapy.
- 2 = Symptoms controlled with difficulty.
- 3 = Symptoms poorly controlled, patient needs frequent adjustment in treatment and dose monitoring.
- 4 = Symptoms poorly controlled, history of rehospitalizations.

The "payment diagnosis" field (M0245) is where diagnoses affecting Medicare home health payment are recorded if a V-code is reported in the primary diagnosis field (M0230). We included payment diagnoses (M0245) when defining patient groups only if the primary diagnosis (M0230) was a V-code or was blank. For the purposes of this study, we assumed that diagnoses recorded in the payment diagnosis field had a

[2] A total of 5,716 OASIS discharges were excluded from all analyses because they could not be associated with a home health agency due to inaccurate or missing Medicare or Medicaid provider numbers. This precluded their inclusion in analyses of whether agencies serve different types of patients. The excluded discharges represent less than 0.09 percent of all OASIS discharges in 2004 and 2005.

severity rating of two or higher since no separate severity rating is recorded for M0245 diagnoses.[3]

We used information recorded on the admission OASIS assessment about inpatient care during the 14 days preceding admission (M0175) to identify post acute care patients. Four types of inpatient facilities are identified as well as an "Other" category:

- 1 = Hospital.
- 2 = Rehabilitation facility.
- 3 = Skilled nursing facility (SNF).
- 4 = Other nursing home.
- 5 = Other (specify).

All applicable types of facilities are supposed to be checked (e.g., if the patient was discharged from a hospital and a rehabilitation facility during the 14 days prior to home health admission, both types of facilities are to be recorded). We also used information on the admission OASIS assessment about whether a patient had a surgical wound (M0482) to further distinguish patients with different types of post acute care needs.

In preliminary analyses we examined the relationship between individual patient characteristics and the length of home health episodes. We also developed a preliminary algorithm for defining different types of patients and examined the distribution of episodes across these groups. A small TAG was convened to review the preliminary algorithm and distributional data, and provide comments during a telephone conference call. The TAG requested additional data and suggested refinements in our approach.

Final analyses were conducted after delivery of the file of all OASIS discharges in 2004 and 2005. The algorithm for defining patient groups was modified to take into account the advice of the TAG. We also examined the sensitivity of the average length of stay (LOS) of each group and the relative size of groups to alternative specifications of post acute care and chronic illness including, in the case of patients with at least one chronic illness, number of comorbidities.

Differences in the sociodemographic, payer and clinical characteristics of the final patient groups were examined as part of our final analyses. No statistical tests of the significance of differences were estimated because we examined a census of all discharges during 2004 and 2005. In addition, given the very large number of observations, even trivial differences will be statistically significant. We focus instead on the magnitude of observed differences among the groups.

[3] The assumption that symptoms are controlled with difficulty or are poorly controlled (i.e., the diagnosis severity is two or greater) is consistent with the M0245 diagnosis being listed as a reason for home health care and recorded in the Medicare payment diagnosis field. It is similar in concept to the primary diagnosis (M0230) where more than 97 percent of all diagnoses have a severity level of two or greater.

Analysis of Types of Patients Served by Home Health Agencies

Home health agency Medicare and/or Medicaid provider numbers are recorded on an OASIS tracking sheet when patients are admitted to home health care (M0010 and M0012). Provider numbers were included on the file delivered by the CMS contractor at the University of Colorado. They were linked to the 2006 Provider of Services (POS) file to obtain information on agency characteristics including how long the agency had been in operation at the end of 2005, whether the agency was hospital-based or freestanding, agency control (e.g., for-profit, non-profit), and geographic location. We also used provider numbers to identify all discharges from the same agency during the two-year period. This count of OASIS discharges was used as our indicator of agency size in all analyses since we concluded from preliminary analyses that information on the POS that might be used to infer agency size (e.g., number of staff nurses, which does not capture per diem or contracted nurses) was inferior to a count of OASIS discharges. While our measure of size only includes Medicare and Medicaid discharges, this is the information needed to determine whether agencies are too small for reporting HHQI measures.

The agency is the unit of analysis when examining agency characteristics and the extent to which agencies serve different types of patients. There were a total of 8,094 agencies with at least one OASIS discharge in 2004 or 2005. All agencies were included in descriptive analyses of agency characteristics. We excluded agencies with too few discharges during the two-year study period to estimate reliable statistics (i.e., agencies with fewer than 100 discharges) when examining the extent to which agencies serve patients classified into the final five patient groups. The 6,113 agencies with 100 or more OASIS discharges in 2004 or 2005 represent the agencies included in analyses of whether agencies serve different types of patients.

In our preliminary analyses, we examined alternative measures of agency size as well as the distribution of the agency characteristics obtained from the POS. These results informed the development of the sampling plan that ultimately did not need to be implemented.

Final analyses included an examination of whether the characteristics of agencies differ by size. For this analysis we grouped all agencies (i.e., all 8,094 agencies with at least one OASIS discharge) into quintiles by size as measured by the number of OASIS discharges in 2004 and 2005 at each agency. To determine whether agencies serve different types of patients, we examined the relative distribution of the five patient groups among agencies with at least 100 discharges (6,113 agencies) that differ in size, ownership and geographic location. As above, no statistical tests of the significance of differences were estimated because we examined a census of all agencies with OASIS discharges in the descriptive analyses, and a census of all agencies with at least 100 OASIS discharges in analyses of whether agencies serve different types of patients.

Analysis of Performance of Publicly-Reported Quality Indicators

The unit of analysis when examining the performance of the 12 HHQI measures was the home health episode. All discharges in the two-year period were included in these analyses. However, when determining the proportion of episodes improving in an HHQI quality measure, CMS excludes episodes that are not eligible to have a particular outcome. For example, home health episodes ending in death currently are excluded when determining the percent of episodes with each HHQI outcome. Other exclusions are identified in Table 2 and vary by HHQI measure.

We also followed the CMS procedure of using the ROC assessment instead of the SOC assessment to determine patient status at baseline and the value of all risk-adjusters when the home health episode (i.e., the period from admission to discharge) was interrupted by an inpatient stay followed by return to the agency. In those cases where there was more than one interruption for an inpatient stay, we used the ROC assessment immediately preceding discharge.

The criteria used to evaluate each HHQI measure include: (1) the share of each patient group with the potential to have the outcome; (2) the extent to which each unadjusted outcome varied among the patient groups; and (3) the skewness of the quality indicator (i.e., whether a very high proportion of eligible episodes either had or did not have the outcome regardless of patient group).

The extent to which risk-adjustment reduced differences in unadjusted outcomes across the five patient groups then was examined. Logistic regression, the statistical method currently used by CMS to risk-adjust OBQI outcomes, was used to estimate risk-adjustment models for all 12 publicly-reported measures.[4] The theory and evidence-based logistic regression models developed for risk-adjusting OBQI outcomes in the earlier project were employed here. For each outcome we estimated a *core model* with a common set of risk factors used to risk-adjust each HHQI quality measure, and then a *full model* where the common set of risk factors is supplemented by additional risk factors specific to each outcome (Murtaugh et al., 2007; Murtaugh et al., 2006a).

Risk-adjustment models of the HHQI outcomes initially were estimated separately for each patient group. The purpose was to examine the consistency across all five patient groups of the effect of risk factors (i.e., the direction and magnitude of their effect) when modeling each outcome. Model statistics, discussed below, also were compared to examine the extent to which there was variation across the groups in the explanatory power of the risk-adjustment models for each outcome.

We then estimated risk-adjustment models of all HHQI outcomes pooling the data for all five patient groups. This is analogous to the national risk-adjustment models

[4] CMS currently does not risk-adjust adverse events and publicly reports the percent of an agency's eligible episodes with Emergent Care for Wound Infection without risk-adjustment. The CMS contractor at the University of Colorado, however, is working on a risk-adjustment model for this HHQI indicator.

developed by CMS using pooled data from all agencies. The predicted probability of an outcome for all eligible episodes and the risk-adjusted percent of eligible episodes with an outcome by patient group were estimated from the risk-adjustment models based on pooled data.

Finally, we estimated risk-adjustment models of all HHQI outcomes pooling the data for all five patient groups (as above) and now adding to each full risk-adjustment model *binary indicators defining the five patient groups*. (Four "dummy variables" representing four of the five patient groups were included as explanatory variables in each risk-adjustment model with the post acute restorative care group as the omitted category.) The magnitudes of the model parameters for the dummy variables are indicators of potential bias in the risk-adjustment models.

Two model statistics -- R-squared and C statistics -- were estimated for all risk-adjustment models of HHQI outcomes. The R-squared statistic is a measure of the amount of variance in the outcome that is explained by the risk-adjusters included in the model. It is the squared correlation between the observed and predicted value of the dependent variable. This is the method used by the CMS contractor at the University of Colorado to estimate the R-squared statistics in publicly released reports describing current risk-adjustment models. The C statistic is a measure of how well the risk-adjusters in the model correctly classify the outcome examined; a completely accurate model would have a C statistic of 1.0, while a model that performed no better than chance would have a C statistic of 0.5.

IV. RESULTS: DEFINING AND DESCRIBING DIFFERENT TYPES OF HOME HELATH PATIENTS

The first question addressed in this project is whether clinically meaningful groups of home health patients can be identified. In particular, whether persons who primarily have short-term post acute care needs can be identified using OASIS data, as well as those who are chronically ill and have more long-term care needs. The steps followed to develop the algorithm for defining patient groups are described below. This is followed by a description of the characteristics of patients classified into each of five groups.

Algorithm Defining Patient Groups

Preliminary work primarily focused on developing a list of medical diagnoses representing chronic conditions. A synthesis of medical diagnoses used in surveys and other studies to identify persons who are chronically ill (Table 3), as well as prior work conducted by the project team examining the types of home health patients served before and after the implementation of the Medicare prospective payment system (PPS) (Murtaugh et al., 2006b) were used to develop an initial list. The data file created to evaluate home health PPS (a 5 percent sample of Medicare admissions in federal fiscal years 2000-2002) was used to estimate the proportion of admissions with a medical diagnosis indicating a chronic condition. We found that over 70 percent of admissions had one or more chronic conditions (not shown).

The initial list of medical diagnoses was presented to a small TAG convened to review our preliminary algorithm for defining patient groups. They suggested some changes (e.g., use OASIS wound items to identify individuals with chronic skin ulcers as opposed to an ICD-9-CM code that they considered too broad) and requested additional data to evaluate the reasonableness of the algorithm for distinguishing persons with a chronic illness from other individuals. Specifically, TAG members asked for data on the primary and other OASIS diagnoses of patients who were *not* classified as having a chronic condition. Further revisions were recommended resulting in a final list of medical diagnoses to be used to identify persons with a chronic illness (Table 4).

We also presented to the small TAG a preliminary algorithm dividing the home health population into those with and without: (1) a chronic condition; (2) a hospital stay prior to admission; and (3) a surgical wound. While the TAG agreed that the algorithm identified important subgroups of the home health population, they also identified other types of patients of potential importance. In particular, persons potentially having end-of-life needs (e.g., those with a life expectancy of six months or less recorded on OASIS), and persons with other types of inpatient stays during the 14 days prior to home health admission (e.g., SNF stays). Whether to try to carve out a group of home health patients potentially having end-of-life needs was discussed with our ASPE

project officer and we concluded that it was beyond the scope of this project. Post-TAG revisions in the algorithm (see below) addressed the issue of persons with other types of inpatient stays prior to home health admission.

Post-TAG Revisions in the Algorithm

The high proportion of home health admissions with at least one chronic condition led us to rethink our approach to identifying individuals who are chronically ill. One of the TAG members suggested that we consider multiple chronic conditions and not just the presence or absence of any condition. Following a review of the literature on comorbidity (see Section II above), we modified our algorithm to better identify home health patients likely to have substantial concurrent and long-term needs for chronic disease care and worse HHQI outcomes. These individuals were defined as persons admitted with chronic conditions that are not well controlled in two or more body systems. The body systems are the MDCs of the ICD-9-CM coding system.[5] Conditions that are not well controlled are those with a severity rating of two or greater on OASIS.

We classified persons as having post acute care needs in our initial algorithm if they had an inpatient hospital stay during the 14-day period prior to home health admission. We subdivided persons with post acute care needs into those with and without a surgical wound. Comments made by the TAG as well as other post acute care experts led us to revise this approach. Empirical information on patterns of Medicare post acute care and comments by experts leading a CMS project to develop and test a uniform post acute care assessment instrument, indicate that virtually all inpatient rehabilitation facility (IRF) stays are preceded by hospital stays. The prior hospitalization will not be reported on OASIS if the IRF stay is 14 days or longer, or when there is under-reporting of hospital stays preceding the patient's location immediately before home health admission. An analogous situation exists for SNF care immediately preceding home health admission. Indeed, Medicare coverage of SNF care is conditional on an acute care hospital stay of at least three consecutive days ending within 30 days of SNF admission. Based on this information, we revised our algorithm for identifying patients with post acute care needs to include individuals with an IRF or SNF stay during the 14-day period prior to home health admission.

We also reconsidered our approach to relying solely on the OASIS surgical wound item (M0482) to identify patients likely to have short-term post-operative care needs. This was motivated in part because the use of IRFs and SNFs following orthopedic procedures could result in surgical wounds being healed by the time patients are admitted to home health agencies. ICD-9-CM diagnosis codes for care related to an injury or trauma, as well as codes for surgical and orthopedic aftercare were identified

[5] The literature suggests that the presence of chronic conditions in different clinical domains contribute to an array of negative outcomes. We used the ICD-9-CM MDCs as a proxy for different clinical domains since budget and time limitations prevented development of clinical domains specific to this project.

and used in addition to the OASIS surgical wound item to identify patients likely to have short-term post-operative care needs (see Table 5).[6]

The final algorithm classifies all home health episodes into five mutually exclusive and exhaustive groups based on OASIS data recorded at home health admission. The algorithm first divides episodes into: (1) those where patients have chronic conditions that are not well controlled in two or more body systems; and (2) all others. We refer to patients in the former group as "clinically complex" in the remainder of this report. The algorithm then divides each of these two groups into: (1) "post acute care" admissions (i.e., patients with an inpatient stay in a hospital, IRF, or SNF in the 14 days prior to home health admission); and (2) "community" admissions.[7] The non-clinically complex post acute care group is further divided into: (1) "restorative care" admissions (i.e., patients with a surgical wound, a diagnosis of injury or trauma, or a surgical or orthopedic aftercare diagnosis); and (2) all others.

The final algorithm for defining the patient groups is presented graphically in Figure 1. The names given to the five mutually exclusive and exhaustive groups, the percent of all episodes they represent, and the average home health LOS for each group are:

1. Post Acute: Clinically Complex -- 17.6 percent of all admissions and average LOS of 58.7 days.

2. Community Admission: Clinically Complex -- 8.8 percent of all admissions and average LOS of 90.0 days.

3. Post Acute: Restorative Care -- 41.2 percent of all admissions and average LOS of 40.1 days.

4. Post Acute: Other -- 10.7 percent of all admissions and average LOS of 55.4 days.

5. Community Admission: Other -- 21.7 percent of all admissions and average LOS of 66.0 days.

To facilitate the presentation of results, these groups are reordered in all subsequent figures and tables. Community admissions are listed first (i.e., Clinically Complex followed by the "Other" group), followed by the Post Acute Care groups (i.e., Clinically Complex, Restorative Care, and the "Other" group).

[6] The process for identifying injury and trauma ICD-9-CM codes is straightforward. We included all "Injury" codes (which include trauma diagnoses) in the "Injury and Poisoning" MDC of the ICD-9-CM coding system and then identified related V-codes.

[7] There are four specific types of inpatient facilities that can be checked under the OASIS item concerning inpatient stays during the 14 days preceding home health admission (M0175): (1) Hospitals; (2) Rehabilitation facilities; (3) SNFs; and (4) Some other type of nursing home. Virtually all "community admissions" (98.6 percent of episodes) had none of the four types of inpatient facilities checked. The balance (1.4 percent of episodes) had stays in nursing homes other than SNFs.

Distribution of Chronic Conditions that Are Not Well Controlled by Clinically Complex Group

The distribution of chronic conditions that are not well controlled (i.e., conditions with a severity level of two or greater) is presented in Table 6 for the two clinically complex groups. The conditions are grouped into the 18 categories listed in Table 4. Diabetes and hypertension were the most common conditions overall. A greater percent of clinically complex community admissions had a diagnosis of hypertension relative to clinically complex post acute admissions (57.2 percent versus 44.1 percent). It was the reverse for diabetes (46.9 percent versus 50.2 percent). Other conditions notably more common among clinically complex community admissions than clinically complex post acute admissions include arthritis and musculoskeletal diseases (33.7 percent versus 20.2 percent), dementia (11.6 percent versus 6.7 percent), and Alzheimer's or other cerebral degeneration (8.3 percent versus 3.6 percent). Conditions that were notably higher among post acute clinically complex admissions relative to clinically complex community admissions include chronic pulmonary disease (30.6 percent versus 19.9 percent), heart failure, (24.3 percent versus 15.0 percent), acute myocardial infarction or chronic ischemic heart disease (18.2 percent versus 11.4 percent), and cardiac dysrythmias (11.9 percent versus 5.7 percent).

Table 7 lists the most common pairs of chronic conditions in different body systems that are not well controlled by clinically complex group. The conditions listed in Table 7 represent ICD-9-CM codes at the three-digit level (i.e., excluding decimal places) and, therefore, are more specific conditions than those reported in Table 6. The most frequent pair of conditions for both clinically complex groups was diabetes and hypertension. Interestingly, depressive disorder appears twice in the list of 20 most common pairs of conditions for clinically complex community admissions (9th and 19th most common pairs) and not at all among clinically complex post acute admissions. Similarly, Alzheimer's disease and other cerebral degenerations as well as dementia were part of the 11th and 16th most common pairs, respectively, among clinically complex community admissions, but do not appear at all on the list of 20 most common pairs for clinically complex post acute admissions.

Distribution of Sociodemographic, Payer and Clinical Characteristics by Patient Group

Table 8-a through Table 8-m compare the characteristics on admission of all five patient groups. Overall, most patients were at least age 75 on admission and slightly less than two-thirds were female. The age and gender distributions do not differ markedly by groups although the community admission "other" group had the highest proportion of individuals age 85 or older on admission (36.1 percent) while the post acute clinically complex and restorative care groups had the smallest shares of persons age 85 or older (21.7 percent and 22.8 percent, respectively) (Table 8-a). A little over

three-quarters of all patients were living in their own homes and a majority lived with their spouse or other family member (Table 8-a). A larger share of the two community admission groups (10.2 percent of the clinically complex group and 16.0 percent of the "other" group) was living in a "board and care or assisted living" facility compared to those in other groups, and fewer of the community admission groups lived with spouses (less than 30.0 percent) compared, in particular, to the post acute restorative care group (43.0 percent). The individuals in all groups were more likely to rely on unpaid help to provide assistance, although more than one-quarter of the community admissions (26.5 percent of the clinically complex and 32.4 percent of the "other" group) relied on paid help other than home health agency staff. That was the case for less than 18.0 percent of any of the post acute groups (Table 8-a).

The nurse or therapist completing the admission OASIS assessment is asked to check all payers from a list of possible categories. Medicare fee-for-service is by far the most common category checked overall (84.4 percent). Medicaid fee-for-service was next most common (10.0 percent) followed by Medicare HMO/managed care (9.2 percent). Differences among the five groups were not large although 14.8 percent of clinically complex community admissions had Medicaid fee-for-service checked compared to 7.7 percent of the post acute restorative care group (Table 8-a).

The percent of patients discharged from inpatient facilities during the 14-day period preceding home health admission is reported in Table 8-b. Overall, 55.8 percent were discharged from a hospital, 11.1 percent from a rehabilitation facility that includes rehabilitation units of short-term general hospitals, 10.2 percent were discharged from SNFs, and less than 1 percent were discharged from some other type of nursing home. Because of the approach used to define the five patient groups, none of the community admission patients were discharged from hospitals, rehabilitation facilities or SNFs, and less than 2 percent were discharged from some other type of nursing home.

Table 8-c reports the frequency of the chronic conditions analyzed in this project by patient group. (See Table 4 for the list of ICD-9-CM codes defining each of the 18 chronic condition groups.) Diagnosis severity was *not* considered when determining the percent of episodes with chronic conditions presented in this table. For this reason, the reported prevalence of chronic conditions on admission for the clinically complex groups is slightly higher in Table 8-c than in Table 6 where the prevalence of chronic conditions with a severity rating of two or greater is reported.

Overall, patients were admitted with at least one chronic condition in nearly three-quarters of all episodes (Table 8-c). Patients had only one of the 18 chronic conditions in a third of all episodes, and exactly two chronic conditions in 24.7 percent of all episodes. Because of the approach used to define the patient groups, all patients in the two clinically complex groups had two or more of the 18 chronic conditions. Diabetes and hypertension were the most common conditions with roughly half or more of clinically complex patients admitted with these diagnoses compared to less than one-quarter, in general, of the other groups. Other notable findings when comparing the patient groups include a higher proportion of patients with dementia or Alzheimer's

disease in the clinically complex groups relative to others, and similarly, higher proportions with depression. Heart failure, on the other hand, was most common among two of the post acute groups: 24.9 percent of the clinically complex group, and 18.1 percent of the "other" post acute group were admitted with this diagnosis.

The relative frequency of *primary* diagnosis on admission is reported in Table 8-d. Overall, 19.0 percent of episodes had a primary diagnosis of "abnormal gait" or other symptoms involving nervous and musculoskeletal systems (an ICD-9-CM code of 781). The next most common primary diagnosis -- diabetes (an ICD-9-CM code of 250) -- was recorded much less often (6.3 percent of all admissions). Among the groups, "abnormal gait" is the most common primary diagnosis for the post acute restorative care group (29.1 percent) and the community admission "other" group (18.3 percent). Diabetes is the most common diagnosis for the two clinically complex groups (22.7 percent of clinically complex community admissions and 12.5 percent of clinically complex post acute admissions). Heart failure is the most common diagnosis for the post acute "other" group (10.3 percent). The primary diagnosis on admission (and, very rarely, the first secondary diagnosis) was used to classify patients into the four diagnosis groups with the potential to affect Medicare payment prior to the change in the Medicare PPS on January 1, 2008. Almost 30 percent of all patients had a primary diagnosis classified into the PPS orthopedic group. Among the five patient groups, 42.2 percent of the post acute restorative care group had a primary diagnosis in the PPS orthopedic category, as did 31.1 percent of the community admission "other" group.

There are three prognosis items on OASIS. The relative distribution of these items by patient group is reported in Table 8-e. Overall, regardless of item, the prognosis was good. Even within the five groups, the prognosis for the majority of patients was good. The largest difference among the groups is in rehabilitative prognosis. Just short of 85 percent of the post acute restorative care group had a good rehabilitative prognosis compared to 65.2 percent of clinically complex community admissions.

The relative distribution of sensory and communication impairments across the patient groups is presented in Table 8-f. Each of three items on OASIS (i.e., vision, hearing, and verbal expression) was dichotomized into any impairment (i.e., a value of one or higher) versus no impairment. A pattern emerges with regard to sensory and communication impairments that carries over into other clinical dimensions. Specifically, clinically complex community admissions have the highest rate of impairment (levels approaching 50 percent on the three items examined here) and the post acute restorative care patients have the lowest rate of impairment (here, less than half that of the clinically complex group in two out of the three measures).

The relative distribution across the patient groups of a range of physiologic problems recorded on OASIS is reported in Table 8-g. Overall, close to two-thirds of all admissions (63.7 percent) had dyspnea recorded on admission (which includes shortness of breath when walking more than 20 feet or climbing stairs) while 53.4 percent report at least daily pain. A little over a third of all patients (36.6 percent) had urinary incontinence or a catheter on admission. Within the groups, urinary and bowel

incontinence was highest for community admissions (in particular, the clinically complex group) and lowest for the restorative care group. A higher proportion of all three post acute groups reportedly had a urinary tract infection in the 14 days prior to home health admission compared to community admissions. Obesity was most common among the clinically complex groups (roughly 20 percent of each group was obese) relative to the other groups.

The prevalence of skin lesions on admission is reported in Table 8-h. Overall, 62.0 percent of patients had a skin lesion or open wound on admission, with 30.8 percent reported to have a surgical wound, 6.4 percent a pressure ulcer and 2.0 percent a stasis ulcer. Because of the way the five patient groups were defined, a far higher share of the post acute restorative care group had a surgical wound (56.9 percent) than any of the other groups and, by definition, the patients in the post acute "other" group did not have surgical wounds. Among those in the four groups with a surgical wound, a much larger share was reported as not healing among those in the community admission groups relative to the other two groups.

The relative frequency of mental and emotional disorders is reported by patient group in Table 8-i. Where the OASIS items have multiple categories indicating greater frequency of symptoms or greater impairment, dichotomous measures were created by grouping together all categories indicating any impairment or deficit (i.e., values of one and higher). An exception is the anxiety measure where we report the frequency of anxiety occurring at least daily. Overall, 42.1 percent of patients were classified as having some type of confusion on admission (this includes 0.28 percent of patients reported to be nonresponsive). The next most common problem overall was some form of cognitive impairment (34.7 percent of all admissions) followed by depressed mood (20.4 percent). The pattern of much higher levels of impairment among clinically complex community admissions relative to patients in the post acute restorative care group is evident here. On all measures reported in Table 8-i, the highest relative frequencies are among clinically complex community admissions and the lowest among post acute restorative care admissions. The community admission "other" group tends to be the next most impaired but it is interesting to note that the post acute clinically complex group has relatively high levels of daily anxiety and depressed mood.

Dependence *prior to admission* in the three activities of daily living (ADLs) and one instrumental activity of daily living (IADL) publicly-reported in HHQI are presented in Table 8-j. Overall, dependence in ambulation was most common (62.3 percent of all admissions required the help of an assistive device, human help, or were unable to ambulate prior to admission). Not quite half of all admissions were dependent in the remaining three functional items prior to admission. The pattern noted above again appears in this domain when the five groups are compared. Clinically complex community admissions had the highest rates of dependence in all four items prior to admission while post acute restorative care admissions had the lowest rates. "Other" community admissions had the second highest rate of dependence in all four functional measures prior to admission.

Physical functioning *on admission* is reported in Table 8-k. The percent dependent in the three ADLs and one IADL was higher on admission, relative to functioning *prior to* admission, across all five groups. More than 70 percent of all admissions were dependent in bathing, transferring, or ambulation, and 56.1 percent were dependent in oral medication management. The increase in dependence is particularly striking for post acute admissions. This is consistent with at least some individuals in the post acute care group experiencing a traumatic event (e.g., a fractured hip from a fall) resulting in an immediate decline in physical functioning. Public reporting and the Medicare home health PPS also could encourage reporting of dependence on admission across all groups. As a result of the relatively large increase in dependence among post acute admissions, there is less variation in physical functioning on admission across the five groups than there is *prior to* admission. For oral medication management, however, there still are notable differences. A much larger share of the two groups of clinically complex patients (post acute and community admissions) were dependent in oral medication management on admission compared to the post acute restorative care group.

Table 8-k also includes the distribution of the number of ADL and IADL dependencies reported on OASIS with the count ranging from zero to 14 dependencies. Overall, the mean number of ADL and IADL dependencies was 6.6 with almost half of all admissions dependent in five to nine of the 14 ADLs and IADLs.

The types of care received or planned on admission are presented by patient group in Table 8-l. By far the most common type of care recorded on OASIS that agencies expect to provide is ten or more therapy visits (i.e., physical, occupational or speech therapy visits). Overall, the admission OASIS indicated that the plan of care for 44.8 percent of admissions included ten or more therapy visits. Oxygen was the next most common service which was provided to 12.5 percent of all patients on admission. Relatively few patients were receiving, on admission, the other services recorded on OASIS (intravenous or infusion therapy; parenteral or enteral nutrition; or psychiatric nursing at home). Over half (52.5 percent) of the post acute restorative care group was expected to receive ten or more therapy visits compared to 27.1 percent of the post acute “other” group. Not quite one-quarter (22.9 percent) of the post acute clinically complex group received oxygen on admission with the post acute “other” group having the next highest rate of oxygen use on admission (17.6 percent).

The LOS of home health episodes is reported in Table 8-m. LOS is the number of days between admission and discharge from the home health agency. It includes time spent in inpatient facilities when patients are transferred to an inpatient provider, but not discharged, and subsequently return to the same home health agency. The mean and median LOS, overall, are 55.0 and 34.0 days, respectively. Roughly 15 percent of admissions end within two weeks, and 28.2 percent end in the third and fourth weeks after admission. Another 36.1 percent of home health episodes end between 30 and 60 days for a total of 79.8 percent of all episodes ending within 60 days of home health admission (calculated from data reported in Table 8-m). The remaining 20.2 percent of

episodes lasting 60 days or more include 1.4 percent of all episodes lasting 365 days or longer.

There are large differences among the five patient groups in LOS. The post acute restorative care group has the shortest mean and median LOS (40.1 and 29.0 days, respectively). At the other extreme is the clinically complex community admission group with a mean and median LOS of 90.0 and 56.0 days, respectively. The standard deviations tend to be fairly large across all five patient groups indicating substantial within group variation in LOS. The post acute restorative care group has the smallest coefficient of variation (i.e., standard deviation divided by the mean) and the clinically complex community admission group the next smallest (1.23 and 1.37, respectively). The two "other" groups have the largest coefficients of variation (1.57 and 1.72 for the community admission "other" group and the post acute admission "other" group, respectively).

The overall share of discharges lasting more than a year is quite small (1.4 percent; calculated from numbers in Table 8-m) although there are notable differences among the five groups. Only episodes that *begin and end* in a one-year time period, as noted above, are included when determining publicly-reported outcomes. Because of differences among the patient groups in the percent of episodes exceeding a year, our results suggest that some groups may be overrepresent in HHQI (e.g., the post acute care restorative care group where only 0.4 percent of admissions exceed one year) while others may be underrepresented (e.g., clinically complex community admissions where 3.6 percent of admissions exceed a year). This assumes that the five patient groups have similar rates of inpatient care during home health episodes since a *new* HHQI episode is created when patients transfer to an inpatient facility and subsequently return to the same home health agency.

V. RESULTS: TYPES OF PATIENTS SERVED BY HOME HEALTH AGENCIES

The second key question addressed in this project is the extent to which agencies serve different types of patients. Agency provider numbers recorded on the OASIS Tracking Sheet at admission were used to identify all discharges from the same agency during calendar years 2004 and 2005. The count of OASIS discharges was used as our measure of agency size (see Methods Section). Agency provider numbers, in addition, were linked to the CMS POS file to obtain information on agency characteristics (e.g., length of operation, geographic location). The characteristics of all agencies with at least one OASIS discharge during the two-year study period are described first, followed by the results of our analysis of whether agencies serve different types of patients.

Characteristics of Home Health Agencies

The 8,094 home health agencies with at least one OASIS discharge were divided into quintiles by size (e.g., the 20 percent of agencies with the fewest discharges are in the first quintile, the 20 percent of agencies with the greatest number of discharges are in the top, or fifth, quintile). Agency characteristics are reported in Table 9 by quintile. One of the objectives of combining two years of data was to minimize the number of agencies with too few discharges for public reporting of one or more of the 12 HHQI quality measures. Twenty percent of agencies, however, have fewer than 75 OASIS discharges (Table 9). The mean size of agencies in the 0-20th percentile is 30.0 discharges. While episodes constructed for OBQI (and, therefore, HHQI) are not the same as the episodes analyzed here, the results do suggest that a substantial share of agencies will have too few HHQI episodes in a single year for reporting of all outcomes. The home health agencies in the top quintile (80th-100th percentile in size), in contrast, averaged a little over 2,800 discharges.

The length of operation of agencies as of January 1, 2006 (the day after the two-year period for identifying OASIS discharges) is presented in Table 9. Overall, 6.6 percent of agencies had been in operation less than one year while 11.7 percent had been in operation 30 years or more. The substantial number of agencies in operation less than three years (21.1 percent, calculated from numbers reported in Table 9) is consistent with other data indicating rapid growth in Medicare-certified home health agencies beginning in 2002 (MedPAC, 2007). Not surprisingly, there is a strong relationship between agency size and length of operation at the extremes in the distribution. Agencies in operation less than one year are 6.6 percent of agencies overall but represent 28.1 percent of agencies in the lowest quintile in size. At the opposite extreme, agencies in operation 30 years or more are 11.7 percent of agencies overall but represent 23.3 percent of all agencies in the top quintile in size.

Almost 80 percent of all agencies (79.7 percent) are freestanding while the balance of home health agencies (20.3 percent) is hospital-based (Table 9). Interestingly, the share of agencies that is freestanding decreases with each quintile in agency size indicating that freestanding ownership is negatively associated with size while hospital-based agencies are disproportionately medium to large in size. There is a similar trend when for-profit agencies are compared with all others. Overall, 61.8 percent of agencies are for-profit, 26.7 percent are non-profit, and 11.5 percent are government owned (e.g., operated by county Departments of Public Health). The share of agencies that is for-profit decreases with each quintile in agency size from a high of 77.8 percent of agencies in the lowest quintile to 45.8 percent of agencies in the top quintile in size.

The number of home health agencies in each of the nine Census divisions is highly variable (Table 9). Almost one-quarter of all agencies (24.9 percent) is located in the West South Central Division (Arkansas, Louisiana, Oklahoma, Texas). The next largest share (16.8 percent) is in the East North Central Division (Illinois, Indiana, Michigan, Ohio, Wisconsin). The smallest number of agencies (3.8 percent) is in New England (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont). The typical size of agencies also varies by Census division. Over one-third of the agencies (34.6 percent) in the bottom quintile (i.e., the smallest size quintile) is located in the West South Central Division, while only 8.3 percent of the agencies in the top quintile are in this division. In contrast, the largest share of agencies in the Mid-Atlantic, South Atlantic and New England Divisions is in the top quintile in size and smallest share in the bottom quintile.

Analysis of Differences in Patients Served

Table 10 reports the distribution of the five patient groups by agency characteristics after excluding agencies with too few discharges for reliable estimates (i.e., agencies with fewer than 100 discharges in the two-year period). The total number of agencies declines from 8,094 to 6,113 with the exclusion of 1,981 agencies with fewer than 100 OASIS discharges (24.5 percent of all agencies).

The relative frequency of discharges by patient type at the agency level is reported in the first row of Table 10 and graphically in Figure 2. Agencies are weighted equally in Table 10 and Figure 2 so the relative distribution of patients is different than when examining all discharges during the two-year period as a single group. For example, clinically complex community admissions are 13.4 percent of an agency's discharges on average (Figure 2) compared to 8.8 percent of all discharges nationally (Figure 1). Similarly, post acute restorative care patients are 34.1 percent of an agency's

discharges on average (Figure 2) compared to 41.2 percent of all discharges nationally (Figure 1).[8]

The differences noted above suggest that agency size is related to the types of patients served. This is confirmed when the share of patients of each type discharged from agencies of different sizes is compared (Table 10). As the size of the agencies increases, there is a decline in the proportion of community admissions (both clinically complex and "other") and a sharp rise in the proportion of post acute restorative care patients. The latter group represents 25.4 percent of patients served by agencies in the smallest size quintile and 44.5 percent of those served by agencies in the largest size quintile.

There also is considerable variation in the types of patients served by hospital-based as opposed to freestanding agencies, as well as for-profit versus other agencies. Hospital-based agencies, perhaps not surprisingly, serve a relatively large share of post acute admissions -- especially restorative care patients. The restorative care group represents 44.2 percent of hospital-based agency discharges, on average, and 30.9 percent of freestanding agency discharges on average. For-profit agencies, interestingly, serve a much larger share of community admissions relative to other agencies. The two community admission groups combined represent 45.8 percent of discharges from for-profit agencies, on average, and 26.4 percent of discharges from all other agencies. Conversely, the post acute restorative and post acute "other" groups represent a notably higher share of discharges, on average, from non-profit and government agencies compared with for-profit agencies.

There also are sizeable differences in the types of patients served by agencies located in different Census divisions (Table 10). This may be partly a function of differences in the characteristics of the agencies located in each division and variation in the supply of other post acute care providers (e.g., IRFs). Community admissions (clinically complex and "other") represent a greater share of discharges, on average, from West South Central Division agencies than from agencies in the other divisions. Post acute restorative care patients represent a greater share of discharges from West North Central Division agencies and post acute "other" patients represent a greater share of discharges from New England Division agencies compared to agencies in other divisions. Figure 3 through Figure 6 graphically summarize the results of the analysis of whether agencies serve different types of patients.

[8] We also examined the relative frequency of discharges by patient type at the agency level *including agencies with fewer than 100 discharges*. The inclusion of small agencies has the effect of accentuating the differences noted in this paragraph. Specifically, when smaller agencies are included: the share of clinically complex community admissions is 15.7 percent as opposed to 13.4 percent without the small agencies; and, the share of patients in the post-acute restorative care group is 30.3 percent as opposed to 34.1 percent. The impact of including the smaller agencies on the share of discharges in the other three groups is relatively minor.

VI. RESULTS: PERFORMANCE OF PUBLICLY-REPORTED QUALITY INDICATORS

The first step in examining the performance of publicly-reported quality indicators for major subgroups of the population was to: (1) examine differences in the percent of each of the five patient groups eligible to have the 12 outcomes; and (2) determine the extent to which those eligible in each of the five groups differed in unadjusted outcomes. We then examined the extent to which risk-adjustment reduced differences in outcomes.

Unadjusted Differences in HHQI Outcomes by Patient Group

Percent Eligible to Have HHQI Outcomes

Overall, more than half of all episodes had the potential to improve on six of the eight health status outcomes (Table 11). The share of eligible episodes was particularly high for ambulation and bathing (roughly 80 percent of all episodes were eligible to have each outcome) indicating that most individuals had some limitation in their ability to perform these activities on admission. For two of the health status measures the share of persons eligible to have each outcome was roughly a third of all episodes or less: Improvement in Status of Surgical Wounds (11.6 percent), and Improvement in Urinary Incontinence (32.6 percent). The result for Improvement in Status of Surgical Wounds partly reflects the approach used to define the five patient groups. However, even for the post acute restorative care group where 56.9 percent of episodes had a surgical wound reported on admission (Table 8-h), only 22.0 percent were eligible to have the outcome. The two main reasons episodes were ineligible were: (1) wounds were "fully granulating" on admission (i.e., at the best level of the OASIS surgical wound healing item) and could not improve; and (2) wounds could not be observed on admission or discharge because wound dressings could not be removed at the time of the admission or discharge assessment.

Other differences among the five groups in the percent eligible to have health status outcomes include the modestly lower percents eligible for four of the six measures among the post acute "other" group relative to the remaining groups. This is consistent with medical diagnoses (e.g., heart failure, pneumonia, diabetes, and symptoms such as syncope and fever of unknown origin) being the most common primary diagnoses on admission for the post acute "other" group (Table 8-d). Also, there was a fairly large difference in the percent eligible to Improve in Management of Oral Medications between clinically complex community admissions and post acute restorative care patients. This may reflect the much higher level of cognitive impairment among the former relative to the latter group (Table 8-i).

Virtually all episodes were eligible to have the three utilization and one adverse event outcomes (Table 11). Only patients whose home health episode ends with death at home are excluded from the Acute Care Hospitalization and Emergent Care for Wound Infection outcomes. In addition to patients who die at home, a very small number of unknown or missing values was excluded when determining eligibility for the Discharge to the Community and Emergent Care outcomes (see Table 2). There is little difference across the five patient groups in eligibility for the utilization and adverse event outcomes because of the very limited reasons for exclusion.

Differences in Unadjusted Outcomes

The unadjusted HHQI outcomes for each of the five patient groups also are presented in Table 11. The post acute restorative care group had the best outcome (i.e., highest percent improving among those eligible to improve) on all eight of the health status outcomes while the two community admission groups had the worst outcomes. On seven of the eight health status measures, the clinically complex community admission group had worse outcomes than the community admission "other" group although in several cases the differences were quite small. The magnitude of the differences between the best and worst groups varies by health status measure. There only was a difference of 5.0 percentage points in Improvement in Pain Interfering with Activity between the best and worst groups (62.8 percent versus 57.8 percent improving). In contrast, the difference was 20 percentage points or more on several of the other measures with the largest difference between the best and worst groups on Improvement in Bathing (a high of 71.4 percent and a low of 45.8 percent).

The unadjusted differences among the five groups on the utilization and adverse event outcomes are much narrower. All of the measures are highly skewed and require some explanation since the percent of episodes with these outcomes differs considerably from percents reported in HHQI. As noted in the Background Section, HHQI outcomes currently are based on an agency's "episodes" of home health care that both *begin and end* in a one-year time period with a *new* HHQI episode created each time a patient is transferred to a hospital (or other inpatient facility) and subsequently returns to the same agency. Relative to the definition of an episode used in our project (i.e., from home health admission to discharge from the agency), the HHQI approach leads to underrepresentation of *long* home health stays that are not interrupted by inpatient care, and overrepresentation of stays that *are* interrupted by inpatient stays. The utilization episodes (i.e., new HHQI episodes) created each time a patient is transferred to a hospital (or other inpatient facility) and then returns to the same agency are not part of our file. They are subsumed in longer episodes that ultimately end with discharge from the agency to the community, to an inpatient facility without return, or death in home care.

The result of the approach used to create episodes in this project is that relatively few episodes have an Acute Care Hospitalization (3.7 percent) since only episodes that end with transfer to an inpatient facility with the patient discharged from the agency (OASIS assessment type 7) were counted as episodes with a hospitalization in our main

measure of Acute Care Hospitalization. An alternative measure where we counted any evidence of a hospital admission including interim and discharge assessments also was estimated. The percent with a hospitalization rises from 3.7 percent to 13.4 percent -- still well shy of the 28 percent reported as the national figure in Home Health Compare. Part of the explanation for the continued discrepancy is that some individuals have multiple hospitalizations (in our file, the average was 1.3 among those with at least one admission). There also is a difference in the denominator used to calculate the percent hospitalized since OBQI requires admission and discharge within the one-year time period being assessed while we include all episodes regardless of length.

Our approach to defining an episode also impacts the percent of episodes discharged to the community. Our overall estimate is 90.7 percent, much higher than the 68 percent figure reported in Home Health Compare. Our overall percent with Emergent Care, on the other hand, is low relative to Home Health Compare (6.7 percent versus 22.7 percent) due to the similarity between the way emergent and inpatient care are counted in OBQI. Emergent Care for Wound Infection, the one adverse event included in HHQI, was very rare among all episodes in our file (0.4 percent) which is comparable to the figure reported in Home Health Compare (rounded to 1 percent).

While the magnitude of the utilization outcomes that we report is not large for hospitalization or emergent care, the relative differences among the groups are substantial. The highest rates of hospitalization were found among two of the three post acute care groups: clinically complex (5.8 percent) and “other” (5.3 percent). These rates are twice that of the post acute restorative care group (2.5 percent). The result for Emergent Care is similar although the relative difference among the three post acute admission groups is not as great. There was little variation across the groups in the percent receiving emergent care for a wound infection.

Risk-Adjusted HHQI Outcomes by Patient Group

Table 12 reports the summary statistics (Pseudo R-squared and C statistics) for the risk-adjustment models for all 12 HHQI outcomes. For each outcome, we estimated a *core model* with a common set of risk factors used to risk-adjust each HHQI quality measure, and a *full model* where the common set of risk factors is supplemented by additional risk factors specific to each outcome (Murtaugh et al., 2007; Murtaugh et al., 2006a). The exception is for models of Improvement in Status of Surgical Wounds, which does not have any outcome-specific risk factors. Risk-adjustment models for the HHQI outcomes initially were estimated separately for each patient group. We then estimated risk-adjustment models of all HHQI outcomes pooling the data for all five patient groups. This is analogous to the national risk-adjustment models developed by CMS using pooled data from all agencies. Finally, we estimated risk-adjustment models of all HHQI outcomes using the pooled data and now adding to each full risk-adjustment model binary indicators defining the five patient groups.

The model statistics for the risk-adjustment models of the health status outcomes reported in the final column of Table 12 (i.e., the statistics for the "All" group) were very similar to the model statistics estimated in our previous project based on a national file of OBQI episodes (Murtaugh, et al., 2007; Murtaugh, et al., 2006a). A comparison of the model statistics for the health status outcomes across the patient groups indicates that the explanatory power for a given outcome fluctuates within a fairly narrow range across the groups. There is no pattern of one group doing better or worse than all others when either the core or full risk-adjustment model statistics are compared across groups.

The model statistics for the risk-adjustment models of the utilization outcomes reported in the final column of Table 12 (i.e., the statistics for the "All" group) are considerably worse than model statistics estimated in our previous project based on a national file of OBQI episodes. The low explanatory power of the risk-adjustment models of utilization outcomes in this project was expected given the highly skewed distribution of these three outcomes. The summary statistics for the risk-adjustment model for the adverse event (Emergent Care for Wound Infection) were poor for the same reason. Given the relatively rare occurrence of Acute Care Hospitalization (3.7 percent of all episodes had this outcome), Emergent Care for any reason (6.8 percent of all episodes), and Emergent Care for Wound Infection (0.6 percent of all episodes), logistic regression may not be the optimal statistical method for risk-adjustment. An examination of other statistical methods that are more appropriate for relatively rare events (e.g., Poisson regression) was beyond the scope of this project.

The parameter estimates for all *full* risk-adjustment models are reported in Table 13-a through Table 13-l.[9] The purpose of estimating separate risk-adjustment models for each patient group was to examine the consistency across all five groups of the effect of the risk factors (i.e., the direction and magnitude of their effect) when modeling each outcome. In general, the risk factors were consistent in their direction, although the magnitude of their effect often varied across groups. The most notable variation was in the effect of the medical diagnoses included in all risk-adjustment models, where in some cases the effect differed both in direction and magnitude.

We also report in the right-most columns of Table 13 under the "All Episodes" heading the full risk-adjustment models using pooled data for all five patient groups. The models were estimated with and without the binary indicators of the patient groups. The parameter estimates for the patient group indicators measure the potential bias in the full risk-adjustment models that *exclude* the indicators. There is a consistent pattern in the direction and magnitude of the patient group parameter estimates in all of the risk-adjustment models of the eight HHQI health status outcomes. The parameter estimates for the two community admission groups are negative in direction and relatively large. This indicates that, relative to the post acute restorative care group, the risk-adjusted health status outcomes for the two community admission groups have the potential to be biased upwards (i.e., the expected improvement in the HHQI health status outcomes

[9] The parameter estimates for all *core* risk-adjustment models are reported in the Appendix.

for the community admission groups could be substantially overestimated). If the risk-adjusted percent improving is overestimated, publicly-reported outcomes will appear worse than they should at agencies serving a disproportionate share of community admissions.[10] The largest potential bias was found in the risk-adjustment model of Improvement in Urinary Incontinence for clinically complex community admissions relative to the post acute restorative care group.

The pattern in the direction and magnitude of the patient group parameter estimates in the risk-adjustment models for the remaining four HHQI outcomes is less consistent. The parameter estimates indicate that all four patient groups, relative to the post acute restorative care group, have the potential to have risk-adjusted Acute Care Hospitalization and Emergent Care outcomes that are biased downwards (i.e., the risk-adjusted rates of hospitalization and emergent care are too low). The same pattern holds for three of the four groups, relative to the post acute restorative care group, for the Emergent Care for Wound Infections outcome. The pattern for Discharge to the Community is similar to that for the health status outcomes with the risk-adjusted outcomes for the two community admission groups, relative to the post acute restorative care group, potentially overestimated by a substantial amount.

The risk-adjusted HHQI outcomes are presented in Table 14. As noted above, we estimated a full risk-adjustment model for each outcome using pooled data across the full set of episodes eligible to have that outcome. These models exclude the individual patient group indicators.[11] The mean of the predicted values for all observations used to estimate a risk-adjustment model will be the same as the unadjusted mean, by definition. For the current analysis, this means that the risk-adjusted predicted probability shown in the "All" column in Table 14 will be identical to the unadjusted mean presented in the "All" column of Table 11. For each of the patient groups, however, the mean of the predicted values presented in Table 14 will vary from their unadjusted means shown in Table 11 to the extent that the risk factors have different effects on the outcomes of specific groups and to the extent that important risk factors for a subgroup are omitted from the risk-adjustment model. In general, the risk-adjusted outcomes are remarkably similar to the unadjusted percents for each outcome. This is not surprising for the outcomes where the summary statistics for the risk-adjustment models (in particular, the C statistic) were relatively good (e.g., Improvement in Ambulation/Locomotion, Improvement in Bathing, Discharge to the Community). It is more surprising for outcomes where the summary statistics for the risk-adjustment models were mediocre to poor (e.g., Improvement in Pain Interfering with Activity, Improvement in Status of Surgical Wounds, Improvement in Urinary Incontinence). The latter outcomes, however, tend not to vary as much as the former group of outcomes. Poorly performing risk-adjustment models that predict values close to the overall mean, therefore, would appear to be more accurate than in those cases where the unadjusted outcomes vary substantially.

[10] The predicted outcome rate for an agency is subtracted from the agency's observed rate when calculating the publicly reported "adjusted agency outcome rate" (see formula below).

[11] The risk-adjustment models used here correspond to those identified as "All Episodes, Without Patient Group Indicators" in Table 13-a through Table 13-l.

The results also suggest that at least some of the potential bias identified by the parameter estimates for the patient group indicators (reported in Table 13) is reduced by other explanatory variables. This can occur when risk factors included in the risk-adjustment model are relatively uniquely associated to patients in one group or another and partly adjust for differences among groups not associated with the individual risk factors. This conclusion also is supported by the typically very modest increase in the values of the R-squared and C statistics after inclusion of the patient group indicators. The explanatory power of the risk-adjustment models for the 12 HHQI outcomes improved only minimally after the addition of the patient group indicators to the full risk-adjustment models.

Figure 7 through Figure 18 graphically summarize the effect of risk-adjustment for each of the 12 HHQI outcomes. The figures present the overall percent with the outcome when all groups are combined, as well as the unadjusted and risk-adjusted percentage point difference from the overall mean for each patient group. In Figure 7, for example, 37.7 percent of all eligible episodes improved in ambulation. The unadjusted percent improving among clinically complex community admissions is 28.3 percent (37.7 minus 9.4). The risk-adjusted percent improving for the same group is 29.7 percent (37.7 minus 8.0). The unadjusted and adjusted values would be identical if risk-adjustment completely accounted for differences in improvement in ambulation among the clinically complex community admissions as compared to others. The figures graphically demonstrate that there is some bias in the risk-adjusted outcomes consistent with the values of the parameter estimates for the patient group indicators reported in Table 13. In most cases the predicted rates of improvement on health status outcomes, as well as discharge to the community, are high for community admissions and low for the post acute restorative care group relative to their unadjusted values (see Figure 7 through Figure 14, and Figure 16). The remaining outcomes all are highly skewed but some bias consistent with the parameter estimate results still is evident (Figure 15, Figure 17 and Figure 18).

VII. CONCLUSIONS AND IMPLICATIONS

This project addressed four key questions: (1) Can clinically meaningful groups of patients be identified (e.g., post acute, chronically ill); (2) To what extent do agencies serve different types of patients; (3) Do these patients differ in publicly-reported outcomes; and (4) To what extent does risk-adjustment reduce (eliminate) any differences in outcomes. The conclusions and implications of our findings in each area are presented below.

Can Clinically Meaningful Groups of Patients Be Identified?

Five types of patients were identified that differed, by design, in number of chronic conditions in different body systems, inpatient care immediately preceding home health admission, and whether they had a surgical wound or other indicators of short-term post-operative care needs. The five groups also differed in the relative distribution of sociodemographic and clinical characteristics on admission, as well as LOS and home health outcomes.

The starkest difference among the five groups was between the "clinically complex community admission" and the "post acute restorative care" groups. Patients in the former group were much more likely to have sensory and communication impairments as well as cognitive deficits on admission relative to the latter group. The diagnostic profile of these two groups also differed markedly. Diabetes and hypertension were common problems among clinically complex community admissions and a significant minority had Alzheimer's disease or other types of dementia. These diagnoses were reported far less often among patients in the post acute restorative care group. Instead, 42.2 percent had an orthopedic primary diagnosis that affected the score on the clinical dimension of the original Medicare PPS (in place beginning in October 2000) including 29.1 percent with "abnormal gait or other symptoms involving nervous and musculoskeletal systems." Given differences in clinical condition on admission it is not surprising that the mean LOS for clinically complex community admissions was over twice that of the post acute restorative care group (90.0 days versus 40.1 days, respectively).

The five groups were useful for answering the other three questions addressed in this project. Whether they could be useful to clinical administrators or those providing home health care, however, is uncertain. While we were able to identify important broad subgroups within the home health population, there still is considerable clinical variability within each group. The large share of clinically complex patients (both community and post acute admissions) with diabetes and hypertension as well as a host of other vascular system diseases (e.g., cardiac dysrythmia, heart failure) does suggest that efforts to develop and implement evidence-based care for individuals with this constellation of conditions could have significant payoff. In general, multimorbidity

is an important problem in home health care; 26.4 percent of all discharges in 2004 and 2005 had chronic conditions that were not well controlled in two or more body systems.

An important limitation of the five groups created in this project is our reliance solely on OASIS data to classify home health episodes. Under-reporting of medical conditions is of particular concern since the OASIS instrument limits the number of diagnoses that can be recorded to the primary diagnosis and a maximum of five secondary diagnoses *related to the reason for home health care*. Perhaps more important is the potential effect of Medicare PPS financial incentives on home health coding practices (e.g., a shift toward diagnoses that support the need for therapy services) and the growth in the use of V-codes that indicate, for example, "aftercare following surgery or other procedures" (V58) and "rehabilitation procedures" (V57) but not the underlying medical condition. Given these limitations, and the fact that documenting medical diagnoses is relatively new in home health care, our estimates of the number of admissions with chronic conditions and multimorbidity are expected to be low.

To What Extent Do Agencies Serve Different Types of Patients?

We found considerable variation in patients served by agencies that differ in size, ownership, control and geographic location. Perhaps the most surprising result is the strong relationship between agency size and the relative share of two of the five types of patients served. Specifically, as agency size increases the proportion of clinically complex community admissions typically decreases and the proportion of post acute restorative care admissions increases. We also found that hospital-based agencies are more likely to care for post acute home health patients -- in particular, post acute restorative care patients -- relative to other agencies, and that for-profit agencies were more likely to serve community admissions compared to other agencies.

Large differences also were found in the relative distribution of the five types of patients among the nine Census divisions. It is plausible that some of this variation reflects differences in the Medicare and Medicaid populations in different areas of the country. For example, the average age of Medicare beneficiaries is older in some states than in others, (Suchan et al., 2007) and the share of Medicare beneficiaries with disability as their original reason for entitlement also varies (CMS, 2005). However, the magnitude of some of the differences (e.g., the three-fold difference between the New England and West South Central Divisions in the share of clinically complex community admissions) suggests other factors may contribute to these differences. These could include differences in home health agency characteristics, variation in the supply of other types of providers that are potential substitutes for home health care (e.g., SNFs), differences in physician practice patterns, and differences in how OASIS fields used to define patient groups (e.g., admission diagnoses and their severity) are recorded.

Multivariate analysis, which is outside the scope of this project, would better explain the relationship between the individual agency characteristics examined in this

project and the types of patients served since the agency characteristics are correlated. Controlling for geographic differences in potential demand for home health services and the supply of substitutes for home health care would help to clarify the extent to which geographic differences in types of patients served are related to home health agency as opposed to local market factors. Our simple analyses establish, however, that there is substantial variation in the types of patients served by agencies that differ in key characteristics (e.g., control and size). These findings, and the results presented in the next section, reinforce the importance of risk-adjustment and standardized recording of risk factors affecting patient outcomes (e.g., chronic conditions) to the accuracy of publicly-reported outcomes and fairness of HHQI to all types of agencies.

A sizeable share of agencies (24.5 percent) was excluded from analyses of whether agencies serve different types of patients because they had too few OASIS discharges to estimate reliable information on the share of patients served (i.e., fewer than 100 OASIS discharges in a two-year period). The smallest agencies, using the number of OASIS discharges as the measure of agency size, were mainly those in operation less than two years. Assuming the rapid rate of growth of agencies in recent years levels off, a greater share of agencies in the future are likely to have more than 100 discharges in a two-year period. Nevertheless, the number of agencies serving too few home health episodes with the potential to have one of more of the HHQI outcomes is likely to remain substantial, limiting information available on the quality of care of agencies. New agencies are particularly likely to have too few episodes for public reporting of outcomes. Our data suggest as well that there will be considerable variation among Census divisions in the share of agencies with no, or fewer than 12, publicly-reported outcomes.

Do the Five Patient Groups Differ in Publicly-Reported Outcomes?

We first determined the share of each group's discharges that had the potential to have the 12 HHQI outcomes since this is one dimension of the extent to which the HHQI measures capture the quality of care provided to each group. While there was variability in the percent eligible to have each outcome, at least half of the discharges in each group had the potential to have most outcomes. The two outcomes where relatively few discharges had the potential to have the outcome, regardless of group, were: (1) Improvement in Urinary Incontinence; and (2) Improvement in Status of Surgical Wounds. Only patients who were incontinent or had a urinary catheter on admission had the potential to have the former outcome. This represented a substantial minority of patients in all five groups, ranging from a high of 44.4 percent of clinically complex community admissions to a low of 27.2 percent of post acute restorative care admissions, which suggests that it is a salient measure for all groups considering the clinical importance of urinary incontinence.

On the other hand, only 11.6 percent of all discharges had the potential to have Improvement in the Status of Surgical Wounds. These individuals were concentrated in the post acute restorative care group (22.0 percent of this group's episodes) due to the

way the five patient groups were defined. In the context of our work, therefore, this measure is not a good quality indicator except for the post acute restorative care group since fewer than 10 percent of each of the remaining group's episodes had the potential to have this outcome.

The magnitude of differences in *unadjusted* health status outcomes among the five patient groups was more than 20 percentage points in some cases. The post acute restorative care group had the best outcome (i.e., highest percent improving among those eligible to improve) on all eight of the health status outcomes while the two community admission groups had the worst outcomes. The typically worse condition on admission of the individuals in the two community groups relative to the post acute restorative care group clearly appears to affect their rate of improvement over the course of the home health episode.

The percent of episodes with the three utilization outcomes as well as the one adverse event outcome are highly skewed across all groups. This result, at least for the utilization outcomes, partly reflects the approach we chose to defining home health episodes relative to the approach used to define OBQI and HHQI episodes. In any case, while the magnitude of the utilization outcomes that we report is not large for hospitalization or emergent care, the relative differences among the groups are substantial. The highest rates of hospitalization and emergent care were found among two of the three post acute care groups (i.e., the clinically complex and the "other" groups) while the lowest and second lowest rates of hospitalization and emergent care, respectively, were among post acute restorative care admissions.

To What Extent Does Risk-Adjustment Reduce Differences in Outcomes?

Models developed in an earlier project to risk-adjust all 41 OBQI outcomes were employed in this project to estimate risk-adjustment models for the 12 HHQI outcomes (see Methods Section). We found that the risk-adjusted outcomes were remarkably similar to the unadjusted outcomes regardless of group. (If risk-adjustment was perfect, the unadjusted and adjusted values would be identical.) This is not surprising for the outcomes where the summary statistics for the risk-adjustment models -- in particular, the C statistic -- were relatively good. It is more surprising for outcomes where the summary statistics for the risk-adjustment models were modest at best. The latter outcomes, however, tend not to vary as much as the former group of outcomes and predicted values closer to the overall mean (the result of weak risk-adjustment) will not differ much from the unadjusted means.

The potential for bias in the risk-adjustment models, at the same time, was found to be substantial although the actual bias at the *aggregate* level does not appear to be large. Nevertheless, the direction of the bias is of concern. In particular, agencies admitting a relatively large share of community admission could have publicly-reported health status outcomes that are too low (i.e., the adjusted proportion improving is

under-reported), while agencies that admit a relatively large share of post acute restorative care patients could have publicly-reported outcomes that are too high. Risk-adjusted utilization outcomes also appear to favor agencies admitting a relatively large share of post acute restorative care patients. An analysis of individual agency outcomes, which is beyond the scope of this project, is required to better understand the impact on actual agency outcomes and rankings. Among the key issues to be addressed in an agency level analysis is the extent of variability in the predicted outcomes at the agency level (i.e., the precision of the risk-adjusted estimates) and the performance of risk-adjustment models when comparing the HHQI outcomes for the same patient groups across agencies. It also is important to determine whether, as is likely, similar results are obtained when HHQI outcomes are risk-adjusted using the models currently employed by CMS. Finally, other statistical modeling methods (e.g., Poisson regression) may be more appropriate for risk-adjusting highly skewed outcomes. Testing alternative modeling methods is beyond the scope of this project.

Implications

The current approach employed by CMS to adjust agency outcomes uses the following formula for calculating an agency's adjusted outcome rate:

Adjusted Agency Outcome Rate = Observed Agency Outcome Rate +
(Observed National Outcome Rate – Agency Predicted Outcome Rate)

The result is that the "Adjusted Agency Outcome Rate" is close to the "Observed National Outcome Rate" when risk-adjustment is *unbiased*, since the observed and predicted agency rates would essentially cancel each other out. The current CMS approach to adjusting agency outcomes should be reassuring to agencies in those cases where risk-adjustment is weak but unbiased.

The evidence of some bias in the risk-adjusted outcomes at the aggregate level, however, remains a concern. The results raise the possibility that HHQI is unfair to agencies admitting a relatively large share of patients who tend to have worse outcomes. In particular, agencies with a relatively large share of clinically complex community admissions could be disadvantaged compared to agencies serving a large share of post acute restorative care patients. Because there are differences in the types of patients served by agencies that vary in size, ownership and geographic location, some of the differences in outcomes observed across the five patient groups could be caused by systematic differences in the quality of care provided by different types of agencies. It seems more likely, however, that important risk-adjusters are omitted from current models.

There are two straightforward approaches to improving current risk-adjustment, each having important drawbacks. One approach is to separately risk-adjust and report outcomes for the patient groups developed here or other groupings of chronically ill and post acute home health patients. This would permit comparison of the quality of care

provided to important subgroups of patients across different agencies. As noted above, CMS currently assesses publicly-reported nursing home quality indicators separately for a nursing home's short-stay and long-stay residents although there is only limited risk-adjustment that mainly is operationalized through exclusion rules (Mukamel et al., 2008). The major drawback of separately risk-adjusting and reporting outcomes for subgroups of home health patients is that far fewer agencies than currently is the case would have the minimum number of episodes with the potential to have HHQI outcomes (i.e., 20 episodes).

The other approach is to estimate models that allow risk-adjusters to vary in their effect on outcomes depending on key measures defining patient groups (e.g., community versus post acute admission). The drawback to developing risk-adjustment models that include interaction terms is that the substantial increase in the complexity of the models limits the ability of providers and consumers to understand risk-adjustment. This may undermine trust in and support for risk-adjusting patient outcomes.

However, it would be informative to conduct agency level analyses before exploring alternative approaches to risk-adjustment. These analyses would improve our understanding of the extent and impact of bias in risk-adjusted outcomes at the agency level, as well as the relationship among agency and geographic factors, the types of individuals served, and patient outcomes. While the risk-adjustment models currently in use are likely to produce results similar to those reported here, agency level analyses also could examine this issue.

Finally, multiple chronic conditions -- as in other health care settings -- were found to be important contributors to outcomes. Given the limitations of current reporting of medical conditions, consideration may need to be given to including a chronic disease checklist as part of the admission OASIS to improve patient care and the risk-adjustment of outcomes. While simple in concept, implementing a chronic disease checklist could prove challenging. One possibility is to ask patients, or someone they designate, to complete a lay-language chronic disease checklist at the time of admission. Assuming this was feasible, how to integrate the information on chronic diseases with the patient's home health plan of care is just one of numerous issues that would have be addressed. Ultimately, electronic health records with improved transfer of information from acute to post acute care providers should lead to better clinical data on patients at the time of admission. The exception is home health patients admitted from the community who are likely to continue to lack comprehensive OASIS data on their medical conditions absent efforts to improve collection of this information on admission.

The project results provide important insights into the types of patients served by home health agencies and differences in their outcomes on publicly-reported measures. While many questions remain to be answered about the risk-adjustment of publicly-reported outcomes, the findings from this project in several areas provide critical information needed by the Department in its efforts to assess and improve the quality of care provided to the diverse home health population.

REFERENCES

Brook RH, Ware JE, Rogers WH, Keeler EB, Davies AR, Sherbourne CA, Goldberg GA, Lohr KN, Camp P, Newhouse JP. 1984. *The Effect of Coinsurance on the Health of Adults: Results from the Rand Health Insurance Experiment* (R-3055-HHS). Santa Monica, CA: The Rand Corporation.

Centers for Disease Control and Prevention. 2004. *The Burden of Chronic Diseases as Causes of Death, United States*. Available at http://www.cdc.gov/nccdphp/burdenbook2004/ (accessed July 2008).

CMS. 2005. *Health Care Financing Review, Statistical Supplement, 2005.* Washington, DC: U.S. Government Printing Office.

CMS. 2006. *Nursing Home Quality Measures*. Available at http://ww.cms.hhs.gov/NursingHomeQualityInits/10_NHQIQualityMeasures.asp (accessed July 2008).

CMS. 2001. *Quality Monitoring Using Case Mix and Adverse Event Outcome Reports*. Available at http://www.cms.hhs.gov/HomeHealthQualityInits/ (accessed July 2008).

Ellis RP, Pope GC, Iezzoni LI, Ayanian JZ, Bates DW, Burstin H, Ash AS. 1996. "Diagnosis-based risk adjustment for Medicare capitation payments." *Health Care Financing Review* 17(3): 101-128.

Gijsen R, Hoeymans N, Schellevis FG, Ruwaard D, Satariano WA, van den Bos GAM. 2001. "Causes and consequences of comorbidity: A review." *Journal of Clinical Epidemiology* 54(2001): 661-674.

Government of British Columbia, Ministry of Health. 2004. *Chronic Disease Management: Physician Survey*. Available at http://www.health.gov.bc.ca/cdm/research/physician_survey.pdf (accessed July 2008).

Iezzoni L, Daley J, Heeren T, Foley S, Fisher E, Duncan C, Hughes J, Coffman G. 1994. "Identifying complications of care using administrative data." *Medical Care* 32(7): 700-715.

Johnson ML. 2003. "Risk assessment and adjustment: Adjustment for sick patients or a sick system?" *Medical Care* 41(1): 4-7.

Liu K, McBride T, Coughlin T. 1994. "Risk of entering nursing homes for long versus short stays." *Medical Care* 32(4): 315-327.

Liu K, Kramer A, et al. 2007. *Options for Improving Medicare Payment for SNFs*. Final Report Submitted to CMS. Available at http://www.cms.hhs.gov/SNFPPS/Downloads/snf_report_final_03-01-07-2.pdf (accessed August 2008).

Medicare Payment Advisory Commission (MedPAC). 2007. *Report to Congress: Medicare Payment Policy*. Washington, DC: Medicare Payment Advisory Commission.

Mukamel DB, Glance LG, Li Y, Weimer DL, Spector WD, Zinn JS, Mosqueda L. 2008. "Does risk adjustment of the CMS quality measures for nursing homes matter?" *Medical Care* 46(5): 532-541.

Murtaugh CM, Peng TR, Maduro GA, Simantov E, Bow TE. 2006a. *Alternative Risk-Adjustment Approaches to Assessing the Quality of Home Health Care: Final Report*. Prepared for Office of Disability, Aging and Long-Term Care Policy, ASPE/HHS. Available at http://aspe.hhs.gov/daltcp/reports/2006/qualHH.htm (accessed August 2008).

Murtaugh CM, Peng TR, Meadow A, Moore S, McCall N. 2006b. *Impact of the Medicare Home Health Prospective Payment System on Beneficiaries and Program Costs*. Final Report submitted to the Robert Wood Johnson Foundation (November 2006).

Murtaugh CM, Peng T, Aykan H, Maduro G. 2007. "Risk adjustment and public reporting on home health care." *Health Care Financing Review* 28(3): 77-94

Suchan TA, Perry MJ, Fitzsimmons JD, Juhn AE, Tait AM, Brewer CA. (2007). *Census Atlas of the United States: Series CENSR-29*. Washington DC: U.S. Census Bureau. Available at http://www.census.gov/population/www/cen2000/censusatlas/ (accessed August 2008).

Tinetti ME, Inouye SK, Gill TM, Doucette JT. 1995. "Shared risk factors for falls, incontinence and functional dependence." *Journal of the American Medical Association* 273(17): 1348-1353.

U.S. Government Printing Office. Medicare Program; Prospective Payment System for Home Health Agencies. Final Rule. Health Care Financing Administration (HCFA), HHS 65 FR 41128. *Federal Register*, July 3, 2000. Available at http://www.gpoaccess.gov/fr/index.html (accessed August 2008).

Weiss CO, Boyd CM, Yu Q, Wolff JL, Leff B. 2007. "Patterns of prevalent major chronic disease among older adults in the United States." *Journal of the American Medical Association* 298(1): 1160-1162.

FIGURES

FIGURE 1. Algorithm for Categorizing Episodes into Patient Groups

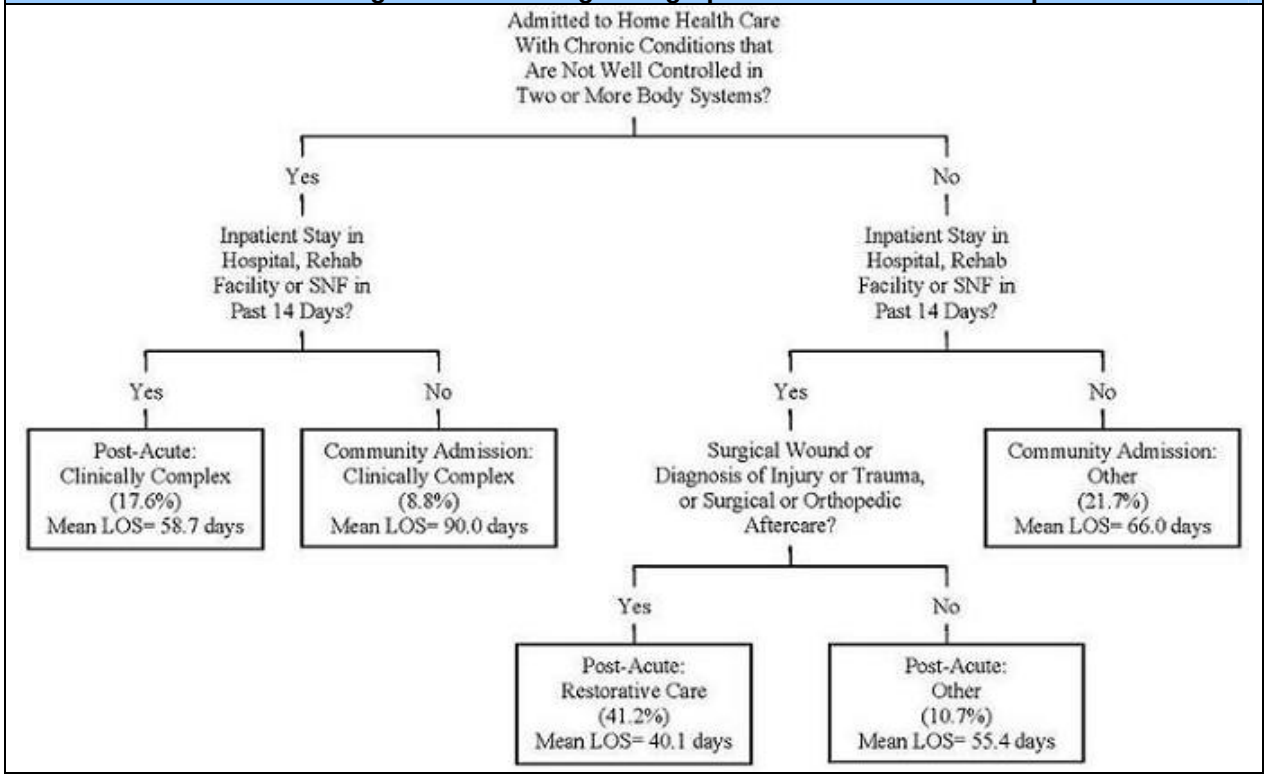
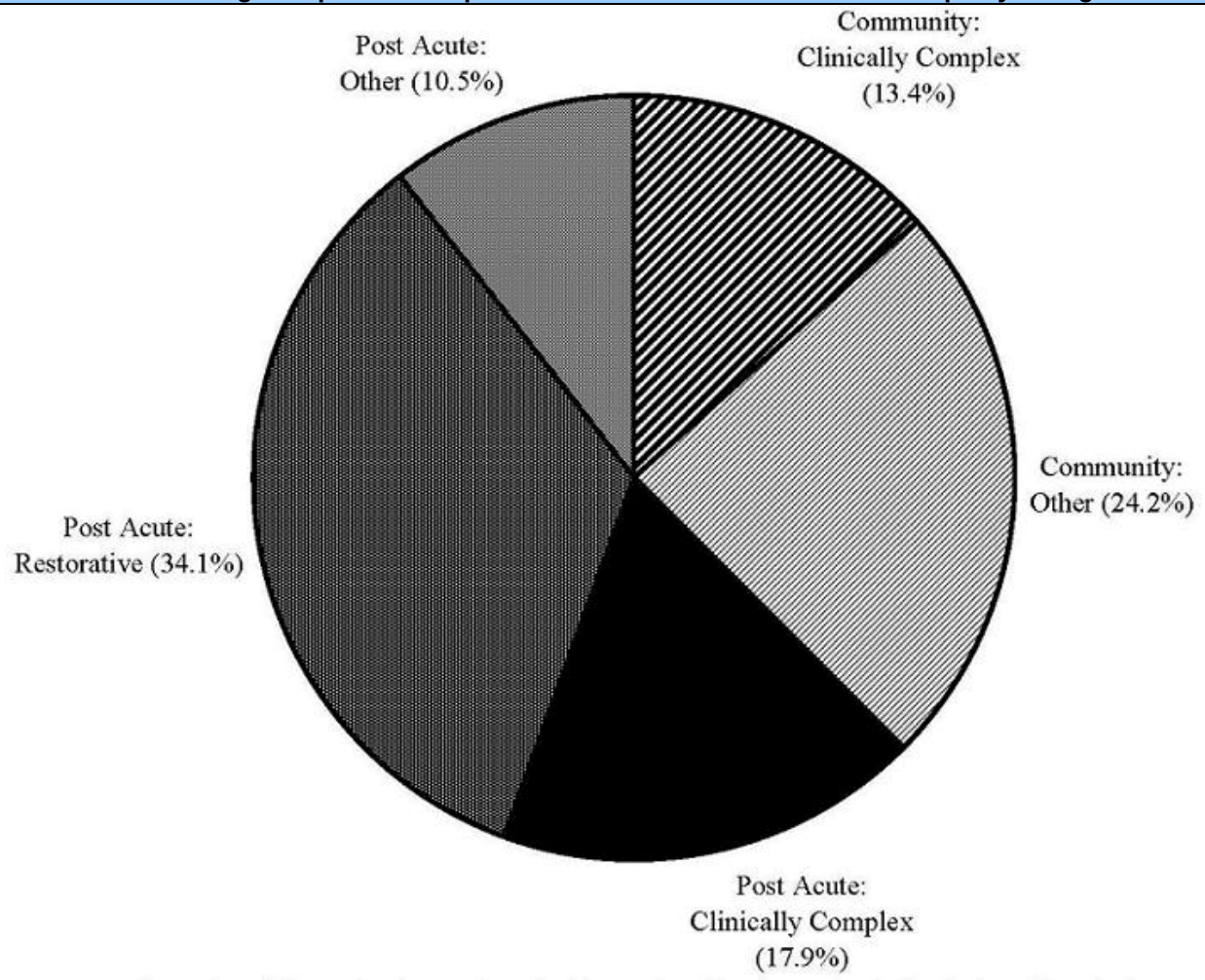
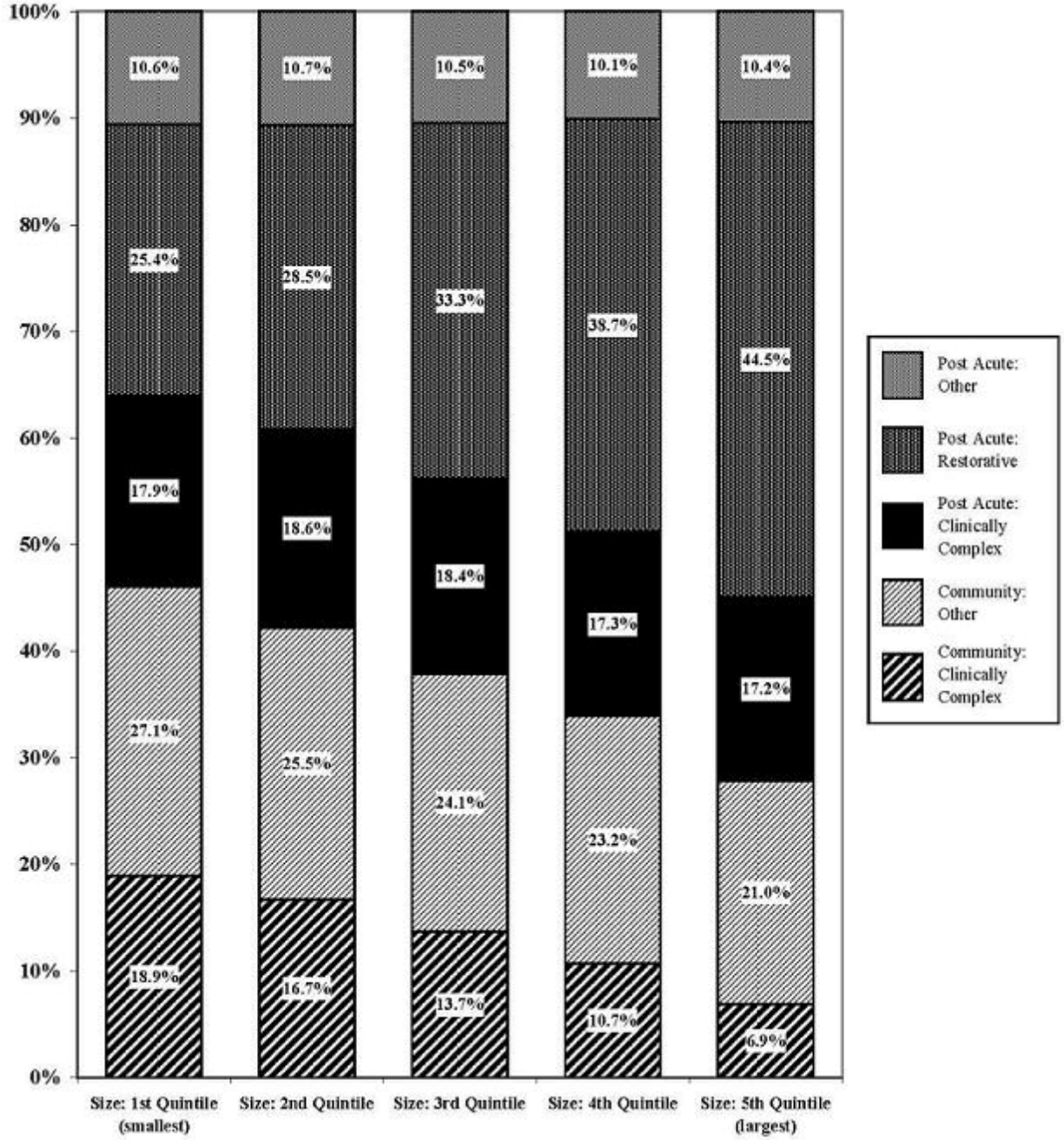


FIGURE 2. Average Proportion of Episodes Provided to Each Patient Groups by All Agencies



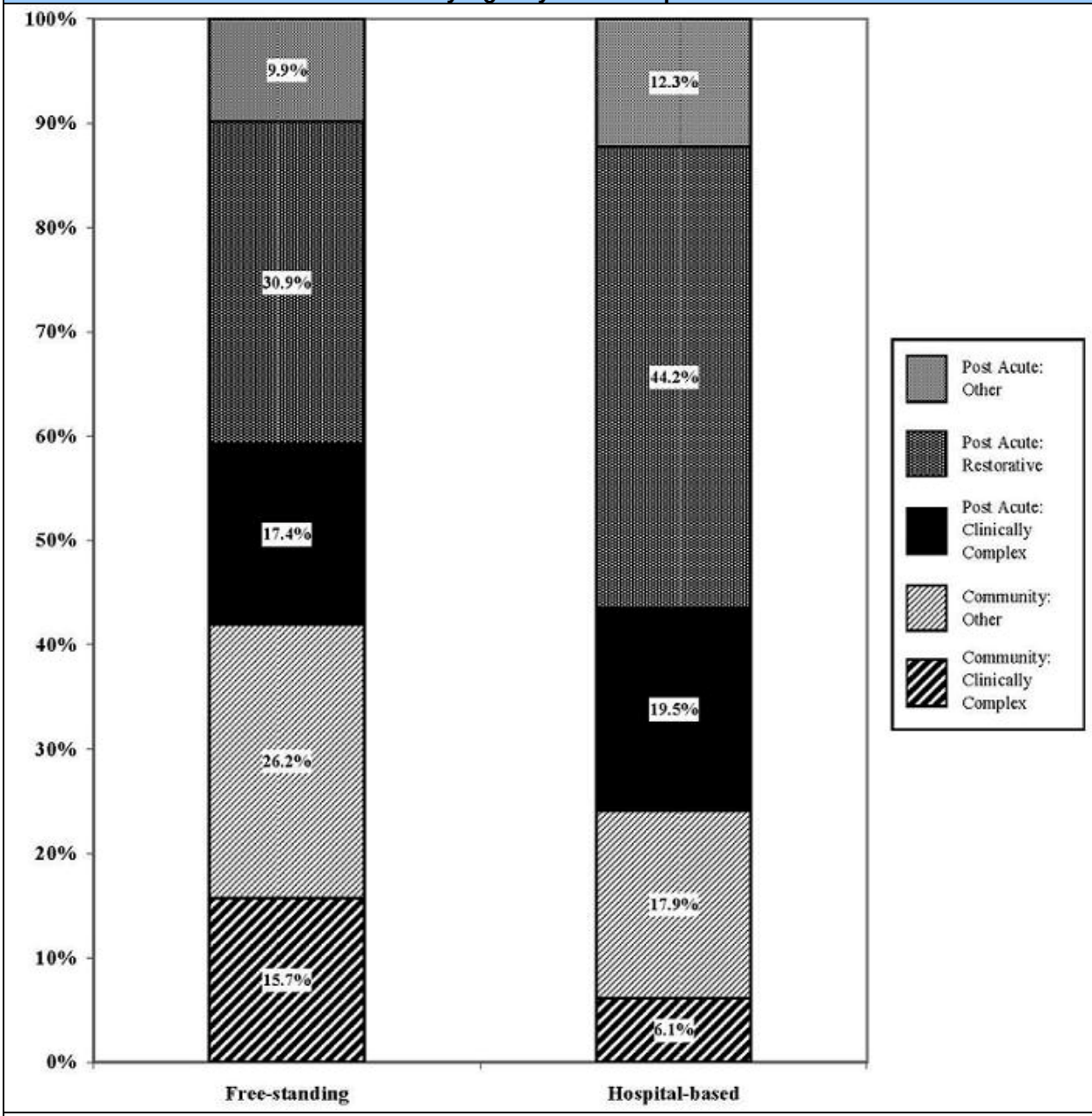
NOTE: The number of observations is 6,113 home health agencies with at least 100 episodes discharged in calendar years.

FIGURE 3. Average Proportion of Episodes Provided to Each Patient Group by Agency Size



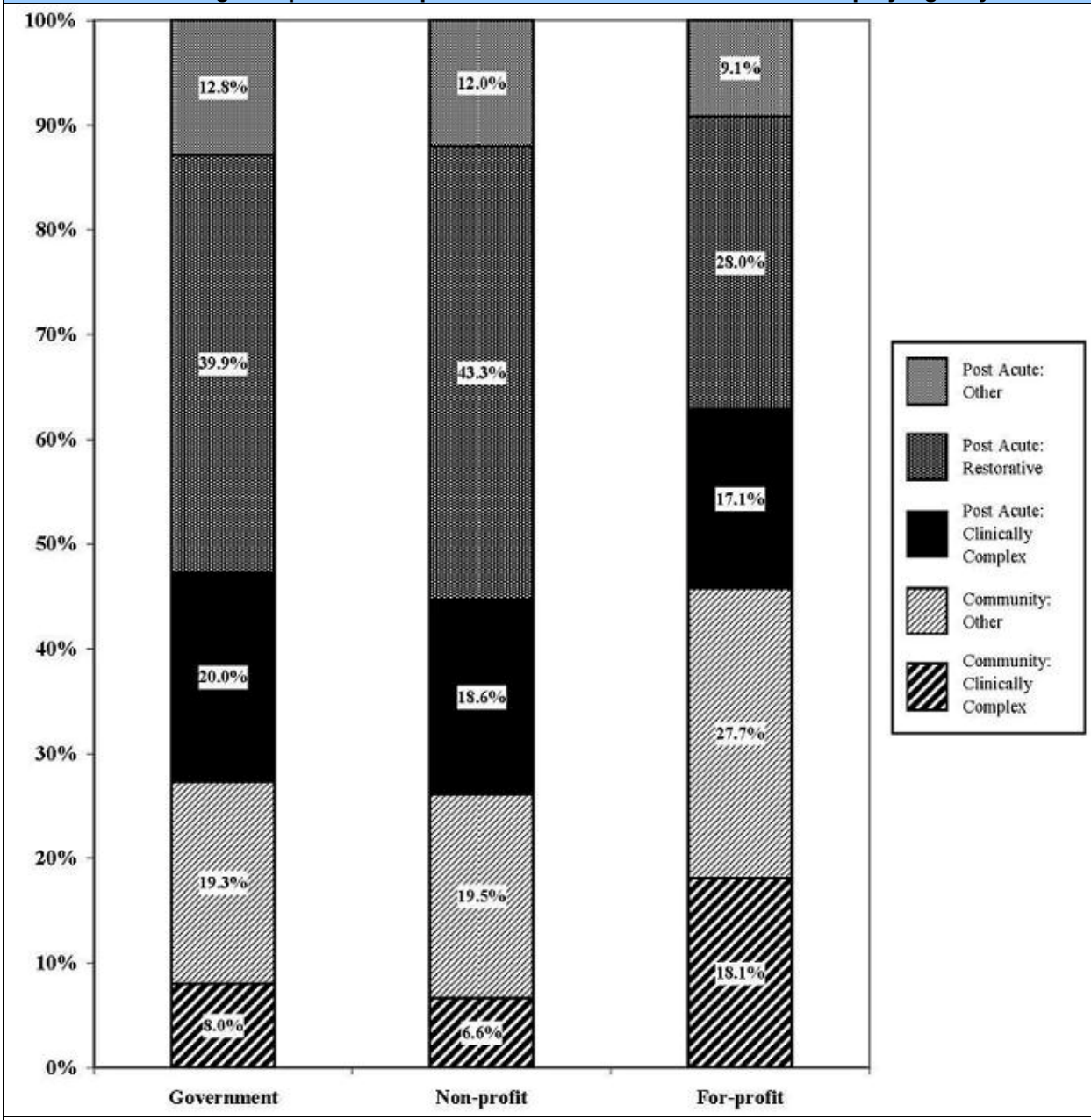
NOTE: The number of observations is 6,113 home health agencies with at least 100 episodes discharged in calendar years 2004-2005.

FIGURE 4. Average Proportion of Episodes Provided to Each Patient Group by Agency Ownership



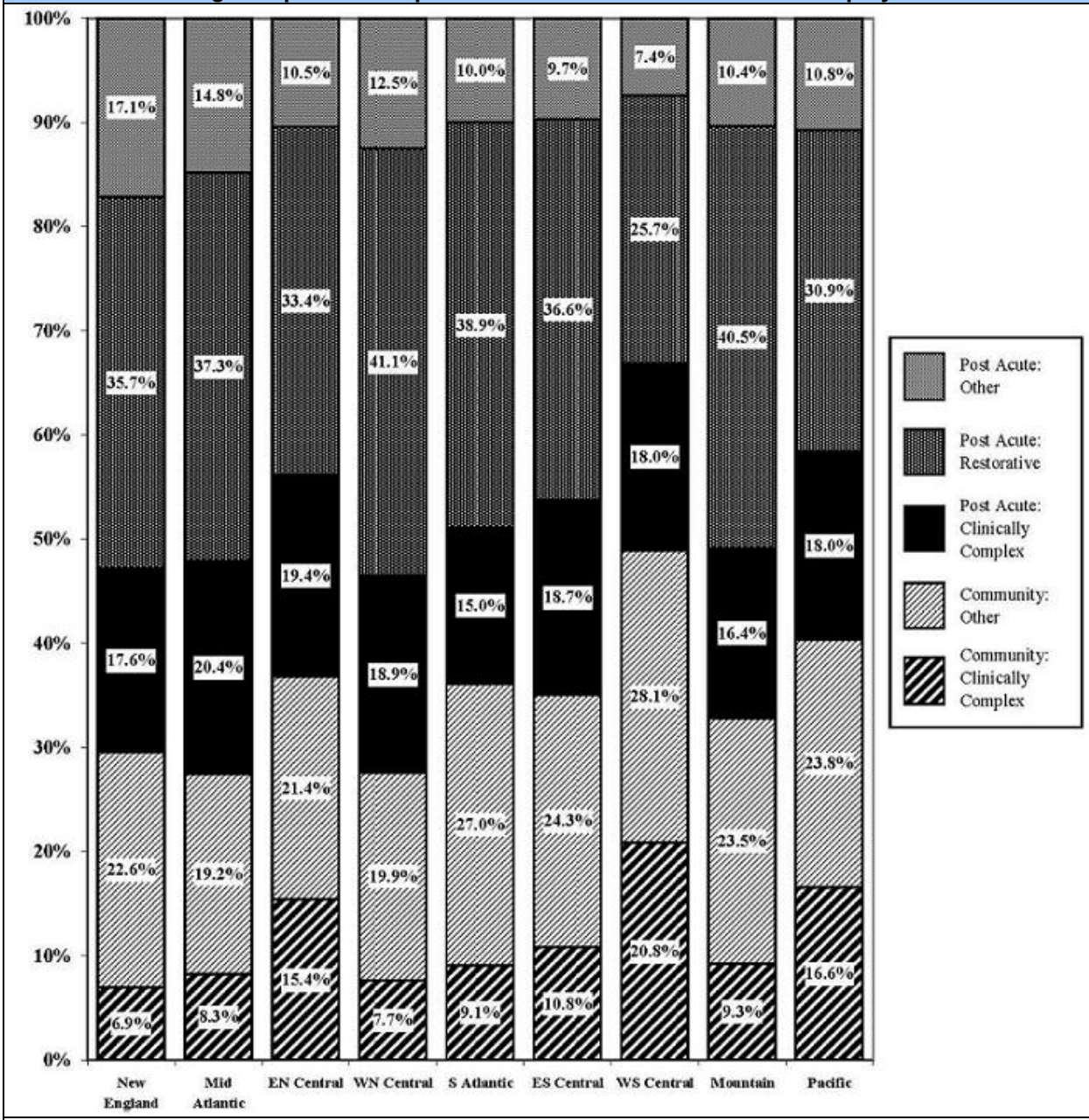
NOTE: The number of observations is 6,113 home health agencies with at least 100 episodes discharged in calendar years 2004-2005.

FIGURE 5. Average Proportion of Episodes Provided to Each Patient Group by Agency Control



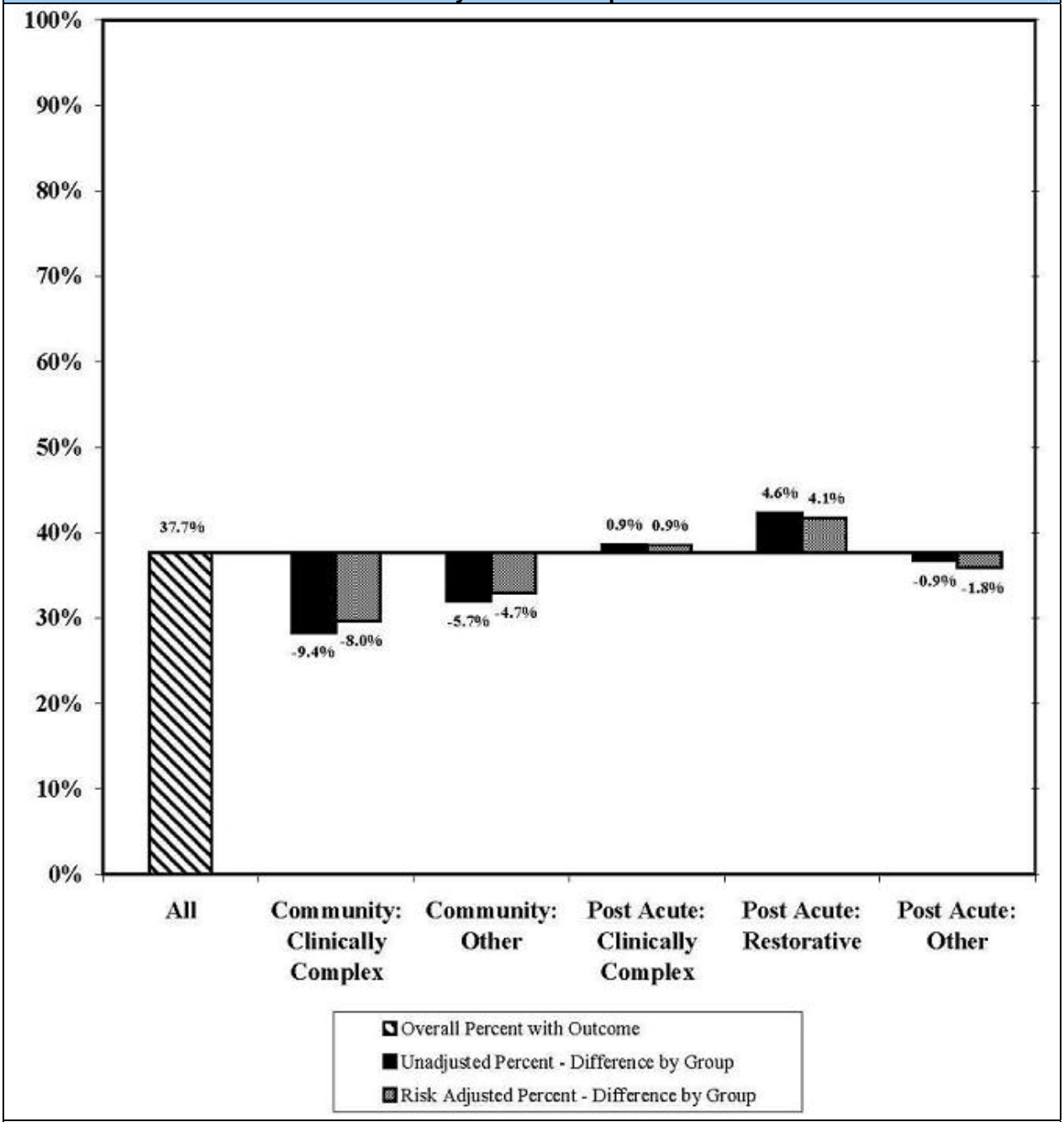
NOTE: The number of observations is 6,113 home health agencies with at least 100 episodes discharged in calendar years 2004-2005.

FIGURE 6. Average Proportion of Episodes Provided to Each Patient Group by Census Division



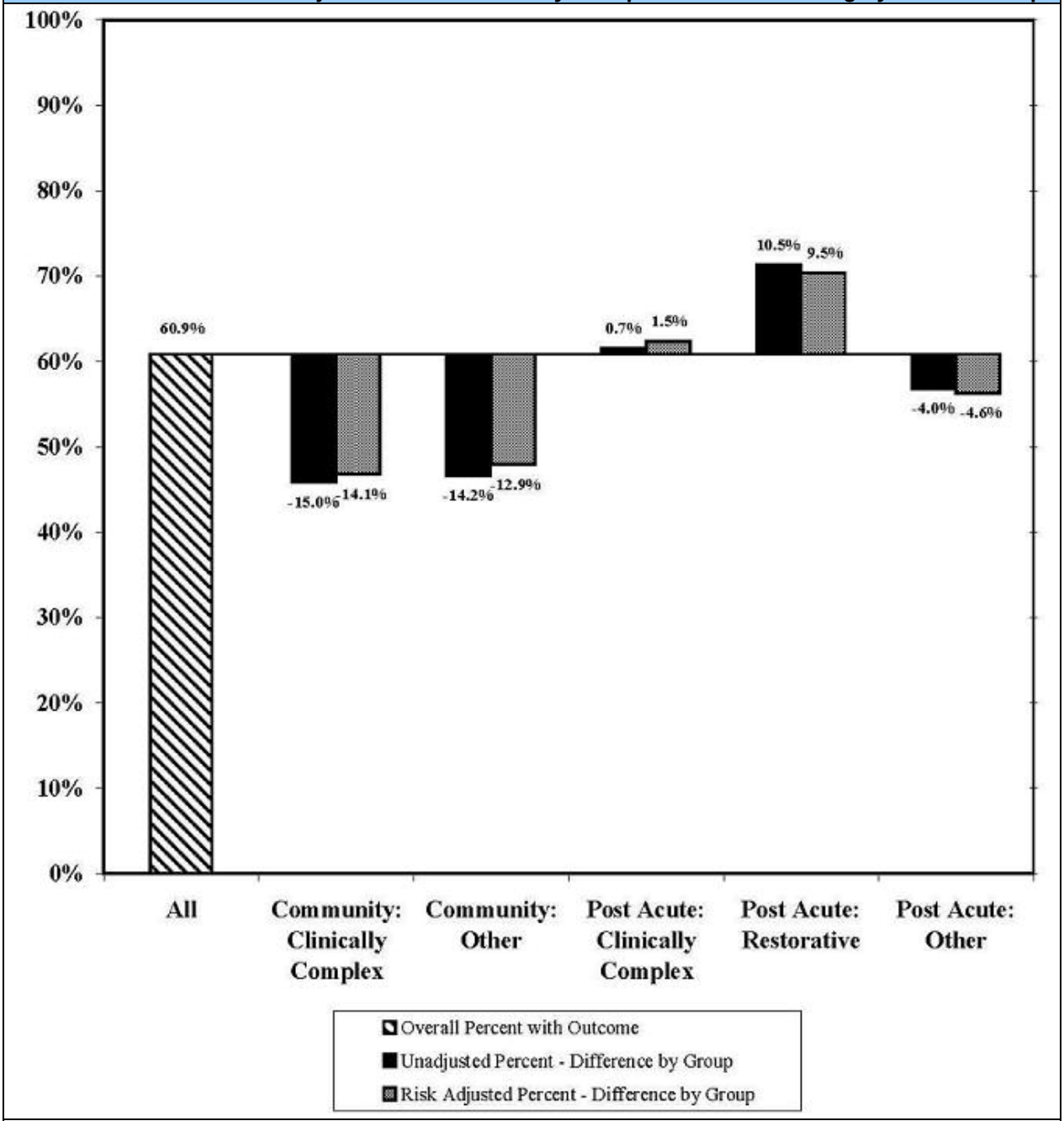
NOTE: The number of observations is 6,113 home health agencies with at least 100 episodes discharged in calendar years 2004-2005.

FIGURE 7. Effect of Risk-Adjustment on Probability of Improvement in Ambulation by Patient Group



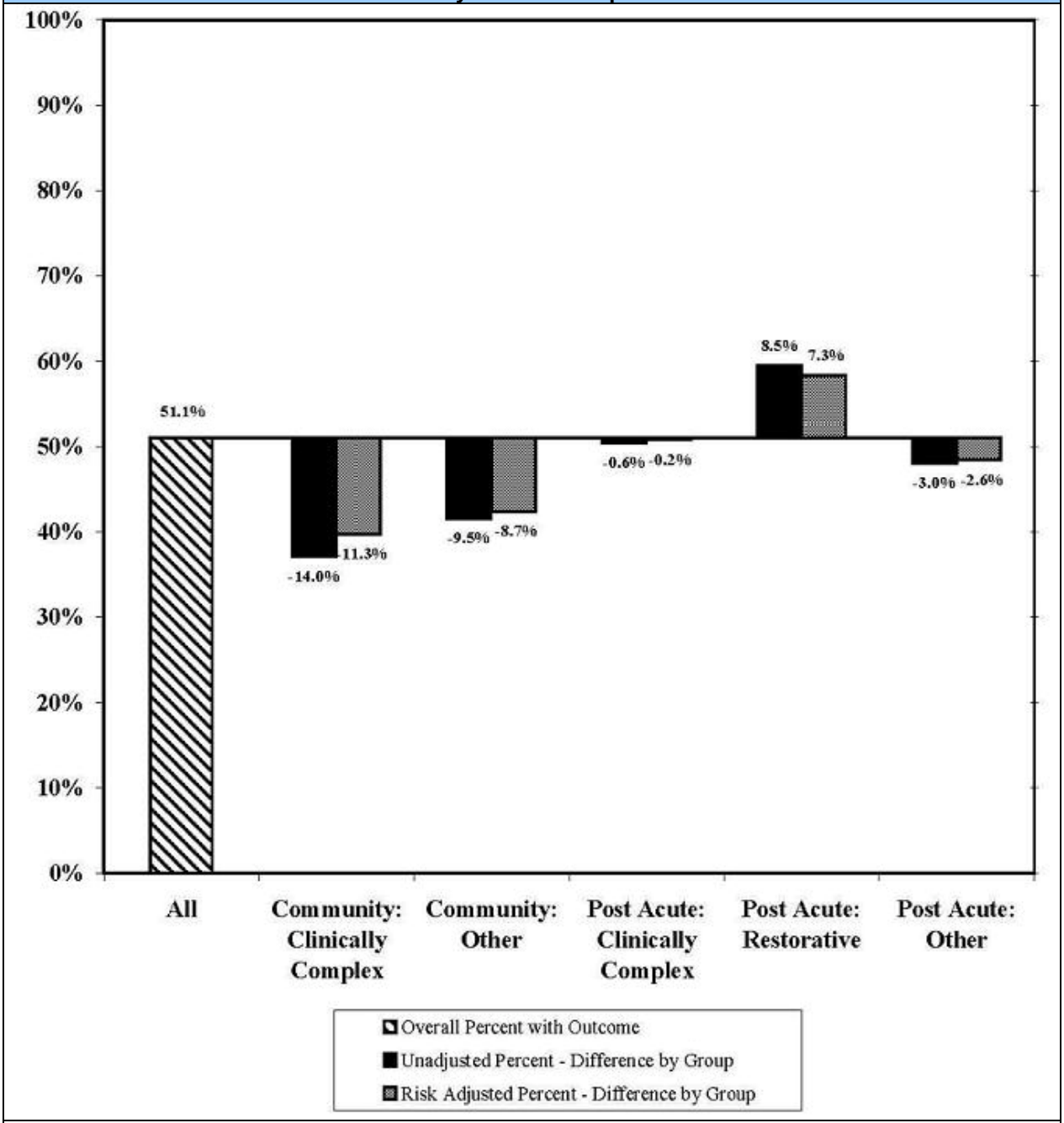
NOTES: The "All" column represents the percent of eligible episodes Improving in Ambulation. The black bar shows the difference between the percent of eligible episodes with Improvement in Ambulation within each study group and the overall percent. The adjacent bar shows the degree to which risk-adjustment affects the predicted probability of Improvement in Ambulation within each group.

FIGURE 8. Effect of Risk-Adjustment on Probability of Improvement in Bathing by Patient Group



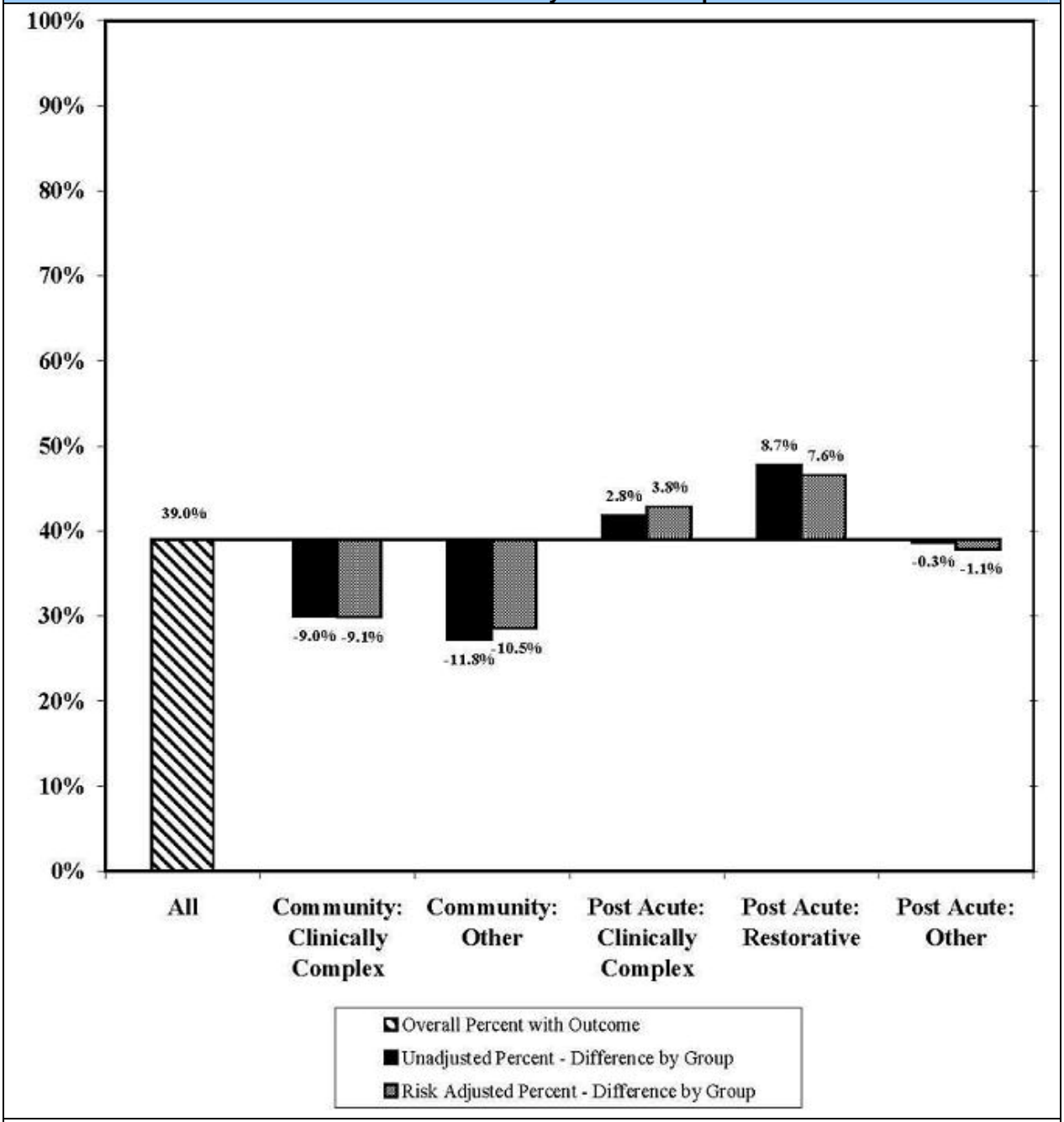
NOTES: The "All" column represents the percent of eligible episodes Improvement in Bathing. The black bar shows the difference between the percent of eligible episodes with Improvement in Bathing within each study group and the overall percent. The adjacent bar shows the degree to which risk-adjustment affects the predicted probability of Improvement in Bathing within each group.

FIGURE 9. Effect of Risk-Adjustment on Probability of Improvement in Transferring by Patient Group



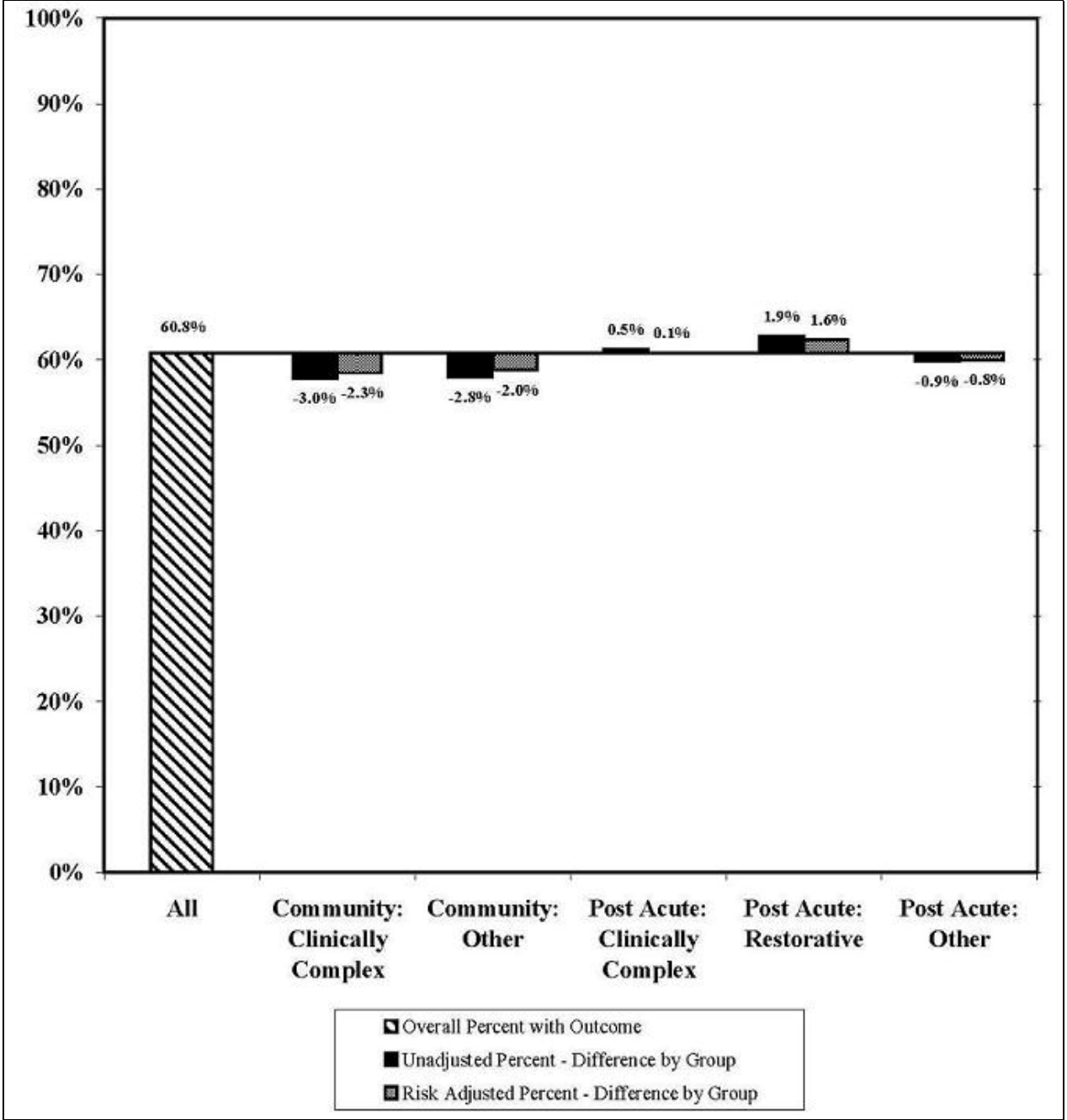
NOTES: The "All" column represents the percent of eligible episodes Improvement in Transferring. The black bar shows the difference between the percent of eligible episodes with Improvement in Transferring within each study group and the overall percent. The adjacent bar shows the degree to which risk-adjustment affects the predicted probability of Improvement in Transferring within each group.

FIGURE 10. Effect of Risk-Adjustment on Probability of Improvement in Management or Oral Medications by Patient Group



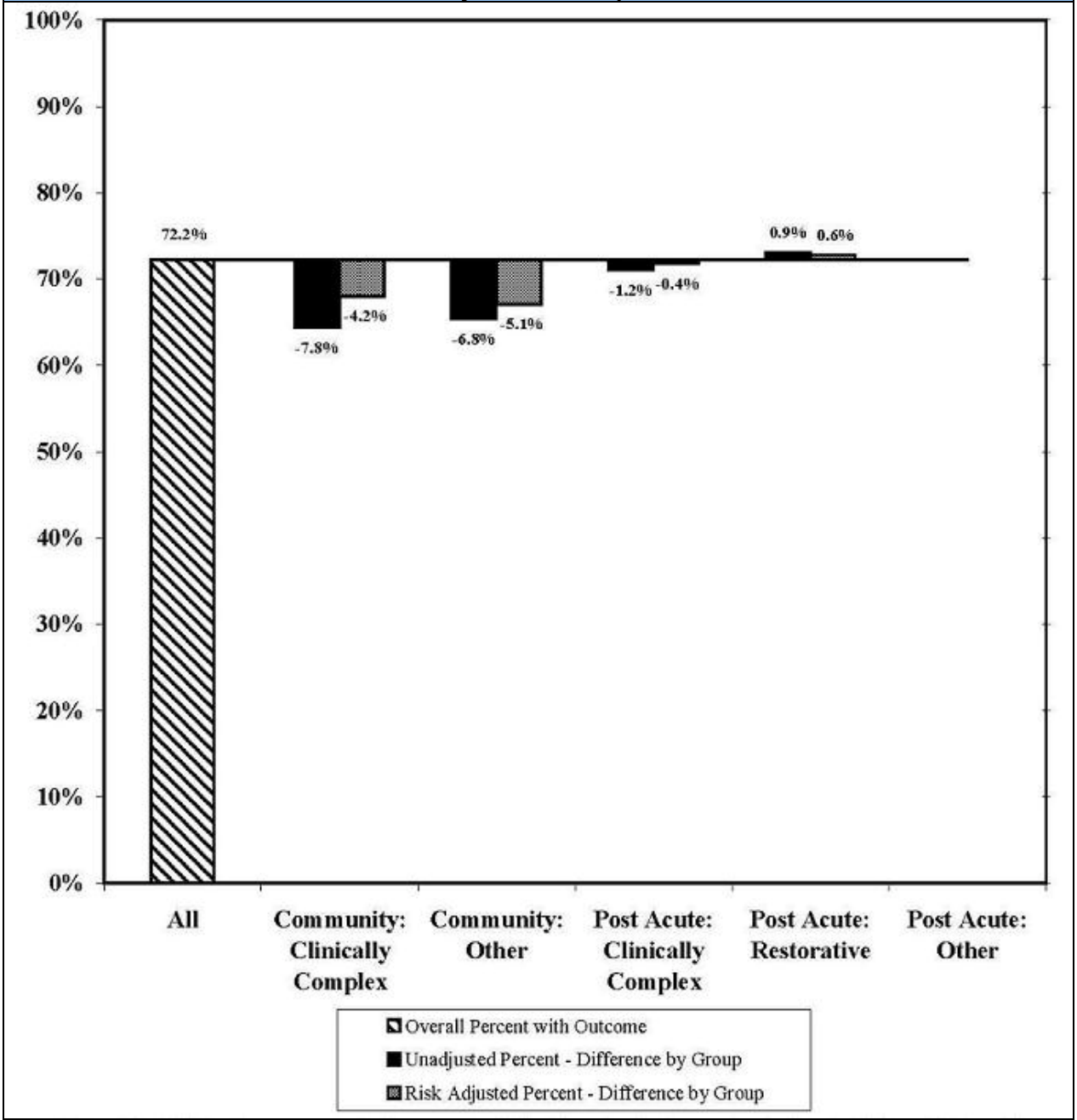
NOTES: The "All" column represents the percent of eligible episodes Improvement in Management of Oral Medications. The black bar shows the difference between the percent of eligible episodes with Improvement in Management of Oral Medications within each study group and the overall percent. The adjacent bar shows the degree to which risk-adjustment affects the predicted probability of Improvement in Management of Oral Medications within each group.

FIGURE 11. Effect of Risk-Adjustment on Probability of Improvement in Pain Frequency by Patient Group



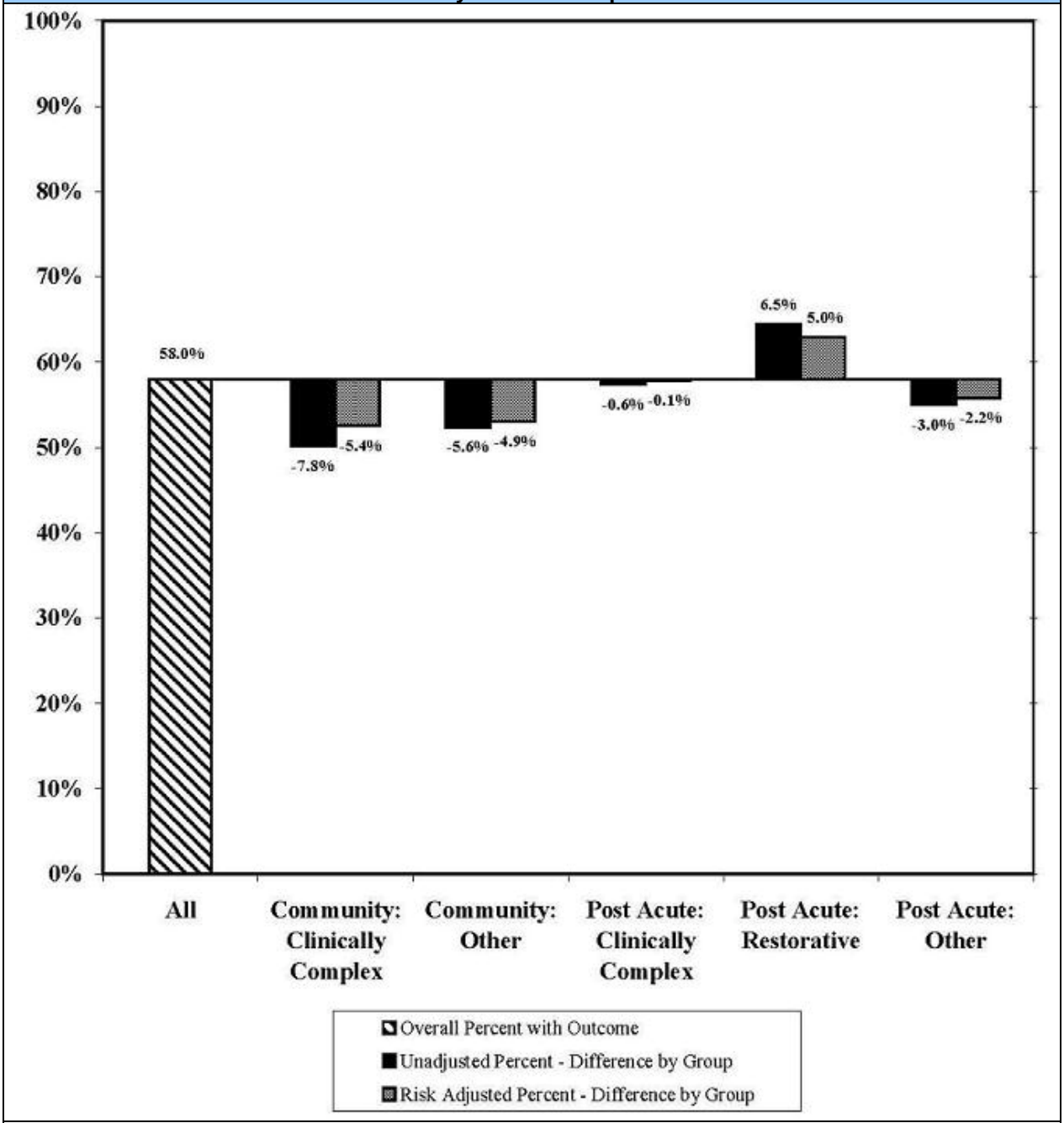
NOTES: The "All" column represents the percent of eligible episodes Improvement in Pain Frequency. The black bar shows the difference between the percent of eligible episodes with Improvement in Pain Frequency within each study group and the overall percent. The adjacent bar shows the degree to which risk-adjustment affects the predicted probability of Improvement in Pain Frequency within each group.

FIGURE 12. Effect of Risk-Adjustment on Probability of Improvement in Surgical Wound Status by Patient Group



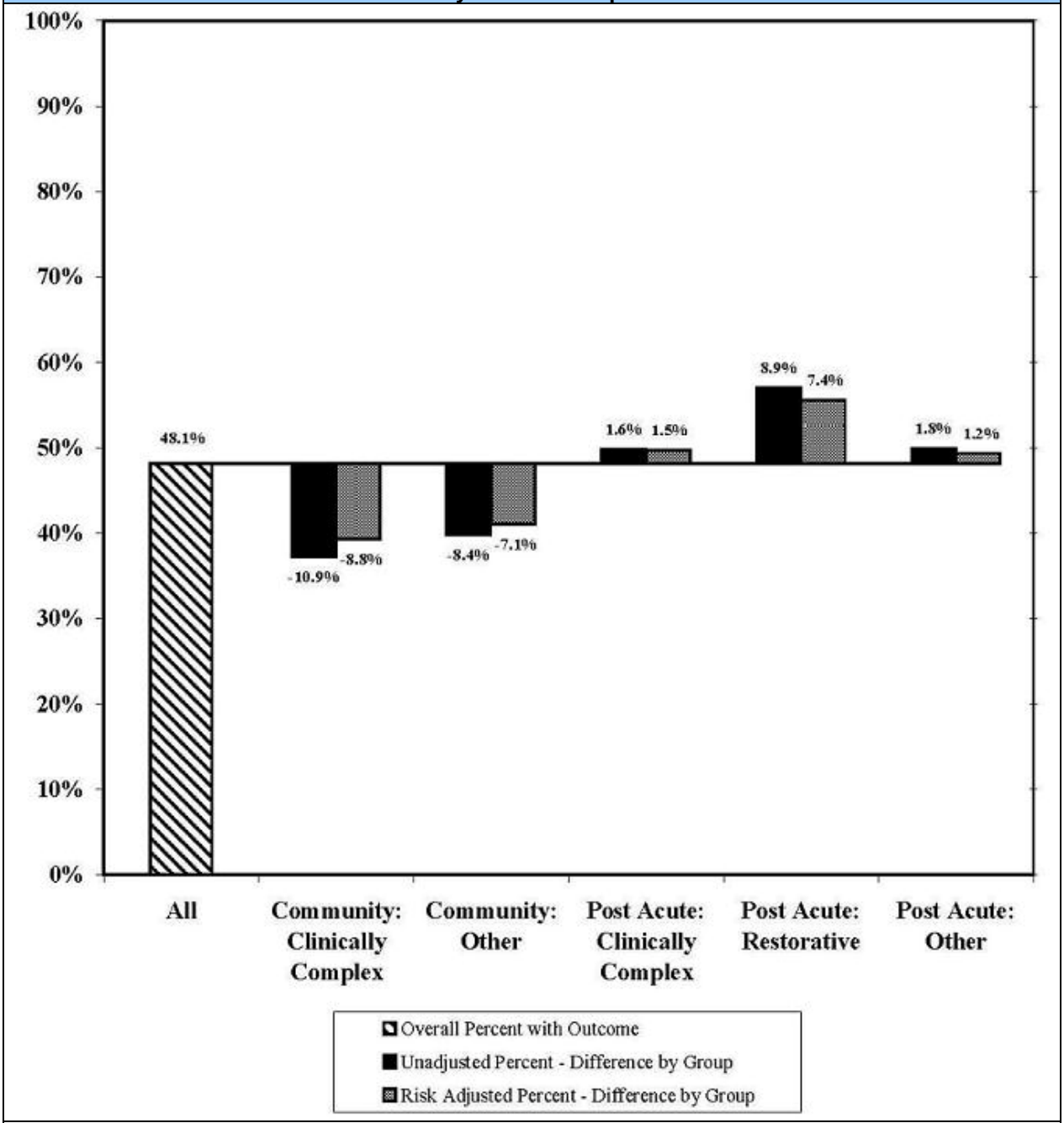
NOTES: The "All" column represents the percent of eligible episodes Improvement in Surgical Wound Status. The black bar shows the difference between the percent of eligible episodes with Improvement in Surgical Wound Status within each study group and the overall percent. The adjacent bar shows the degree to which risk-adjustment affects the predicted probability of Improvement in Surgical Would Status within each group. Unadjusted and risk-adjusted values are not applicable for the Post Acute: Other group because by definition, all post acute non-clinically complex patients with a surgical wound at the start of an episode are place in the Post Acute: Restorative group.

FIGURE 13. Effect of Risk-Adjustment on Probability of Improvement in Dyspnea by Patient Group



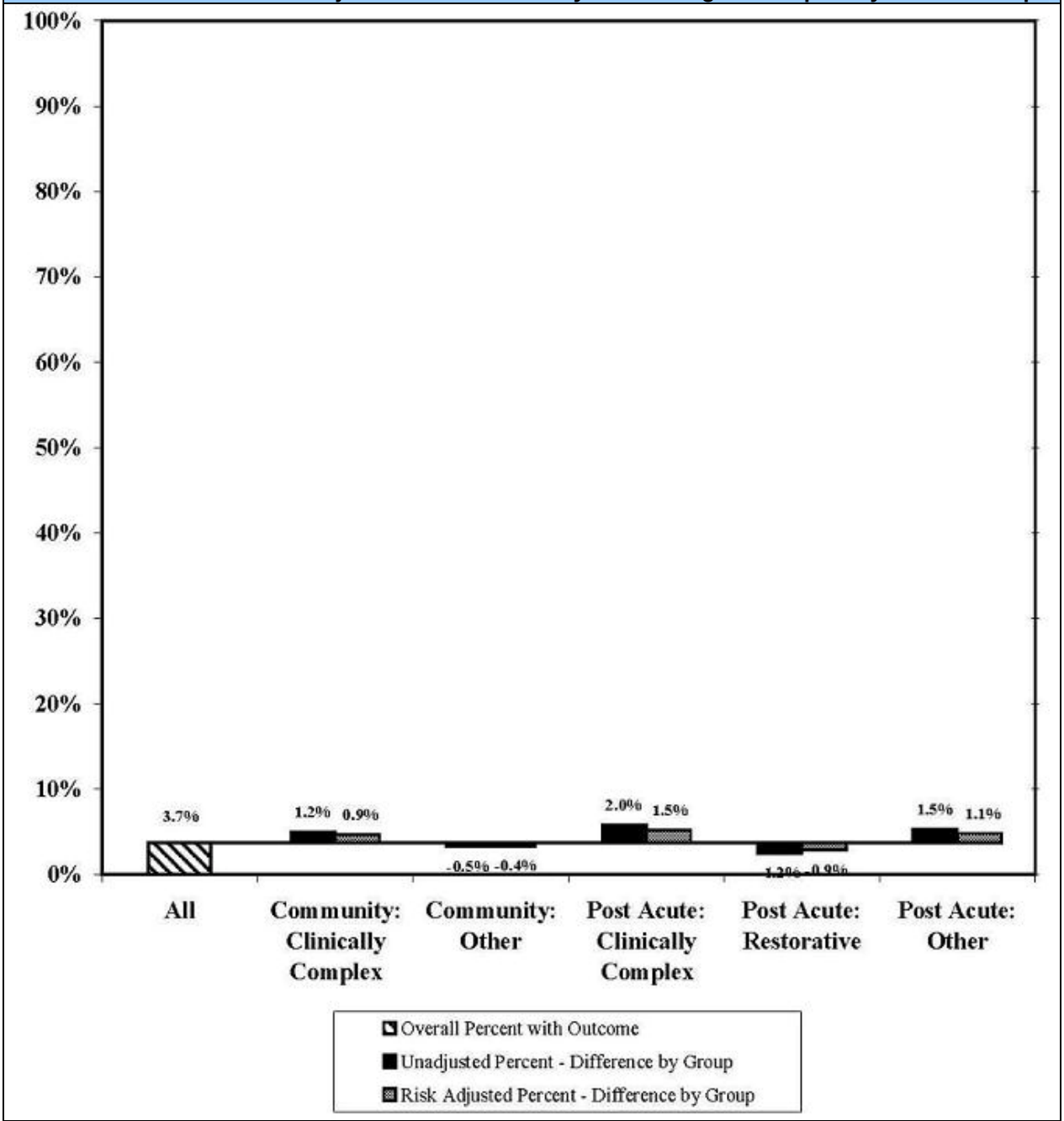
NOTES: The "All" column represents the percent of eligible episodes Improvement in Dyspnea. The black bar shows the difference between the percent of eligible episodes with Improvement in Dyspnea within each study group and the overall percent. The adjacent bar shows the degree to which risk-adjustment affects the predicted probability of Improvement in Dyspnea within each group.

FIGURE 14. Effect of Risk-Adjustment on Probability of Improvement in Urinary Incontinence by Patient Group



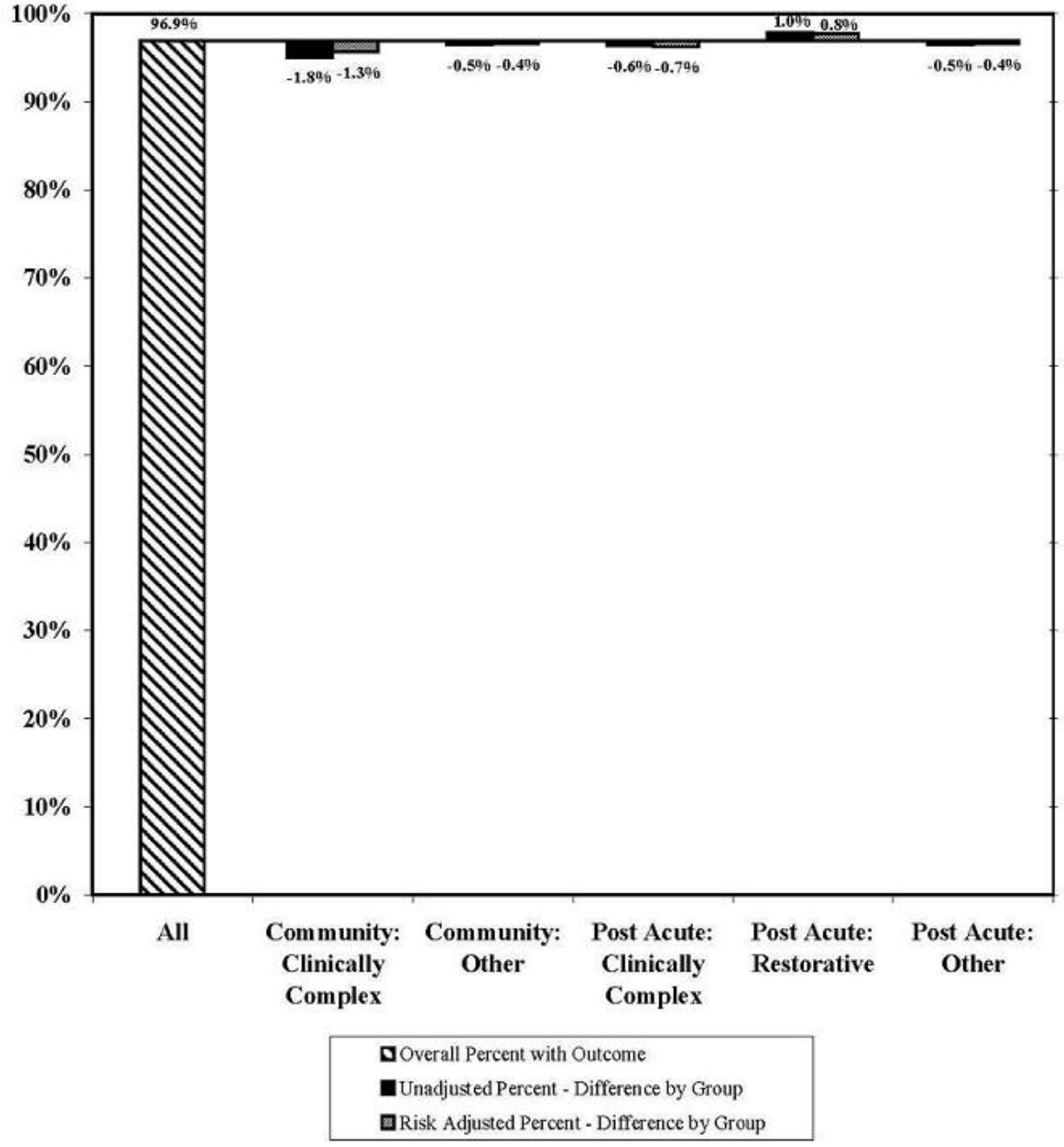
NOTES: The "All" column represents the percent of eligible episodes Improvement in Urinary Incontinence. The black bar shows the difference between the percent of eligible episodes with Improvement in Urinary Incontinence within each study group and the overall percent. The adjacent bar shows the degree to which risk-adjustment affects the predicted probability of Improvement in Urinary Incontinence within each group.

FIGURE 15. Effect of Risk-Adjustment on Probability of Discharge to Hospital by Patient Group



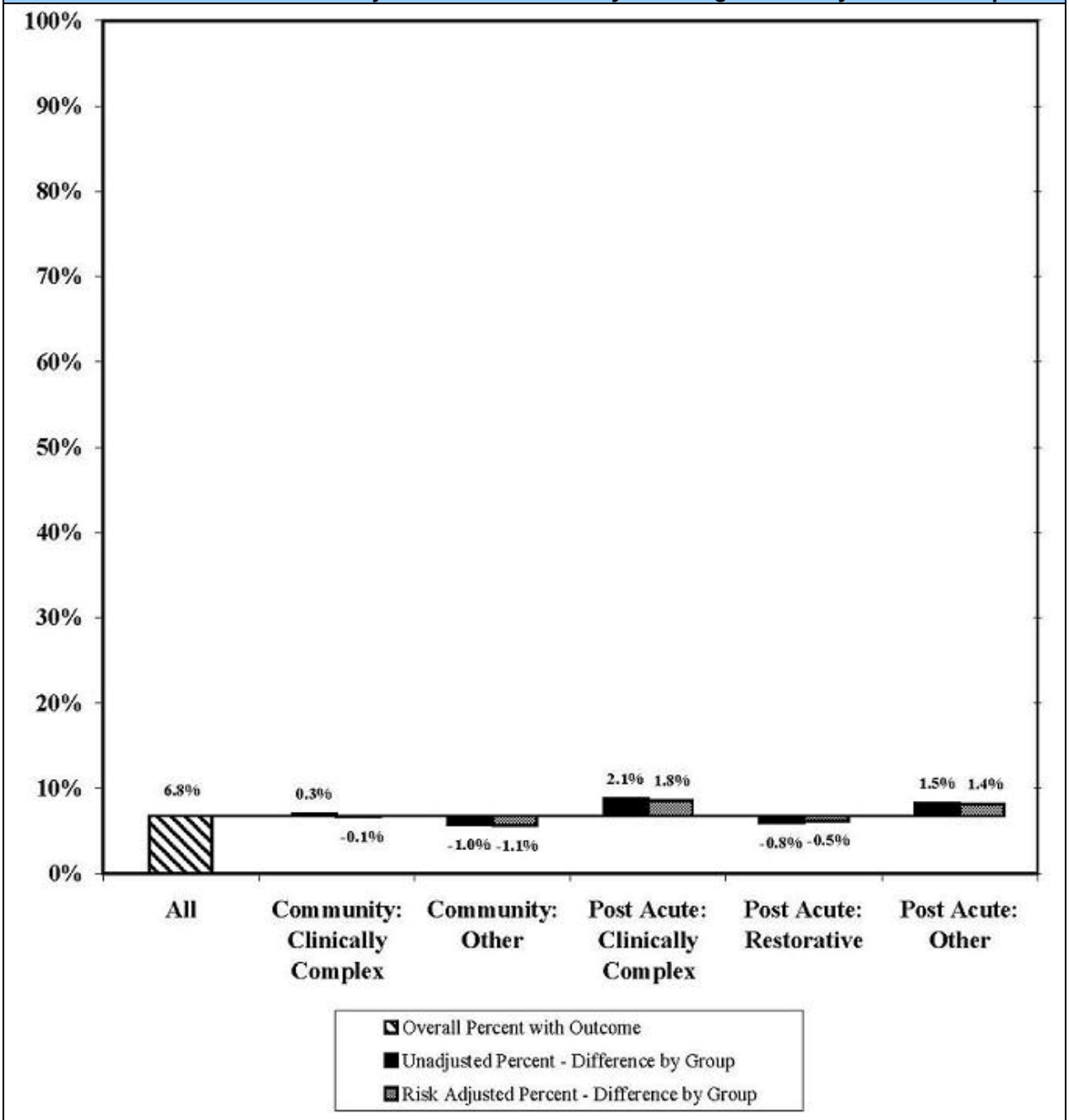
NOTES: The "All" column represents the percent of eligible episodes Discharged to Hospital. The black bar shows the difference between the percent of eligible episodes with Discharged to Hospital within each study group and the overall percent. The adjacent bar shows the degree to which risk-adjustment affects the predicted probability of Discharged to Hospital within each group.

FIGURE 16. Effect of Risk-Adjustment on Probability of Discharge to Community by Patient Group



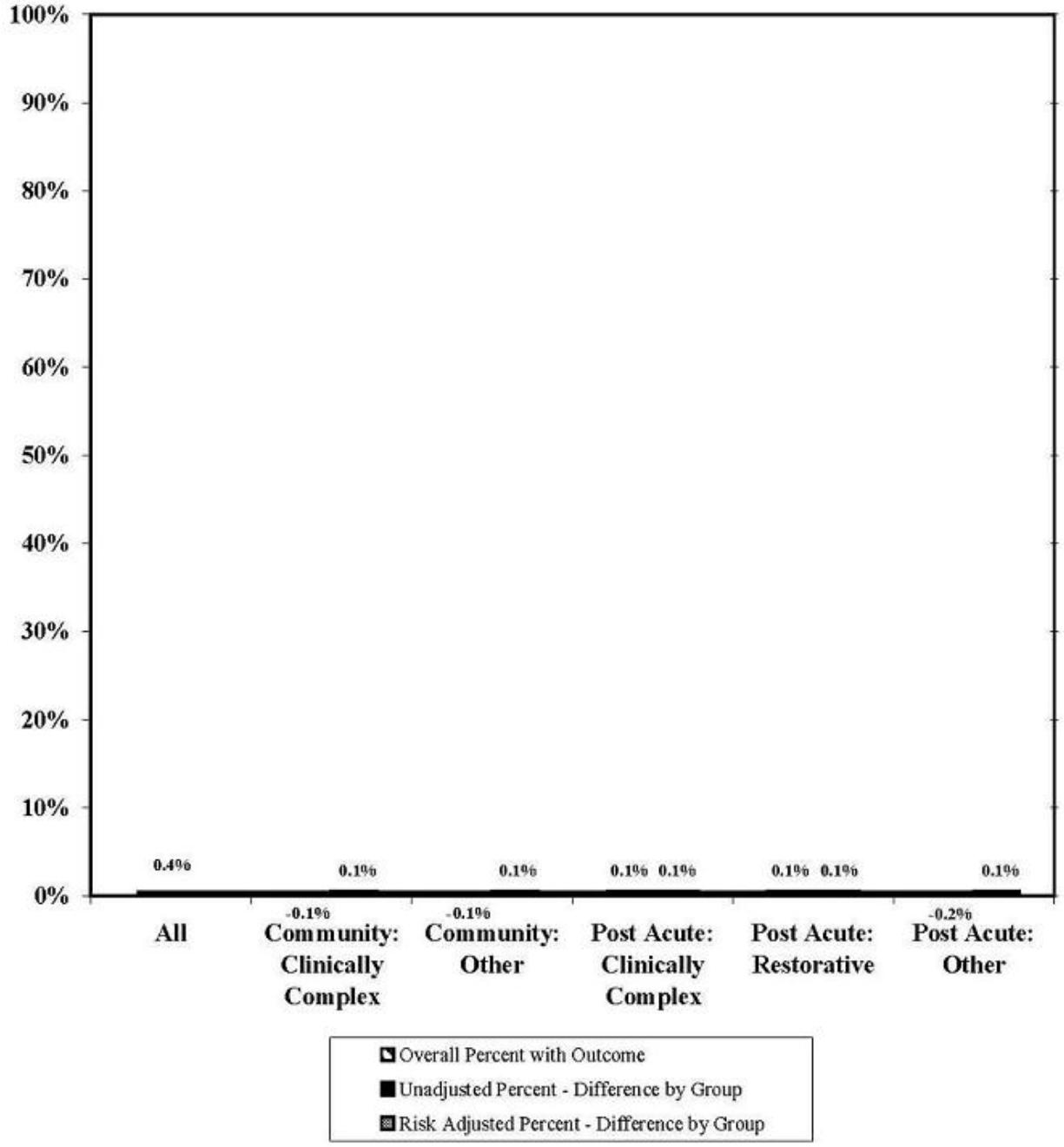
NOTES: The "All" column represents the percent of eligible episodes Discharged to Community. The black bar shows the difference between the percent of eligible episodes with Discharged to Community within each study group and the overall percent. The adjacent bar shows the degree to which risk-adjustment affects the predicted probability of Discharged to Community within each group.

FIGURE 17. Effect of Risk-Adjustment on Probability of Emergent Care by Patient Group



NOTES: The "All" column represents the percent of eligible episodes with Emergent Care. The black bar shows the difference between the percent of eligible episodes with Emergent Care within each study group and the overall percent. The adjacent bar shows the degree to which risk-adjustment affects the predicted probability of Emergent Care within each group.

FIGURE 18. Effect of Risk-Adjustment on Probability of Emergent Care for Wound Infection by Patient Group



NOTES: The "All" column represents the percent of eligible episodes with Emergent Care for Wound. The black bar shows the difference between the percent of eligible episodes with Emergent Care for Wound within each study group and the overall percent. The adjacent bar shows the degree to which risk-adjustment affects the predicted probability of Emergent Care for Wound within each group.

TABLES

TABLE 1. OBQI Outcome Measures

HEALTH STATUS OUTCOME MEASURES

Functional: Activities of Daily Living
- Improved in:
  - Ambulation/locomotion
  - Dressing upper body
  - Dressing lower body
  - Grooming
  - Bathing
  - Eating
  - Toileting
  - Transferring
- Stabilized in:
  - Grooming
  - Bathing
  - Transferring

Functional: Instrumental Activities of Daily Living
- Improved in:
  - Management of oral medications
  - Light meal preparation
  - Laundry
  - Housekeeping
  - Shopping
  - Telephone use
- Stabilized in:
  - Management of oral medications
  - Light meal preparation
  - Laundry
  - Housekeeping
  - Shopping
  - Telephone use

Physiologic
- Improved in:
  - Pain interfering with activity
  - Number of surgical wounds
  - Status of surgical wounds
  - Dyspnea
  - Urinary tract infection
  - Urinary incontinence
  - Bowel incontinence
  - Speech or language
- Stabilized in:
  - Speech or language

Emotional/Behavioral
- Improved in:
  - Anxiety level
  - Behavioral problem frequency
- Stabilized in:
  - Anxiety level

Cognitive
- Improved in:
  - Confusion frequency
  - Cognitive functioning
- Stabilized in:
  - Cognitive functioning

UTILIZATION OUTCOME MEASURES

Acute care hospitalization
Discharge to community
Emergent care

NOTES: Adapted from Shaughnessy, PW, and Hittle, DF. 2002. *Overview of Risk Adjustment and Outcome Measures for Home Health Agency OBQI Reports* (available at http://www.cms.gov/providers/hha/RiskAdj1.pdf).

Outcomes labeled as “Improved in” are binary indicators of whether status at discharge is better than at start of the episode on that outcome. Episodes that start at the ceiling of the outcome measure (i.e., those that could not improve because they are already at the top) are excluded from the denominator for “Improvement” outcomes.

Outcomes labeled as “Stabilized in” are binary indicators of whether status at discharge is the same or better at discharge as compared to the start of the episode for that outcome. Episodes that start at the floor of the outcome measure (i.e., those that could not get worse because they start at the worst level), are excluded from the denominator for “Stabilization” outcomes.

TABLE 2. Current Publicly-Reported Home Health Quality Indicators	
Quality Measure	**Episodes Eligible to Have the Outcome or Adverse Event**
HEALTH STATUS OUTCOME MEASURES	
Improvement in Ambulation/Locomotion	Episodes ending with discharge to the community except those where the patient is independent at baseline (M0700 = 0)
Improvement in Bathing	Episodes ending with discharge to the community except those where the patient is independent at baseline (M0760 = 0)
Improvement in Transferring	Episodes ending with discharge to the community except those where the patient is independent at baseline (M0690 = 0)
Improvement in Management of Oral Medications	Episodes ending with discharge to the community except those where the patient is independent at baseline (M0780 = 0)
Improvement in Pain Interfering with Activity	Episodes ending with discharge to the community except those where the patient has no pain interfering with activity at baseline (M0420 = 0)
Improvement in Status of Surgical Wounds	Episodes ending with discharge to the community where the patient has t least one observable wound at baseline (M0484 = 1, 2, 3 or 4) with a status of early/partial granulation or not healing (M0488 = 2 or 3), and the surgical would is observable at discharge (M0488 = 1, 2 or 3)
Improvement in Dyspnea	Episodes ending with discharge to the community except those where the patient has no dyspnea at baseline (M0490 = 0)
Improvement in Urinary Incontinence	Episodes ending with discharge to the community except those where the patient is continent and does not have a urinary catheter at baseline (M0520 = 0)
UTILIZATION OUTCOME MEASURES	
Acute Care Hospitalization	All episodes except those ending in death at home (M0100 = 8)
Discharge to Community	All episodes except those ending in death at home (M0100 = 8), and those with missing or “Unknown” discharge disposition (M0870 = UK or missing)
Emergent Care	All episodes except those ending in death at home (M0100 = 8), and those with “Unknown” emergent care status (M0830 = UK)
ADVERSE EVENT MEASURE[a]	
Emergent Care for Wound Infection	All episodes except those ending in death at home (M0100 = 8)

a. There are a total of 13 adverse events monitored by CMS. They are distinct from the 41 OBQI outcomes. “Emergent Care for Wound Infection” is the only adverse event that currently is publicly-reported.

TABLE 3. Medical Diagnoses Used to Identify Persons with Chronic Conditions in Surveys and Other Studies						
ICD-9-CM MDCs[a]	**CDC (2002)**	**Brooke, Ware et al. (1984)**	**Ellis, Pope et al. (1996)**	**Liu, McBride et al. (1994)**	**Iezzoni, Daley et al. (1994)**	**Ministry of Health, British Columbia (2004)**
Infectious and Parasitic Diseases (001-139)					Acquired immunodeficiency syndrome (042)	
Neoplasms (140-239)	All cancers (140-208) Colorectal cancer (153-154) Lung cancer (162) Breast cancer (174)		Colorectal cancer (153-154) Lung or pancreatic cancer (162, 157)	Cancer (140-208)	Primary cancer with poor prognosis (150, 151, 155, 157, 162, 163, 183, 191, 200-208) Metastatic cancer (196-199)	
Endocrine, Nutritional, Metabolic, Immunity (240-279)	Diabetes (250)	Hyper/Hypothyroidism (244, 246.8) Other Thyroid disease (240-246) Diabetes (250) Obesity (259.9, 278) Hypercholesterolemia (272) Hyperlipidemia (272.4)	Diabetes (with complications) Diabetes (no complications) (250)		Diabetes Mellitus (250) Nutritional deficiencies (260-269)	Diabetes (250)
Blood and Blood Forming Organs (280-289)						
Mental Disorders (290-319)			Alcohol and Drug Dependence (304) Depression (311)		Dementia (290-298.9)	Chronic depression (311)
Nervous System and Sense Organs (320-389)	Alzheimer's disease (331)	Otitis media (chronic) - middle ear (381.1-381.4, 382.1-382.3)		Parkinson's Disease (332) Multiple Sclerosis (340) Cerebral Palsy (343)	Functional impairment: Hemiplegia, Quadriplegia, or unspecified paralysis (342-344)	

TABLE 3 (*continued*)						
ICD-9-CM MDCs[a]	**CDC (2002)**	**Brooke, Ware et al. (1984)**	**Ellis, Pope et al. (1996)**	**Liu, McBride et al. (1994)**	**Iezzoni, Daley et al. (1994)**	**Ministry of Health, British Columbia (2004)**
Circulatory System (390-459)	Stroke (430-436)	Hypertension (401-405) Other abnormal blood pressure (458.1) Ischemic heart disease/angina (414) Cardiac arrhythmia (427.9) CHF (428)	Hypertension (benign/ unspec) (401.1, 401.9, 402.1, 402.9, 403.1, 403.9, 404.1, 404.9) Hypertensive heart disease (402) Acute myocardial infarction (410) Heart failure or cardiomyopathy (428, 425.4) Other heart disease (391-429) Intracerebral hemorrhage (431) Other stroke (430, 432-436)	Stroke (430-436)	Coronary artery disease (414) Congestive heart failure (428) Late effects of CVA (438) Peripheral vascular disease (443)	Hypertension (401-405) Chronic Heart Failure (428)
Respiratory System (460-519)	Chronic lower respiratory diseases (490-496)	Asthma (493)	Chronic Obstructive Pulmonary Disease (490-492, 496)	Lung Disease (490-519)	Chronic Obstructive Pulmonary Disease (491.2, 492, 493.2, 495) Tracheostomy (519.0)	Chronic lung disease (490-496) Asthma (493)
Digestive System (520-579)					Severe chronic liver disease (571)	End-stage liver disease (570-573)
Genitourinary System (580-629)	Nephritis/Nephrosis (580-589)		Hypertensive renal disease (403.90)		Chronic renal failure (585)	Chronic renal failure (582.9, 585)
Complications of Pregnancy, Childbirth, and the Puerperium (630-677)						
Skin and Subcutaneous Tissue (680-709)		Acne (706)				
Musculoskeletal System and Connective Tissue (710-739)	Arthritis (714.0, 715-716)	Rheumatic disease (714, 720) Degenerative joint disorders (715.9) Disc displace/ derangement (722)	Arthritis (714.0, 715-716)			Arthritis (714.0, 715-716)
Congential Anomalies (740-759)						
Perinatal Conditions (760-779)						

TABLE 3 (*continued*)						
ICD-9-CM MDCs[a]	**CDC (2002)**	**Brooke, Ware et al. (1984)**	**Ellis, Pope et al. (1996)**	**Liu, McBride et al. (1994)**	**Iezzoni, Daley et al. (1994)**	**Ministry of Health, British Columbia (2004)**
Symptoms, Signs, and Ill-defined Conditions (780-799)						
Injury and Poisoning (800-999)			Hip fracture (820)	Fracture (820-829)		
NOTES: ICD-9-CM codes were added in parentheses by the project team except for the study by Iezzoni et al. (1994) where they already were specified. ICD-9-CM MDCs are the Major Diagnostic Categories of the International Classification of Disease, 9th revision, Clinical Modification. Populations sampled in each study are: Adult U.S. population (CDC, 2002; Brook, Ware et al., 1984). U.S. Medicare beneficiaries or claims (Ellis, Pope et al., 1996; Liu, McBride et al., 1994), California hospital discharges (Iezzoni, Daley et al., 1994) and Canadian ambulatory care physicians (British Columbia Ministry of Health, 2001).						

TABLE 4. Medical Diagnoses Used to Identify Persons with Chronic Conditions in This Project	
Chronic Condition Group	**ICD-9-CM Code[a]**
1. HIV/AIDS	042-044
2. Metastatic Cancer or Primary Cancer with Poor Prognosis	196-199
Esophagus	150
Stomach	151
Pancreas	157
Trachea, bronchus, and lung	162
Pleura	163
Ovary and other uterine adnexa	183
Brain	191
Lymphosarcoma and reticulosarcoma	200
Leukemia of unspecified cell type	208
3. Diabetes	250
4. Dementia	
Senile and presenile organic psychotic conditions	290
Alcohol amnestic syndrome	291.1
Other alcoholic dementia	291.2
Other organic psychotic conditions (chronic)	294
5. Depression	
Chronic depressive personality	301.12
Prolonged depressive reaction	309.1
Depressive disorder, not elsewhere classified	311
6. Alzheimer's or Other Cerebral Degeneration	
Cerebral degenerations usually manifest in childhood	330
Alzheimer's disease	331.0
Pick's disease	331.1
Senile degeneration of brain	331.2
Other cerebral degeneration	331.3-331.9
7. Other Neurological Diseases	
Parkinson's disease	332
Other extrapyramidal diseases and abnormal movement disorders	333.4-333.5
Motor neuron disease, including Amyotrophic Lateral Sclerosis	334-335
Multiple sclerosis	340
Other demyelinating diseases of central nervous system	341
Hemiplegia and hemiparesis	342
Cerebral palsy	343
Other paralytic syndromes	344
8. Hypertension	401-405
9. Acute Myocardial Infarction or Chronic Ischemic Heart Disease	410
Angina pectoris	413
Other forms of chronic ischemic heart disease	414
10. Cardiac Dysrhythmias	427
11. Heart Failure	428
12. Stroke or Late Effects of Cerebrovascular Disease	430-436, 438
13. Peripheral Vascular Disease	443

TABLE 4 (*continued*)	
Chronic Condition Group	**ICD-9-CM Code[a]**
14. Chronic Pulmonary Disease	
Bronchitis not specific as acute or chronic, chronic bronchitis, emphysema	490-492
Asthma	493
Bronchiectasis with or without acute exacerbation	494
Extrinsic allergic alveolitis; chronic airway obstruction not elsewhere to classified; coal worker's pneumoconiosis; asbestosis; pneumoconiosis due other silica or silicates; pneumoconiosis due to other inorganic dust; pneumonopathy due to inhalation of other dust; pneumoconiosis unspecified	495-505
Chronic respiratory conditions due to fumes and vapors	506.4
Pulmonary fibrosis	515
15. Chronic Hepatic or Renal Diseases	
Severe Chronic Liver Disease	
Chronic hepatitis C with hepatic coma	070.44
Chronic hepatitis C without mention of hepatic coma	070.54
Chronic liver disease and cirrhosis	571
Liver abscess and sequelae of chronic liver disease (portal hypertension)	572.3
Liver abscess and sequelae of chronic liver disease (other sequelae of chronic liver disease)	572.8
Person with a condition influencing their health status, organ or tissue replaced by transplant, liver	V42.7
Nephrotic syndrome	581
Chronic glomerulonephritis	582
Rapidly progressive glomerulonephritis with lesion	583.4
Chronic kidney disease	585
Encounter for dialysis and dialysis catheter care	V56
16. Skin Ulcer: Stage 3 or 4 only	[b]
17. Genitourinary Diseases: Chronic Prostatitis	601.1
18. Arthritis and Musculoskeletal Diseases	
Diffuse diseases of connective tissue	710
Rheumatoid arthritis and other inflammatory polyarthropathies	714
Osteoarthrosis and allied disorders	715
Ankylosing spondylitis and other inflammatory spondylopathies	720
Polymyalgia rheumatica	725
Osteoporosis	733

a. International Classification of Diseases, 9th revision, Clinical Modification.
b. A diagnosis of a stage 3 or 4 skin ulcer is based on a Start-Of-Care OASIS item (M0360 = 3 or 4) and not an ICD-9-CM diagnosis code.

TABLE 5. Medical Diagnoses Used to Identify Persons with a Surgical Wound, a Diagnosis of an Injury to Trauma, or Surgical or Orthopedic Aftercare	
Diagnosis	**ICD-9-CM Code[a]**
1. Presence of Surgical Wound	[b]
2. Injury or Trauma[c]	
Fractures	800-829
Dislocations, sprains and strains	830-848
Intracranial injury	850-854
Internal injuries	860-869
Open wounds	870-897
Injury to blood vessels	900-904
Late effects of injuries	905-908
Contusions, superficial and crushing injuries	910-929
Foriegn body entering through orifice	930-939
Burns	940-949
Injury to nerves and spinal cord	950-957
Traumatic complications	958-959
Unspecified effects of external causes	990-995
Complications of surgical and medical care	996-999
3. Surgical or Orthopedic Aftercare[c]	
Organ or tissue transplant	V42
Organ or tissue replaced by other means (devices/prosthesis)	V43
Artificial openings	V44
Other post-procedural states	V45
Aftercare for specific procedures including rehabilitation	V50-V59

a. International Classification of Diseases, 9th revision, Clinical Modification.
b. A Start-Of-Care OASIS item (M0482) was used to identify individuals with a surgical wound rather than an ICD-9-CM code.
c. Includes all ICD-9-CM Injury codes from the Major Diagnostic Category "Injury and Poisoning" and related V-codes.

TABLE 6. Distribution of Chronic Conditions that Are Not Well Controlled by Clinically Complex Group		
	Clinically Complex Group	
	Community Admission	Post Acute Admission
HIV/AIDS	0.3	0.3
Cancer: Metastatic or Primary with Poor Prognosis	2.5	4.8
Diabetes	46.9	50.2
Dementia	11.6	6.7
Depression	7.8	5.1
Alzheimer's or Other Cerebral Degeneration	8.3	3.6
Other Neurological Diseases	9.0	7.2
Hypertension	57.2	44.1
Acute Myocardial Infarction or Chronic Ischemic Heart Disease	11.4	18.2
Cardiac Dysrhythmia	5.7	11.9
Heart Failure	15.0	24.3
Stroke or Late Effects of CVA	10.1	11.9
Peripheral Vascular Disease	4.8	4.6
Chronic Pulmonary Disease	19.9	30.6
Chronic Hepatic or Renal Disease	3.6	6.3
Skin Ulcer	3.8	3.2
Genitourinary Diseases	<0.1	<0.1
Arthritis and Musculoskeletal Diseases	33.7	20.2

NOTES: The specific diagnostic codes included in each chronic condition group are listed in Table 4.

Conditions are classified as not well controlled if they have severity levels of 2, 3 or 4 on the Start-Of-Care OASIS.

Percents do not sum down the column to 100 percent because all home health diagnosis fields were examined on the Start-Of-Care OASIS assessment and patients can have diagnoses in more than one chronic condition group.

TABLE 7. Most Common Pairs of Chronic Conditions in Different Body Systems that Are Not Well Controlled by Clinically Complex Patient Group		
	Clinically Complex Group	
	Community Admission	Post Acute Admission
1st Most Common	Diabetes-Hypertension	Diabetes-Hypertension
2nd Most Common	Hypertension-Arthritis	Diabetes-Heart Failure
3rd Most Common	Diabetes-Arthritis	Diabetes-Ischemic Heart Disease
4th Most Common	Diabetes-Heart Failure	Hypertension-Arthritis
5th Most Common	Hypertension-Heart Failure	Heart Failure-Chronic Airway Obstruction
6th Most Common	Hypertension-Ischemic Heart Disease	Hypertension-Heart Failure
7th Most Common	Diabetes-Ischemic Heart Disease	Hypertension-Chronic Airway Obstruction
8th Most Common	Hypertension-Chronic Airway Obstruction	Hypertension-Ischemic Heart Disease
9th Most Common	Depressive Disorder-Hypertension	Diabetes-Chronic Airway Obstruction
10th Most Common	Hypertension-Osteoporosis	Diabetes-Cardiac Dysrhythmias
11th Most Common	Alzheimer's-Hypertension	Diabetes-Other Peripheral Vascular Disease
12th Most Common	Diabetes-Other Peripheral Vascular Disease	Diabetes-Arthritis
13th Most Common	Diabetes-Chronic Airway Obstruction	Cardiac Dysrhythmia-Heart Failure
14th Most Common	Heart Failure-Chronic Airway Obstruction	Ischemic Heart Disease-Heart Failure
15th Most Common	Heart Failure-Arthritis	Hypertension-Cardiac Dysrhythmia
16th Most Common	Dementia-Hypertension	Ischemic Heart Disease-Chronic Airway Obstruction
17th Most Common	Diabetes-Late Effects of Cerebrovascular Disease	Cardiac Dysrhythmia-Chronic Airway Obstruction
18th Most Common	Chronic Ischemic Heart Disease-Arthritis	Diabetes-Chronic Kidney Disease
19th Most Common	Diabetes-Depressive Disorder	Diabetes-Ill Defined Cerebrovascular Disease
20th Most Common	Diabetes-Cardiac Dysrhythmias	Hypertension-Osteoporosis
NOTE: Chronic condition pairs are based on ICD-9-CM diagnoses at the three-digit level excluding decimal places.		

TABLE 8-a. Distribution of Sociodemographic Characteristics and Payer on Admission by Patient Group

	Community Admission		Post Acute Admission			All
	Clinically Complex	Other	Clinically Complex	Restorative	Other	
Age						
Percent < 65 years of age	13.9	14.5	14.4	13.6	14.0	14.0
Percent 65 to < 75	21.5	16.0	25.1	25.5	17.7	22.2
Percent 75 to < 85	36.8	33.5	38.8	38.2	36.1	36.9
Percent 85 or older	27.7	36.1	21.7	22.8	32.2	26.9
Percent Female	68.4	67.9	61.8	63.0	63.7	64.4
Current Residence						
Percent living in own home	75.1	69.9	78.5	79.9	77.4	76.8
Percent in family member's home	13.0	12.0	15.5	13.7	14.7	13.7
Percent in boarding home/rented room	1.0	1.1	0.7	0.6	0.9	0.8
Percent in assisted living facility	10.2	16.0	4.7	4.9	6.1	7.9
Percent in other setting	0.8	1.0	0.7	0.9	0.9	0.9
Living Arrangements[a]						
Percent living alone	32.5	31.9	26.9	26.1	32.2	28.7
Percent living with spouse	29.6	29.6	37.8	43.0	32.8	36.9
Percent living with other family	29.9	25.1	33.0	28.1	30.3	28.7
Percent living with paid help	10.3	15.1	5.8	5.8	7.1	8.3
Assisting Person[a]						
Percent relatives/friends/neighbors outside house	52.6	50.7	54.5	52.8	54.5	52.8
Percent person residing in home (not paid)	47.3	45.0	60.6	62.2	53.6	56.0
Percent paid help other than Agency staff	26.5	32.4	16.0	14.0	17.5	19.8
Payer on Admission[a]						
Percent Medicare Fee-for-Service	88.7	85.4	85.5	84.0	78.8	84.4
Percent Medicare HMO/Managed Care	4.7	7.8	8.3	10.3	13.4	9.2
Percent Medicaid Fee-for-Service	14.8	10.9	11.5	7.7	10.9	10.0
Percent Medicaid HMO/Managed Care	1.3	1.6	1.7	1.9	2.2	1.8
Percent Private Insurance	6.7	8.6	5.6	3.9	5.3	6.8

NOTE: The total number of home health episodes on which percentages in the "All" column are based, unless otherwise indicated, is 6,493,623; this includes missing values which in most cases are <0.5 percent.

a. Percents do not sum down the column to 100 percent because more than one category of this item can be checked on the Start-Of-Care OASIS.

TABLE 8-b. Percent Who Received Care in Inpatient Settings During 14 Days Preceding Admission by Patient Group

	Community Admission		Post Acute Admission			All
	Clinically Complex	Other	Clinically Complex	Restorative	Other	
Percent with Hospital Stay	0.0	0.0	79.8	78.8	86.1	55.8
Percent with Rehab Facility Stay	0.0	0.0	14.6	18.5	8.7	11.1
Percent with SNF Stay	0.0	0.0	14.4	15.9	10.5	10.2
Percent with Other Nursing Home Stay	1.6	1.3	0.1	0.1	0.1	0.5

NOTE: The total number of home health episodes on which percentages in the "All" column are based, unless otherwise indicated is 6,493,623; this includes missing values which in most cases are <0.5 percent.

TABLE 8-c. Distribution of Chronic Conditions by Patient Group						
	Community Admission		Post Acute Admission			All
	Clinically Complex	Other	Clinically Complex	Restorative	Other	
Percent with At Least 1 Chronic Condition	100.0	65.6	100.0	61.8	79.3	74.6
Percent with:						
None	0.0	34.4	0.0	38.3	20.7	25.4
1 Only	0.0	46.9	0.0	43.8	46.9	33.2
2 Only	53.7	13.3	52.7	13.4	20.7	24.7
3 Only	33.0	4.4	33.4	3.9	8.9	12.3
4 Only	11.1	0.9	11.6	0.6	2.4	3.7
5 or more	2.1	0.1	2.3	<0.1	0.4	0.7
Mean Number of Chronic Conditions						
All episodes	2.6	0.9	2.6	0.8	1.3	1.4
Episodes with at least 1 chronic condition	2.6	1.4	2.6	1.4	1.6	1.8
Percent with Diagnoses in the Following Chronic Condition Groups:[a]						
HIV/AIDS	0.3	0.1	0.3	<0.1	0.3	0.2
Cancer: Metastatic or Primary with Poor Prognosis	2.6	1.9	4.9	2.1	2.6	2.6
Diabetes	48.1	12.8	51.6	10.5	14.9	22.0
Dementia	11.8	3.7	6.9	1.2	2.5	3.8
Depression	8.5	2.0	5.5	1.0	2.1	2.8
Alzheimer's or Other Cerebral Degeneration	8.4	2.7	3.7	0.8	1.3	2.5
Other Neurological Diseases	9.2	6.3	7.3	2.0	2.4	4.6
Hypertension	60.2	21.2	47.6	18.5	28.0	28.9
Acute MI or Chronic Ischemic Heart Disease	12.5	4.5	19.4	8.9	12.1	10.4
Cardiac Dysrhythmia	6.2	3.8	12.8	6.9	11.2	7.7
Heart Failure	15.7	5.8	24.9	6.6	18.1	11.7
Stroke or Late Effects of CVA	10.6	6.6	12.2	6.0	8.9	8.0
Peripheral Vascular Disease	5.0	1.8	4.8	1.5	1.6	2.5
Chronic Pulmonary Disease	20.5	4.9	31.1	5.0	13.3	11.8
Chronic Hepatic or Renal Disease	3.7	0.8	6.5	1.0	1.5	2.2
Skin Ulcer	3.8	0.9	3.2	0.5	0.7	1.4
Genitourinary Diseases	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Arthritis and Musculoskeletal Diseases	34.5	11.2	20.8	12.4	5.4	14.8

NOTES: The total number of home health episodes on which percentages in the "All" column are based, unless otherwise indicated, is 6,493,623; this includes missing values which in most cases are <0.5 percent.

The chronic conditions reported in this table represent the 18 chronic condition groups listed in Table 4; diagnosis severity was not considered.

a. Percents do not sum down the column to 100 percent because all home health diagnosis fields were examined on the Start-Of-Care OASIS assessment and patients can have diagnoses in more than one chronic condition group.

TABLE 8-d. Distribution of Primary Diagnosis by Patient Group						
	Community Admission		Post Acute Admission			All
	Clinically Complex	Other	Clinically Complex	Restorative	Other	
Top 20 Primary Diagnoses in Descending Order of Overall Percent with Condition[a]						
Abnormal Gait (ICD-9-CM = 781)	8.8	18.3	10.3	29.1	4.8	19.0
Diabetes (ICD-9-CM = 250)	22.7	4.4	12.5	1.5	4.8	6.3
Aftercare Following Unspecified and Other Aftercare Procedures (ICD-9-CM = V58)	0.8	2.6	4.6	9.9	0.0	5.5
Heart Failure (ICD-9-CM = 428)	3.7	1.8	9.2	2.0	10.3	4.3
Arthritis (ICD-9-CM = 728)	2.5	4.6	3.4	5.3	1.9	4.2
Rehabilitation Procedures (ICD-9-CM = V57)	2.3	5.1	2.3	5.3	0.0	3.9
Chronic Ulcer of Skin (ICD-9-CM = 707)	5.6	5.8	2.4	1.0	2.7	2.9
Hypertension (ICD-9-CM = 401)	8.2	3.8	1.8	0.5	2.7	2.3
Osteoarthrosis (ICD-9-CM = 715)	4.2	1.3	2.1	1.9	0.6	1.9
COPD (ICD-9-CM = 496)	2.7	0.8	4.7	0.5	3.7	1.9
General Symptoms (ICD-9-CM = 780)	1.0	1.8	1.4	1.5	3.8	1.7
Pneumonia (ICD-9-CM = 486) (ICD-9-CM = 436)	0.3 1.3	0.4 0.8	2.4 3.1	1.0 1.3	6.8 2.8	1.7 1.7
Chronic Ischemic Heart Disease (ICD-9-CM = 414)	1.0	0.5	2.8	1.8	1.8	1.6
Other Cellulitis and Abscess (ICD-9-CM = 682)	0.8	1.5	1.2	1.2	3.0	1.4
Cardiac Dysrhythmias (ICD-9-CM = 427)	0.9	0.7	2.0	1.1	3.0	1.4
Other Complications of Procedures, Not Elsewhere Classified (ICD-9-CM = 998)	0.5	1.2	0.9	2.0	0.0	1.3
Other and Unspecified Disorders of Back (ICD-9-CM = 724)	0.8	1.9	0.6	1.1	0.9	1.2
Other and Unspecified Disorders of Joint (ICD-9-CM = 719)	0.8	1.7	0.6	1.2	0.7	1.1
Other Orthopedic Aftercare (ICD-9-CM = V54)	0.1	0.2	0.6	1.8	0.0	0.9
Percent with Diagnosis in Medicare PPS Payment Group[b]						
Diabetes	22.7	4.4	12.5	1.5	4.8	6.3
Orthopedic	16.4	31.1	17.6	42.2	9.1	29.7
Neurological	6.7	5.1	8.5	4.2	6.7	5.6
Wound/Burn	2.0	4.0	0.9	1.6	0.0	1.9

NOTE: The total number of home health episodes on which percentages in the "All" column are based, unless otherwise indicated, is 5,493,623; this includes missing values which in most cases are <0.5 percent.

a. The conditions listed represent ICD-9-CM codes at the three-digit level, excluding decimal places.
b. The four PPS payment groups are the four groups of primary diagnoses (and, rarely, secondary diagnoses) contributing to the score on the clinical dimension of the original Medicare home health PPS in place between October 1, 2000, and December 31, 2007.

TABLE 8-e. Percent with a Relatively Good Prognosis by Patient Group						
	Community Admission		Post Acute Admission			All
	Clinically Complex	Other	Clinically Complex	Restorative	Other	
Percent with Good/Fair Overall Prognosis	84.0	87.1	86.4	93.8	87.3	89.5
Percent with Good Rehabilitative Prognosis	65.2	71.1	69.5	84.5	70.9	75.8
Percent with Life Expectancy Greater Than 6 Months	88.3	89.0	86.0	91.3	87.4	89.2

NOTE: The total number of home health episodes on which percentages in the "All" column are based, unless otherwise indicated, is 6,493,623; this includes missing values which in most cases are <0.5 percent.

TABLE 8-f. Distribution of Sensory and Communication Impairments by Patient Group						
	Community Admission		Post Acute Admission			All
	Clinically Complex	Other	Clinically Complex	Restorative	Other	
Percent with Any Vision Impairment	45.4	31.0	28.8	17.4	24.3	25.5
Percent with Any Hearing Impairment	48.3	41.1	39.2	30.6	38.0	36.8
Percent with Any Impaired Verbal Expression	48.6	37.8	35.6	22.0	32.0	31.2
NOTE: The total number of home health episodes on which percentages in the "All" column are based, unless otherwise indicated, is 6,493,623; this includes missing values which in most cases are <0.5 percent.						

TABLE 8-g. Distribution of Physiologic Programs by Patient Group						
	Community Admission		Post Acute Admission			All
	Clinically Complex	Other	Clinically Complex	Restorative	Other	
Percent with Dyspnea	76.8	60.0	76.3	56.1	68.9	63.7
Percent with Daily Pain	57.8	52.7	48.3	59.7	35.8	53.4
Percent Obese	20.7	14.5	20.5	14.5	13.1	16.0
Percent with Urinary Tract Infection	3.8	4.6	9.1	8.7	12.1	7.8
Percent with Urinary Incontinence or Catheter	50.4	43.9	38.2	29.8	33.8	36.6
Percent with Bowel Incontinence	18.7	15.5	13.0	8.0	11.4	11.9
NOTE: The total number of home health episodes on which percentages in the "All" column are based, unless otherwise indicated, is 6,493,623; this includes missing values which is most cases are <0.5 percent.						

TABLE 8-h. Distribution of Skin Lesions by Patient Group						
	Community Admission		Post Acute Admission			All
	Clinically Complex	Other	Clinically Complex	Restorative	Other	
Percent with Skin Lesion or Open Wound	45.0	51.4	61.1	77.2	40.4	62.0
Percent with Pressure Ulcer	8.5	7.4	8.1	5.0	5.5	6.4
Percent with Stasis Ulcer	3.0	3.7	1.8	0.9	2.5	2.0
Percent with Surgical Wound	5.1	9.5	27.4	56.9	0.0	30.8
Percent with Surgical Wound that Is Not Healing[a]	21.8	23.2	11.0	9.6	--	10.9
NOTE: The total number of home health episodes on which percentages in the "All" column are based, unless otherwise indicated, is 6,493,623; this includes missing values which is most cases are <0.5 percent. a. The percentages in this row are based on the number which a surgical wound.						

TABLE 8-i. Distribution of Mental and Emotional Problems by Patient Group						
	Community Admission		Post Acute Admission			All
	Clinically Complex	Other	Clinically Complex	Restorative	Other	
Percent Cognitively Impaired	52.9	41.6	39.2	25.0	35.3	34.7
Percent Confused or Nonresponsive	59.8	47.9	47.9	32.4	44.2	42.1
Percent with Memory Deficit	23.8	18.3	15.7	9.4	12.7	14.1
Percent with Impaired Decision Making	26.6	18.6	17.0	9.3	13.4	14.6
Percent with Daily Anxiety	22.1	17.7	20.5	14.2	18.4	17.2
Percent with Depressed Mood	28.9	22.0	24.0	16.5	19.7	20.4
Percent with Any Other Depressive Feelings	5.1	3.6	3.3	1.8	3.0	2.8
Percent with Inappropriate Behavior	4.9	4.0	2.9	1.4	3.2	2.8
NOTE: The total number of home health episodes on which percentages in the "All" column are based, unless otherwise indicated, is 6,493,623; this includes missing values which in most cases are <0.5 percent.						

TABLE 8-j. Distribution of Dependence in Physical Functioning Prior to Admission by Patient Group						
	Community Admission		Post Acute Admission			All
	Clinically Complex	Other	Clinically Complex	Restorative	Other	
Percent Dependent in Bathing	59.5	55.3	50.7	39.8	43.1	47.2
Percent Dependent in Transferring	63.0	56.7	52.7	42.4	44.6	49.4
Percent Dependent in Ambulation	77.4	72.8	64.9	53.2	58.8	62.3
Percent Dependent in Oral Medication Management	60.5	53.4	53.1	38.9	48.1	47.5
NOTE: The total number of home health episodes on which percentages in the "All" column are based, unless otherwise indicated, is 6,493,623; this includes missing values which in most cases are <0.5 percent.						

TABLE 8-k. Distribution of Dependence in Physical Functioning on Admission by Patient Group						
	Community Admission		Post Acute Admission			All
	Clinically Complex	Other	Clinically Complex	Restorative	Other	
Percent Dependent in Bathing	73.8	70.9	77.9	79.3	65.7	75.3
Percent Dependent in Transferring	75.7	70.9	73.7	73.5	61.4	71.9
Percent Dependent in Ambulation	89.0	86.0	87.8	87.4	79.1	86.4
Percent Dependent in Oral Medication Management	68.8	58.8	64.8	47.3	59.4	56.1
Mean Number of ADL & IADL Dependencies[a]	6.9	6.5	7.0	6.6	6.0	6.6
Count of ADL & IADL Dependencies[a]						
Percent with 0-4	27.9	32.8	23.5	25.5	37.2	28.2
Percent with 5-9	44.6	41.4	50.3	55.1	43.2	49.1
Percent with 10-14	27.6	25.8	26.2	19.5	19.6	22.8
NOTE: The total number of home health episodes on which percentages in the "All" column are based, unless otherwise indicated, is 6,493,623; this includes missing values which in most cases are <0.5 percent. a. The count of ADL and IADL dependencies ranges from 0-14.						

TABLE 8-l. Distribution of Types of Care Needed by Patient Group						
	Community Admission		Post Acute Admission			All
	Clinically Complex	Other	Clinically Complex	Restorative	Other	
Percent Receiving Intravenous or Infusion Therapy	1.1	2.9	2.0	3.4	3.2	2.8
Percent Receiving Parenteral or Enteral Nutrition	0.8	1.3	1.5	1.9	1.6	1.6
Percent Receiving Oxygen	13.9	8.2	22.9	8.7	17.6	12.5
Percent Receiving Psychiatric Nursing at Home	2.3	2.2	1.3	0.6	2.5	1.4
Percent Expected to Need 10 or More Therapy Services	38.1	41.9	44.5	52.5	27.1	44.8
NOTE: The total number of home health episodes on which percentages in the "All" column are based, unless otherwise indicated, is 6,493,623; this includes missing values which in most cases are <0.5 percent.						

TABLE 8-m. Distribution of Length of Home Health Episodes by Patient Group						
	Community Admission		Post Acute Admission			All
	Clinically Complex	Other	Clinically Complex	Restorative	Other	
Length of Stay (Days)						
Mean (Standard Deviation)	90.0 (123.3)	66.0 (103.7)	58.7 (85.0)	40.1 (49.3)	55.4 (95.4)	55.0 (84.5)
Median	56.0	39.0	37.0	29.0	31.0	34.0
Percent of Episodes with Length of:						
Less than 8 days	3.6	5.6	4.4	5.0	6.7	5.1
8 to <15 days	5.3	8.6	8.7	12.9	12.0	10.4
15 to <30 days	16.1	23.4	25.9	34.2	29.1	28.2
30 to <45 days	14.5	17.9	18.8	20.0	16.9	18.5
45 to <60 days	22.4	19.3	19.6	15.0	16.4	17.5
60 to <90 days	10.2	8.4	8.2	6.0	6.8	7.3
90 to <120 days	8.7	5.9	5.7	3.4	4.4	4.9
120 to <365 days	15.5	8.7	7.3	3.3	6.0	6.5
365 to <2 years	2.9	1.7	1.2	0.3	1.4	1.1
2 or More Years	0.7	0.5	0.3	0.1	0.5	0.3
NOTES: The total number of home health episodes on which percentages in the "All" column are based, unless otherwise indicated, is 6,493,623; this includes missing values which in most cases are <0.5 percent. The length of the home health episodes is the interval beginning with admission to and ending with discharge from the home health agency.						

TABLE 9. Home Health Agency Characteristics by Agency Size						
	Agency Size (Quintiles)					All Agencies
	0-20th Percentile	20th-40th Percentile	40th-60th Percentile	60th-80th Percentile	80th-100th Percentile	
Number of Agencies	1,628	1,610	1,620	1,617	1,619	8,094
Episodes Provided						
Average total (standard deviation)	30.0 (21.7)	137.2 (39.4)	323.5 (71.1)	718.9 (171.6)	2,802.5 (3,149.7)	802.3 (1,745.4)
Range (minimum - maximum)	1 - 74	75 - 211	212 - 464	465 - 1,085	1,087 - 89,046	1 - 89,046
Length of Operation as of 1/1/2006[a]						
< 1 year	28.1%	4.4%	0.6%	0.0%	0.0%	6.6%
1 to <2 years	15.4%	12.8%	7.7%	2.6%	0.4%	7.8%
2 to <3 years	5.7%	10.6%	8.9%	6.4%	1.7%	6.7%
3 to <4 years	4.4%	5.3%	5.0%	5.0%	3.2%	4.6%
4 to <5 years	2.4%	2.9%	4.1%	3.9%	2.7%	3.2%
5 to <10 years	12.5%	15.3%	15.9%	15.8%	10.9%	14.1%
10 to <15 years	14.9%	17.3%	20.4%	20.4%	13.5%	17.3%
15 to <20 years	4.1%	7.1%	8.0%	9.3%	11.3%	7.9%
20 to <25 years	5.1%	11.3%	16.1%	18.4%	22.7%	14.7%
25 to <30 years	2.2%	4.2%	4.6%	5.9%	10.4%	5.5%
30 or more years	5.2%	8.9%	8.9%	12.2%	23.3%	11.7%
Agency Ownership[a]						
Percent hospital-based	6.1%	16.2%	24.1%	26.7%	28.4%	20.3%
Percent freestanding	93.9%	83.8%	75.9%	73.4%	71.6%	79.7%
Agency Control[a]						
For-profit	77.8%	64.5%	62.1%	58.4%	45.8%	61.8%
Non-profit (non-government)	12.3%	17.6%	21.7%	31.9%	50.0%	26.7%
Government	9.9%	17.8%	16.2%	9.7%	4.1%	11.5%
Census Division[a]						
New England	2.4%	2.4%	3.3%	4.4%	6.6%	3.8%
Mid Atlantic	5.1%	3.6%	3.0%	7.1%	14.5%	6.7%
East North Central	19.0%	14.7%	17.3%	17.1%	16.0%	16.8%
West North Central	15.2%	16.5%	10.8%	5.7%	4.1%	10.5%
South Atlantic	10.3%	11.2%	12.5%	19.7%	25.3%	15.8%
East South Central	1.2%	3.0%	7.0%	8.5%	7.7%	5.5%
West South Central	34.6%	34.8%	28.2%	18.4%	8.3%	24.9%
Mountain	6.5%	7.3%	6.8%	6.4%	4.9%	6.4%
Pacific	5.8%	6.6%	11.2%	12.9%	12.4%	9.8%

NOTE: The total number of home health agencies with at least one home health episode ending with discharge during the two-year study period is 8,094 (see Methods section for definition of home health discharge). Of those, 283 agencies (3.5 percent) terminated participation in the Medicare program during the study period.

a. Percents shown are within agency quintile (i.e., column percents).

TABLE 10. Distribution of Patient Groups among Agencies with Different Characteristics						
	Community Admission		Post Acute Admission			All
	Clinically Complex	Other	Clinically Complex	Restorative	Other	
All Agencies With At Least 100 Episodes	13.4%	24.2%	17.9%	34.1%	10.5%	100.0%
Agency Size						
1st Quintile (100-207 episodes)	18.9%	27.1%	17.9%	25.4%	10.6%	100.0%
2nd Quintile (208-372 episodes)	16.7%	25.5%	18.6%	28.5%	10.7%	100.0%
3rd Quintile (373-688 episodes)	13.7%	24.1%	18.4%	33.3%	10.5%	100.0%
4th Quintile (689-1,401 episodes)	10.7%	23.2%	17.3%	38.7%	10.1%	100.0%
5th Quintile (1,402-89,046 episodes)	6.9%	21.0%	17.2%	44.5%	10.4%	100.0%
Agency Ownership						
Hospital-based	6.1%	17.9%	19.5%	44.2%	12.3%	100.0%
Freestanding	15.7%	26.2%	17.4%	30.9%	9.9%	100.0%
Agency Control						
For-profit	18.1%	27.7%	17.1%	28.0%	9.1%	100.0%
Non-profit (non-government)	6.6%	19.5%	18.6%	43.3%	12.0%	100.0%
Government	8.0%	19.3%	20.0%	39.9%	12.8%	100.0%
Census Division						
New England	6.9%	22.6%	17.6%	35.7%	17.1%	100.0%
Mid Atlantic	8.3%	19.2%	20.4%	37.3%	14.8%	100.0%
East North Central	15.4%	21.4%	19.4%	33.4%	10.5%	100.0%
West North Central	7.7%	19.9%	18.9%	41.1%	12.5%	100.0%
South Atlantic	9.1%	27.0%	15.0%	38.9%	10.0%	100.0%
East South Central	10.8%	24.3%	18.7%	36.6%	9.7%	100.0%
West South Central	20.8%	28.1%	18.0%	25.7%	7.4%	100.0%
Mountain	9.3%	23.5%	16.4%	40.5%	10.4%	100.0%
Pacific	16.6%	23.8%	18.0%	30.9%	10.8%	100.0%

NOTES: The total number of home health agencies with at least 100 home health episodes ending with discharge during the two-year study period is 6,113 (see Methods section for definition of home health discharge). Of these, 136 agencies (2.2 percent) terminated participation in the Medicare program during the study period.

Percents reported in the table represent the average proportion of each type of agency's episodes provided to the five study groups (i.e., row percents).

TABLE 11. Unadjusted HHQI Outcomes by Patient Group						
	Community Admission		Post Acute Admission			All
	Clinically Complex	Other	Clinically Complex	Restorative	Other	
HEALTH STATUS OUTCOME MEASURES						
Improvement in Ambulation/ Locomotion						
Percent eligible to improve	79.3	78.3	77.4	82.0	70.0	78.8
Percent improving among those eligible	28.3	32.0	38.6	42.3	36.7	37.7
Improvement in Bathing						
Percent eligible to improve	79.6	78.4	79.5	85.2	71.8	80.8
Percent improving among those eligible	45.8	46.6	61.5	71.4	56.8	60.9
Improvement in Transferring						
Percent eligible to improve	67.5	64.4	64.4	68.6	53.9	65.3
Percent improving among those eligible	37.1	41.6	50.4	59.5	48.1	51.0
Improvement in Management of Oral Medications						
Percent eligible to improve	60.6	52.4	56.2	43.3	51.7	50.0
Percent improving among those eligible	30.0	27.2	41.8	47.7	38.7	39.0
Improvement in Pain Interfering with Activity						
Percent eligible to improve	63.6	59.0	53.5	65.5	42.3	59.3
Percent improving among those eligible	57.8	58.0	61.3	62.8	59.9	60.8
Improvement in Status of Surgical Wounds[a]						
Percent eligible to improve	1.4	3.5	8.8	22.0	N/A	11.6
Percent improving among those eligible	64.4	65.4	71.0	73.1	N/A	72.2
Improvement in Dyspnea						
Percent eligible to improve	68.6	54.6	67.3	52.4	61.3	57.9
Percent improving among those eligible	50.2	52.4	57.4	64.5	55.0	58.0
Improvement in Urinary Incontinence						
Percent eligible to improve	44.4	39.5	32.7	27.2	29.2	32.6
Percent improving among those eligible	37.2	39.8	49.8	57.0	49.9	48.1
UTILIZATION OUTCOME MEASURES						
Acute Care Hospitalization						
Percent eligible to be hospitalized	95.5	95.2	95.4	97.2	95.2	96.1
Percent hospitalized among those eligible	4.9	3.2	5.8	2.5	5.3	3.7
Discharge to Community						
Percent eligible to be discharged to community	87.6	90.0	87.9	93.6	88.2	90.7
Percent discharged to community among those eligible	95.1	96.4	96.3	97.9	96.4	96.9
Emergent Care						
Percent eligible to have emergent care	93.9	94.0	94.2	96.3	93.9	95.0
Percent with emergent care among those eligible	7.0	5.7	5.7	6.0	8.2	6.7
ADVERSE EVENT MEASURE[b]						
Emergent Care for Wound Infection						
Percent eligible to have emergent care for wound infection	95.5	95.2	95.4	97.2	95.2	96.1
Percent having emergent care for wound infection	0.4	0.4	0.5	0.5	0.3	0.4

NOTE: See Table 2 for description of episodes eligible to have each HHQI outcome.

a. Post Acute episodes that are not clinically complex but have a surgical wound at admission are considered Restorative. Thus, there are no episodes eligible for the Improvement in Status of Surgical Wounds outcome in the Post Acute Other group.
b. There are a total of 13 adverse events monitored by CMS. They are distinct from the 41 OBQI outcomes. “Emergent Care for Wound Infection” is the only adverse event that currently is publicly-reported.

TABLE 12. Summary Statistics for Risk-Adjustment Models for HHQI Outcomes						
	Community Admission		Post Acute Admission			All
	Clinically Complex	Other	Clinically Complex	Restorative	Other	
Improvement in Ambulation/Locomotion						
Core risk-adjustment model						
R-squared statistics	0.216	0.244	0.221	0.272	0.189	0.244
C Statistics	0.776	0.789	0.772	0.796	0.753	0.783
Full risk-adjustment model						
R-squared statistics	0.221	0.251	0.228	0.279	0.196	0.251
C Statistics	0.780	0.794	0.776	0.799	0.758	0.787
Full risk-adjustment model + patient group indicators						
R-squared statistics	---	---	---	---	---	0.252
C Statistics	---	---	---	---	---	0.788
Improvement in Bathing						
Core risk-adjustment model						
R-squared statistics	0.134	0.157	0.155	0.171	0.140	0.193
C Statistics	0.712	0.729	0.732	0.755	0.718	0.759
Full risk-adjustment model						
R-squared statistics	0.135	0.158	0.155	0.172	0.141	0.193
C Statistics	0.712	0.730	0.732	0.755	0.718	0.759
Full risk-adjustment model + patient group indicators						
R-squared statistics	---	---	---	---	---	0.195
C Statistics	---	---	---	---	---	0.760
Improvement in Transferring						
Core risk-adjustment model						
R-squared statistics	0.122	0.134	0.115	0.098	0.101	0.130
C Statistics	0.701	0.710	0.693	0.679	0.682	0.706
Full risk-adjustment model						
R-squared statistics	0.131	0.143	0.124	0.105	0.111	0.138
C Statistics	0.708	0.716	0.701	0.685	0.690	0.713
Full risk-adjustment model + patient group indicators						
R-squared statistics	---	---	---	---	---	0.140
C Statistics	---	---	---	---	---	0.714
Improvement in Management of Oral Medications						
Core risk-adjustment model						
R-squared statistics	0.121	0.108	0.137	0.152	0.118	0.153
C Statistics	0.715	0.708	0.715	0.724	0.701	0.729
Full risk-adjustment model						
R-squared statistics	0.122	0.109	0.138	0.153	0.119	0.154
C Statistics	0.716	0.709	0.716	0.724	0.702	0.730
Full risk-adjustment model + patient group indicators						
R-squared statistics	---	---	---	---	---	0.155
C Statistics	---	---	---	---	---	0.730
Improvement in Pain Interfering with Activity						
Core risk-adjustment model						
R-squared statistics	0.051	0.049	0.045	0.052	0.036	0.047
C Statistics	0.631	0.625	0.621	0.631	0.607	0.623
Full risk-adjustment model						
R-squared statistics	0.052	0.050	0.046	0.053	0.038	0.048
C Statistics	0.632	0.627	0.622	0.632	0.609	0.625
Full risk-adjustment model + patient group indicators						
R-squared statistics	---	---	---	---	---	0.049
C Statistics	---	---	---	---	---	0.625

TABLE 12 (*continued*)						
	Community Admission		Post Acute Admission			All
	Clinically Complex	Other	Clinically Complex	Restorative	Other	
Improvement in Status of Surgical Wounds[a]						
Core risk-adjustment model						
R-squared statistics	0.078	0.097	0.061	0.060	---	0.063
C Statistics	0.667	0.686	0.654	0.655	---	0.659
Full risk-adjustment model[b]						
R-squared statistics	---	---	---	---	---	---
C Statistics	---	---	---	---	---	---
Full risk-adjustment model + patient group indicators						
R-squared statistics	---	---	---	---	---	0.064
C Statistics	---	---	---	---	---	0.660
Improvement in Dyspnea						
Core risk-adjustment model						
R-squared statistics	0.085	0.075	0.105	0.096	0.101	0.100
C Statistics	0.667	0.658	0.687	0.686	0.683	0.684
Full risk-adjustment model						
R-squared statistics	0.095	0.087	0.119	0.111	0.116	0.113
C Statistics	0.676	0.669	0.698	0.698	0.695	0.695
Full risk-adjustment model + patient group indicators						
R-squared statistics	---	---	---	---	---	0.115
C Statistics	---	---	---	---	---	0.696
Improvement in Urinary Incontinence						
Core risk-adjustment model						
R-squared statistics	0.047	0.068	0.056	0.056	0.064	0.078
C Statistics	0.623	0.648	0.631	0.629	0.637	0.656
Full risk-adjustment model						
R-squared statistics	0.056	0.077	0.071	0.070	0.080	0.090
C Statistics	0.637	0.659	0.650	0.647	0.657	0.669
Full risk-adjustment model + patient group indicators						
R-squared statistics	---	---	---	---	---	0.092
C Statistics	---	---	---	---	---	0.672
Acute Care Hospitalization						
Core risk-adjustment model						
R-squared statistics	0.019	0.017	0.045	0.031	0.038	0.034
C Statistics	0.669	0.687	0.728	0.755	0.721	0.735
Full risk-adjustment model						
R-squared statistics	0.020	0.017	0.046	0.032	0.038	0.035
C Statistics	0.673	0.690	0.730	0.760	0.723	0.738
Full risk-adjustment model + patient group indicators						
R-squared statistics	---	---	---	---	---	0.035
C Statistics	---	---	---	---	---	0.740
Discharge to Community						
Core risk-adjustment model						
R-squared statistics	0.047	0.070	0.071	0.059	0.083	0.065
C Statistics	0.690	0.737	0.752	0.750	0.762	0.752
Full risk-adjustment model						
R-squared statistics	0.050	0.073	0.075	0.062	0.086	0.068
C Statistics	0.694	0.741	0.755	0.752	0.766	0.755
Full risk-adjustment model + patient group indicators						0.069
R-squared statistics	---	---	---	---	---	0.757
C Statistics	---	---	---	---	---	

TABLE 12 (*continued*)						
	Community Admission		Post Acute Admission			All
	Clinically Complex	Other	Clinically Complex	Restorative	Other	
Emergent Care						
Core risk-adjustment model						
R-squared statistics	0.018	0.015	0.025	0.018	0.023	0.022
C Statistics	0.640	0.633	0.645	0.643	0.646	0.650
Full risk-adjustment model						
R-squared statistics	0.018	0.015	0.026	0.019	0.024	0.022
C Statistics	0.642	0.634	0.646	0.646	0.647	0.652
Full risk-adjustment model + patient group indicators						
R-squared statistics	---	---	---	---	---	0.023
C Statistics	---	---	---	---	---	0.652
Emergent Care for Wound Infections						
Core risk-adjustment model						
R-squared statistics	0.009	0.006	0.010	0.005	0.010	0.006
C Statistics	0.814	0.785	0.800	0.739	0.789	0.776
Full risk-adjustment model						
R-squared statistics	0.009	0.006	0.010	0.005	0.010	0.006
C Statistics	0.814	0.789	0.801	0.740	0.798	0.776
Full risk-adjustment model + patient group indicators						
R-squared statistics	---	---	---	---	---	0.006
C Statistics	---	---	---	---	---	0.777

NOTES: The Appendix and Table 13 report detailed results for the risk-adjustment models estimated for each of the 12 HHQI outcomes.

a. Post Acute episodes that are not clinically complex but have a surgical wound at admission are considered Restorative. Thus, there are no episodes eligible for the Improvement in Status of Surgical Wounds outcome in the Post Acute Other group.
b. There are no outcome-specific risk-adjusters for the Improvement in Status of Surgical Wounds model. Only the core risk-adjustment model is estimated for this outcome.

TABLE 13-a. Full Risk-Adjustment Model for Improvement in Ambulation/Locomotion														
Risk Factor Measured at SOC/ROC	**Community Admission**				**Post Acute**						**All Episodes**			
	Clinically Complex		**Other**		**Clinically Complex**		**Restorative**		**Other**		**Without Patient Group Indicators**		**With Patient Group Indicators**	
	Full Model		**Full Model**		**Full Model**		**Full Model**		**Full Model**		**Full Model**		**Full Model**	
	Coef.	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**
PATIENT GROUP INDICATORS														
Community Admission: Clinically Complex													-0.372	0.000
Community Admission: Other													-0.333	0.000
Post acute: Clinically Complex													-0.058	0.000
Post acute: Other													-0.010	0.020
DEMOGRAPHICS														
Age below 65	0.010	0.465	-0.113	0.000	-0.033	0.000	-0.070	0.000	0.005	0.743	-0.052	0.000	-0.053	0.000
Age 75-84	-0.142	0.000	-0.114	0.000	-0.149	0.000	-0.090	0.000	-0.156	0.000	-0.100	0.000	-0.099	0.000
Age 85+	-0.357	0.000	-0.347	0.000	-0.394	0.000	-0.377	0.000	-0.451	0.000	-0.354	0.000	-0.355	0.000
Gender: female	-0.065	0.000	-0.087	0.000	-0.117	0.000	-0.112	0.000	-0.121	0.000	-0.105	0.000	-0.104	0.000
SOCIOECONOMIC FACTORS														
Any Medicaid	-0.091	0.000	-0.075	0.000	-0.099	0.000	-0.071	0.000	-0.077	0.000	-0.084	0.000	-0.084	0.000
Medicare HMO	-0.076	0.000	-0.128	0.000	-0.114	0.000	-0.206	0.000	-0.106	0.000	-0.149	0.000	-0.158	0.000
PRIOR SERVICE USE														
Discharged past 14 days:														
Discharge from hospital					0.150	0.000	0.121	0.000	0.209	0.000	0.282	0.000	0.054	0.000
Discharge from rehab facility					-0.159	0.000	-0.239	0.000	-0.101	0.000	-0.092	0.000	-0.253	0.000
Discharge from skilled nursing facility					-0.107	0.000	-0.223	0.000	-0.082	0.000	-0.030	0.000	-0.220	0.000
CLINICAL FACTORS														
Prognoses														
Overall prognosis good/fair	0.102	0.000	0.170	0.000	0.163	0.000	0.231	0.000	0.160	0.000	0.195	0.000	0.190	0.000
Rehabilitation prognosis good	0.252	0.000	0.348	0.000	0.233	0.000	0.312	0.000	0.267	0.000	0.312	0.000	0.308	0.000
Diagnoses														
Diabetes (PPS Group)	0.078	0.000	0.091	0.000	-0.002	0.805	-0.153	0.000	0.010	0.539	-0.045	0.000	-0.018	0.000
Orthopedic (PPS Group)	0.073	0.000	0.004	0.476	-0.135	0.000	-0.376	0.000	-0.084	0.000	-0.225	0.000	-0.226	0.000
Neurological (PPS Group)	-0.038	0.006	-0.202	0.000	-0.090	0.000	-0.188	0.000	-0.134	0.000	-0.162	0.000	-0.161	0.000
Wound/Burn (PPS Group)	-0.155	0.000	-0.101	0.000	-0.157	0.000	-0.033	0.022	-0.276	0.038	-0.132	0.000	-0.112	0.000
Cancer	-0.087	0.000	0.059	0.000	0.055	0.000	0.302	0.000	-0.075	0.000	0.176	0.000	0.176	0.000
Mental condition	0.072	0.000	0.165	0.000	0.102	0.000	0.134	0.000	0.090	0.000	0.115	0.000	0.118	0.000
Dementia	0.082	0.000	0.063	0.000	0.018	0.119	-0.053	0.000	0.013	0.564	0.012	0.048	0.028	0.000
Hypertension	0.094	0.000	0.052	0.000	0.075	0.000	0.078	0.000	0.004	0.566	0.061	0.000	0.073	0.000
Ischemia	0.070	0.000	0.085	0.000	0.201	0.000	0.415	0.000	0.057	0.000	0.245	0.000	0.246	0.000
Arrhythmia	0.057	0.000	0.012	0.337	0.083	0.000	0.118	0.000	0.036	0.001	0.093	0.000	0.087	0.000
Heart failure	-0.037	0.001	-0.057	0.000	-0.032	0.000	-0.086	0.000	-0.051	0.000	-0.062	0.000	-0.060	0.000
COPD	0.076	0.000	0.078	0.000	0.119	0.000	0.065	0.000	0.085	0.000	0.078	0.000	0.088	0.000
Skin ulcer	-0.182	0.000	-0.146	0.000	-0.169	0.000	-0.079	0.000	-0.213	0.000	-0.159	0.000	-0.155	0.000
Orthopedic (other than PPS)	-0.021	0.016	-0.064	0.000	-0.221	0.000	-0.366	0.000	-0.201	0.000	-0.260	0.000	-0.244	0.000
Incontinence	-0.160	0.000	-0.171	0.000	-0.201	0.000	-0.124	0.000	-0.114	0.000	-0.193	0.000	-0.179	0.000
Symptoms, signs, & ill-defined conditions	-0.026	0.010	-0.059	0.000	-0.009	0.140	0.007	0.113	-0.037	0.000	-0.003	0.307	-0.009	0.001
Diagnosis Severity														
Number of severity ratings >2	0.002	0.503	0.038	0.000	0.009	0.000	0.001	0.300	0.039	0.000	0.016	0.000	0.017	0.000

TABLE 13-a (*continued*)														
Risk Factor Measured at SOC/ROC	**Community Admission**				**Post Acute**						**All Episodes**			
	Clinically Complex		**Other**		**Clinically Complex**		**Restorative**		**Other**		**Without Patient Group Indicators**		**With Patient Group Indicators**	
	Full Model		**Full Model**		**Full Model**		**Full Model**		**Full Model**		**Full Model**		**Full Model**	
	Coef.	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**
Sensory Status														
Partially vision impaired	0.008	0.334	0.024	0.000	-0.080	0.000	-0.046	0.000	-0.063	0.000	-0.035	0.000	-0.026	0.000
Severely vision impaired	-0.196	0.000	-0.184	0.000	-0.350	0.000	-0.385	0.000	-0.295	0.000	-0.308	0.000	-0.300	0.000
Speech: Minimum difficulty	-0.077	0.000	-0.078	0.000	-0.049	0.000	-0.045	0.000	-0.064	0.000	-0.063	0.000	-0.060	0.000
Speech: Moderate difficulty	-0.088	0.000	-0.149	0.000	-0.116	0.000	-0.156	0.000	-0.103	0.000	-0.146	0.000	-0.141	0.000
Speech: Severe difficulty	-0.390	0.000	-0.410	0.000	-0.366	0.000	-0.374	0.000	-0.408	0.000	-0.415	0.000	-0.408	0.000
Integumentary Status														
Surgical wound present	0.210	0.000	0.368	0.000	0.302	0.000	0.269	0.000			0.263	0.000	0.245	0.000
Stage of most problematic pressure ulcer	-0.135	0.000	-0.171	0.000	-0.109	0.000	-0.139	0.000	-0.130	0.000	-0.152	0.000	-0.149	0.000
Status of most problematic stasis ulcer	-0.037	0.000	-0.049	0.000	-0.080	0.000	-0.108	0.000	-0.091	0.000	-0.090	0.000	-0.083	0.000
Functional Status/Physical Functioning														
ADL/IADL index	-0.116	0.000	-0.102	0.000	-0.097	0.000	-0.079	0.000	-0.117	0.000	-0.094	0.000	-0.096	0.000
Amb: Needs assistance to walk	3.546	0.000	3.424	0.000	3.179	0.000	3.567	0.000	3.108	0.000	3.391	0.000	3.396	0.000
Amb: Chairfast-Able to wheel	3.219	0.000	3.297	0.000	2.421	0.000	2.643	0.000	2.501	0.000	2.743	0.000	2.753	0.000
Amb: Chairfast-Unable to wheel	4.346	0.000	4.503	0.000	3.567	0.000	3.943	0.000	3.588	0.000	3.912	0.000	3.917	0.000
Amb: Bedfast	5.658	0.000	5.652	0.000	4.258	0.000	4.602	0.000	4.322	0.000	4.589	0.000	4.592	0.000
Transfer: Able w/minimal assistance	-0.387	0.000	-0.425	0.000	-0.397	0.000	-0.436	0.000	-0.358	0.000	-0.431	0.000	-0.428	0.000
Transfer: Unable but pivots	-0.530	0.000	-0.693	0.000	-0.594	0.000	-0.775	0.000	-0.649	0.000	-0.699	0.000	-0.697	0.000
Transfer: Needs assistance	-0.898	0.000	-1.173	0.000	-0.980	0.000	-1.160	0.000	-1.031	0.000	-1.114	0.000	-1.110	0.000
Transfer: Bedfast (Levels 4, 5)	-1.407	0.000	-1.700	0.000	-1.491	0.000	-1.814	0.000	-1.524	0.000	-1.685	0.000	-1.680	0.000
Elimination Status														
Urinary incontinence during the night	-0.203	0.000	-0.198	0.000	-0.166	0.000	-0.185	0.000	-0.180	0.000	-0.187	0.000	-0.187	0.000
Urinary incontinence during the day	-0.101	0.000	-0.101	0.000	-0.138	0.000	-0.155	0.000	-0.128	0.000	-0.124	0.000	-0.116	0.000
Urinary incontinence during the night & day	-0.211	0.000	-0.182	0.000	-0.169	0.000	-0.164	0.000	-0.200	0.000	-0.182	0.000	-0.178	0.000
Urinary catheter present	-0.637	0.000	-0.400	0.000	-0.497	0.000	-0.252	0.000	-0.408	0.000	-0.360	0.000	-0.360	0.000
Bowel incontinent less than weekly	-0.114	0.000	-0.100	0.000	-0.091	0.000	-0.145	0.000	-0.105	0.000	-0.125	0.000	-0.123	0.000
Bowel incontinent 1-3 times/week	-0.088	0.000	-0.136	0.000	-0.167	0.000	-0.274	0.000	-0.148	0.000	-0.191	0.000	-0.188	0.000
Bowel incontinent 4-6 times/week	-0.284	0.000	-0.349	0.000	-0.403	0.000	-0.429	0.000	-0.293	0.000	-0.386	0.000	-0.386	0.000
Bowel incontinent daily or more often	-0.310	0.000	-0.344	0.000	-0.394	0.000	-0.459	0.000	-0.266	0.000	-0.386	0.000	-0.389	0.000
Ostomy	-0.223	0.000	-0.081	0.000	-0.044	0.052	0.292	0.000	-0.090	0.004	0.188	0.000	0.179	0.000

TABLE 13-a (*continued*)														
Risk Factor Measured at SOC/ROC	**Community Admission**				**Post Acute**						**All Episodes**			
	Clinically Complex		**Other**		**Clinically Complex**		**Restorative**		**Other**		**Without Patient Group Indicators**		**With Patient Group Indicators**	
	Full Model		**Full Model**		**Full Model**		**Full Model**		**Full Model**		**Full Model**		**Full Model**	
	Coef.	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**
Neuro/Emotional/Behavioral Status														
Cog Func: Requires prompting	0.074	0.000	0.026	0.000	0.031	0.000	0.003	0.549	0.007	0.509	0.022	0.000	0.025	0.000
Cog Func: Requires assistance & some direction	0.156	0.000	0.047	0.000	0.067	0.000	-0.053	0.000	0.055	0.001	0.026	0.000	0.030	0.000 0.000
Cog Func: Requires considerable assistance	0.021	0.415	-0.018	0.308	-0.022	0.274	-0.218	0.000	-0.051	0.069	-0.092	0.000	-0.087	0.000
Cog Func: Totally dependent	-0.187	0.000	-0.191	0.000	-0.221	0.000	-0.495	0.000	-0.240	0.000	-0.316	0.000	-0.310	0.000
Conf Freq: In new situations	0.039	0.000	0.042	0.000	0.016	0.019	0.020	0.000	0.012	0.180	0.030	0.000	0.031	0.000
Conf Freq: Awakening at night	0.014	0.592	-0.003	0.876	-0.001	0.957	-0.071	0.000	-0.012	0.660	-0.027	0.003	-0.025	0.006
Conf Freq: Day and evening	0.031	0.064	0.026	0.017	-0.023	0.055	-0.099	0.000	-0.004	0.786	-0.031	0.000	-0.030	0.000
Conf Freq: Constantly	0.097	0.000	0.081	0.000	-0.000	1.000	-0.061	0.001	-0.012	0.697	0.004	0.674	0.010	0.278
Anx Freq: Less than daily	0.019	0.045	0.046	0.000	0.042	0.000	0.077	0.000	0.055	0.000	0.059	0.000	0.061	0.000
Anx Freq: Daily but not constantly	0.101	0.000	0.138	0.000	0.134	0.000	0.175	0.000	0.146	0.000	0.157	0.000	0.157	0.000
Anx Freq: All the time	0.195	0.000	0.214	0.000	0.196	0.000	0.240	0.000	0.207	0.000	0.228	0.000	0.227	0.000
Verbal disruption	-0.081	0.002	-0.042	0.027	-0.124	0.000	-0.094	0.000	-0.091	0.006	-0.093	0.000	-0.089	0.000
Depressive Feelings: Depressed mood	-0.035	0.000	-0.029	0.000	-0.023	0.000	0.001	0.828	-0.033	0.000	-0.012	0.000	-0.010	0.001
Depressive Feelings: Any other element (2-6)	0.056	0.005	0.014	0.376	-0.021	0.217	-0.022	0.143	-0.020	0.420	-0.005	0.520	0.004	0.624
PRIOR VALUE OF OUTCOME														
Status Prior to Admission														
Amb: Needs device to walk	-0.845	0.000	-0.945	0.000	-0.748	0.000	-0.605	0.000	-0.865	0.000	-0.715	0.000	-0.702	0.000
Amb: Needs assistance to walk	-1.637	0.000	-1.635	0.000	-0.956	0.000	-0.801	0.000	-1.114	0.000	-1.074	0.000	-1.064	0.000
Amb: Chairfast-Able to wheel	-2.342	0.000	-2.499	0.000	-1.545	0.000	-1.385	0.000	-1.986	0.000	-1.752	0.000	-1.735	0.000
Amb: Chairfast-Unable wheel	-2.299	0.000	-2.407	0.000	-1.266	0.000	-1.127	0.000	-1.649	0.000	-1.534	0.000	-1.512	0.000
Amb: Bedfast	-2.457	0.000	-2.362	0.000	-0.883	0.000	-0.541	0.000	-1.209	0.000	-0.982	0.000	-0.955	0.000
OUTCOME-SPECIFIC RISK-ADJUSTERS														
Obesity	-0.129	0.000	-0.139	0.000	-0.150	0.000	-0.156	0.000	-0.215	0.000	-0.158	0.000	-0.154	0.000
Pain less often than daily	-0.060	0.000	0.014	0.073	-0.053	0.000	-0.015	0.010	-0.060	0.000	-0.033	0.000	-0.029	0.000
Pain daily but not constantly	-0.023	0.018	0.089	0.000	-0.063	0.000	-0.045	0.000	-0.113	0.000	-0.032	0.000	-0.023	0.000
Pain all the time	-0.079	0.000	0.097	0.000	-0.119	0.000	-0.042	0.000	-0.191	0.000	-0.034	0.000	-0.025	0.000
Intercept	0.037	0.136	-0.143	0.000	0.204	0.000	0.019	0.137	0.455	0.000	-0.085	0.000	0.188	0.000
Pseudo-R2 statistic	0.221		0.251		0.228		0.279		0.196		0.251		0.252	
C statistic	0.780		0.794		0.776		0.799		0.758		0.787		0.788	
Model N	454,519		1,100,361		884,062		2,193,648		487,060		5,119,647		5,119,647	

TABLE 13-b. Full Risk-Adjustment Model for Improvement in Bathing

Risk Factor Measured at SOC/ROC	Community Admission				Post Acute						All Episodes			
	Clinically Complex		Other		Clinically Complex		Restorative		Other		Without Patient Group Indicators		With Patient Group Indicators	
	Full Model		Full Model		Full Model		Full Model		Full Model		Full Model		Full Model	
	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p
PATIENT GROUP INDICATORS														
Community Admission: Clinically Complex													-0.369	0.000
Community Admission: Other													-0.357	0.000
Post acute: Clinically Complex													-0.143	0.000
Post acute: Other													-0.066	0.000
DEMOGRAPHICS														
Age below 65	0.024	0.037	-0.089	0.000	-0.072	0.000	-0.170	0.000	-0.022	0.096	-0.111	0.000	-0.110	0.000
Age 75-84	-0.074	0.000	-0.072	0.000	-0.106	0.000	-0.093	0.000	-0.080	0.000	-0.086	0.000	-0.087	0.000
Age 85+	-0.231	0.000	-0.242	0.000	-0.297	0.000	-0.334	0.000	-0.307	0.000	-0.291	0.000	-0.294	0.000
Gender: female	-0.086	0.000	-0.110	0.000	-0.126	0.000	-0.138	0.000	-0.128	0.000	-0.125	0.000	-0.124	0.000
SOCIOECONOMIC FACTORS														
Any Medicaid	-0.137	0.000	-0.164	0.000	-0.139	0.000	-0.158	0.000	-0.149	0.000	-0.160	0.000	-0.159	0.000
Medicare HMO	-0.060	0.000	-0.080	0.000	-0.060	0.000	-0.116	0.000	-0.041	0.000	-0.079	0.000	-0.086	0.000
PRIOR SERVICE USE														
Discharged past 14 days:														
Discharge from hospital					0.176	0.000	0.178	0.000	0.156	0.000	0.356	0.000	0.136	0.000
Discharge from rehab facility					0.147	0.000	0.111	0.000	0.117	0.000	0.294	0.000	0.118	0.000
Discharge from skilled nursing facility					0.083	0.000	0.042	0.000	0.055	0.000	0.249	0.000	0.049	0.000
CLINICAL FACTORS														
Prognoses														
Overall prognosis good/fair	0.145	0.000	0.188	0.000	0.160	0.000	0.208	0.000	0.188	0.000	0.186	0.000	0.181	0.000
Rehabilitation prognosis good	0.293	0.000	0.320	0.000	0.288	0.000	0.326	0.000	0.275	0.000	0.324	0.000	0.319	0.000
Diagnoses														
Diabetes (PPS Group)	0.082	0.000	0.066	0.000	0.017	0.027	-0.128	0.000	0.016	0.326	-0.007	0.124	0.025	0.000
Orthopedic (PPS Group)	0.107	0.000	0.125	0.000	0.080	0.000	0.008	0.037	0.117	0.000	0.069	0.000	0.062	0.000
Neurological (PPS Group)	-0.022	0.069	-0.056	0.000	0.025	0.004	0.002	0.844	-0.008	0.500	-0.026	0.000	-0.018	0.000
Wound/Burn (PPS Group)	-0.151	0.000	-0.091	0.000	-0.203	0.000	-0.136	0.000	0.065	0.587	-0.151	0.000	-0.134	0.000
Cancer	-0.167	0.000	-0.121	0.000	-0.179	0.000	-0.098	0.000	-0.212	0.000	-0.134	0.000	-0.132	0.000
Mental condition	-0.049	0.001	0.016	0.128	-0.036	0.005	-0.039	0.000	0.001	0.945	-0.023	0.000	-0.021	0.000
Dementia	-0.084	0.000	-0.103	0.000	-0.173	0.000	-0.197	0.000	-0.204	0.000	-0.159	0.000	-0.135	0.000
Hypertension	0.118	0.000	0.099	0.000	0.081	0.000	0.047	0.000	0.040	0.000	0.055	0.000	0.075	0.000
Ischemia	0.081	0.000	0.093	0.000	0.120	0.000	0.192	0.000	0.042	0.000	0.118	0.000	0.124	0.000
Arrhythmia	0.055	0.000	0.016	0.131	0.068	0.000	0.058	0.000	0.046	0.000	0.052	0.000	0.050	0.000
Heart failure	-0.013	0.152	-0.013	0.149	-0.039	0.000	-0.074	0.000	-0.032	0.000	-0.054	0.000	-0.043	0.000
COPD	0.016	0.077	0.014	0.190	0.058	0.000	-0.047	0.000	0.012	0.231	-0.010	0.003	0.017	0.000
Skin ulcer	-0.173	0.000	-0.149	0.000	-0.189	0.000	-0.166	0.000	-0.225	0.000	-0.197	0.000	-0.191	0.000
Orthopedic (other than PPS)	0.063	0.000	-0.014	0.011	0.029	0.000	0.034	0.000	-0.026	0.021	0.006	0.014	0.024	0.000
Incontinence	-0.260	0.000	-0.274	0.000	-0.270	0.000	-0.220	0.000	-0.245	0.000	-0.272	0.000	-0.261	0.000
Symptoms, signs, & ill-defined conditions	-0.032	0.000	-0.055	0.000	-0.024	0.000	-0.054	0.000	-0.026	0.000	-0.038	0.000	-0.045	0.000
Diagnosis Severity														
Number of severity ratings >2	0.021	0.000	0.069	0.000	0.035	0.000	0.053	0.000	0.051	0.000	0.050	0.000	0.051	0.000

TABLE 13-b (*continued*)														
Risk Factor Measured at SOC/ROC	**Community Admission**				**Post Acute**						**All Episodes**			
	Clinically Complex		**Other**		**Clinically Complex**		**Restorative**		**Other**		**Without Patient Group Indicators**		**With Patient Group Indicators**	
	Full Model		**Full Model**		**Full Model**		**Full Model**		**Full Model**		**Full Model**		**Full Model**	
	Coef.	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**
Sensory Status														
Partially vision impaired	0.083	0.000	0.066	0.000	-0.041	0.000	-0.060	0.000	-0.038	0.000	-0.008	0.001	0.001	0.752
Severely vision impaired	-0.081	0.000	-0.081	0.000	-0.273	0.000	-0.275	0.000	-0.255	0.000	-0.204	0.000	-0.197	0.000
Speech: Minimum difficulty	-0.047	0.000	-0.049	0.000	-0.059	0.000	-0.073	0.000	-0.052	0.000	-0.063	0.000	-0.060	0.000
Speech: Moderate difficulty	-0.070	0.000	-0.125	0.000	-0.107	0.000	-0.185	0.000	-0.148	0.000	-0.136	0.000	-0.132	0.000
Speech: Severe difficulty	-0.425	0.000	-0.465	0.000	-0.419	0.000	-0.496	0.000	-0.505	0.000	-0.472	0.000	-0.468	0.000
Integumentary Status														
Surgical wound present	0.206	0.000	0.298	0.000	0.363	0.000	0.394	0.000			0.389	0.000	0.359	0.000
Stage of most problematic pressure ulcer	-0.123	0.000	-0.128	0.000	-0.103	0.000	-0.112	0.000	-0.106	0.000	-0.120	0.000	-0.117	0.000
Status of most problematic stasis ulcer	-0.032	0.000	-0.049	0.000	-0.077	0.000	-0.131	0.000	-0.100	0.000	-0.083	0.000	-0.076	0.000
Functional Status/Physical Functioning														
ADL/IADL index	-0.139	0.000	-0.152	0.000	-0.155	0.000	-0.148	0.000	-0.161	0.000	-0.150	0.000	-0.151	0.000
Bath: Able w/partial assistance	1.710	0.000	1.532	0.000	1.530	0.000	1.613	0.000	1.405	0.000	1.560	0.000	1.557	0.000
Bath: Requires assistance	2.977	0.000	2.741	0.000	2.583	0.000	2.679	0.000	2.465	0.000	2.625	0.000	2.623	0.000
Bath: Unable-Bathed in bed/chair	3.441	0.000	3.058	0.000	2.774	0.000	2.674	0.000	2.679	0.000	2.735	0.000	2.725	0.000
Bath: Totally dependent	4.286	0.000	4.073	0.000	3.392	0.000	3.385	0.000	3.255	0.000	3.446	0.000	3.444	0.000
Elimination Status														
Urinary incontinence during the night	-0.184	0.000	-0.174	0.000	-0.130	0.000	-0.149	0.000	-0.148	0.000	-0.160	0.000	-0.160	0.000
Urinary incontinence during the day	0.140	0.000	0.028	0.015	-0.047	0.002	-0.112	0.000	-0.042	0.037	0.001	0.827	0.007	0.261
Urinary incontinence during the night & day	-0.159	0.000	-0.146	0.000	-0.145	0.000	-0.130	0.000	-0.163	0.000	-0.151	0.000	-0.147	0.000
Urinary catheter present	-0.579	0.000	-0.372	0.000	-0.515	0.000	-0.318	0.000	-0.425	0.000	-0.397	0.000	-0.397	0.000
Bowel incontinent less than weekly	-0.094	0.000	-0.095	0.000	-0.112	0.000	-0.114	0.000	-0.053	0.004	-0.104	0.000	-0.102	0.000
Bowel incontinent 1-3 times/week	-0.072	0.000	-0.128	0.000	-0.170	0.000	-0.236	0.000	-0.159	0.000	-0.162	0.000	-0.160	0.000
Bowel incontinent 4-6 times/week	-0.262	0.000	-0.366	0.000	-0.424	0.000	-0.432	0.000	-0.404	0.000	-0.392	0.000	-0.392	0.000
Bowel incontinent daily or more often	-0.384	0.000	-0.404	0.000	-0.484	0.000	-0.476	0.000	-0.435	0.000	-0.444	0.000	-0.446	0.000
Ostomy	-0.211	0.000	-0.187	0.000	-0.229	0.000	-0.087	0.000	-0.141	0.000	-0.107	0.000	-0.120	0.000

TABLE 13-b (*continued*)

Risk Factor Measured at SOC/ROC	Community Admission				Post Acute						All Episodes			
	Clinically Complex		Other		Clinically Complex		Restorative		Other		Without Patient Group Indicators		With Patient Group Indicators	
	Full Model		Full Model		Full Model		Full Model		Full Model		Full Model		Full Model	
	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p
Neuro/Emotional/Behavioral Status														
Cog Func: Requires prompting	0.068	0.000	-0.017	0.008	0.013	0.070	-0.035	0.000	-0.024	0.010	-0.009	0.002	-0.007	0.023
Cog Func: Requires assistance & some direction	0.050	0.000	-0.065	0.000	-0.006	0.576	-0.080	0.000	-0.038	0.012	-0.044	0.000	-0.042	0.000
Cog Func: Requires considerable assistance	-0.047	0.033	-0.154	0.000	-0.080	0.000	-0.159	0.000	-0.112	0.000	-0.125	0.000	-0.122	0.000
Cog Func: Totally dependent	-0.393	0.000	-0.521	0.000	-0.351	0.000	-0.618	0.000	-0.537	0.000	-0.501	0.000	-0.498	0.000
Conf Freq: In new situations	-0.002	0.795	0.022	0.000	-0.021	0.001	-0.044	0.000	-0.033	0.000	-0.022	0.000	-0.021	0.000
Conf Freq: Awakening at night	-0.093	0.000	-0.054	0.001	-0.091	0.000	-0.137	0.000	-0.067	0.007	-0.099	0.000	-0.097	0.000
Conf Freq: Day and evening	-0.144	0.000	-0.099	0.000	-0.159	0.000	-0.207	0.000	-0.151	0.000	-0.165	0.000	-0.164	0.000
Conf Freq: Constantly	-0.253	0.000	-0.138	0.000	-0.246	0.000	-0.286	0.000	-0.231	0.000	-0.237	0.000	-0.233	0.000
Anx Freq: Less than daily	0.009	0.258	0.019	0.000	0.023	0.000	0.029	0.000	0.031	0.000	0.023	0.000	0.025	0.000
Anx Freq: Daily but not constantly	0.031	0.001	0.078	0.000	0.077	0.000	0.084	0.000	0.118	0.000	0.080	0.000	0.081	0.000
Anx Freq: All the time	0.160	0.000	0.166	0.000	0.123	0.000	0.117	0.000	0.166	0.000	0.145	0.000	0.144	0.000
Verbal disruption	-0.085	0.000	-0.107	0.000	-0.133	0.000	-0.107	0.000	-0.107	0.000	-0.114	0.000	-0.111	0.000
Depressive Feelings: Depressed mood	-0.073	0.000	-0.042	0.000	-0.045	0.000	-0.062	0.000	-0.057	0.000	-0.059	0.000	-0.055	0.000
Depressive Feelings: Any other element (2-6)	0.015	0.392	0.020	0.146	-0.007	0.635	-0.054	0.000	0.018	0.425	-0.011	0.128	-0.002	0.811
PRIOR VALUE OF OUTCOME														
Status Prior to Admission														
Bath: Able w/use of devices	-0.158	0.000	-0.315	0.000	-0.285	0.000	-0.254	0.000	-0.356	0.000	-0.262	0.000	-0.248	0.000
Bath: Able w/partial assistance	-0.888	0.000	-0.958	0.000	-0.753	0.000	-0.667	0.000	-0.844	0.000	-0.793	0.000	-0.775	0.000
Bath: Requires assistance	-1.406	0.000	-1.331	0.000	-0.874	0.000	-0.699	0.000	-0.997	0.000	-0.954	0.000	-0.939	0.000
Bath: Unable-Bathed in bed/chair	-1.667	0.000	-1.520	0.000	-0.923	0.000	-0.682	0.000	-1.104	0.000	-0.943	0.000	-0.923	0.000
Bath: Totally dependent	-1.892	0.000	-1.822	0.000	-0.865	0.000	-0.656	0.000	-1.103	0.000	-0.992	0.000	-0.968	0.000
OUTCOME-SPECIFIC RISK-ADJUSTERS														
Obesity	-0.091	0.000	-0.117	0.000	-0.086	0.000	-0.102	0.000	-0.138	0.000	-0.113	0.000	-0.108	0.000
Pain less often than daily	0.007	0.548	0.061	0.000	0.009	0.254	0.054	0.000	0.011	0.270	0.030	0.000	0.034	0.000
Pain daily but not constantly	0.132	0.000	0.158	0.000	0.050	0.000	0.123	0.000	0.013	0.069	0.108	0.000	0.113	0.000
Pain all the time	0.096	0.000	0.186	0.000	0.005	0.579	0.118	0.000	-0.041	0.003	0.098	0.000	0.105	0.000
Intercept	-0.669	0.000	-0.511	0.000	-0.153	0.000	-0.265	0.000	0.142	0.000	-0.419	0.000	-0.124	0.000
Pseudo-R2 statistic	0.135		0.158		0.155		0.172		0.141		0.193		0.195	
C statistic	0.712		0.730		0.732		0.755		0.718		0.759		0.760	
Model N	456,479		1,102,506		908,447		2,279,836		499,743		5,247,007		5,247,007	

TABLE 13-c. Full Risk-Adjustment Model for Improvement in Transferring

Risk Factor Measured at SOC/ROC	Community Admission				Post Acute						All Episodes			
	Clinically Complex		Other		Clinically Complex		Restorative		Other		Without Patient Group Indicators		With Patient Group Indicators	
	Full Model		Full Model		Full Model		Full Model		Full Model		Full Model		Full Model	
	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p
PATIENT GROUP INDICATORS														
Community Admission: Clinically Complex													-0.455	0.000
Community Admission: Other													-0.327	0.000
Post acute: Clinically Complex													-0.127	0.000
Post acute: Other													-0.114	0.000
DEMOGRAPHICS														
Age below 65	0.018	0.179	-0.102	0.000	-0.042	0.000	-0.103	0.000	-0.028	0.061	-0.080	0.000	-0.081	0.000
Age 75-84	-0.035	0.000	-0.025	0.000	-0.095	0.000	-0.064	0.000	-0.072	0.000	-0.053	0.000	-0.054	0.000
Age 85+	-0.157	0.000	-0.144	0.000	-0.271	0.000	-0.254	0.000	-0.279	0.000	-0.211	0.000	-0.216	0.000
Gender: female	-0.031	0.000	-0.038	0.000	-0.049	0.000	-0.034	0.000	-0.069	0.000	-0.041	0.000	-0.041	0.000
SOCIOECONOMIC FACTORS														
Any Medicaid	-0.049	0.000	-0.112	0.000	-0.102	0.000	-0.109	0.000	-0.098	0.000	-0.107	0.000	-0.104	0.000
Medicare HMO	-0.012	0.494	-0.063	0.000	-0.038	0.000	-0.132	0.000	-0.035	0.001	-0.079	0.000	-0.085	0.000
PRIOR SERVICE USE														
Discharged past 14 days: Discharge from hospital					0.115	0.000	0.125	0.000	0.132	0.000	0.277	0.000	0.070	0.000
Discharge from rehab facility					0.040	0.000	0.013	0.010	0.106	0.000	0.158	0.000	-0.004	0.356
Discharge from skilled nursing facility					0.061	0.000	-0.018	0.001	0.073	0.000	0.164	0.000	-0.025	0.000
CLINICAL FACTORS														
Prognoses														
Overall prognosis good/fair	0.108	0.000	0.160	0.000	0.147	0.000	0.186	0.000	0.184	0.000	0.168	0.000	0.163	0.000
Rehabilitation prognosis good	0.210	0.000	0.274	0.000	0.191	0.000	0.256	0.000	0.187	0.000	0.249	0.000	0.243	0.000
Diagnoses														
Diabetes (PPS Group)	-0.016	0.095	-0.056	0.000	-0.072	0.000	-0.169	0.000	-0.037	0.040	-0.128	0.000	-0.080	0.000
Orthopedic (PPS Group)	0.186	0.000	0.260	0.000	0.075	0.000	0.016	0.000	0.159	0.000	0.115	0.000	0.103	0.000
Neurological (PPS Group)	-0.002	0.875	-0.031	0.002	0.036	0.000	-0.002	0.784	0.040	0.003	-0.007	0.111	0.002	0.727
Wound/Burn (PPS Group)	-0.152	0.000	-0.189	0.000	-0.228	0.000	-0.162	0.000	0.023	0.856	-0.204	0.000	-0.194	0.000
Cancer	-0.129	0.000	-0.124	0.000	-0.064	0.000	0.011	0.131	-0.156	0.000	-0.044	0.000	-0.041	0.000
Mental condition	-0.023	0.189	0.003	0.811	0.021	0.154	0.041	0.000	0.071	0.000	0.013	0.036	0.017	0.007
Dementia	0.067	0.000	0.018	0.164	0.007	0.550	-0.059	0.000	-0.045	0.046	-0.022	0.000	0.013	0.025
Hypertension	-0.030	0.000	-0.093	0.000	-0.005	0.354	-0.010	0.023	-0.034	0.000	-0.062	0.000	-0.032	0.000
Ischemia	0.054	0.000	0.023	0.042	0.105	0.000	0.186	0.000	0.032	0.007	0.102	0.000	0.111	0.000
Arrhythmia	0.004	0.794	-0.032	0.009	0.023	0.003	-0.004	0.584	0.045	0.000	0.010	0.019	0.008	0.058
Heart failure	-0.056	0.000	-0.091	0.000	-0.074	0.000	-0.106	0.000	-0.044	0.000	-0.098	0.000	-0.084	0.000
COPD	0.053	0.000	0.047	0.000	0.077	0.000	0.008	0.324	0.057	0.000	0.017	0.000	0.048	0.000
Skin ulcer	-0.207	0.000	-0.196	0.000	-0.164	0.000	-0.172	0.000	-0.192	0.000	-0.201	0.000	-0.196	0.000
Orthopedic (other than PPS)	0.019	0.019	0.058	0.000	-0.040	0.000	-0.047	0.000	-0.013	0.291	-0.043	0.000	-0.019	0.000
Incontinence	-0.256	0.000	-0.266	0.000	-0.222	0.000	-0.183	0.000	-0.177	0.000	-0.256	0.000	-0.242	0.000
Symptoms, signs, & ill-defined conditions	-0.017	0.073	-0.010	0.075	0.022	0.000	0.015	0.000	0.022	0.005	0.023	0.000	0.014	0.000
Diagnosis Severity														
Number of severity ratings >2	0.025	0.000	0.046	0.000	0.031	0.000	0.014	0.000	0.027	0.000	0.026	0.000	0.028	0.000

TABLE 13-c (*continued*)

Risk Factor Measured at SOC/ROC	Community Admission				Post Acute						All Episodes			
	Clinically Complex		Other		Clinically Complex		Restorative		Other		Without Patient Group Indicators		With Patient Group Indicators	
	Full Model		Full Model		Full Model		Full Model		Full Model		Full Model		Full Model	
	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p
Sensory Status														
Partially vision impaired	-0.110	0.000	-0.072	0.000	-0.120	0.000	-0.094	0.000	-0.086	0.000	-0.107	0.000	-0.095	0.000
Severely vision impaired	-0.107	0.000	-0.098	0.000	-0.234	0.000	-0.201	0.000	-0.169	0.000	-0.178	0.000	-0.168	0.000
Speech: Minimum difficulty	-0.116	0.000	-0.100	0.000	-0.087	0.000	-0.078	0.000	-0.077	0.000	-0.095	0.000	-0.091	0.000
Speech: Moderate difficulty	-0.108	0.000	-0.129	0.000	-0.126	0.000	-0.134	0.000	-0.113	0.000	-0.134	0.000	-0.127	0.000
Speech: Severe difficulty	-0.372	0.000	-0.330	0.000	-0.328	0.000	-0.337	0.000	-0.340	0.000	-0.356	0.000	-0.349	0.000
Integumentary Status														
Surgical wound present	0.165	0.000	0.228	0.000	0.287	0.000	0.227	0.000			0.265	0.000	0.227	0.000
Stage of most problematic pressure ulcer	-0.095	0.000	-0.111	0.000	-0.091	0.000	-0.098	0.000	-0.080	0.000	-0.105	0.000	-0.101	0.000
Status of most problematic stasis ulcer	-0.030	0.001	-0.056	0.000	-0.091	0.000	-0.115	0.000	-0.084	0.000	-0.088	0.000	-0.081	0.000
Functional Status/Physical Functioning														
ADL/IADL index	-0.110	0.000	-0.117	0.000	-0.095	0.000	-0.082	0.000	-0.107	0.000	-0.096	0.000	-0.098	0.000
Amb: Needs assistance to walk	-0.615	0.000	-0.725	0.000	-0.600	0.000	-0.646	0.000	-0.526	0.000	-0.655	0.000	-0.654	0.000
Amb: Chairfast-Able to wheel	-0.642	0.000	-0.748	0.000	-0.721	0.000	-0.727	0.000	-0.628	0.000	-0.715	0.000	-0.715	0.000
Amb: Chairfast-Unable to wheel	-1.236	0.000	-1.284	0.000	-1.469	0.000	-1.490	0.000	-1.380	0.000	-1.416	0.000	-1.404	0.000
Amb: Bedfast	-1.635	0.000	-1.662	0.000	-1.776	0.000	-1.787	0.000	-1.707	0.000	-1.745	0.000	-1.741	0.000
Transfer: Able w/minimal assistance	-2.105	0.000	-2.092	0.000	-2.149	0.000	-2.043	0.000	-2.111	0.000	-2.096	0.000	-2.092	0.000
Transfer: Unable but pivots	2.659	0.000	2.463	0.000	2.321	0.000	2.304	0.000	2.137	0.000	2.271	0.000	2.275	0.000
Transfer: Needs assistance	3.492	0.000	3.176	0.000	2.770	0.000	2.598	0.000	2.676	0.000	2.708	0.000	2.713	0.000
Transfer: Bedfast (Levels 4, 5)	3.990	0.000	3.662	0.000	2.952	0.000	2.718	0.000	2.968	0.000	2.905	0.000	2.909	0.000
Elimination Status														
Urinary incontinence during the night	-0.074	0.000	-0.136	0.000	-0.114	0.000	-0.135	0.000	-0.137	0.000	-0.128	0.000	-0.128	0.000
Urinary incontinence during the day	-0.140	0.000	-0.176	0.000	-0.203	0.000	-0.160	0.000	-0.162	0.000	-0.179	0.000	-0.169	0.000
Urinary incontinence during the night & day	-0.227	0.000	-0.227	0.000	-0.236	0.000	-0.210	0.000	-0.224	0.000	-0.229	0.000	-0.225	0.000
Urinary catheter present	-0.650	0.000	-0.496	0.000	-0.513	0.000	-0.346	0.000	-0.451	0.000	-0.435	0.000	-0.439	0.000
Bowel incontinent less than weekly	-0.088	0.000	-0.067	0.000	-0.084	0.000	-0.101	0.000	-0.068	0.001	-0.090	0.000	-0.088	0.000
Bowel incontinent 1-3 times/week	-0.127	0.000	-0.166	0.000	-0.184	0.000	-0.210	0.000	-0.160	0.000	-0.186	0.000	-0.183	0.000
Bowel incontinent 4-6 times/week	-0.255	0.000	-0.295	0.000	-0.334	0.000	-0.352	0.000	-0.303	0.000	-0.326	0.000	-0.326	0.000
Bowel incontinent daily or more often	-0.352	0.000	-0.295	0.000	-0.357	0.000	-0.362	0.000	-0.251	0.000	-0.334	0.000	-0.337	0.000
Ostomy	-0.178	0.000	-0.079	0.000	-0.056	0.015	0.106	0.000	-0.078	0.014	0.063	0.000	0.049	0.000

TABLE 13-c (*continued*)

Risk Factor Measured at SOC/ROC	Community Admission				Post Acute						All Episodes			
	Clinically Complex		Other		Clinically Complex		Restorative		Other		Without Patient Group Indicators		With Patient Group Indicators	
	Full Model		Full Model		Full Model		Full Model		Full Model		Full Model		Full Model	
	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p
Neuro/Emotional/Behavioral Status														
Cog Func: Requires prompting	0.045	0.000	-0.028	0.000	-0.005	0.517	-0.049	0.000	-0.025	0.019	-0.027	0.000	-0.023	0.000
Cog Func: Requires assistance & some direction	0.107	0.000	0.022	0.044	0.043	0.000	-0.069	0.000	0.025	0.140	-0.000	0.989	0.004	0.455
Cog Func: Requires considerable assistance	0.019	0.437	-0.013	0.428	-0.017	0.392	-0.137	0.000	-0.046	0.096	-0.063	0.000	-0.057	0.000
Cog Func: Totally dependent	-0.165	0.000	-0.225	0.000	-0.286	0.000	-0.496	0.000	-0.289	0.000	-0.332	0.000	-0.325	0.000
Conf Freq: In new situations	-0.036	0.000	0.011	0.086	-0.045	0.000	-0.039	0.000	-0.044	0.000	-0.030	0.000	-0.028	0.000
Conf Freq: Awakening at night	-0.051	0.041	0.009	0.600	-0.087	0.000	-0.058	0.000	-0.067	0.015	-0.051	0.000	-0.049	0.000
Conf Freq: Day and evening	0.004	0.819	0.038	0.000	-0.041	0.000	-0.065	0.000	-0.019	0.246	-0.026	0.000	-0.024	0.000
Conf Freq: Constantly	0.054	0.030	0.132	0.000	0.007	0.731	-0.001	0.934	0.028	0.344	0.039	0.000	0.046	0.000
Anx Freq: Less than daily	0.007	0.435	0.006	0.332	0.015	0.019	0.010	0.019	0.028	0.002	0.010	0.000	0.012	0.000
Anx Freq: Daily but not constantly	0.062	0.000	0.074	0.000	0.081	0.000	0.071	0.000	0.099	0.000	0.078	0.000	0.078	0.000
Anx Freq: All the time	0.127	0.000	0.171	0.000	0.149	0.000	0.134	0.000	0.174	0.000	0.152	0.000	0.151	0.000
Verbal disruption	-0.041	0.107	-0.039	0.034	-0.083	0.000	-0.041	0.035	-0.023	0.480	-0.051	0.000	-0.049	0.000
Depressive Feelings: Depressed mood	-0.043	0.000	-0.015	0.012	-0.037	0.000	-0.031	0.000	-0.015	0.126	-0.029	0.000	-0.024	0.000
Depressive Feelings: Any other element (2-6)	0.012	0.539	-0.002	0.879	-0.038	0.027	-0.042	0.004	0.001	0.982	-0.026	0.001	-0.014	0.066
PRIOR VALUE OF OUTCOME														
Status Prior to Admission														
Transfer: Able w/minimal assistance	-0.845	0.000	-0.873	0.000	-0.664	0.000	-0.547	0.000	-0.742	0.000	-0.676	0.000	-0.664	0.000
Transfer: Unable but pivots	-1.499	0.000	-1.412	0.000	-0.711	0.000	-0.519	0.000	-0.855	0.000	-0.804	0.000	-0.792	0.000
Transfer: Needs assistance	-1.940	0.000	-1.890	0.000	-0.906	0.000	-0.660	0.000	-1.226	0.000	-1.045	0.000	-1.027	0.000
Transfer: Bedfast (Levels 4, 5)	-1.896	0.000	-1.837	0.000	-0.706	0.000	-0.490	0.000	-0.989	0.000	-0.815	0.000	-0.789	0.000
OUTCOME-SPECIFIC RISK-ADJUSTERS														
Obesity	-0.092	0.000	-0.121	0.000	-0.114	0.000	-0.107	0.000	-0.155	0.000	-0.118	0.000	-0.112	0.000
Pain less often than daily	-0.080	0.000	-0.015	0.060	-0.080	0.000	-0.035	0.000	-0.066	0.000	-0.051	0.000	-0.047	0.000
Pain daily but not constantly	-0.069	0.000	0.030	0.000	-0.084	0.000	-0.025	0.000	-0.086	0.000	-0.037	0.000	-0.030	0.000
Pain all the time	-0.084	0.000	0.057	0.000	-0.132	0.000	-0.044	0.000	-0.154	0.000	-0.045	0.000	-0.037	0.000
Intercept	1.359	0.000	1.456	0.000	1.473	0.000	1.491	0.000	1.552	0.000	1.360	0.000	1.650	0.000
Pseudo-R2 statistic	0.131		0.143		0.124		0.105		0.111		0.138		0.140	
C statistic	0.708		0.716		0.701		0.685		0.690		0.713		0.714	
Model N	386,945		905,886		735,585		1,834,816		374,983		4,238,214		4,238,214	

TABLE 13-d. Full Risk-Adjustment Model for Improvement in Management of Oral Medications														
Risk Factor Measured at SOC/ROC	**Community Admission**				**Post Acute**						**All Episodes**			
	Clinically Complex		**Other**		**Clinically Complex**		**Restorative**		**Other**		**Without Patient Group Indicators**		**With Patient Group Indicators**	
	Full Model		**Full Model**		**Full Model**		**Full Model**		**Full Model**		**Full Model**		**Full Model**	
	Coef.	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**
PATIENT GROUP INDICATORS														
Community Admission: Clinically Complex													-0.243	0.000
Community Admission: Other													-0.304	0.000
Post acute: Clinically Complex													-0.132	0.000
Post acute: Other													-0.032	0.000
DEMOGRAPHICS														
Age below 65	0.063	0.000	-0.045	0.000	0.079	0.000	-0.106	0.000	-0.017	0.301	-0.046	0.000	-0.043	0.000
Age 75-84	-0.166	0.000	-0.170	0.000	-0.242	0.000	-0.252	0.000	-0.181	0.000	-0.217	0.000	-0.218	0.000
Age 85+	-0.408	0.000	-0.422	0.000	-0.549	0.000	-0.623	0.000	-0.462	0.000	-0.528	0.000	-0.533	0.000
Gender: female	0.072	0.000	0.067	0.000	0.103	0.000	0.108	0.000	0.097	0.000	0.090	0.000	0.091	0.000
SOCIOECONOMIC FACTORS														
Any Medicaid	-0.134	0.000	-0.154	0.000	-0.158	0.000	-0.183	0.000	-0.130	0.000	-0.157	0.000	-0.156	0.000
Medicare HMO	-0.062	0.002	-0.007	0.508	-0.023	0.027	-0.020	0.003	-0.033	0.003	-0.015	0.001	-0.022	0.000
PRIOR SERVICE USE														
Discharged past 14 days: Discharge from hospital					0.179	0.000	0.201	0.000	0.148	0.000	0.326	0.000	0.156	0.000
Discharge from rehab facility					0.191	0.000	0.176	0.000	0.130	0.000	0.313	0.000	0.176	0.000
Discharge from skilled nursing facility					0.076	0.000	0.030	0.000	0.049	0.004	0.198	0.000	0.045	0.000
CLINICAL FACTORS														
Prognoses														
Overall prognosis good/fair	0.083	0.000	0.099	0.000	0.121	0.000	0.130	0.000	0.152	0.000	0.115	0.000	0.111	0.000
Rehabilitation prognosis good	0.155	0.000	0.115	0.000	0.167	0.000	0.184	0.000	0.149	0.000	0.167	0.000	0.162	0.000
Diagnoses														
Diabetes (PPS Group)	0.012	0.246	0.058	0.000	-0.017	0.051	-0.059	0.000	-0.049	0.006	-0.021	0.000	-0.001	0.827
Orthopedic (PPS Group)	0.006	0.605	0.040	0.000	0.066	0.000	0.043	0.000	0.044	0.001	0.047	0.000	0.043	0.000
Neurological (PPS Group)	-0.144	0.000	-0.061	0.000	-0.124	0.000	-0.131	0.000	-0.078	0.000	-0.121	0.000	-0.115	0.000
Wound/Burn (PPS Group)	-0.187	0.000	-0.094	0.000	-0.096	0.002	-0.043	0.018	-0.106	0.474	-0.128	0.000	-0.109	0.000
Cancer	-0.097	0.000	-0.080	0.000	-0.108	0.000	-0.109	0.000	-0.131	0.000	-0.108	0.000	-0.106	0.000
Mental condition	-0.320	0.000	-0.359	0.000	-0.239	0.000	-0.312	0.000	-0.347	0.000	-0.323	0.000	-0.322	0.000
Dementia	-0.406	0.000	-0.430	0.000	-0.521	0.000	-0.546	0.000	-0.513	0.000	-0.462	0.000	-0.445	0.000
Hypertension	0.167	0.000	0.158	0.000	0.100	0.000	0.091	0.000	0.027	0.001	0.100	0.000	0.112	0.000
Ischemia	0.128	0.000	0.125	0.000	0.060	0.000	0.034	0.000	0.033	0.005	0.055	0.000	0.059	0.000
Arrhythmia	0.008	0.641	0.017	0.210	-0.016	0.044	-0.055	0.000	-0.045	0.000	-0.035	0.000	-0.038	0.000
Heart failure	0.018	0.113	-0.014	0.212	-0.048	0.000	-0.112	0.000	-0.070	0.000	-0.070	0.000	-0.062	0.000
COPD	0.087	0.000	0.140	0.000	0.136	0.000	0.032	0.001	0.155	0.000	0.079	0.000	0.103	0.000
Skin ulcer	-0.047	0.023	0.029	0.028	0.016	0.211	-0.038	0.000	-0.023	0.178	-0.029	0.000	-0.024	0.000
Orthopedic (other than PPS)	0.127	0.000	0.009	0.205	0.151	0.000	0.112	0.000	0.035	0.011	0.092	0.000	0.105	0.000
Incontinence	-0.219	0.000	-0.184	0.000	-0.196	0.000	-0.162	0.000	-0.160	0.000	-0.180	0.000	-0.172	0.000
Symptoms, signs, & ill-defined conditions	-0.056	0.000	-0.100	0.000	-0.066	0.000	-0.137	0.000	-0.083	0.000	-0.097	0.000	-0.104	0.000
Diagnosis Severity														
Number of severity ratings >2	0.037	0.000	0.099	0.000	0.039	0.000	0.074	0.000	0.076	0.000	0.067	0.000	0.069	0.000

TABLE 13-d (*continued*)														
Risk Factor Measured at SOC/ROC	**Community Admission**				**Post Acute**						**All Episodes**			
	Clinically Complex		**Other**		**Clinically Complex**		**Restorative**		**Other**		**Without Patient Group Indicators**		**With Patient Group Indicators**	
	Full Model		**Full Model**		**Full Model**		**Full Model**		**Full Model**		**Full Model**		**Full Model**	
	Coef.	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**
Sensory Status														
Partially vision impaired	0.042	0.000	0.059	0.000	-0.091	0.000	-0.097	0.000	-0.072	0.000	-0.040	0.000	-0.034	0.000
Severely vision impaired	-0.320	0.000	-0.236	0.000	-0.597	0.000	-0.589	0.000	-0.495	0.000	-0.462	0.000	-0.457	0.000
Speech: Minimum difficulty	-0.143	0.000	-0.101	0.000	-0.128	0.000	-0.152	0.000	-0.136	0.000	-0.135	0.000	-0.133	0.000
Speech: Moderate difficulty	-0.228	0.000	-0.286	0.000	-0.299	0.000	-0.360	0.000	-0.328	0.000	-0.301	0.000	-0.300	0.000
Speech: Severe difficulty	-0.671	0.000	-0.790	0.000	-0.829	0.000	-0.896	0.000	-0.863	0.000	-0.835	0.000	-0.833	0.000
Integumentary Status														
Surgical wound present	0.203	0.000	0.326	0.000	0.384	0.000	0.471	0.000			0.456	0.000	0.436	0.000
Stage of most problematic pressure ulcer	-0.085	0.000	-0.099	0.000	-0.057	0.000	-0.067	0.000	-0.070	0.000	-0.076	0.000	-0.073	0.000
Status of most problematic stasis ulcer	0.048	0.000	0.057	0.000	0.009	0.361	-0.005	0.594	0.017	0.170	0.026	0.000	0.033	0.000
Functional Status/Physical Functioning														
ADL/IADL index	-0.079	0.000	-0.082	0.000	-0.087	0.000	-0.074	0.000	-0.092	0.000	-0.080	0.000	-0.080	0.000
Oral Med: Totally dependent	1.587	0.000	1.060	0.000	1.186	0.000	0.849	0.000	1.104	0.000	0.962	0.000	0.965	0.000
Elimination Status														
Urinary incontinence during the night	-0.139	0.000	-0.153	0.000	-0.108	0.000	-0.170	0.000	-0.118	0.000	-0.150	0.000	-0.149	0.000
Urinary incontinence during the day	0.040	0.017	0.012	0.403	-0.086	0.000	-0.152	0.000	-0.085	0.000	-0.051	0.000	-0.048	0.000
Urinary incontinence during the night & day	-0.037	0.000	-0.075	0.000	-0.076	0.000	-0.109	0.000	-0.081	0.000	-0.090	0.000	-0.086	0.000
Urinary catheter present	-0.223	0.000	-0.114	0.000	-0.291	0.000	-0.188	0.000	-0.179	0.000	-0.201	0.000	-0.202	0.000
Bowel incontinent less than weekly	-0.047	0.016	-0.059	0.000	-0.050	0.001	-0.082	0.000	-0.010	0.630	-0.059	0.000	-0.058	0.000
Bowel incontinent 1-3 times/week	-0.060	0.000	-0.074	0.000	-0.162	0.000	-0.188	0.000	-0.156	0.000	-0.128	0.000	-0.126	0.000
Bowel incontinent 4-6 times/week	-0.311	0.000	-0.336	0.000	-0.447	0.000	-0.401	0.000	-0.399	0.000	-0.384	0.000	-0.383	0.000
Bowel incontinent daily or more often	-0.418	0.000	-0.380	0.000	-0.523	0.000	-0.477	0.000	-0.428	0.000	-0.451	0.000	-0.452	0.000
Ostomy	-0.087	0.071	0.038	0.129	-0.023	0.376	0.029	0.028	0.053	0.134	0.043	0.000	0.032	0.001

TABLE 13-d (*continued*)

Risk Factor Measured at SOC/ROC	Community Admission				Post Acute						All Episodes			
	Clinically Complex		Other		Clinically Complex		Restorative		Other		Without Patient Group Indicators		With Patient Group Indicators	
	Full Model		Full Model		Full Model		Full Model		Full Model		Full Model		Full Model	
	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p
Neuro/Emotional/Behavioral Status														
Cog Func: Requires prompting	-0.056	0.000	-0.153	0.000	-0.122	0.000	-0.164	0.000	-0.154	0.000	-0.141	0.000	-0.139	0.000
Cog Func: Requires assistance & some direction	-0.182	0.000	-0.317	0.000	-0.251	0.000	-0.320	0.000	-0.257	0.000	-0.279	0.000	-0.279	0.000
Cog Func: Requires considerable assistance	-0.407	0.000	-0.463	0.000	-0.446	0.000	-0.549	0.000	-0.516	0.000	-0.479	0.000	-0.479	0.000
Cog Func: Totally dependent	-0.910	0.000	-0.842	0.000	-0.827	0.000	-0.917	0.000	-1.051	0.000	-0.889	0.000	-0.887	0.000
Conf Freq: In new situations	-0.175	0.000	-0.130	0.000	-0.150	0.000	-0.197	0.000	-0.148	0.000	-0.172	0.000	-0.172	0.000
Conf Freq: Awakening at night	-0.371	0.000	-0.240	0.000	-0.313	0.000	-0.333	0.000	-0.305	0.000	-0.313	0.000	-0.313	0.000
Conf Freq: Day and evening	-0.491	0.000	-0.387	0.000	-0.453	0.000	-0.518	0.000	-0.414	0.000	-0.465	0.000	-0.465	0.000
Conf Freq: Constantly	-0.773	0.000	-0.672	0.000	-0.777	0.000	-0.916	0.000	-0.703	0.000	-0.792	0.000	-0.791	0.000
Anx Freq: Less than daily	0.067	0.000	0.109	0.000	0.091	0.000	0.115	0.000	0.092	0.000	0.101	0.000	0.103	0.000
Anx Freq: Daily but not constantly	0.180	0.000	0.208	0.000	0.196	0.000	0.232	0.000	0.229	0.000	0.215	0.000	0.216	0.000
Anx Freq: All the time	0.325	0.000	0.334	0.000	0.291	0.000	0.316	0.000	0.313	0.000	0.319	0.000	0.319	0.000
Verbal disruption	-0.196	0.000	-0.310	0.000	-0.212	0.000	-0.307	0.000	-0.268	0.000	-0.272	0.000	-0.271	0.000
Depressive Feelings: Depressed mood	-0.065	0.000	-0.034	0.000	-0.075	0.000	-0.077	0.000	-0.053	0.000	-0.067	0.000	-0.064	0.000
													0.065	
Depressive Feelings: Any other element (2-6)	0.069	0.001	0.110	0.000	0.061	0.000	0.032	0.047	0.025	0.298	0.058	0.000	0.065	0.000
PRIOR VALUE OF OUTCOME														
Status Prior to Admission														
Oral Med: Able if prepared	-0.928	0.000	-0.953	0.000	-0.777	0.000	-0.787	0.000	-0.812	0.000	-0.838	0.000	-0.826	0.000
Oral Med: Totally dependent	-1.759	0.000	-1.486	0.000	-0.880	0.000	-0.787	0.000	-0.989	0.000	-1.000	0.000	-0.990	0.000
OUTCOME-SPECIFIC RISK-ADJUSTERS														
Memory deficit	-0.185	0.000	-0.241	0.000	-0.186	0.000	-0.206	0.000	-0.199	0.000	-0.212	0.000	-0.210	0.000
Impaired decision making	0.014	0.169	0.004	0.566	0.006	0.436	-0.007	0.279	-0.013	0.256	0.001	0.836	0.004	0.305
Intercept	0.424	0.000	0.406	0.000	0.522	0.000	0.586	0.000	0.596	0.000	0.419	0.000	0.650	0.000
Pseudo-R2 statistic	0.122		0.109		0.138		0.153		0.119		0.154		0.155	
C statistic	0.716		0.709		0.716		0.724		0.702		0.730		0.730	
Model N	347,257		737,008		642,433		1,159,983		359,665		3,246,343		3,246,343	

TABLE 13-e. Full Risk-Adjustment Model for Improvement in Pain Interfering with Activity														
Risk Factor Measured at SOC/ROC	**Community Admission**				**Post Acute**						**All Episodes**			
	Clinically Complex		**Other**		**Clinically Complex**		**Restorative**		**Other**		**Without Patient Group Indicators**		**With Patient Group Indicators**	
	Full Model		**Full Model**		**Full Model**		**Full Model**		**Full Model**		**Full Model**		**Full Model**	
	Coef.	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**
PATIENT GROUP INDICATORS														
Community Admission: Clinically Complex													-0.182	0.000
Community Admission: Other													-0.190	0.000
Post acute: Clinically Complex													-0.010	0.008
Post acute: Other													-0.045	0.000
DEMOGRAPHICS														
Age below 65	-0.147	0.000	-0.179	0.000	-0.192	0.000	-0.244	0.000	-0.197	0.000	-0.197	0.000	-0.198	0.000
Age 75-84	0.048	0.000	0.048	0.000	0.081	0.000	0.115	0.000	0.085	0.000	0.089	0.000	0.090	0.000
Age 85+	0.071	0.000	0.101	0.000	0.137	0.000	0.211	0.000	0.136	0.000	0.154	0.000	0.156	0.000
Gender: female	-0.108	0.000	-0.126	0.000	-0.122	0.000	-0.115	0.000	-0.126	0.000	-0.122	0.000	-0.121	0.000
SOCIOECONOMIC FACTORS														
Any Medicaid	-0.071	0.000	-0.102	0.000	-0.008	0.360	0.022	0.001	-0.020	0.129	-0.033	0.000	-0.034	0.000
Medicare HMO	-0.076	0.000	-0.149	0.000	-0.040	0.000	-0.162	0.000	-0.000	0.982	-0.121	0.000	-0.125	0.000
PRIOR SERVICE USE														
Discharged past 14 days: Discharge from hospital					0.033	0.002	0.068	0.000	0.051	0.008	0.098	0.000	-0.025	0.000
Discharge from rehab facility					0.020	0.063	0.018	0.000	-0.003	0.892	0.042	0.000	-0.045	0.000
Discharge from skilled nursing facility					-0.040	0.000	-0.064	0.000	-0.050	0.008	-0.018	0.000	-0.123	0.000
CLINICAL FACTORS														
Prognoses														
Overall prognosis good/fair	0.176	0.000	0.223	0.000	0.178	0.000	0.243	0.000	0.201	0.000	0.229	0.000	0.226	0.000
Rehabilitation prognosis good	0.342	0.000	0.277	0.000	0.191	0.000	0.186	0.000	0.203	0.000	0.243	0.000	0.240	0.000
Diagnoses														
Diabetes (PPS Group)	0.034	0.000	0.005	0.706	0.036	0.000	0.079	0.000	0.041	0.032	0.020	0.000	0.026	0.000
Orthopedic (PPS Group)	-0.059	0.000	-0.056	0.000	-0.103	0.000	-0.207	0.000	-0.115	0.000	-0.158	0.000	-0.158	0.000
Neurological (PPS Group)	0.012	0.362	-0.007	0.562	0.075	0.000	0.081	0.000	0.030	0.073	0.033	0.000	0.031	0.000
Wound/Burn (PPS Group)	0.112	0.000	0.268	0.000	0.031	0.240	0.079	0.000	-0.018	0.891	0.141	0.000	0.148	0.000
Cancer	-0.255	0.000	-0.195	0.000	-0.192	0.000	0.034	0.000	-0.297	0.000	-0.089	0.000	-0.091	0.000
Mental condition	-0.022	0.160	0.103	0.000	-0.061	0.000	0.044	0.000	0.041	0.014	0.027	0.000	0.031	0.000
Dementia	0.175	0.000	0.175	0.000	0.172	0.000	0.142	0.000	0.169	0.000	0.148	0.000	0.147	0.000
Hypertension	0.123	0.000	0.124	0.000	0.096	0.000	0.111	0.000	0.085	0.000	0.117	0.000	0.119	0.000
Ischemia	0.091	0.000	0.083	0.000	0.073	0.000	0.203	0.000	0.025	0.055	0.129	0.000	0.127	0.000
Arrhythmia	0.024	0.115	0.016	0.200	0.075	0.000	0.138	0.000	0.080	0.000	0.098	0.000	0.094	0.000
Heart failure	-0.059	0.000	-0.079	0.000	-0.025	0.000	0.029	0.000	-0.011	0.310	-0.022	0.000	-0.023	0.000
COPD	-0.050	0.000	-0.013	0.260	-0.020	0.003	0.027	0.002	0.034	0.010	-0.006	0.103	-0.010	0.018
Skin ulcer	0.080	0.000	0.133	0.000	0.000	0.993	0.102	0.000	0.048	0.001	0.077	0.000	0.080	0.000
Orthopedic (other than PPS)	-0.050	0.000	-0.201	0.000	-0.249	0.000	-0.178	0.000	-0.239	0.000	-0.192	0.000	-0.186	0.000
Incontinence	-0.213	0.000	-0.110	0.000	-0.091	0.000	-0.049	0.004	-0.076	0.007	-0.134	0.000	-0.124	0.000
Symptoms, signs, & ill-defined conditions	-0.037	0.000	-0.053	0.000	-0.037	0.000	-0.006	0.181	-0.035	0.000	-0.027	0.000	-0.027	0.000
Diagnosis Severity														
Number of severity ratings >2	-0.031	0.000	-0.010	0.000	-0.004	0.056	-0.009	0.000	-0.013	0.000	-0.008	0.000	-0.010	0.000

TABLE 13-e (*continued*)														
Risk Factor Measured at SOC/ROC	**Community Admission**				**Post Acute**						**All Episodes**			
	Clinically Complex		**Other**		**Clinically Complex**		**Restorative**		**Other**		**Without Patient Group Indicators**		**With Patient Group Indicators**	
	Full Model		**Full Model**		**Full Model**		**Full Model**		**Full Model**		**Full Model**		**Full Model**	
	Coef.	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**
Sensory Status														
Partially vision impaired	0.072	0.000	0.068	0.000	0.005	0.420	0.039	0.000	0.016	0.094	0.045	0.000	0.051	0.000
Severely vision impaired	0.011	0.604	0.048	0.001	-0.025	0.196	0.036	0.019	0.027	0.314	0.018	0.023	0.024	0.003
Speech: Minimum difficulty	-0.048	0.000	0.040	0.000	-0.003	0.726	0.037	0.000	0.015	0.179	0.019	0.000	0.021	0.000
Speech: Moderate difficulty	0.082	0.000	0.138	0.000	0.097	0.000	0.135	0.000	0.104	0.000	0.124	0.000	0.127	0.000
Speech: Severe difficulty	0.139	0.000	0.241	0.000	0.084	0.000	0.207	0.000	0.211	0.000	0.193	0.000	0.198	0.000
Integumentary Status														
Surgical wound present	0.060	0.000	0.206	0.000	0.225	0.000	0.201	0.000			0.205	0.000	0.187	0.000
Stage of most problematic pressure ulcer	-0.038	0.000	-0.067	0.000	-0.048	0.000	-0.044	0.000	-0.060	0.000	-0.055	0.000	-0.054	0.000
Status of most problematic stasis ulcer	-0.013	0.138	-0.016	0.003	-0.049	0.000	-0.084	0.000	-0.066	0.000	-0.046	0.000	-0.041	0.000
Functional Status/Physical Functioning														
ADL/IADL index	0.008	0.000	-0.004	0.000	-0.003	0.001	-0.010	0.000	-0.016	0.000	-0.005	0.000	-0.006	0.000
Elimination Status														
Urinary incontinence during the night	-0.168	0.000	-0.076	0.000	-0.104	0.000	-0.057	0.000	-0.078	0.000	-0.080	0.000	-0.080	0.000
Urinary incontinence during the day	0.275	0.000	0.171	0.000	0.106	0.000	0.059	0.000	0.104	0.000	0.166	0.000	0.171	0.000
Urinary incontinence during the night & day	-0.154	0.000	-0.053	0.000	-0.104	0.000	-0.039	0.000	-0.032	0.002	-0.065	0.000	-0.062	0.000
Urinary catheter present	-0.278	0.000	-0.014	0.295	-0.185	0.000	0.058	0.000	-0.049	0.022	-0.023	0.000	-0.022	0.000
Bowel incontinent less than weekly	-0.042	0.016	-0.015	0.250	-0.058	0.000	-0.029	0.013	-0.029	0.193	-0.036	0.000	-0.035	0.000
Bowel incontinent 1-3 times/week	0.081	0.000	0.060	0.000	-0.002	0.872	0.002	0.866	0.026	0.202	0.034	0.000	0.036	0.000
Bowel incontinent 4-6 times/week	0.020	0.422	-0.015	0.416	-0.039	0.087	-0.016	0.391	-0.023	0.479	-0.017	0.091	-0.015	0.135
Bowel incontinent daily or more often	0.028	0.159	0.018	0.208	-0.014	0.426	-0.008	0.575	0.045	0.072	0.008	0.294	0.008	0.271
Ostomy	-0.095	0.019	-0.051	0.013	0.015	0.528	0.233	0.000	-0.029	0.401	0.149	0.000	0.144	0.000

TABLE 13-e (*continued*)

Risk Factor Measured at SOC/ROC	Community Admission				Post Acute						All Episodes			
	Clinically Complex		Other		Clinically Complex		Restorative		Other		Without Patient Group Indicators		With Patient Group Indicators	
	Full Model		Full Model		Full Model		Full Model		Full Model		Full Model		Full Model	
	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p
Neuro/Emotional/Behavioral Status														
Cog Func: Requires prompting	0.122	0.000	0.076	0.000	0.043	0.000	0.040	0.000	0.050	0.000	0.062	0.000	0.063	0.000
Cog Func: Requires assistance & some direction	0.206	0.000	0.165	0.000	0.128	0.000	0.111	0.000	0.117	0.000	0.141	0.000	0.142	0.000
Cog Func: Requires considerable assistance	0.237	0.000	0.199	0.000	0.177	0.000	0.127	0.000	0.147	0.000	0.170	0.000	0.172	0.000
Cog Func: Totally dependent	0.251	0.000	0.298	0.000	0.154	0.000	0.094	0.010	0.214	0.000	0.195	0.000	0.200	0.000
Conf Freq: In new situations	0.022	0.016	0.048	0.000	0.003	0.702	0.045	0.000	0.006	0.528	0.036	0.000	0.036	0.000
Conf Freq: Awakening at night	-0.008	0.745	0.071	0.000	0.008	0.699	0.015	0.357	-0.020	0.525	0.023	0.011	0.024	0.008
Conf Freq: Day and evening	0.049	0.002	0.067	0.000	0.022	0.095	0.070	0.000	0.022	0.248	0.036	0.000	0.052	0.000
Conf Freq: Constantly	0.157	0.000	0.173	0.000	0.082	0.003	0.208	0.000	0.120	0.003	0.052	0.000	0.163	0.000
Anx Freq: Less than daily	-0.104	0.000	-0.104	0.000	-0.109	0.000	-0.076	0.000	-0.097	0.000	-0.091	0.000	-0.090	0.000
Anx Freq: Daily but not constantly	-0.222	0.000	-0.181	0.000	-0.178	0.000	-0.148	0.000	-0.146	0.000	-0.166	0.000	-0.166	0.000
Anx Freq: All the time	-0.286	0.000	-0.220	0.000	-0.186	0.000	-0.187	0.000	-0.089	0.002	-0.197	0.000	-0.198	0.000
Verbal disruption	-0.048	0.062	0.017	0.392	-0.060	0.013	-0.077	0.000	-0.021	0.562	-0.040	0.000	-0.038	0.000
Depressive Feelings: Depressed mood	-0.144	0.000	-0.153	0.000	-0.141	0.000	-0.139	0.000	-0.142	0.000	-0.144	0.000	-0.143	0.000
Depressive Feelings: Any other element (2-6)	-0.190	0.000	-0.254	0.000	-0.242	0.000	-0.284	0.000	-0.195	0.000	-0.254	0.000	-0.250	0.000
PRIOR VALUE OF OUTCOME														
Status Prior to Admission														
Intractable pain prior 2 weeks	-0.083	0.000	-0.228	0.000	-0.309	0.000	-0.262	0.000	-0.331	0.000	-0.259	0.000	-0.259	0.000
OUTCOME-SPECIFIC RISK-ADJUSTERS														
Pain daily but not constantly	0.518	0.000	0.326	0.000	0.323	0.000	0.209	0.000	0.251	0.000	0.284	0.000	0.286	0.000
Pain all the time	1.551	0.000	1.543	0.000	1.574	0.000	1.782	0.000	1.345	0.000	1.618	0.000	1.621	0.000
Intractable pain	-0.211	0.000	-0.248	0.000	-0.189	0.000	-0.212	0.000	-0.254	0.000	-0.216	0.000	-0.214	0.000
Intercept	-0.369	0.000	-0.268	0.000	0.027	0.186	-0.058	0.000	0.101	0.000	-0.188	0.000	-0.015	0.053
Pseudo-R2 statistic	0.052		0.050		0.046		0.053		0.038		0.048		0.049	
C statistic	0.632		0.627		0.622		0.632		0.609		0.625		0.625	
Model N	364,500		829,064		610,879		1,751,832		294,519		3,850,794		3,850,794	

TABLE 13-f. Full Risk-Adjustment Model for Improvement in Status of Surgical Wound														
Risk Factor Measured at SOC/ROC	**Community Admission**				**Post Acute**						**All Episodes**			
	Clinically Complex		**Other**		**Clinically Complex**		**Restorative**		**Other**		**Without Patient Group Indicators**		**With Patient Group Indicators**	
	Full Model		**Full Model**		**Full Model**		**Full Model**		**Full Model**		**Full Model**		**Full Model**	
	Coef.	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**
PATIENT GROUP INDICATORS														
Community Admission: Clinically Complex													-0.327	0.000
Community Admission: Other													-0.221	0.000
Post acute: Clinically Complex													-0.076	0.000
DEMOGRAPHICS														
Age below 65	-0.128	0.055	-0.130	0.000	-0.231	0.000	-0.227	0.000			-0.227	0.000	-0.224	0.000
Age 75-84	0.174	0.008	0.112	0.000	0.139	0.000	0.111	0.000			0.116	0.000	0.116	0.000
Age 85+	0.227	0.012	0.267	0.000	0.225	0.000	0.197	0.000			0.211	0.000	0.212	0.000
Gender: female	0.109	0.033	0.140	0.000	0.100	0.000	0.094	0.000			0.097	0.000	0.098	0.000
SOCIOECONOMIC FACTORS														
Any Medicaid	0.086	0.212	-0.016	0.627	-0.133	0.000	-0.114	0.000			-0.103	0.000	-0.104	0.000
Medicare HMO	-0.132	0.225	-0.118	0.001	-0.063	0.014	-0.077	0.000			-0.073	0.000	-0.078	0.000
PRIOR SERVICE USE														
Discharged past 14 days:														
Discharge from hospital					0.172	0.000	0.146	0.000			0.269	0.000	0.138	0.000
Discharge from rehab facility					0.237	0.000	0.213	0.000			0.271	0.000	0.217	0.000
Discharge from skilled nursing facility					0.114	0.000	0.137	0.000			0.197	0.000	0.130	0.000
CLINICAL FACTORS														
Prognoses														
Overall prognosis good/fair	0.384	0.000	0.500	0.000	0.288	0.000	0.364	0.000			0.373	0.000	0.369	0.000
Rehabilitation prognosis good	0.191	0.006	0.165	0.000	0.097	0.000	0.109	0.000			0.129	0.000	0.123	0.000
Diagnoses														
Diabetes (PPS Group)	-0.316	0.000	-0.221	0.001	-0.123	0.000	-0.335	0.000			-0.267	0.000	-0.239	0.000
Orthopedic (PPS Group)	0.256	0.005	0.325	0.000	0.231	0.000	0.330	0.000			0.329	0.000	0.322	0.000
Neurological (PPS Group)	0.024	0.892	0.073	0.511	0.244	0.000	0.139	0.000			0.149	0.000	0.150	0.000
Wound/Burn (PPS Group)	-0.312	0.000	-0.171	0.000	-0.460	0.000	-0.399	0.000			-0.373	0.000	-0.359	0.000
Cancer	-0.107	0.194	-0.057	0.043	-0.021	0.403	-0.163	0.000			-0.132	0.000	-0.129	0.000
Mental condition, & ill-defined conditions	0.127	0.405	0.019	0.764	0.107	0.033	0.088	0.000			0.093	0.000	0.088	0.000
Dementia	0.226	0.162	0.210	0.084	0.248	0.000	0.074	0.221			0.133	0.001	0.156	0.000
Hypertension	0.072	0.164	0.068	0.016	0.107	0.000	0.054	0.000			0.053	0.000	0.067	0.000
Ischemia	0.165	0.026	0.109	0.036	0.105	0.000	0.111	0.000			0.105	0.000	0.108	0.000
Arrhythmia	0.038	0.713	0.257	0.000	0.129	0.000	0.119	0.000			0.129	0.000	0.129	0.000
Heart failure	-0.193	0.018	-0.095	0.155	-0.028	0.243	0.023	0.229			-0.025	0.071	-0.016	0.249
COPD	0.063	0.425	0.042	0.549	0.118	0.000	0.050	0.015			0.058	0.000	0.081	0.000
Skin ulcer	-0.121	0.088	-0.046	0.128	-0.366	0.000	-0.357	0.000			-0.323	0.000	-0.319	0.000
Orthopedic (other than PPS)	0.140	0.041	0.251	0.000	0.387	0.000	0.267	0.000			0.276	0.000	0.282	0.000
Incontinence	0.107	0.587	-0.063	0.536	0.013	0.888	0.078	0.074			0.042	0.241	0.046	0.198
Symptoms, signs, & ill-defined conditions	-0.068	0.392	-0.116	0.002	-0.054	0.015	0.017	0.083			0.002	0.773	-0.003	0.683
Diagnosis Severity														
Number of severity ratings >2	-0.024	0.262	0.023	0.004	-0.020	0.001	0.014	0.000			0.009	0.000	0.012	0.000

TABLE 13-f (*continued*)														
Risk Factor Measured at SOC/ROC	**Community Admission**				**Post Acute**						**All Episodes**			
	Clinically Complex		**Other**		**Clinically Complex**		**Restorative**		**Other**		**Without Patient Group Indicators**		**With Patient Group Indicators**	
	Full Model		**Full Model**		**Full Model**		**Full Model**		**Full Model**		**Full Model**		**Full Model**	
	Coef.	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**
Sensory Status														
Partially vision impaired	-0.068	0.243	-0.012	0.676	-0.074	0.000	-0.021	0.046			-0.043	0.000	-0.037	0.000
Severely vision impaired	-0.190	0.223	0.041	0.627	-0.238	0.000	0.011	0.780			-0.072	0.016	-0.061	0.042
Speech: Minimum difficulty	-0.034	0.651	0.025	0.487	0.002	0.944	0.003	0.783			0.001	0.946	0.003	0.775
Speech: Moderate difficulty	-0.092	0.557	0.010	0.901	-0.059	0.312	-0.031	0.340			-0.041	0.111	-0.040	0.122
Speech: Severe difficulty	-0.296	0.195	-0.034	0.747	-0.195	0.024	-0.080	0.042			-0.105	0.002	-0.104	0.002
Integumentary Status														
Surgical wound present	1.019	0.000	1.480	0.000	1.354	0.000	1.677	0.000			1.559	0.000	1.569	0.000
Stage of most problematic pressure ulcer	-0.114	0.008	-0.180	0.000	-0.045	0.002	0.007	0.417			-0.033	0.000	-0.032	0.000
Status of most problematic stasis ulcer	-0.182	0.006	-0.248	0.000	-0.147	0.000	-0.197	0.000			-0.200	0.000	-0.196	0.000
Functional Status/Physical Functioning														
ADL/IADL index	-0.001	0.926	0.008	0.024	0.009	0.002	0.026	0.000			0.022	0.000	0.021	0.000
Elimination Status														
Urinary incontinence during the day	0.013	0.944	0.042	0.655	0.062	0.375	0.036	0.257			0.037	0.171	0.039	0.151
Urinary incontinence during the night & day	0.032	0.644	0.021	0.527	-0.004	0.877	-0.020	0.071			-0.016	0.085	-0.014	0.141
Urinary catheter present	-0.325	0.028	-0.151	0.020	-0.143	0.002	-0.063	0.000			-0.084	0.000	-0.087	0.000
Bowel incontinent less than weekly	0.049	0.758	-0.072	0.383	-0.070	0.208	-0.060	0.042			-0.060	0.015	-0.058	0.018
Bowel incontinent 1-3 times/week	-0.297	0.030	-0.195	0.015	-0.137	0.010	-0.076	0.011			-0.120	0.000	-0.118	0.000
Bowel incontinent 4-6 times/week	-0.159	0.496	-0.338	0.012	-0.137	0.142	-0.221	0.000			-0.229	0.000	-0.225	0.000
Bowel incontinent daily or more often	-0.517	0.004	-0.269	0.007	-0.355	0.000	-0.235	0.000			-0.283	0.000	-0.283	0.000
Ostomy	-0.297	0.130	-0.371	0.000	-0.185	0.000	-0.132	0.000			-0.144	0.000	-0.155	0.000

TABLE 13-f (*continued*)														
Risk Factor Measured at SOC/ROC	**Community Admission**				**Post Acute**						**All Episodes**			
	Clinically Complex		**Other**		**Clinically Complex**		**Restorative**		**Other**		**Without Patient Group Indicators**		**With Patient Group Indicators**	
	Full Model		**Full Model**		**Full Model**		**Full Model**		**Full Model**		**Full Model**		**Full Model**	
	Coef.	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**
Neuro/Emotional/Behavioral Status														
Cog Func: Requires prompting	0.034	0.671	0.028	0.473	0.023	0.367	-0.009	0.484			-0.002	0.861	-0.000	0.983
Cog Func: Requires assistance & some direction	0.121	0.393	0.110	0.117	0.072	0.156	0.027	0.325			0.045	0.044	0.048	0.031
Cog Func: Requires considerable assistance	0.004	0.989	0.247	0.064	0.119	0.246	0.030	0.583			0.061	0.172	0.067	0.131
Cog Func: Totally dependent	0.331	0.372	0.013	0.953	0.041	0.808	-0.059	0.506			-0.047	0.504	-0.040	0.573
Conf Freq: In new situations	0.009	0.893	0.102	0.001	0.024	0.254	0.064	0.000			0.059	0.000	0.060	0.000
Conf Freq: Awakening at night	-0.497	0.009	-0.532	0.000	0.065	0.420	-0.061	0.160			-0.096	0.006	-0.091	0.010
Conf Freq: Day and evening	-0.014	0.925	-0.066	0.366	-0.066	0.201	-0.026	0.348			-0.043	0.061	-0.040	0.075
Conf Freq: Constantly	0.417	0.149	0.281	0.050	-0.035	0.771	0.084	0.205			0.100	0.056	0.106	0.042
Anx Freq: Less than daily	-0.011	0.859	0.021	0.433	0.031	0.101	0.022	0.010			0.022	0.002	0.023	0.001
Anx Freq: Daily but not constantly	-0.046	0.538	-0.033	0.315	0.013	0.552	-0.008	0.461			-0.005	0.558	-0.005	0.584
Anx Freq: All the time	-0.422	0.036	0.098	0.308	0.011	0.870	-0.037	0.242			-0.021	0.442	-0.022	0.419
Verbal disruption	0.153	0.504	-0.139	0.275	-0.127	0.157	-0.349	0.000			-0.267	0.000	-0.267	0.000
Depressive Feelings: Depressed mood	-0.026	0.680	-0.079	0.008	-0.038	0.054	-0.058	0.000			-0.059	0.000	-0.057	0.000
Depressive Feelings: Any other element (2-6)	0.020	0.897	-0.234	0.007	-0.062	0.305	-0.171	0.000			-0.158	0.000	-0.154	0.000
Intercept	-0.104	0.485	-0.617	0.000	0.027	0.646	-0.188	0.000			-0.315	0.000	-0.166	0.000
Pseudo-R2 statistic	0.007		0.008		0.012		0.005				0.019		0.064	
C statistic	0.667		0.686		0.654		0.655				0.659		0.660	
Model N	8,044		49,645		100,686		589,392				750,164		750,164	

TABLE 13-g. Full Risk-Adjustment Model for Improvement of Dyspnea														
Risk Factor Measured at SOC/ROC	**Community Admission**				**Post Acute**						**All Episodes**			
	Clinically Complex		**Other**		**Clinically Complex**		**Restorative**		**Other**		**Without Patient Group Indicators**		**With Patient Group Indicators**	
	Full Model		**Full Model**		**Full Model**		**Full Model**		**Full Model**		**Full Model**		**Full Model**	
	Coef.	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**
PATIENT GROUP INDICATORS														
Community Admission: Clinically Complex													-0.476	0.000
Community Admission: Other													-0.356	0.000
Post acute: Clinically Complex													-0.155	0.000
Post acute: Other													-0.157	0.000
DEMOGRAPHICS														
Age below 65	-0.018	0.139	0.036	0.000	-0.069	0.000	-0.060	0.000	-0.045	0.001	-0.043	0.000	-0.042	0.000
Age 75-84	0.048	0.000	0.045	0.000	0.016	0.011	-0.041	0.000	0.035	0.000	0.004	0.178	0.003	0.411
Age 85+	0.029	0.006	0.038	0.000	0.004	0.587	-0.095	0.000	0.030	0.004	-0.017	0.000	-0.022	0.000
Gender: female	0.019	0.012	0.060	0.000	0.021	0.000	0.051	0.000	0.040	0.000	0.041	0.000	0.042	0.000
SOCIOECONOMIC FACTORS														
Any Medicaid	-0.048	0.000	-0.101	0.000	-0.056	0.000	-0.053	0.000	-0.035	0.004	-0.070	0.000	-0.066	0.000
Medicare HMO	0.137	0.000	0.136	0.000	0.093	0.000	0.092	0.000	0.091	0.000	0.109	0.000	0.104	0.000
PRIOR SERVICE USE														
Discharged past 14 days: Discharge from hospital					0.059	0.000	0.119	0.000	0.026	0.132	0.256	0.000	0.028	0.000
Discharge from rehab facility					0.157	0.000	0.174	0.000	0.131	0.000	0.293	0.000	0.118	0.000
Discharge from skilled nursing facility					0.137	0.000	0.097	0.000	0.106	0.000	0.251	0.000	0.053	0.000
CLINICAL FACTORS														
Prognoses														
Overall prognosis good/fair	0.161	0.000	0.192	0.000	0.227	0.000	0.233	0.000	0.257	0.000	0.220	0.000	0.214	0.000
Rehabilitation prognosis good	0.254	0.000	0.203	0.000	0.212	0.000	0.248	0.000	0.208	0.000	0.235	0.000	0.227	0.000
Diagnoses														
Diabetes (PPS Group)	-0.038	0.000	-0.079	0.000	-0.053	0.000	0.102	0.000	0.015	0.362	-0.101	0.000	-0.052	0.000
Orthopedic (PPS Group)	0.211	0.000	0.317	0.000	0.154	0.000	0.234	0.000	0.222	0.000	0.269	0.000	0.251	0.000
Neurological (PPS Group)	0.120	0.000	0.169	0.000	0.186	0.000	0.135	0.000	0.220	0.000	0.148	0.000	0.157	0.000
Wound/Burn (PPS Group)	-0.196	0.000	-0.228	0.000	-0.301	0.000	-0.238	0.000	-0.068	0.601	-0.256	0.000	-0.251	0.000
Cancer	-0.251	0.000	-0.265	0.000	-0.294	0.000	-0.260	0.000	-0.234	0.000	-0.270	0.000	-0.266	0.000
Mental condition	-0.041	0.006	-0.030	0.007	-0.058	0.000	0.007	0.566	0.081	0.000	-0.020	0.001	-0.013	0.022
Dementia	0.158	0.000	0.124	0.000	0.129	0.000	0.133	0.000	0.115	0.000	0.095	0.000	0.132	0.000
Hypertension	-0.037	0.000	-0.092	0.000	-0.002	0.699	-0.022	0.000	0.009	0.240	-0.076	0.000	-0.044	0.000
Ischemia	0.039	0.000	-0.047	0.000	-0.022	0.001	-0.079	0.000	-0.045	0.000	-0.047	0.000	-0.038	0.000
Arrhythmia	-0.026	0.059	-0.048	0.000	-0.024	0.001	-0.090	0.000	-0.005	0.662	-0.053	0.000	-0.054	0.000
Heart failure	-0.098	0.000	-0.140	0.000	-0.123	0.000	-0.216	0.000	-0.144	0.000	-0.161	0.000	-0.144	0.000
COPD	-0.198	0.000	-0.302	0.000	-0.280	0.000	-0.413	0.000	-0.368	0.000	-0.319	0.000	-0.288	0.000
Skin ulcer	-0.042	0.010	-0.100	0.000	-0.140	0.000	-0.173	0.000	-0.096	0.000	-0.140	0.000	-0.134	0.000
Orthopedic (other than PPS)	0.084	0.000	0.090	0.000	0.028	0.000	0.161	0.000	0.056	0.000	0.074	0.000	0.101	0.000
Incontinence	-0.250	0.000	-0.275	0.000	-0.289	0.000	-0.240	0.000	-0.185	0.000	-0.275	0.000	-0.262	0.000
Symptoms, signs, & ill-defined conditions	-0.029	0.001	-0.015	0.010	-0.034	0.000	-0.039	0.000	0.029	0.000	-0.018	0.000	-0.028	0.000
Diagnosis Severity														
Number of severity ratings >2	0.008	0.006	0.024	0.000	0.028	0.000	0.022	0.000	-0.008	0.001	0.016	0.000	0.018	0.000

TABLE 13-g (*continued*)														
Risk Factor Measured at SOC/ROC	**Community Admission**				**Post Acute**						**All Episodes**			
	Clinically Complex		**Other**		**Clinically Complex**		**Restorative**		**Other**		**Without Patient Group Indicators**		**With Patient Group Indicators**	
	Full Model		**Full Model**		**Full Model**		**Full Model**		**Full Model**		**Full Model**		**Full Model**	
	Coef.	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**
Sensory Status														
Partially vision impaired	-0.149	0.000	-0.176	0.000	-0.190	0.000	-0.195	0.000	-0.169	0.000	-0.199	0.000	-0.187	0.000
Severely vision impaired	-0.144	0.000	-0.136	0.000	-0.154	0.000	-0.183	0.000	-0.145	0.000	-0.174	0.000	-0.162	0.000
Speech: Minimum difficulty	-0.097	0.000	-0.101	0.000	-0.099	0.000	-0.108	0.000	-0.076	0.000	-0.105	0.000	-0.101	0.000
Speech: Moderate difficulty	-0.046	0.003	-0.083	0.000	-0.092	0.000	-0.099	0.000	-0.039	0.032	-0.085	0.000	-0.080	0.000
Speech: Severe difficulty	-0.122	0.000	-0.120	0.000	-0.148	0.000	-0.131	0.000	-0.107	0.000	-0.134	0.000	-0.127	0.000
Integumentary Status														
Surgical wound present	0.051	0.000	0.132	0.000	0.256	0.000	0.259	0.000			0.299	0.000	0.249	0.000
Stage of most problematic pressure ulcer	-0.023	0.004	-0.019	0.001	-0.026	0.000	-0.038	0.000	-0.017	0.058	-0.030	0.000	-0.027	0.000
Status of most problematic stasis ulcer	-0.046	0.000	-0.055	0.000	-0.076	0.000	-0.092	0.000	-0.065	0.000	-0.072	0.000	-0.065	0.000
Functional Status/Physical Functioning														
ADL/IADL index	0.003	0.038	-0.001	0.451	-0.001	0.227	0.006	0.000	-0.013	0.000	0.002	0.000	0.001	0.167
Elimination Status														
Urinary incontinence during the night	-0.083	0.000	-0.055	0.000	-0.043	0.000	-0.078	0.000	-0.027	0.032	-0.059	0.000	-0.059	0.000
Urinary incontinence during the day	0.112	0.000	0.031	0.017	-0.000	0.990	-0.058	0.000	-0.009	0.707	0.007	0.301	0.017	0.014
Urinary incontinence during the night & day	-0.186	0.000	-0.178	0.000	-0.152	0.000	-0.171	0.000	-0.124	0.000	-0.172	0.000	-0.168	0.000
Urinary catheter present	-0.270	0.000	-0.187	0.000	-0.255	0.000	-0.174	0.000	-0.137	0.000	-0.194	0.000	-0.200	0.000
Bowel incontinent less than weekly	-0.021	0.209	-0.005	0.693	-0.039	0.007	-0.052	0.000	0.031	0.130	-0.027	0.000	-0.025	0.000
Bowel incontinent 1-3 times/week	-0.018	0.214	-0.023	0.036	-0.071	0.000	-0.097	0.000	-0.041	0.029	-0.060	0.000	-0.056	0.000
Bowel incontinent 4-6 times/week	-0.023	0.351	-0.035	0.059	-0.100	0.000	-0.123	0.000	-0.089	0.004	-0.083	0.000	-0.080	0.000
Bowel incontinent daily or more often	-0.122	0.000	-0.095	0.000	-0.116	0.000	-0.128	0.000	-0.105	0.000	-0.121	0.000	-0.120	0.000
Ostomy	-0.053	0.190	-0.008	0.697	-0.023	0.332	0.031	0.009	0.011	0.724	0.034	0.000	0.017	0.063

TABLE 13-g (*continued*)

Risk Factor Measured at SOC/ROC	Community Admission				Post Acute						All Episodes			
	Clinically Complex		Other		Clinically Complex		Restorative		Other		Without Patient Group Indicators		With Patient Group Indicators	
	Full Model		Full Model		Full Model		Full Model		Full Model		Full Model		Full Model	
	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p
Neuro/Emotional/Behavioral Status														
Cog Func: Requires prompting	0.066	0.000	0.002	0.735	0.022	0.003	0.003	0.610	0.025	0.011	0.013	0.000	0.016	0.000
Cog Func: Requires assistance & some direction	0.101	0.000	0.064	0.000	0.084	0.000	0.069	0.000	0.140	0.000	0.079	0.000	0.084	0.000
Cog Func: Requires considerable assistance	0.101	0.000	0.091	0.000	0.047	0.025	0.036	0.068	0.128	0.000	0.068	0.000	0.075	0.000
Cog Func: Totally dependent	0.141	0.001	-0.010	0.746	-0.096	0.012	-0.133	0.000	0.040	0.448	-0.030	0.075	-0.018	0.289
Conf Freq: In new situations	-0.021	0.023	-0.045	0.000	-0.066	0.000	-0.086	0.000	-0.050	0.000	-0.067	0.000	-0.065	0.000
Conf Freq: Awakening at night	-0.068	0.004	0.006	0.722	-0.074	0.000	-0.075	0.000	-0.102	0.000	-0.064	0.000	-0.061	0.000
Conf Freq: Day and evening	-0.023	0.134	0.002	0.858	-0.067	0.000	-0.062	0.000	-0.049	0.003	-0.048	0.000	-0.045	0.000
Conf Freq: Constantly	0.063	0.015	0.112	0.000	0.042	0.079	0.003	0.910	0.089	0.009	0.056	0.000	0.063	0.000
Anx Freq: Less than daily	-0.083	0.000	-0.085	0.000	-0.093	0.000	-0.092	0.000	-0.083	0.000	-0.090	0.000	-0.088	0.000
Anx Freq: Daily but not constantly	-0.115	0.000	-0.084	0.000	-0.095	0.000	-0.077	0.000	-0.094	0.000	-0.088	0.000	-0.088	0.000
Anx Freq: All the time	-0.100	0.000	-0.061	0.001	-0.100	0.000	-0.071	0.000	-0.118	0.000	-0.082	0.000	-0.083	0.000
Verbal disruption	-0.017	0.487	-0.022	0.261	-0.059	0.009	-0.100	0.000	-0.163	0.000	-0.062	0.000	-0.058	0.000
Depressive Feelings: Depressed mood	-0.061	0.000	-0.041	0.000	-0.068	0.000	-0.090	0.000	-0.064	0.000	-0.074	0.000	-0.069	0.000
Depressive Feelings: Any other element (2-6)	-0.098	0.000	-0.068	0.000	-0.135	0.000	-0.112	0.000	-0.113	0.000	-0.117	0.000	-0.105	0.000
OUTCOME-SPECIFIC RISK-ADJUSTERS														
Obesity	-0.129	0.000	-0.235	0.000	-0.154	0.000	-0.241	0.000	-0.189	0.000	-0.203	0.000	-0.197	0.000
Dyspnea when moderate exertion	1.097	0.000	0.946	0.000	1.216	0.000	1.180	0.000	1.217	0.000	1.111	0.000	1.121	0.000
Dyspnea with minimum exertion	1.636	0.000	1.465	0.000	1.869	0.000	1.790	0.000	1.855	0.000	1.702	0.000	1.716	0.000
Dyspnea when at rest	2.182	0.000	1.921	0.000	2.319	0.000	2.179	0.000	2.245	0.000	2.154	0.000	2.170	0.000
Smoking	-0.112	0.000	-0.172	0.000	-0.089	0.000	-0.204	0.000	-0.124	0.000	-0.149	0.000	-0.150	0.000
Clinical Factors: Therapies														
Oxygen therapy	-0.645	0.000	-0.721	0.000	-0.699	0.000	-0.807	0.000	-0.723	0.000	-0.732	0.000	-0.734	0.000
Ventilator	-0.935	0.000	-0.833	0.000	-0.657	0.000	-0.814	0.000	-0.645	0.000	-0.797	0.000	-0.797	0.000
Intercept	-0.921	0.000	-0.671	0.000	-0.709	0.000	-0.483	0.000	-0.589	0.000	-0.716	0.000	-0.383	0.000
Pseudo-R2 statistic	0.095		0.087		0.119		0.111		0.116		0.113		0.115	
C statistic	0676		0.669		0.698		0.698		0.695		0.695		0.696	
Model N	393,243		768,024		768,766		1,401,118		426,210		3,757,360		3,757,360	

TABLE 13-h. Full Risk-Adjustment Model for Improvement in Urinary Incontinence

Risk Factor Measured at SOC/ROC	Community Admission				Post Acute						All Episodes			
	Clinically Complex		Other		Clinically Complex		Restorative		Other		Without Patient Group Indicators		With Patient Group Indicators	
	Full Model		Full Model		Full Model		Full Model		Full Model		Full Model		Full Model	
	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p
PATIENT GROUP INDICATORS														
Community Admission: Clinically Complex													-0.489	0.000
Community Admission: Other													-0.432	0.000
Post acute: Clinically Complex													-0.098	0.000
Post acute: Other													-0.071	0.000
DEMOGRAPHICS														
Age below 65	-0.023	0.168	-0.180	0.000	-0.109	0.000	-0.194	0.000	-0.160	0.000	-0.157	0.000	-0.155	0.000
Age 75-84	-0.027	0.022	-0.039	0.000	-0.043	0.000	-0.058	0.000	-0.057	0.000	-0.044	0.000	-0.044	0.000
Age 85+	-0.072	0.000	-0.109	0.000	-0.121	0.000	-0.163	0.000	-0.136	0.000	-0.122	0.000	-0.125	0.000
Gender: female	-0.118	0.000	-0.120	0.000	-0.122	0.000	-0.065	0.000	-0.090	0.000	-0.100	0.000	-0.099	0.000
SOCIOECONOMIC FACTORS														
Any Medicaid	-0.103	0.000	-0.159	0.000	-0.051	0.000	-0.083	0.000	-0.084	0.000	-0.109	0.000	-0.107	0.000
Medicare HMO	0.172	0.000	0.176	0.000	0.199	0.000	0.164	0.000	0.200	0.000	0.189	0.000	0.179	0.000
PRIOR SERVICE USE														
Discharged past 14 days: Discharge from hospital					0.038	0.006	0.066	0.000	0.036	0.106	0.331	0.000	0.035	0.000
Discharge from rehab facility					0.174	0.000	0.138	0.000	0.136	0.000	0.382	0.000	0.142	0.000
Discharge from skilled nursing facility					0.058	0.000	-0.031	0.001	0.012	0.572	0.259	0.000	-0.013	0.042
CLINICAL FACTORS														
Prognoses														
Overall prognosis good/fair	0.068	0.000	0.051	0.000	0.094	0.000	0.116	0.000	0.088	0.000	0.090	0.000	0.084	0.000
Rehabilitation prognosis good	0.141	0.000	0.144	0.000	0.141	0.000	0.149	0.000	0.160	0.000	0.157	0.000	0.150	0.000
Diagnoses														
Diabetes (PPS Group)	-0.017	0.138	-0.022	0.154	-0.048	0.000	-0.014	0.477	-0.014	0.564	-0.066	0.000	-0.033	0.000
Orthopedic (PPS Group)	0.040	0.001	0.071	0.000	0.014	0.144	0.002	0.697	0.048	0.002	0.037	0.000	0.030	0.000
Neurological (PPS Group)	0.003	0.835	-0.002	0.891	0.033	0.006	-0.020	0.069	0.056	0.002	0.007	0.255	0.012	0.040
Wound/Burn (PPS Group)	-0.177	0.000	-0.098	0.000	-0.229	0.000	-0.218	0.000	-0.084	0.647	-0.176	0.000	-0.157	0.000
Cancer	-0.013	0.604	0.050	0.001	-0.061	0.000	-0.057	0.000	-0.008	0.719	-0.023	0.001	-0.026	0.000
Mental condition	-0.044	0.023	-0.018	0.184	-0.054	0.002	-0.018	0.251	0.027	0.175	-0.030	0.000	-0.026	0.000
Dementia	-0.052	0.000	-0.041	0.005	-0.049	0.000	-0.132	0.000	-0.064	0.011	-0.074	0.000	-0.053	0.000
Hypertension	-0.016	0.093	-0.041	0.000	-0.026	0.000	-0.023	0.000	-0.049	0.000	-0.054	0.000	-0.035	0.000
Ischemia	-0.019	0.151	-0.035	0.014	-0.007	0.466	0.008	0.436	-0.022	0.180	-0.021	0.000	-0.017	0.002
Arrhythmia	-0.014	0.422	-0.018	0.236	0.018	0.083	0.006	0.527	0.033	0.032	0.010	0.060	0.004	0.454
Heart failure	-0.008	0.519	-0.026	0.025	-0.018	0.033	-0.053	0.000	0.003	0.842	-0.037	0.000	-0.029	0.000
COPD	0.020	0.105	0.022	0.154	0.019	0.021	0.022	0.059	0.013	0.408	-0.003	0.488	0.013	0.012
Skin ulcer	-0.105	0.000	-0.059	0.000	-0.136	0.000	-0.124	0.000	-0.160	0.000	-0.128	0.000	-0.119	0.000
Orthopedic (other than PPS)	0.008	0.385	-0.027	0.000	-0.038	0.000	-0.029	0.000	-0.074	0.000	-0.053	0.000	-0.030	0.000
Incontinence	-0.379	0.000	-0.405	0.000	-0.298	0.000	-0.217	0.000	-0.274	0.000	-0.350	0.000	-0.334	0.000
Symptoms, signs, & ill-defined conditions	-0.026	0.020	-0.040	0.000	0.000	0.999	-0.050	0.000	-0.013	0.205	-0.027	0.000	-0.034	0.000
Diagnosis Severity														
Number of severity ratings >2	-0.007	0.049	0.038	0.000	0.007	0.028	0.036	0.000	-0.004	0.294	0.026	0.000	0.026	0.000

TABLE 13-h (*continued*)

Risk Factor Measured at SOC/ROC	Community Admission				Post Acute						All Episodes			
	Clinically Complex		Other		Clinically Complex		Restorative		Other		Without Patient Group Indicators		With Patient Group Indicators	
	Full Model		Full Model		Full Model		Full Model		Full Model		Full Model		Full Model	
	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p
Sensory Status														
Partially vision impaired	-0.094	0.000	-0.075	0.000	-0.119	0.000	-0.074	0.000	-0.081	0.000	-0.099	0.000	-0.088	0.000
Severely vision impaired	-0.089	0.000	0.003	0.864	-0.090	0.000	-0.066	0.000	-0.109	0.000	-0.069	0.000	-0.060	0.000
Speech: Minimum difficulty	-0.108	0.000	-0.066	0.000	-0.090	0.000	-0.055	0.000	-0.076	0.000	-0.080	0.000	-0.075	0.000
Speech: Moderate difficulty	-0.158	0.000	-0.076	0.000	-0.116	0.000	-0.076	0.000	-0.088	0.000	-0.102	0.000	-0.097	0.000
Speech: Severe difficulty	-0.280	0.000	-0.226	0.000	-0.252	0.000	-0.219	0.000	-0.272	0.000	-0.251	0.000	-0.246	0.000
Integumentary Status														
Surgical wound present	0.021	0.275	0.073	0.000	0.169	0.000	0.166	0.000			0.185	0.000	0.153	0.000
Stage of most problematic pressure ulcer	-0.084	0.000	-0.104	0.000	-0.069	0.000	-0.032	0.000	-0.052	0.000	-0.067	0.000	-0.064	0.000
Status of most problematic stasis ulcer	0.012	0.291	0.016	0.025	-0.013	0.282	-0.034	0.003	-0.001	0.953	-0.003	0.449	0.005	0.260
Functional Status/Physical Functioning														
ADL/IADL index	-0.031	0.000	-0.033	0.000	-0.017	0.000	-0.011	0.000	-0.026	0.000	-0.022	0.000	-0.023	0.000
Toilet: When reminded, assisted or supervised	0.226	0.000	0.182	0.000	0.142	0.000	0.087	0.000	0.147	0.000	0.146	0.000	0.141	0.000
Toilet: Uses bedside commode	0.358	0.000	0.263	0.000	0.071	0.000	0.033	0.006	0.108	0.000	0.132	0.000	0.125	0.000
Toilet: Uses bedpan independently	0.567	0.000	0.464	0.000	0.098	0.002	0.045	0.056	0.113	0.017	0.200	0.000	0.188	0.000
Toilet: Totally dependent	0.161	0.000	0.034	0.181	-0.300	0.000	-0.338	0.000	-0.257	0.000	-0.213	0.000	-0.223	0.000
Elimination Status														
Urinary incontinence during the day	0.135	0.000	0.273	0.000	0.270	0.000	0.363	0.000	0.292	0.000	0.275	0.000	0.284	0.000
Urinary incontinence during the night & day	0.060	0.000	0.114	0.000	0.116	0.000	0.162	0.000	0.125	0.000	0.121	0.000	0.127	0.000
Urinary catheter present	0.314	0.000	0.350	0.000	0.349	0.000	0.371	0.000	0.164	0.000	0.340	0.000	0.335	0.000
Bowel incontinent less than weekly	-0.096	0.000	-0.087	0.000	-0.085	0.000	-0.106	0.000	-0.122	0.000	-0.101	0.000	-0.099	0.000
Bowel incontinent 1-3 times/week	-0.119	0.000	-0.179	0.000	-0.173	0.000	-0.186	0.000	-0.193	0.000	-0.177	0.000	-0.174	0.000
Bowel incontinent 4-6 times/week	-0.269	0.000	-0.363	0.000	-0.291	0.000	-0.309	0.000	-0.320	0.000	-0.317	0.000	-0.318	0.000
Bowel incontinent daily or more often	-0.303	0.000	-0.400	0.000	-0.304	0.000	-0.309	0.000	-0.329	0.000	-0.331	0.000	-0.335	0.000
Ostomy	-0.241	0.000	-0.312	0.000	-0.404	0.000	-0.268	0.000	-0.294	0.000	-0.279	0.000	-0.291	0.000

TABLE 13-h (*continued*)

Risk Factor Measured at SOC/ROC	Community Admission				Post Acute						All Episodes			
	Clinically Complex		Other		Clinically Complex		Restorative		Other		Without Patient Group Indicators		With Patient Group Indicators	
	Full Model		Full Model		Full Model		Full Model		Full Model		Full Model		Full Model	
	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p
Neuro/Emotional/Behavioral Status														
Cog Func: Requires prompting	-0.035	0.006	-0.076	0.000	-0.046	0.000	-0.067	0.000	-0.046	0.001	-0.063	0.000	-0.061	0.000
Cog Func: Requires assistance & some direction	-0.037	0.042	-0.081	0.000	-0.020	0.187	-0.095	0.000	-0.066	0.002	-0.071	0.000	-0.070	0.000
Cog Func: Requires considerable assistance	-0.116	0.000	-0.185	0.000	-0.103	0.000	-0.203	0.000	-0.149	0.000	-0.167	0.000	-0.166	0.000
Cog Func: Totally dependent	-0.307	0.000	-0.367	0.000	-0.240	0.000	-0.373	0.000	-0.298	0.000	-0.344	0.000	-0.341	0.000
Conf Freq: In new situations	-0.017	0.166	-0.052	0.000	-0.071	0.000	-0.055	0.000	-0.036	0.004	-0.054	0.000	-0.053	0.000
Conf Freq: Awakening at night	-0.080	0.003	-0.060	0.002	-0.094	0.000	-0.082	0.000	-0.107	0.001	-0.085	0.000	-0.084	0.000
Conf Freq: Day and evening	-0.057	0.002	-0.109	0.000	-0.085	0.000	-0.102	0.000	-0.060	0.003	-0.094	0.000	-0.095	0.000
Conf Freq: Constantly	-0.176	0.000	-0.207	0.000	-0.185	0.000	-0.182	0.000	-0.173	0.000	-0.196	0.000	-0.194	0.000
Anx Freq: Less than daily	0.006	0.583	-0.007	0.301	-0.041	0.000	-0.014	0.024	-0.014	0.225	-0.017	0.000	-0.014	0.000
Anx Freq: Daily but not constantly	0.026	0.031	0.069	0.000	0.022	0.021	0.044	0.000	0.066	0.000	0.046	0.000	0.048	0.000
Anx Freq: All the time	0.125	0.000	0.167	0.000	0.089	0.000	0.122	0.000	0.163	0.000	0.135	0.000	0.135	0.000
Verbal disruption	-0.062	0.022	-0.102	0.000	-0.132	0.000	-0.086	0.000	-0.018	0.627	-0.091	0.000	-0.088	0.000
Depressive Feelings: Depressed mood	-0.048	0.000	-0.029	0.000	-0.060	0.000	-0.076	0.000	-0.039	0.001	-0.059	0.000	-0.055	0.000
Depressive Feelings: Any other element (2-6)	0.015	0.473	0.045	0.010	0.013	0.527	-0.033	0.070	0.002	0.943	-0.001	0.903	0.009	0.323
PRIOR VALUE OF OUTCOME														
Status Prior to Admission														
Toilet: Able when supervised	-0.259	0.000	-0.259	0.000	-0.179	0.000	-0.200	0.000	-0.198	0.000	-0.225	0.000	-0.217	0.000
Toilet: Uses bedside commode	-0.427	0.000	-0.394	0.000	-0.206	0.000	-0.205	0.000	-0.275	0.000	-0.274	0.000	-0.262	0.000
Toilet: Uses bedpan/totally dependent (Levels 3, 4)	-0.687	0.000	-0.642	0.000	-0.289	0.000	-0.283	0.000	-0.385	0.000	-0.405	0.000	-0.383	0.000
Urinary incontinence prior 2 weeks	-0.253	0.000	-0.259	0.000	-0.404	0.000	-0.394	0.000	-0.410	0.000	-0.335	0.000	-0.341	0.000
Indwelling/suprapubic catheter prior 2 weeks	-0.540	0.000	-0.529	0.000	-0.549	0.000	-0.540	0.000	-0.572	0.000	-0.536	0.000	-0.534	0.000
OUTCOME-SPECIFIC RISK-ADJUSTERS														
Impaired decision making prior 2 weeks	0.057	0.000	0.041	0.000	-0.027	0.010	-0.012	0.162	-0.015	0.336	0.017	0.000	0.015	0.002
Memory loss prior 2 weeks	0.080	0.000	0.025	0.019	0.019	0.111	0.001	0.881	-0.012	0.464	0.030	0.000	0.027	0.000
Obesity	-0.062	0.000	-0.074	0.000	-0.077	0.000	-0.078	0.000	-0.069	0.000	-0.081	0.000	-0.075	0.000
Memory deficit	-0.117	0.000	-0.103	0.000	-0.087	0.000	-0.068	0.000	-0.055	0.000	-0.096	0.000	-0.092	0.000
Impaired decision making	-0.018	0.122	-0.077	0.000	-0.094	0.000	-0.092	0.000	-0.074	0.000	-0.084	0.000	-0.077	0.000
Intercept	0.229	0.000	0.213	0.000	0.610	0.000	0.472	0.000	0.662	0.000	0.220	0.000	0.615	0.000
Pseudo-R2 statistic	0.056		0.077		0.071		0.070		0.080		0.090		0.092	
C statistic	0.637		0.659		0.650		0.647		0.657		0.669		0.672	
Model N	254,379		555,796		373,327		727,277		203,474		2,114,252		2,114,252	

TABLE 13-i. Full Risk-Adjustment Model for Acute Care Hospitalization

Risk Factor Measured at SOC/ROC	Community Admission				Post Acute						All Episodes			
	Clinically Complex		Other		Clinically Complex		Restorative		Other		Without Patient Group Indicators		With Patient Group Indicators	
	Full Model		Full Model		Full Model		Full Model		Full Model		Full Model		Full Model	
	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p
PATIENT GROUP INDICATORS														
Community Admission: Clinically Complex													0.382	0.000
Community Admission: Other													0.196	0.000
Post acute: Clinically Complex													0.375	0.000
Post acute: Other													0.328	0.000
DEMOGRAPHICS														
Age below 65	0.044	0.043	-0.049	0.007	0.312	0.000	0.417	0.000	0.225	0.000	0.246	0.000	0.241	0.000
Age 75-84	0.023	0.191	-0.044	0.004	-0.134	0.000	-0.063	0.000	-0.171	0.000	-0.085	0.000	-0.077	0.000
Age 85+	-0.021	0.286	-0.054	0.000	-0.206	0.000	-0.092	0.000	-0.280	0.000	-0.135	0.000	-0.115	0.000
Gender: female	-0.047	0.001	-0.098	0.000	0.006	0.518	-0.049	0.000	-0.035	0.004	-0.039	0.000	-0.039	0.000
SOCIOECONOMIC FACTORS														
Any Medicaid	0.645	0.000	0.737	0.000	0.781	0.000	0.699	0.000	0.900	0.000	0.779	0.000	0.771	0.000
Medicare HMO	0.377	0.000	0.581	0.000	0.840	0.000	0.948	0.000	0.813	0.000	0.795	0.000	0.791	0.000
PRIOR SERVICE USE														
Discharged past 14 days: Discharge from hospital					-0.208	0.000	-0.209	0.000	-0.171	0.000	0.275	0.000	0.304	0.000
Discharge from rehab facility					-0.276	0.000	-0.228	0.000	-0.142	0.000	0.053	0.000	0.090	0.000
Discharge from skilled nursing facility					-0.395	0.000	-0.294	0.000	-0.275	0.000	-0.010	0.246	0.030	0.002
CLINICAL FACTORS														
Prognoses Overall prognosis good/fair	-0.150	0.000	-0.222	0.000	-0.178	0.000	-0.223	0.000	-0.201	0.000	-0.202	0.000	-0.196	0.000
Rehabilitation prognosis good	-0.234	0.000	-0.250	0.000	-0.278	0.000	-0.410	0.000	-0.265	0.000	-0.316	0.000	-0.305	0.000
Diagnoses Diabetes (PPS Group)	0.117	0.000	0.348	0.000	0.237	0.000	0.450	0.000	0.242	0.000	0.335	0.000	0.262	0.000
Orthopedic (PPS Group)	-0.252	0.000	-0.332	0.000	-0.224	0.000	-0.364	0.000	-0.103	0.000	-0.352	0.000	-0.303	0.000
Neurological (PPS Group)	-0.102	0.000	-0.227	0.000	-0.343	0.000	-0.303	0.000	-0.251	0.000	-0.232	0.000	-0.255	0.000
Wound/Burn (PPS Group)	0.099	0.026	-0.009	0.747	0.432	0.000	0.418	0.000	0.450	0.006	0.261	0.000	0.287	0.000
Cancer	0.412	0.000	0.532	0.000	0.357	0.000	0.482	0.000	0.533	0.000	0.484	0.000	0.475	0.000
Mental condition	0.220	0.000	0.413	0.000	0.344	0.000	0.147	0.000	0.458	0.000	0.342	0.000	0.338	0.000
Dementia	-0.143	0.000	-0.034	0.210	-0.202	0.000	-0.049	0.155	-0.060	0.111	-0.034	0.003	-0.103	0.000
Hypertension	0.003	0.804	0.088	0.000	0.067	0.000	0.067	0.000	0.099	0.000	0.145	0.000	0.084	0.000
Ischemia	0.056	0.004	0.180	0.000	0.044	0.000	-0.006	0.726	0.141	0.000	0.088	0.000	0.059	0.000
Arrhythmia	0.121	0.000	0.222	0.000	-0.006	0.664	0.045	0.004	-0.000	0.998	0.049	0.000	0.036	0.000
Heart failure	0.330	0.000	0.393	0.000	0.248	0.000	0.401	0.000	0.248	0.000	0.343	0.000	0.296	0.000
COPD	0.097	0.000	0.271	0.000	-0.031	0.004	0.134	0.000	0.064	0.001	0.123	0.000	0.041	0.000
Skin ulcer	0.102	0.000	0.047	0.015	0.191	0.000	0.260	0.000	0.088	0.000	0.178	0.000	0.171	0.000
Orthopedic (other than PPS)	-0.265	0.000	-0.146	0.000	-0.151	0.000	-0.356	0.000	0.057	0.009	-0.172	0.000	-0.199	0.000
Incontinence	0.114	0.000	0.244	0.000	0.224	0.000	0.205	0.000	0.207	0.000	0.194	0.000	0.194	0.000
Symptoms, signs, & ill-defined conditions	0.045	0.006	0.085	0.000	0.035	0.001	0.076	0.000	-0.014	0.273	0.044	0.000	0.061	0.000
Diagnosis Severity Number of severity ratings >2	0.048	0.000	0.008	0.024	-0.014	0.000	0.004	0.189	0.047	0.000	0.018	0.000	0.013	0.000

TABLE 13-i (*continued*)

Risk Factor Measured at SOC/ROC	Community Admission				Post Acute						All Episodes			
	Clinically Complex		Other		Clinically Complex		Restorative		Other		Without Patient Group Indicators		With Patient Group Indicators	
	Full Model		Full Model		Full Model		Full Model		Full Model		Full Model		Full Model	
	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p
Sensory Status														
Partially vision impaired	0.118	0.000	0.094	0.000	0.219	0.000	0.142	0.000	0.122	0.000	0.169	0.000	0.158	0.000
Severely vision impaired	0.180	0.000	0.057	0.041	0.120	0.000	0.098	0.000	0.038	0.279	0.121	0.000	0.110	0.000
Speech: Minimum difficulty	0.091	0.000	0.002	0.885	0.034	0.004	0.026	0.033	0.064	0.000	0.048	0.000	0.044	0.000
Speech: Moderate difficulty	0.053	0.049	-0.025	0.269	-0.005	0.786	0.003	0.894	0.029	0.285	0.012	0.257	0.008	0.436
Speech: Severe difficulty	-0.015	0.674	-0.168	0.000	0.011	0.670	-0.036	0.169	-0.112	0.002	-0.073	0.000	-0.074	0.000
Integumentary Status														
Surgical wound present	0.136	0.000	-0.066	0.000	-0.364	0.000	-0.407	0.000			-0.451	0.000	-0.358	0.000
Stage of most problematic pressure ulcer	0.095	0.000	0.126	0.000	0.146	0.000	0.151	0.000	0.130	0.000	0.143	0.000	0.133	0.000
Status of most problematic stasis ulcer	0.152	0.000	0.200	0.000	0.221	0.000	0.291	0.000	0.219	0.000	0.223	0.000	0.219	0.000
Functional Status/Physical Functioning														
ADL/IADL index	0.066	0.000	0.062	0.000	0.095	0.000	0.091	0.000	0.094	0.000	0.081	0.000	0.082	0.000
Elimination Status														
Urinary incontinence during the night	-0.052	0.047	-0.071	0.000	-0.128	0.000	-0.069	0.000	-0.137	0.000	-0.091	0.000	-0.089	0.000
Urinary incontinence during the day	-0.127	0.000	-0.124	0.000	0.066	0.015	0.012	0.684	0.012	0.748	-0.020	0.147	-0.023	0.105
Urinary incontinence during the night & day	-0.054	0.001	-0.115	0.000	-0.048	0.000	-0.081	0.000	-0.106	0.000	-0.076	0.000	-0.076	0.000
Urinary catheter present	0.560	0.000	0.572	0.000	0.522	0.000	0.481	0.000	0.522	0.000	0.521	0.000	0.531	0.000
Bowel incontinent less than weekly	0.051	0.094	0.029	0.258	0.059	0.011	0.129	0.000	0.028	0.411	0.068	0.000	0.067	0.000
Bowel incontinent 1-3 times/week	0.058	0.018	0.088	0.000	0.139	0.000	0.217	0.000	0.151	0.000	0.136	0.000	0.132	0.000
Bowel incontinent 4-6 times/week	0.004	0.923	0.109	0.000	0.163	0.000	0.319	0.000	0.200	0.000	0.175	0.000	0.168	0.000
Bowel incontinent daily or more often	0.213	0.000	0.177	0.000	0.379	0.000	0.412	0.000	0.358	0.000	0.336	0.000	0.329	0.000
Ostomy	0.141	0.018	0.291	0.000	0.309	0.000	0.458	0.000	0.407	0.000	0.365	0.000	0.391	0.000

TABLE 13-i (*continued*)

Risk Factor Measured at SOC/ROC	Community Admission				Post Acute						All Episodes			
	Clinically Complex		Other		Clinically Complex		Restorative		Other		Without Patient Group Indicators		With Patient Group Indicators	
	Full Model		Full Model		Full Model		Full Model		Full Model		Full Model		Full Model	
	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p
Neuro/Emotional/Behavioral Status														
Cog Func: Requires prompting	-0.030	0.112	0.023	0.131	0.064	0.000	0.016	0.213	0.005	0.753	0.032	0.000	0.030	0.000
Cog Func: Requires assistance & some direction	-0.013	0.629	0.013	0.556	0.029	0.142	-0.030	0.154	0.008	0.753	0.012	0.247	0.009	0.358
Cog Func: Requires considerable assistance	-0.047	0.247	-0.034	0.305	-0.027	0.367	-0.102	0.002	-0.076	0.066	-0.053	0.001	-0.057	0.000
Cog Func: Totally dependent	-0.142	0.013	-0.096	0.038	0.006	0.891	-0.140	0.003	-0.088	0.126	-0.108	0.000	-0.117	0.000
Conf Freq: In new situations	0.065	0.000	0.059	0.000	0.033	0.005	0.048	0.000	0.051	0.001	0.059	0.000	0.055	0.000
Conf Freq: Awakening at night	0.016	0.705	0.085	0.016	0.030	0.329	0.038	0.256	0.043	0.309	0.053	0.001	0.050	0.002
Conf Freq: Day and evening	0.036	0.174	0.051	0.017	-0.063	0.001	-0.017	0.388	-0.081	0.002	-0.001	0.906	-0.005	0.579
Conf Freq: Constantly	-0.126	0.002	-0.081	0.015	-0.206	0.000	-0.083	0.018	-0.168	0.000	-0.124	0.000	-0.131	0.000
Anx Freq: Less than daily	0.054	0.001	0.066	0.000	0.043	0.000	0.025	0.017	0.065	0.000	0.050	0.000	0.047	0.000
Anx Freq: Daily but not constantly	0.085	0.000	0.087	0.000	0.052	0.000	0.066	0.000	0.088	0.000	0.073	0.000	0.072	0.000
Anx Freq: All the time	0.032	0.472	0.076	0.037	0.001	0.974	0.075	0.019	0.057	0.154	0.048	0.003	0.049	0.002
Verbal disruption	-0.049	0.223	0.038	0.239	0.050	0.106	0.046	0.197	0.191	0.000	0.045	0.004	0.045	0.004
Depressive Feelings: Depressed mood	0.059	0.000	0.076	0.000	0.065	0.000	0.160	0.000	0.073	0.000	0.109	0.000	0.103	0.000
Depressive Feelings: Any other element (2-6)	0.085	0.006	0.147	0.000	0.184	0.000	0.211	0.000	0.119	0.000	0.179	0.000	0.167	0.000
OUTCOME-SPECIFIC RISK-ADJUSTERS														
Dyspnea walking 20 feet, stairs	0.098	0.000	0.137	0.000	0.086	0.000	0.128	0.000	0.087	0.000	0.126	0.000	0.121	0.000
Dyspnea when moderate exertion	0.142	0.000	0.211	0.000	0.170	0.000	0.260	0.000	0.103	0.000	0.215	0.000	0.203	0.000
Dyspnea with minimum exertion	0.295	0.000	0.339	0.000	0.307	0.000	0.373	0.000	0.213	0.000	0.344	0.000	0.329	0.000
Dyspnea when at rest	0.511	0.000	0.426	0.000	0.407	0.000	0.453	0.000	0.349	0.000	0.458	0.000	0.443	0.000
Clinical Factors: Therapies														
IV/Infusion therapy	0.209	0.000	0.165	0.000	0.338	0.000	0.576	0.000	0.214	0.000	0.411	0.000	0.425	0.000
Ventilator	0.116	0.442	0.006	0.953	-0.034	0.735	0.058	0.522	0.162	0.164	0.043	0.377	0.049	0.317
Intercept	-3.928	0.000	-3.953	0.000	-3.501	0.000	-3.943	0.000	-3.742	0.000	-4.249	0.000	-4.448	0.000
Pseudo-R2 statistic	0.020		0.017		0.046		0.032		0.038		0.035		0.035	
C statistic	0.673		0.690		0.730		0.760		0.723		0.738		0.740	
Model N	547,561		1,339,228		1,089,908		2,602,341		662,319		6,241,350		6,241,350	

TABLE 13-j. Full Risk-Adjustment Model for Discharge to Community

Risk Factor Measured at SOC/ROC	Community Admission				Post Acute						All Episodes			
	Clinically Complex		Other		Clinically Complex		Restorative		Other		Without Patient Group Indicators		With Patient Group Indicators	
	Full Model		Full Model		Full Model		Full Model		Full Model		Full Model		Full Model	
	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p
PATIENT GROUP INDICATORS														
Community Admission: Clinically Complex													-0.586	0.000
Community Admission: Other													-0.463	0.000
Post acute: Clinically Complex													-0.095	0.000
Post acute: Other													-0.168	0.000
DEMOGRAPHICS														
Age below 65	0.261	0.000	0.198	0.000	0.067	0.002	0.073	0.000	0.108	0.000	0.133	0.000	0.136	0.000
Age 75-84	0.007	0.696	0.001	0.940	-0.068	0.000	-0.069	0.000	-0.042	0.046	-0.042	0.000	-0.042	0.000
Age 85+	-0.066	0.001	-0.071	0.000	-0.193	0.000	-0.223	0.000	-0.138	0.000	-0.149	0.000	-0.151	0.000
Gender: female	0.029	0.047	0.032	0.003	0.032	0.006	0.006	0.534	0.020	0.191	0.021	0.000	0.024	0.000
SOCIOECONOMIC FACTORS														
Any Medicaid	-0.107	0.000	-0.035	0.040	0.044	0.021	0.118	0.000	0.038	0.147	-0.004	0.617	-0.002	0.863
Medicare HMO	0.263	0.000	0.223	0.000	0.205	0.000	0.291	0.000	0.230	0.000	0.256	0.000	0.247	0.000
PRIOR SERVICE USE														
Discharged past 14 days: Discharge from hospital					-0.008	0.769	0.009	0.653	-0.030	0.454	0.050	0.000	-0.277	0.000
Discharge from rehab facility					0.168	0.000	0.147	0.000	0.149	0.000	0.200	0.000	-0.051	0.000
Discharge from skilled nursing facility					0.173	0.000	0.235	0.000	0.174	0.000	0.264	0.000	-0.016	0.165
CLINICAL FACTORS														
Prognoses														
Overall prognosis good/fair	0.577	0.000	0.817	0.000	0.730	0.000	0.826	0.000	0.873	0.000	0.786	0.000	0.779	0.000
Rehabilitation prognosis good	0.291	0.000	0.334	0.000	0.286	0.000	0.425	0.000	0.376	0.000	0.365	0.000	0.356	0.000
Diagnoses														
Diabetes (PPS Group)	-0.117	0.000	-0.249	0.000	-0.152	0.000	-0.111	0.001	-0.051	0.193	-0.225	0.000	-0.185	0.000
Orthopedic (PPS Group)	0.276	0.000	0.440	0.000	0.112	0.000	0.197	0.000	0.179	0.000	0.269	0.000	0.253	0.000
Neurological (PPS Group)	-0.039	0.097	0.129	0.000	0.044	0.035	0.017	0.439	0.021	0.503	0.028	0.006	0.034	0.001
Wound/Burn (PPS Group)	0.267	0.000	0.102	0.000	-0.287	0.000	-0.310	0.000	0.219	0.433	-0.069	0.000	-0.062	0.001
Cancer	-1.326	0.000	-1.492	0.000	-1.384	0.000	-1.177	0.000	-1.362	0.000	-1.342	0.000	-1.342	0.000
Mental condition	-0.000	0.988	-0.142	0.000	-0.048	0.100	0.035	0.228	0.040	0.224	-0.061	0.000	-0.051	0.000
Dementia	0.105	0.000	0.070	0.005	0.064	0.003	0.038	0.231	0.042	0.316	0.041	0.000	0.068	0.000
Hypertension	0.091	0.000	0.018	0.157	0.080	0.000	0.066	0.000	0.166	0.000	0.029	0.000	0.055	0.000
Ischemia	0.049	0.022	-0.021	0.386	0.031	0.055	0.066	0.000	0.127	0.000	0.050	0.000	0.056	0.000
Arrhythmia	-0.058	0.028	-0.074	0.002	0.007	0.694	-0.013	0.447	0.086	0.001	-0.000	0.979	-0.004	0.689
Heart failure	-0.089	0.000	-0.235	0.000	-0.094	0.000	-0.204	0.000	-0.087	0.000	-0.137	0.000	-0.127	0.000
COPD	0.029	0.161	0.034	0.163	0.097	0.000	0.073	0.001	0.248	0.000	0.097	0.000	0.112	0.000
Skin ulcer	0.151	0.000	0.114	0.000	-0.024	0.299	-0.112	0.000	0.172	0.000	0.021	0.044	0.036	0.001
Orthopedic (other than PPS)	0.183	0.000	0.277	0.000	0.112	0.000	0.220	0.000	0.187	0.000	0.163	0.000	0.190	0.000
Incontinence	-0.124	0.000	-0.128	0.000	-0.224	0.000	-0.238	0.000	-0.153	0.000	-0.175	0.000	-0.152	0.000
Symptoms, signs, & ill-defined conditions	-0.064	0.000	-0.077	0.000	-0.068	0.000	-0.048	0.000	0.010	0.523	-0.053	0.000	-0.059	0.000
Diagnosis Severity														
Number of severity ratings >2	-0.027	0.000	-0.051	0.000	0.006	0.174	-0.031	0.000	-0.061	0.000	-0.031	0.000	-0.034	0.000

TABLE 13-j (*continued*)														
Risk Factor Measured at SOC/ROC	**Community Admission**				**Post Acute**						**All Episodes**			
	Clinically Complex		**Other**		**Clinically Complex**		**Restorative**		**Other**		**Without Patient Group Indicators**		**With Patient Group Indicators**	
	Full Model		**Full Model**		**Full Model**		**Full Model**		**Full Model**		**Full Model**		**Full Model**	
	Coef.	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**
Sensory Status														
Partially vision impaired	-0.124	0.000	-0.085	0.000	-0.107	0.000	-0.051	0.000	-0.039	0.022	-0.102	0.000	-0.090	0.000
Severely vision impaired	-0.165	0.000	-0.017	0.517	-0.038	0.226	-0.029	0.323	0.010	0.805	-0.057	0.000	-0.047	0.001
Speech: Minimum difficulty	-0.024	0.199	-0.066	0.000	-0.055	0.000	-0.050	0.000	-0.059	0.004	-0.063	0.000	-0.059	0.000
Speech: Moderate difficulty	-0.035	0.205	-0.120	0.000	-0.067	0.006	-0.082	0.000	-0.003	0.929	-0.078	0.000	-0.073	0.000
Speech: Severe difficulty	-0.086	0.015	-0.089	0.001	-0.042	0.180	-0.027	0.312	0.053	0.203	-0.044	0.001	-0.037	0.007
Integumentary Status														
Surgical wound present	0.088	0.002	0.204	0.000	0.316	0.000	0.259	0.000			0.354	0.000	0.302	0.000
Stage of most problematic pressure ulcer	-0.185	0.000	-0.192	0.000	-0.169	0.000	-0.165	0.000	-0.186	0.000	-0.180	0.000	-0.177	0.000
Status of most problematic stasis ulcer	0.021	0.236	-0.048	0.000	-0.086	0.000	-0.099	0.000	-0.090	0.000	-0.068	0.000	-0.059	0.000
Functional Status/Physical Functioning														
ADL/IADL index	-0.049	0.000	-0.070	0.000	-0.110	0.000	-0.113	0.000	-0.116	0.000	-0.089	0.000	-0.090	0.000
Elimination Status														
Urinary incontinence during the night	0.022	0.416	0.202	0.000	0.073	0.001	0.116	0.000	0.130	0.000	0.115	0.000	0.116	0.000
Urinary incontinence during the day	0.139	0.000	0.191	0.000	0.006	0.877	0.066	0.050	0.229	0.000	0.101	0.000	0.113	0.000
Urinary incontinence during the night & day	-0.004	0.834	0.176	0.000	0.011	0.451	0.099	0.000	0.141	0.000	0.086	0.000	0.093	0.000
Urinary catheter present	-0.634	0.000	-0.534	0.000	-0.596	0.000	-0.469	0.000	-0.444	0.000	-0.535	0.000	-0.534	0.000
Bowel incontinent less than weekly	-0.058	0.064	-0.096	0.000	-0.101	0.000	-0.118	0.000	0.013	0.745	-0.087	0.000	-0.084	0.000
Bowel incontinent 1-3 times/week	-0.073	0.003	-0.176	0.000	-0.160	0.000	-0.216	0.000	-0.159	0.000	-0.165	0.000	-0.159	0.000
Bowel incontinent 4-6 times/week	-0.115	0.002	-0.140	0.000	-0.216	0.000	-0.309	0.000	-0.187	0.000	-0.200	0.000	-0.195	0.000
Bowel incontinent daily or more often	0.013	0.658	-0.136	0.000	-0.194	0.000	-0.266	0.000	-0.237	0.000	-0.177	0.000	-0.176	0.000
Ostomy	0.056	0.408	-0.103	0.004	-0.063	0.148	-0.264	0.000	-0.107	0.052	-0.134	0.000	-0.148	0.000

TABLE 13-j (*continued*)

Risk Factor Measured at SOC/ROC	Community Admission				Post Acute						All Episodes			
	Clinically Complex		Other		Clinically Complex		Restorative		Other		Without Patient Group Indicators		With Patient Group Indicators	
	Full Model		Full Model		Full Model		Full Model		Full Model		Full Model		Full Model	
	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p
Neuro/Emotional/Behavioral Status														
Cog Func: Requires prompting	-0.024	0.246	-0.006	0.704	-0.036	0.034	-0.009	0.535	-0.040	0.071	-0.031	0.000	-0.027	0.000
Cog Func: Requires assistance & some direction	0.013	0.644	0.057	0.010	0.030	0.229	0.018	0.404	0.024	0.451	0.023	0.036	0.027	0.015
Cog Func: Requires considerable assistance	-0.168	0.000	-0.018	0.554	-0.107	0.002	-0.084	0.008	0.053	0.263	-0.073	0.000	-0.068	0.000
Cog Func: Totally dependent	-0.211	0.000	-0.089	0.025	-0.175	0.000	-0.113	0.014	0.096	0.146	-0.103	0.000	-0.091	0.000
Conf Freq: In new situations	-0.082	0.000	-0.112	0.000	-0.069	0.000	-0.056	0.000	-0.052	0.009	-0.085	0.000	-0.083	0.000
Conf Freq: Awakening at night	-0.141	0.001	-0.238	0.000	-0.222	0.000	-0.213	0.000	-0.154	0.002	-0.211	0.000	-0.208	0.000
Conf Freq: Day and evening	-0.212	0.000	-0.241	0.000	-0.231	0.000	-0.213	0.000	-0.196	0.000	-0.230	0.000	-0.228	0.000
Conf Freq: Constantly	-0.210	0.000	-0.184	0.000	-0.117	0.001	-0.180	0.000	-0.132	0.007	-0.165	0.000	-0.161	0.000
Anx Freq: Less than daily	-0.037	0.027	-0.034	0.006	-0.027	0.053	0.003	0.793	-0.012	0.515	-0.024	0.000	-0.020	0.002
Anx Freq: Daily but not constantly	-0.086	0.000	-0.059	0.000	-0.047	0.002	-0.017	0.212	-0.031	0.136	-0.046	0.000	-0.045	0.000
Anx Freq: All the time	0.021	0.643	0.098	0.010	-0.039	0.300	0.031	0.404	0.089	0.099	0.036	0.047	0.037	0.045
Verbal disruption	-0.013	0.724	0.092	0.004	-0.017	0.648	0.051	0.185	-0.077	0.138	0.025	0.139	0.029	0.084
Depressive Feelings: Depressed mood	-0.074	0.000	-0.122	0.000	-0.167	0.000	-0.194	0.000	-0.172	0.000	-0.160	0.000	-0.156	0.000
Depressive Feelings: Any other element (2-6)	-0.038	0.254	-0.258	0.000	-0.299	0.000	-0.381	0.000	-0.395	0.000	-0.291	0.000	-0.278	0.000
OUTCOME-SPECIFIC RISK-ADJUSTERS														
Dyspnea walking 20 feet, stairs	-0.079	0.000	-0.104	0.000	0.000	0.994	-0.027	0.036	-0.007	0.751	-0.057	0.000	-0.055	0.000
Dyspnea when moderate exertion	-0.172	0.000	-0.251	0.000	-0.137	0.000	-0.161	0.000	-0.134	0.000	-0.204	0.000	-0.195	0.000
Dyspnea with minimum exertion	-0.346	0.000	-0.437	0.000	-0.327	0.000	-0.356	0.000	-0.322	0.000	-0.396	0.000	-0.383	0.000
Dyspnea when at rest	-0.614	0.000	-0.632	0.000	-0.555	0.000	-0.504	0.000	-0.561	0.000	-0.610	0.000	-0.597	0.000
Oxygen therapy	-0.176	0.000	-0.208	0.000	-0.221	0.000	-0.261	0.000	-0.204	0.000	-0.215	0.000	-0.218	0.000
IV/Infusion therapy	0.093	0.125	0.002	0.955	-0.149	0.000	-0.348	0.000	-0.013	0.759	-0.193	0.000	-0.195	0.000
Intercept	3.249	0.000	3.476	0.000	3.893	0.000	3.990	0.000	3.729	0.000	3.702	0.000	4.156	0.000
Pseudo-R2 statistic	0.050		0.073		0.075		0.062		0.086		0.068		0.069	
C statistic	0.694		0.741		0.755		0.752		0.766		0.755		0.757	
Model N	502,274		1,265,064		1,003,911		2,505,964		613,390		5,891,599		5,890,599	

TABLE 13-k. Full Risk-Adjustment Model for Emergent Care

Risk Factor Measured at SOC/ROC	Community Admission				Post Acute						All Episodes			
	Clinically Complex		Other		Clinically Complex		Restorative		Other		Without Patient Group Indicators		With Patient Group Indicators	
	Full Model		Full Model		Full Model		Full Model		Full Model		Full Model		Full Model	
	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p
PATIENT GROUP INDICATORS														
Community Admission: Clinically Complex													0.229	0.000
Community Admission: Other													0.162	0.000
Post acute: Clinically Complex													0.123	0.000
Post acute: Other													0.082	0.000
DEMOGRAPHICS														
Age below 65	0.075	0.000	0.035	0.013	0.257	0.000	0.317	0.000	0.234	0.000	0.220	0.000	0.218	0.000
Age 75-84	0.002	0.882	-0.005	0.655	-0.098	0.000	-0.046	0.000	-0.070	0.000	-0.049	0.000	-0.047	0.000
Age 85+	-0.006	0.736	0.015	0.203	-0.161	0.000	-0.080	0.000	-0.137	0.000	-0.072	0.000	-0.067	0.000
Gender: female	0.009	0.466	-0.010	0.251	0.018	0.015	-0.034	0.000	0.000	0.991	-0.012	0.001	-0.012	0.000
SOCIOECONOMIC FACTORS														
Any Medicaid	0.405	0.000	0.461	0.000	0.405	0.000	0.287	0.000	0.499	0.000	0.403	0.000	0.400	0.000
Medicare HMO	0.184	0.000	0.304	0.000	0.395	0.000	0.325	0.000	0.392	0.000	0.341	0.000	0.343	0.000
PRIOR SERVICE USE														
Discharged past 14 days:														
Discharge from hospital					-0.096	0.000	-0.013	0.259	-0.108	0.000	0.372	0.000	0.462	0.000
Discharge from rehab facility					-0.294	0.000	-0.277	0.000	-0.203	0.000	-0.035	0.000	0.028	0.000
Discharge from skilled nursing facility					-0.262	0.000	-0.198	0.000	-0.196	0.000	0.056	0.000	0.129	0.000
CLINICAL FACTORS														
Prognoses														
Overall prognosis good/fair	-0.187	0.000	-0.175	0.000	-0.180	0.000	-0.211	0.000	-0.219	0.000	-0.197	0.000	-0.194	0.000
Rehabilitation prognosis good	-0.297	0.000	-0.256	0.000	-0.256	0.000	-0.254	0.000	-0.256	0.000	-0.268	0.000	-0.263	0.000
Diagnoses														
Diabetes (PPS Group)	-0.042	0.004	0.150	0.000	0.010	0.335	0.133	0.000	0.114	0.000	0.084	0.000	0.053	0.000
Orthopedic (PPS Group)	-0.206	0.000	-0.202	0.000	-0.188	0.000	-0.203	0.000	-0.072	0.000	-0.202	0.000	-0.189	0.000
Neurological (PPS Group)	-0.085	0.000	-0.154	0.000	-0.185	0.000	-0.104	0.000	-0.147	0.000	-0.115	0.000	-0.124	0.000
Wound/Burn (PPS Group)	-0.044	0.259	-0.044	0.036	0.069	0.041	0.043	0.034	0.643	0.000	0.038	0.002	0.038	0.003
Cancer	0.259	0.000	0.358	0.000	0.180	0.000	0.175	0.000	0.284	0.000	0.233	0.000	0.231	0.000
Mental condition	0.119	0.000	0.196	0.000	0.210	0.000	0.091	0.000	0.238	0.000	0.172	0.000	0.170	0.000
Dementia	-0.100	0.000	0.003	0.886	-0.165	0.000	-0.015	0.511	0.020	0.501	-0.028	0.002	-0.054	0.000
Hypertension	-0.145	0.000	-0.052	0.000	-0.071	0.000	-0.040	0.000	-0.001	0.905	-0.027	0.000	-0.049	0.000
Ischemia	-0.033	0.049	0.067	0.000	0.048	0.000	0.125	0.000	0.092	0.000	0.079	0.000	0.070	0.000
Arrhythmia	0.061	0.004	0.187	0.000	0.023	0.034	0.063	0.000	0.052	0.001	0.057	0.000	0.055	0.000
Heart failure	0.272	0.000	0.328	0.000	0.159	0.000	0.228	0.000	0.165	0.000	0.216	0.000	0.201	0.000
COPD	0.085	0.000	0.272	0.000	-0.014	0.118	0.124	0.000	0.094	0.000	0.089	0.000	0.061	0.000
Skin ulcer	0.016	0.493	-0.011	0.482	0.036	0.012	0.028	0.014	-0.010	0.579	0.027	0.000	0.023	0.001
Orthopedic (other than PPS)	-0.241	0.000	-0.107	0.000	-0.130	0.000	-0.118	0.000	-0.008	0.671	-0.113	0.000	-0.127	0.000
Incontinence	0.029	0.242	0.090	0.000	0.079	0.002	0.031	0.175	0.026	0.418	0.066	0.000	0.061	0.000
Symptoms, signs, & ill-defined conditions	0.095	0.000	0.103	0.000	0.088	0.000	0.084	0.000	0.041	0.000	0.085	0.000	0.092	0.000
Diagnosis Severity														
Number of severity ratings >2	0.042	0.000	0.049	0.000	-0.018	0.000	0.018	0.000	0.047	0.000	0.023	0.000	0.020	0.000

TABLE 13-k (*continued*)

Risk Factor Measured at SOC/ROC	Community Admission				Post Acute						All Episodes			
	Clinically Complex		Other		Clinically Complex		Restorative		Other		Without Patient Group Indicators		With Patient Group Indicators	
	Full Model		Full Model		Full Model		Full Model		Full Model		Full Model		Full Model	
	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p
Sensory Status														
Partially vision impaired	-0.026	0.029	-0.071	0.000	0.046	0.000	-0.000	0.951	0.015	0.180	0.003	0.465	-0.003	0.455
Severely vision impaired	0.083	0.004	-0.038	0.086	0.034	0.120	0.004	0.848	0.006	0.838	0.025	0.018	0.019	0.072
Speech: Minimum difficulty	0.068	0.000	0.034	0.001	0.038	0.000	0.019	0.022	0.055	0.000	0.042	0.000	0.039	0.000
Speech: Moderate difficulty	0.046	0.045	0.022	0.206	0.015	0.363	0.017	0.275	0.014	0.528	0.023	0.005	0.021	0.012
Speech: Severe difficulty	-0.028	0.365	-0.114	0.000	0.024	0.286	0.025	0.213	-0.042	0.171	-0.032	0.003	-0.035	0.001
Integumentary Status														
Surgical wound present	0.184	0.000	0.036	0.005	-0.138	0.000	-0.146	0.000			-0.158	0.000	-0.130	0.000
Stage of most problematic pressure ulcer	0.051	0.000	0.062	0.000	0.086	0.000	0.102	0.000	0.071	0.000	0.086	0.000	0.082	0.000
Status of most problematic stasis ulcer	0.066	0.000	0.089	0.000	0.093	0.000	0.120	0.000	0.097	0.000	0.101	0.000	0.097	0.000
Functional Status/Physical Functioning														
ADL/IADL index	0.034	0.000	0.033	0.000	0.044	0.000	0.036	0.000	0.050	0.000	0.037	0.000	0.038	0.000
Elimination Status														
Urinary incontinence during the night	0.045	0.034	0.035	0.015	-0.001	0.953	0.045	0.000	-0.025	0.176	0.029	0.000	0.029	0.000
Urinary incontinence during the day	-0.111	0.000	-0.132	0.000	-0.053	0.027	-0.007	0.736	-0.036	0.272	-0.060	0.000	-0.064	0.000
Urinary incontinence during the night & day	-0.060	0.000	-0.065	0.000	-0.045	0.000	-0.015	0.062	-0.070	0.000	-0.039	0.000	-0.042	0.000
Urinary catheter present	0.451	0.000	0.543	0.000	0.426	0.000	0.411	0.000	0.472	0.000	0.440	0.000	0.441	0.000
Bowel incontinent less than weekly	0.066	0.010	0.026	0.190	0.090	0.000	0.082	0.000	0.045	0.099	0.068	0.000	0.067	0.000
Bowel incontinent 1-3 times/week	0.045	0.036	0.016	0.351	0.089	0.000	0.104	0.000	0.060	0.011	0.067	0.000	0.064	0.000
Bowel incontinent 4-6 times/week	0.001	0.966	0.039	0.109	0.107	0.000	0.151	0.000	0.054	0.113	0.085	0.000	0.082	0.000
Bowel incontinent daily or more often	0.098	0.000	0.072	0.000	0.181	0.000	0.227	0.000	0.185	0.000	0.166	0.000	0.164	0.000
Ostomy	0.054	0.316	0.142	0.000	0.158	0.000	0.238	0.000	0.227	0.000	0.193	0.000	0.203	0.000

TABLE 13-k (*continued*)

Risk Factor Measured at SOC/ROC	Community Admission				Post Acute						All Episodes			
	Clinically Complex		Other		Clinically Complex		Restorative		Other		Without Patient Group Indicators		With Patient Group Indicators	
	Full Model		Full Model		Full Model		Full Model		Full Model		Full Model		Full Model	
	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p
Neuro/Emotional/Behavioral Status														
Cog Func: Requires prompting	-0.015	0.347	0.002	0.888	0.051	0.000	0.030	0.001	-0.004	0.756	0.024	0.000	0.023	0.000
Cog Func: Requires assistance & some direction	-0.014	0.555	0.001	0.957	0.059	0.000	0.028	0.052	-0.014	0.529	0.025	0.002	0.023	0.004
Cog Func: Requires considerable assistance	-0.009	0.788	-0.024	0.346	0.063	0.014	-0.021	0.379	-0.057	0.102	-0.003	0.819	-0.006	0.657
Cog Func: Totally dependent	-0.044	0.375	0.004	0.915	0.104	0.007	0.002	0.948	-0.058	0.259	-0.005	0.777	-0.011	0.568
Conf Freq: In new situations	0.056	0.000	0.035	0.001	0.033	0.001	0.025	0.001	0.050	0.000	0.038	0.000	0.036	0.000
Conf Freq: Awakening at night	0.065	0.073	0.121	0.000	0.078	0.002	0.093	0.000	0.119	0.001	0.100	0.000	0.098	0.000
Conf Freq: Day and evening	0.063	0.006	0.103	0.000	0.031	0.048	0.050	0.000	0.004	0.833	0.061	0.000	0.059	0.000
Conf Freq: Constantly	-0.047	0.179	0.003	0.913	-0.118	0.000	-0.048	0.065	-0.096	0.012	-0.049	0.000	-0.052	0.000
Anx Freq: Less than daily	0.085	0.000	0.113	0.000	0.090	0.000	0.092	0.000	0.099	0.000	0.096	0.000	0.095	0.000
Anx Freq: Daily but not constantly	0.182	0.000	0.178	0.000	0.136	0.000	0.167	0.000	0.169	0.000	0.163	0.000	0.163	0.000
Anx Freq: All the time	0.209	0.000	0.260	0.000	0.176	0.000	0.209	0.000	0.186	0.000	0.209	0.000	0.210	0.000
Verbal disruption	0.055	0.087	0.051	0.044	0.108	0.000	0.082	0.001	0.110	0.002	0.075	0.000	0.073	0.000
Depressive Feelings: Depressed mood	0.103	0.000	0.146	0.000	0.100	0.000	0.170	0.000	0.125	0.000	0.145	0.000	0.142	0.000
Depressive Feelings: Any other element (2-6)	0.240	0.000	0.257	0.000	0.221	0.000	0.285	0.000	0.215	0.000	0.260	0.000	0.253	0.000
OUTCOME-SPECIFIC RISK-ADJUSTERS														
Dyspnea walking 20 feet, stairs	0.096	0.000	0.138	0.000	0.089	0.000	0.125	0.000	0.057	0.000	0.116	0.000	0.115	0.000
Dyspnea when moderate exertion	0.017	0.287	0.093	0.000	0.064	0.000	0.124	0.000	0.054	0.000	0.093	0.000	0.088	0.000
Dyspnea with minimum exertion	0.175	0.000	0.185	0.000	0.167	0.000	0.210	0.000	0.137	0.000	0.192	0.000	0.185	0.000
Dyspnea when at rest	0.336	0.000	0.369	0.000	0.262	0.000	0.276	0.000	0.241	0.000	0.300	0.000	0.294	0.000
Clinical Factors: Therapies														
IV/Infusion therapy	0.087	0.054	0.176	0.000	0.244	0.000	0.366	0.000	0.223	0.000	0.287	0.000	0.292	0.000
Ventilator	0.333	0.010	-0.168	0.092	0.147	0.100	-0.002	0.982	0.042	0.704	0.038	0.375	0.039	0.368
Intercept	-2.924	0.000	-3.211	0.000	-2.430	0.000	-2.812	0.000	-2.795	0.000	-3.172	0.000	-3.315	0.000
Pseudo-R2 statistic	0.018		0.015		0.026		0.019		0.024		0.022		0.023	
C statistic	0.642		0.634		0.646		0.646		0.647		0.652		0.652	
Model N	538,245		1,321,405		1,075,583		2,577,451		653,131		6,165,808		6,165,808	

TABLE 13-I. Full Risk-Adjustment Model for Emergent Care for Wound Infection

Risk Factor Measured at SOC/ROC	Community Admission				Post Acute						All Episodes			
	Clinically Complex		Other		Clinically Complex		Restorative		Other		Without Patient Group Indicators		With Patient Group Indicators	
	Full Model		Full Model		Full Model		Full Model		Full Model		Full Model		Full Model	
	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p
PATIENT GROUP INDICATORS														
Community Admission: Clinically Complex													0.309	0.000
Community Admission: Other													0.147	0.000
Post acute: Clinically Complex													0.150	0.000
Post acute: Other													-0.069	0.013
DEMOGRAPHICS														
Age below 65	0.186	0.007	0.258	0.000	0.377	0.000	0.464	0.000	0.299	0.000	0.377	0.000	0.373	0.000
Age 75-84	-0.120	0.057	-0.116	0.010	-0.313	0.000	-0.155	0.000	-0.238	0.001	-0.194	0.000	-0.190	0.000
Age 85+	-0.170	0.018	-0.181	0.000	-0.433	0.000	-0.348	0.000	-0.440	0.000	-0.332	0.000	-0.320	0.000
Gender: female	-0.111	0.018	0.025	0.419	-0.070	0.015	-0.058	0.002	-0.060	0.217	-0.047	0.000	-0.048	0.000
SOCIOECONOMIC FACTORS														
Any Medicaid	0.326	0.000	0.265	0.000	0.239	0.000	0.164	0.000	0.300	0.000	0.224	0.000	0.223	0.000
Medicare HMO	0.372	0.000	0.474	0.000	0.476	0.000	0.298	0.000	0.318	0.000	0.358	0.000	0.363	0.000
PRIOR SERVICE USE														
Discharged past 14 days:														
Discharge from hospital	0.512	0.000	0.748	0.000	-0.201	0.002	0.028	0.482	-0.300	0.017	0.183	0.000	0.304	0.000
Discharge from rehab facility	-0.188	0.490	-0.214	0.265	-0.284	0.000	-0.355	0.000	-0.079	0.542	-0.190	0.000	-0.117	0.000
Discharge from skilled nursing facility	0.658	0.001	0.302	0.051	-0.239	0.000	-0.266	0.000	-0.021	0.863	-0.075	0.002	0.013	0.640
CLINICAL FACTORS														
Prognoses														
Overall prognosis good/fair	-0.110	0.102	0.036	0.492	-0.031	0.505	0.064	0.152	-0.056	0.483	-0.002	0.918	-0.000	0.986
Rehabilitation prognosis good	-0.145	0.008	-0.174	0.000	-0.197	0.000	-0.183	0.000	-0.184	0.002	-0.186	0.000	-0.179	0.000
Diagnoses														
Diabetes (PPS Group)	0.103	0.078	0.234	0.000	-0.046	0.269	0.155	0.005	0.216	0.014	0.108	0.000	0.058	0.019
Orthopedic (PPS Group)	-0.539	0.000	-0.658	0.000	-0.421	0.000	-0.437	0.000	-0.073	0.443	-0.465	0.000	-0.453	0.000
Neurological (PPS Group)	-0.403	0.000	-0.647	0.000	-0.748	0.000	-0.870	0.000	-0.463	0.000	-0.683	0.000	-0.697	0.000
Wound/Burn (PPS Group)	1.283	0.000	1.038	0.000	0.927	0.000	0.759	0.000	1.946	0.000	0.930	0.000	0.919	0.000
Cancer	-0.187	0.131	-0.132	0.046	-0.266	0.000	-0.076	0.018	-0.272	0.015	-0.127	0.000	-0.126	0.000
Mental condition	-0.052	0.635	-0.149	0.042	-0.297	0.001	-0.009	0.859	-0.222	0.043	-0.160	0.000	-0.147	0.000
Dementia	-0.197	0.025	-0.308	0.002	-0.482	0.000	-0.245	0.044	-0.555	0.009	-0.243	0.000	-0.289	0.000
Hypertension	-0.163	0.001	-0.072	0.066	-0.109	0.000	-0.078	0.001	-0.031	0.601	-0.069	0.000	-0.105	0.000
Ischemia	-0.004	0.952	-0.047	0.539	0.024	0.534	0.017	0.606	-0.016	0.862	0.026	0.222	0.012	0.584
Arrhythmia	0.172	0.054	0.095	0.207	-0.200	0.000	-0.268	0.000	-0.056	0.542	-0.154	0.000	-0.155	0.000
Heart failure	0.140	0.023	-0.195	0.003	-0.220	0.000	-0.221	0.000	-0.087	0.226	-0.137	0.000	-0.157	0.000
COPD	-0.353	0.000	-0.181	0.033	-0.451	0.000	-0.224	0.000	-0.297	0.003	-0.317	0.000	-0.360	0.000
Skin ulcer	1.213	0.000	0.993	0.000	0.852	0.000	0.641	0.000	1.736	0.000	0.905	0.000	0.907	0.000
Orthopedic (other than PPS)	-0.327	0.000	-0.213	0.000	-0.239	0.000	-0.196	0.000	-0.096	0.334	-0.199	0.000	-0.218	0.000
Incontinence	-0.155	0.151	0.162	0.026	0.116	0.226	0.101	0.226	-0.179	0.256	0.062	0.138	0.063	0.133
Symptoms, signs, & ill-defined conditions	-0.043	0.499	-0.105	0.010	-0.141	0.000	-0.174	0.000	-0.152	0.010	-0.167	0.000	-0.152	0.000
Diagnosis Severity														
Number of severity ratings >2	0.019	0.304	0.021	0.050	0.014	0.232	0.016	0.008	0.050	0.004	0.029	0.000	0.017	0.000

TABLE 13-I (*continued*)														
Risk Factor Measured at SOC/ROC	**Community Admission**				**Post Acute**						**All Episodes**			
	Clinically Complex		**Other**		**Clinically Complex**		**Restorative**		**Other**		**Without Patient Group Indicators**		**With Patient Group Indicators**	
	Full Model		**Full Model**		**Full Model**		**Full Model**		**Full Model**		**Full Model**		**Full Model**	
	Coef.	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**
Sensory Status														
Partially vision impaired	0.067	0.173	-0.026	0.470	-0.023	0.486	-0.006	0.809	-0.021	0.732	-0.003	0.859	-0.012	0.465
Severely vision impaired	0.020	0.861	-0.052	0.545	-0.029	0.729	-0.051	0.537	0.222	0.104	-0.004	0.927	-0.013	0.754
Speech: Minimum difficulty	0.051	0.422	-0.074	0.097	-0.012	0.775	-0.032	0.305	-0.071	0.321	-0.035	0.079	-0.037	0.063
Speech: Moderate difficulty	0.070	0.481	0.004	0.959	-0.021	0.785	-0.109	0.097	-0.113	0.380	-0.039	0.276	-0.041	0.260
Speech: Severe difficulty	-0.094	0.456	-0.187	0.040	0.086	0.365	-0.111	0.168	0.001	0.993	-0.082	0.067	-0.082	0.068
Integumentary Status														
Surgical wound present	0.903	0.000	0.956	0.000	0.940	0.000	1.052	0.000	1.051	0.000	1.028	0.000	1.030	0.000
Stage of most problematic pressure ulcer	0.283	0.000	0.202	0.000	0.242	0.000	0.185	0.000	0.089	0.004	0.230	0.000	0.221	0.000
Status of most problematic stasis ulcer	0.448	0.000	0.489	0.000	0.424	0.000	0.476	0.000	0.495	0.000	0.499	0.000	0.496	0.000
Functional Status/Physical Functioning														
ADL/IADL index	0.024	0.003	0.023	0.000	0.032	0.000	0.022	0.000	0.035	0.000	0.028	0.000	0.028	0.000
Elimination Status														
Urinary incontinence during the night	-0.094	0.330	0.016	0.777	-0.189	0.004	0.028	0.477	-0.072	0.474	-0.030	0.271	-0.030	0.270
Urinary incontinence during the day	-0.216	0.117	-0.367	0.001	-0.169	0.137	-0.067	0.415	-0.222	0.261	-0.197	0.000	-0.202	0.000
Urinary incontinence during the night & day	-0.012	0.842	-0.176	0.000	-0.094	0.023	-0.018	0.527	-0.057	0.418	-0.066	0.000	-0.068	0.000
Urinary catheter present	0.039	0.686	0.062	0.338	0.260	0.000	0.131	0.001	0.468	0.000	0.191	0.000	0.184	0.000
Bowel incontinent less than weekly	0.002	0.984	0.041	0.630	0.091	0.280	0.066	0.326	0.123	0.382	0.064	0.107	0.061	0.126
Bowel incontinent 1-3 times/week	0.129	0.133	0.094	0.171	0.257	0.000	0.068	0.257	0.114	0.322	0.140	0.000	0.135	0.000
Bowel incontinent 4-6 times/week	0.078	0.505	0.231	0.009	0.083	0.375	0.106	0.229	-0.352	0.052	0.115	0.011	0.110	0.015
Bowel incontinent daily or more often	0.205	0.026	0.372	0.000	0.333	0.000	0.317	0.000	0.351	0.001	0.341	0.000	0.338	0.000
Ostomy	0.190	0.234	0.131	0.183	0.515	0.000	0.283	0.000	0.524	0.000	0.325	0.000	0.332	0.000

TABLE 13-I (*continued*)

Risk Factor Measured at SOC/ROC	Community Admission				Post Acute						All Episodes			
	Clinically Complex		Other		Clinically Complex		Restorative		Other		Without Patient Group Indicators		With Patient Group Indicators	
	Full Model		Full Model		Full Model		Full Model		Full Model		Full Model		Full Model	
	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p
Neuro/Emotional/Behavioral Status														
Cog Func: Requires prompting	-0.148	0.036	-0.023	0.638	-0.006	0.891	-0.033	0.313	-0.047	0.542	-0.040	0.057	-0.042	0.050
Cog Func: Requires assistance & some direction	-0.093	0.357	-0.070	0.348	-0.021	0.780	0.018	0.752	-0.004	0.972	-0.028	0.421	-0.028	0.416
Cog Func: Requires considerable assistance	-0.166	0.245	0.087	0.414	0.172	0.122	-0.024	0.814	0.032	0.859	0.055	0.302	0.054	0.312
Cog Func: Totally dependent	-0.240	0.188	0.098	0.472	0.180	0.228	0.045	0.762	0.211	0.354	0.092	0.191	0.089	0.209
Conf Freq: In new situations	-0.047	0.453	-0.105	0.012	-0.064	0.095	-0.040	0.138	0.020	0.756	-0.057	0.001	-0.058	0.001
Conf Freq: Awakening at night	-0.161	0.339	-0.188	0.149	0.012	0.914	-0.183	0.071	-0.147	0.493	-0.129	0.027	-0.131	0.025
Conf Freq: Day and evening	-0.000	0.999	-0.105	0.140	-0.163	0.024	-0.199	0.001	0.055	0.634	-0.120	0.000	-0.123	0.000
Conf Freq: Constantly	0.028	0.839	-0.077	0.446	-0.221	0.066	-0.129	0.258	-0.190	0.319	-0.105	0.054	-0.111	0.041
Anx Freq: Less than daily	0.144	0.009	0.081	0.029	0.096	0.005	0.125	0.000	-0.003	0.958	0.108	0.000	0.107	0.000
Anx Freq: Daily but not constantly	0.176	0.007	0.104	0.019	0.059	0.153	0.186	0.000	0.015	0.838	0.133	0.000	0.135	0.000
Anx Freq: All the time	0.212	0.170	0.087	0.462	-0.019	0.866	0.209	0.004	-0.140	0.482	0.111	0.025	0.115	0.020
Verbal disruption	0.317	0.008	0.077	0.459	0.204	0.046	0.168	0.065	-0.294	0.167	0.139	0.005	0.138	0.006
Depressive Feelings: Depressed mood	0.050	0.347	0.120	0.002	0.093	0.007	0.111	0.000	0.164	0.007	0.108	0.000	0.103	0.000
Depressive Feelings: Any other element (2-6)	0.064	0.576	0.199	0.026	0.312	0.000	0.327	0.000	0.080	0.614	0.245	0.000	0.237	0.000
OUTCOME-SPECIFIC RISK-ADJUSTERS														
Dyspnea walking 20 feet, stairs	-0.172	0.012	-0.019	0.628	0.019	0.622	0.014	0.513	0.000	0.995	-0.006	0.708	-0.006	0.716
Dyspnea when moderate exertion	-0.186	0.003	-0.040	0.317	-0.020	0.598	-0.039	0.119	-0.049	0.451	-0.051	0.003	-0.054	0.001
Dyspnea with minimum exertion	-0.099	0.168	-0.074	0.167	-0.048	0.304	-0.072	0.046	-0.039	0.632	-0.066	0.003	-0.070	0.002
Dyspnea when at rest	-0.185	0.130	-0.223	0.040	-0.179	0.023	-0.145	0.049	-0.206	0.153	-0.177	0.000	-0.181	0.000
Clinical Factors: Therapies														
IV/Infusion therapy	0.085	0.560	0.066	0.363	0.100	0.105	0.080	0.024	0.077	0.430	0.065	0.013	0.073	0.006
Ventilator	-0.232	0.693	-0.040	0.911	-0.235	0.494	0.066	0.810	0.482	0.223	-0.027	0.866	-0.021	0.894
Intercept	-6.042	0.000	-6.234	0.000	-5.449	0.000	-5.961	0.000	-6.203	0.000	-6.138	0.000	-6.247	0.000
Pseudo-R2 statistic	0.009		0.006		0.010		0.005		0.010		0.006		0.006	
C statistic	0.814		0.789		0.801		0.740		0.798		0.776		0.777	
Model N	547,561		1,339,221		1,089,908		2,602,341		662,319		6,241,350		6,241,350	

TABLE 14. Risk-Adjusted HHQI Outcomes by Patient Group						
	Community Admission		Post Acute Admission			All
	Clinically Complex	Other	Clinically Complex	Restorative	Other	
HEALTH STATUS OUTCOME MEASURES						
Percent Improving in Ambulation/Locomotion	29.7	33.0	38.5	41.7	35.9	37.7
Percent Improving in Bathing	46.8	47.9	62.4	70.3	56.3	60.9
Percent Improving in Transferring	39.7	42.4	50.8	58.3	48.4	51.0
Percent Improving in Management of Oral Medications	29.9	28.5	42.8	46.6	37.9	39.0
Percent Improving in Pain Interfering with Activity	58.5	58.8	60.9	62.4	60.0	60.8
Percent Improving in Status of Surgical Wounds	68.0	67.1	71.8	72.8	---	72.2
Percent Improving in Dyspnea	52.6	53.0	57.8	62.9	55.8	58.0
Percent Improving in Urinary Incontinence	39.3	41.0	49.7	55.5	49.3	48.1
UTILIZATION OUTCOME MEASURES						
Percent with Acute Care Hospitalization	4.6	3.3	5.2	2.9	4.8	3.7
Percent Discharged to Community	95.7	96.6	96.2	97.7	96.6	96.9
Percent with Emergent Care	6.7	5.6	8.5	6.2	8.2	6.7
ADVERSE EVENT MEASURE[a]						
Percent with Emergent Care for Wound Infections	0.6	0.4	0.4	0.4	0.4	0.4

a. There are a total of 13 adverse events monitored by CMS. They are distinct from the 41 OBQI outcomes. “Emergent Care for Wound Infection” is the only adverse event that currently is publicly-reported.

APPENDIX

TABLE A1-a. Core Risk-Adjustment Model for Improvement in Ambulation/Locomotion												
Risk Factor Measured at SOC/ROC	Community Admission				Post Acute						All Episodes	
	Clinically Complex		Other		Clinically Complex		Restorative		Other			
	Core Model		Core Model		Core Model		Core Model		Core Model		Core Model	
	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p
DEMOGRAPHICS												
Age below 65	-0.008	0.537	-0.133	0.000	-0.056	0.000	-0.088	0.000	-0.030	0.027	-0.072	0.000
Age 75-84	-0.124	0.000	-0.101	0.000	-0.127	0.000	-0.071	0.000	-0.131	0.000	-0.081	0.000
Age 85+	-0.320	0.000	-0.319	0.000	-0.353	0.000	-0.340	0.000	-0.401	0.000	-0.315	0.000
Gender: female	-0.083	0.000	-0.098	0.000	-0.136	0.000	-0.131	0.000	-0.145	0.000	-0.124	0.000
SOCIOECONOMIC FACTORS												
Any Medicaid	-0.084	0.000	-0.073	0.000	-0.097	0.000	-0.072	0.000	-0.078	0.000	-0.083	0.000
Medicare HMO	-0.074	0.000	-0.126	0.000	-0.115	0.000	-0.206	0.000	-0.104	0.000	-0.148	0.000
PRIOR SERVICE USE												
Discharged past 14 days:												
Discharge from hospital					0.141	0.000	0.109	0.000	0.204	0.000	0.287	0.000
Discharge from rehab facility					-0.171	0.000	-0.257	0.000	-0.109	0.000	-0.100	0.000
Discharge from skilled nursing facility					-0.116	0.000	-0.235	0.000	-0.086	0.000	-0.030	0.000
CLINICAL FACTORS												
Prognoses												
Overall prognosis good/fair	0.100	0.000	0.172	0.000	0.164	0.000	0.237	0.000	0.160	0.000	0.197	0.000
Rehabilitation prognosis good	0.253	0.000	0.350	0.000	0.232	0.000	0.317	0.000	0.267	0.000	0.313	0.000
Diagnoses												
Diabetes (PPS Group)	0.068	0.000	0.076	0.000	-0.013	0.116	-0.164	0.000	-0.004	0.829	-0.062	0.000
Orthopedic (PPS Group)	0.064	0.000	0.004	0.510	-0.157	0.000	-0.403	0.000	-0.115	0.000	-0.246	0.000
Neurological (PPS Group)	-0.036	0.009	-0.215	0.000	-0.086	0.000	-0.186	0.000	-0.130	0.000	-0.164	0.000
Wound/Burn (PPS Group)	-0.152	0.000	-0.094	0.000	-0.166	0.000	-0.042	0.003	-0.319	0.016	-0.137	0.000
Cancer	-0.062	0.004	0.097	0.000	0.081	0.000	0.341	0.000	-0.057	0.000	0.211	0.000
Mental condition	0.091	0.000	0.181	0.000	0.117	0.000	0.150	0.000	0.112	0.000	0.134	0.000
Dementia	0.110	0.000	0.084	0.000	0.050	0.000	-0.024	0.108	0.053	0.017	0.042	0.000
Hypertension	0.083	0.000	0.038	0.000	0.068	0.000	0.072	0.000	-0.001	0.865	0.050	0.000
Ischemia	0.077	0.000	0.090	0.000	0.209	0.000	0.435	0.000	0.061	0.000	0.257	0.000
Arrhythmia	0.067	0.000	0.012	0.332	0.090	0.000	0.129	0.000	0.047	0.000	0.103	0.000
Heart failure	-0.045	0.000	-0.062	0.000	-0.035	0.000	-0.081	0.000	-0.048	0.000	-0.064	0.000
COPD	0.086	0.000	0.098	0.000	0.131	0.000	0.084	0.000	0.111	0.000	0.094	0.000
Skin ulcer	-0.188	0.000	-0.156	0.000	-0.183	0.000	-0.089	0.000	-0.252	0.000	-0.172	0.000
Orthopedic (other than PPS)	-0.036	0.000	-0.055	0.000	-0.255	0.000	-0.391	0.000	-0.242	0.000	-0.283	0.000
Incontinence	-0.162	0.000	-0.184	0.000	-0.210	0.000	-0.142	0.000	-0.121	0.000	-0.204	0.000
Symptoms, signs, & ill-defined conditions	-0.023	0.023	-0.059	0.000	-0.006	0.372	0.015	0.000	-0.033	0.000	0.004	0.141
Diagnosis Severity												
Number of severity ratings >2	-0.003	0.287	0.036	0.000	0.004	0.081	-0.003	0.002	0.033	0.000	0.011	0.000

TABLE A1-a (*continued*)												
Risk Factor Measured at SOC/ROC	**Community Admission**				**Post Acute**						**All Episodes**	
	Clinically Complex		**Other**		**Clinically Complex**		**Restorative**		**Other**			
	Core Model		**Core Model**		**Core Model**		**Core Model**		**Core Model**		**Core Model**	
	Coef.	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**
Sensory Status												
Partially vision impaired	-0.005	0.524	0.021	0.000	-0.090	0.000	-0.052	0.000	-0.074	0.000	-0.045	0.000
Severely vision impaired	-0.182	0.000	-0.167	0.000	-0.339	0.000	-0.373	0.000	-0.278	0.000	-0.294	0.000
Speech: Minimum difficulty	-0.079	0.000	-0.078	0.000	-0.048	0.000	-0.042	0.000	-0.060	0.000	-0.062	0.000
Speech: Moderate difficulty	-0.085	0.000	-0.147	0.000	-0.107	0.000	-0.150	0.000	-0.086	0.000	-0.139	0.000
Speech: Severe difficulty	-0.400	0.000	-0.427	0.000	-0.362	0.000	-0.374	0.000	-0.391	0.000	-0.417	0.000
Integumentary Status												
Surgical wound present	0.210	0.000	0.377	0.000	0.289	0.000	0.256	0.000			0.254	0.000
Stage of most problematic pressure ulcer	-0.143	0.000	-0.177	0.000	-0.116	0.000	-0.147	0.000	-0.131	0.000	-0.159	0.000
Status of most problematic stasis ulcer	-0.044	0.000	-0.054	0.000	-0.088	0.000	-0.116	0.000	-0.106	0.000	-0.099	0.000
Functional Status/Physical Functioning ADL/IADL index	-0.146	0.000	-0.140	0.000	-0.132	0.000	-0.119	0.000	-0.151	0.000	-0.132	0.000
Amb: Needs assistance to walk	3.541	0.000	3.419	0.000	3.169	0.000	3.543	0.000	3.076	0.000	3.376	0.000
Amb: Chairfast-Able to wheel	3.108	0.000	3.145	0.000	2.280	0.000	2.437	0.000	2.304	0.000	2.573	0.000
Amb: Chairfast-Unable to wheel	4.031	0.000	4.113	0.000	3.188	0.000	3.453	0.000	3.134	0.000	3.485	0.000
Amb: Bedfast	4.890	0.000	4.750	0.000	3.420	0.000	3.535	0.000	3.418	0.000	3.634	0.000
Elimination Status												
Urinary incontinence during the night	-0.209	0.000	-0.203	0.000	-0.177	0.000	-0.192	0.000	-0.194	0.000	-0.194	0.000
Urinary incontinence during the day	-0.119	0.000	-0.113	0.000	-0.160	0.000	-0.169	0.000	-0.152	0.000	-0.144	0.000
Urinary incontinence during the night & day	-0.235	0.000	-0.204	0.000	-0.198	0.000	-0.189	0.000	-0.235	0.000	-0.209	0.000
Urinary catheter present	-0.696	0.000	-0.464	0.000	-0.548	0.000	-0.288	0.000	-0.449	0.000	-0.409	0.000
Bowel incontinent less than weekly	-0.118	0.000	-0.109	0.000	-0.099	0.000	-0.155	0.000	-0.112	0.000	-0.133	0.000
Bowel incontinent 1-3 times/week	-0.109	0.000	-0.170	0.000	-0.196	0.000	-0.305	0.000	-0.181	0.000	-0.223	0.000
Bowel incontinent 4-6 times/week	-0.330	0.000	-0.423	0.000	-0.455	0.000	-0.490	0.000	-0.350	0.000	-0.449	0.000
Bowel incontinent daily or more often	-0.377	0.000	-0.439	0.000	-0.464	0.000	-0.538	0.000	-0.333	0.000	-0.466	0.000
Ostomy	-0.240	0.000	-0.099	0.000	-0.050	0.027	0.300	0.000	-0.094	0.002	0.188	0.000

TABLE A1-a (*continued*)												
Risk Factor Measured at SOC/ROC	**Community Admission**				**Post Acute**						**All Episodes**	
	Clinically Complex		**Other**		**Clinically Complex**		**Restorative**		**Other**			
	Core Model		**Core Model**		**Core Model**		**Core Model**		**Core Model**		**Core Model**	
	Coef.	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**
Neuro/Emotional/Behavioral Status												
Cog Func: Requires prompting	0.080	0.000	0.036	0.000	0.038	0.000	0.012	0.038	0.018	0.086	0.031	0.000
Cog Func: Requires assistance & some direction	0.179	0.000	0.071	0.000	0.086	0.000	-0.032	0.001	0.081	0.000	0.050	0.000
Cog Func: Requires considerable assistance	0.044	0.084	-0.007	0.697	-0.006	0.745	-0.215	0.000	-0.029	0.300	-0.077	0.000
Cog Func: Totally dependent	-0.192	0.000	-0.229	0.000	-0.232	0.000	-0.529	0.000	-0.247	0.000	-0.339	0.000
Conf Freq: In new situations	0.045	0.000	0.048	0.000	0.020	0.004	0.024	0.000	0.017	0.054	0.035	0.000
Conf Freq: Awakening at night	0.026	0.315	0.008	0.657	0.005	0.813	-0.068	0.000	-0.007	0.814	-0.019	0.033
Conf Freq: Day and evening	0.064	0.000	0.057	0.000	0.004	0.741	-0.072	0.000	0.026	0.113	0.001	0.912
Conf Freq: Constantly	0.153	0.000	0.139	0.000	0.049	0.023	-0.009	0.613	0.043	0.145	0.063	0.000
Anx Freq: Less than daily	0.014	0.133	0.048	0.000	0.034	0.000	0.072	0.000	0.044	0.000	0.055	0.000
Anx Freq: Daily but not constantly	0.100	0.000	0.148	0.000	0.129	0.000	0.173	0.000	0.133	0.000	0.157	0.000
Anx Freq: All the time	0.190	0.000	0.230	0.000	0.187	0.000	0.241	0.000	0.193	0.000	0.231	0.000
Verbal disruption	-0.076	0.004	-0.033	0.084	-0.125	0.000	-0.099	0.000	-0.089	0.006	-0.090	0.000
Depressive Feelings: Depressed mood	-0.036	0.000	-0.023	0.000	-0.029	0.000	0.001	0.793	-0.045	0.000	-0.013	0.000
Depressive Feelings: Any other element (2-6)	0.049	0.016	0.023	0.133	-0.039	0.024	-0.027	0.072	-0.045	0.071	-0.011	0.169
PRIOR VALUE OF OUTCOME												
Status Prior to Admission												
Amb: Needs device to walk	-0.855	0.000	-0.962	0.000	-0.766	0.000	-0.617	0.000	-0.892	0.000	-0.731	0.000
Amb: Needs assistance to walk	-1.636	0.000	-1.648	0.000	-0.960	0.000	-0.798	0.000	-1.126	0.000	-1.074	0.000
Amb: Chairfast-Able to wheel	-2.329	0.000	-2.497	0.000	-1.544	0.000	-1.377	0.000	-1.962	0.000	-1.741	0.000
Amb: Chairfast-Unable wheel	-2.351	0.000	-2.508	0.000	-1.311	0.000	-1.175	0.000	-1.720	0.000	-1.593	0.000
Amb: Bedfast	-2.513	0.000	-2.473	0.000	-0.915	0.000	-0.558	0.000	-1.263	0.000	-1.021	0.000
Intercept	-0.095	0.000	-0.206	0.000	0.114	0.000	-0.083	0.000	0.361	0.000	-0.197	0.000
Pseudo-R2 statistic	0.216		0.244		0.221		0.272		0.189		0.244	
C statistic	0.776		0.789		0.772		0.796		0.753		0.783	
Model N	454,519		1,100,361		884,062		2,193,648		487,060		5,119,647	

TABLE A1-b. Core Risk-Adjustment Model for Improvement in Bathing

Risk Factor Measured at SOC/ROC	Community Admission				Post Acute						All Episodes	
	Clinically Complex		Other		Clinically Complex		Restorative		Other			
	Core Model		Core Model		Core Model		Core Model		Core Model		Core Model	
	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p
DEMOGRAPHICS												
Age below 65	0.020	0.082	-0.090	0.000	-0.077	0.000	-0.170	0.000	-0.034	0.010	-0.115	0.000
Age 75-84	-0.071	0.000	-0.068	0.000	-0.099	0.000	-0.091	0.000	-0.068	0.000	-0.081	0.000
Age 85+	-0.225	0.000	-0.235	0.000	-0.283	0.000	-0.331	0.000	-0.285	0.000	-0.281	0.000
Gender: female	-0.088	0.000	-0.105	0.000	-0.130	0.000	-0.137	0.000	-0.135	0.000	-0.126	0.000
SOCIOECONOMIC FACTORS												
Any Medicaid	-0.139	0.000	-0.165	0.000	-0.140	0.000	-0.158	0.000	-0.150	0.000	-0.161	0.000
Medicare HMO	-0.066	0.000	-0.084	0.000	-0.062	0.000	-0.117	0.000	-0.042	0.000	-0.082	0.000
PRIOR SERVICE USE												
Discharged past 14 days: Discharge from hospital					0.176	0.000	0.182	0.000	0.155	0.000	0.352	0.000
Discharge from rehab facility					0.147	0.000	0.111	0.000	0.117	0.000	0.290	0.000
Discharge from skilled nursing facility					0.082	0.000	0.042	0.000	0.054	0.000	0.244	0.000
CLINICAL FACTORS												
Prognoses Overall prognosis good/fair	0.143	0.000	0.184	0.000	0.158	0.000	0.205	0.000	0.185	0.000	0.182	0.000
Rehabilitation prognosis good	0.297	0.000	0.320	0.000	0.290	0.000	0.328	0.000	0.278	0.000	0.327	0.000
Diagnoses Diabetes (PPS Group)	0.078	0.000	0.052	0.000	0.014	0.074	-0.142	0.000	0.005	0.756	-0.016	0.000
Orthopedic (PPS Group)	0.117	0.000	0.141	0.000	0.084	0.000	0.020	0.000	0.116	0.000	0.081	0.000
Neurological (PPS Group)	-0.020	0.086	-0.059	0.000	0.026	0.003	-0.009	0.237	-0.005	0.667	-0.030	0.000
Wound/Burn (PPS Group)	-0.148	0.000	-0.085	0.000	-0.201	0.000	-0.129	0.000	0.068	0.567	-0.146	0.000
Cancer	-0.155	0.000	-0.111	0.000	-0.170	0.000	-0.095	0.000	-0.204	0.000	-0.125	0.000
Mental condition	-0.054	0.000	0.003	0.802	-0.035	0.007	-0.041	0.000	0.004	0.783	-0.026	0.000
Dementia	-0.093	0.000	-0.117	0.000	-0.171	0.000	-0.203	0.000	-0.200	0.000	-0.165	0.000
Hypertension	0.120	0.000	0.099	0.000	0.081	0.000	0.045	0.000	0.039	0.000	0.054	0.000
Ischemia	0.085	0.000	0.096	0.000	0.121	0.000	0.191	0.000	0.043	0.000	0.119	0.000
Arrhythmia	0.053	0.000	0.010	0.371	0.068	0.000	0.051	0.000	0.047	0.000	0.048	0.000
Heart failure	-0.022	0.018	-0.025	0.004	-0.046	0.000	-0.088	0.000	-0.038	0.000	-0.067	0.000
COPD	0.016	0.070	0.009	0.404	0.058	0.000	-0.054	0.000	0.013	0.212	-0.016	0.000
Skin ulcer	-0.177	0.000	-0.154	0.000	-0.191	0.000	-0.172	0.000	-0.238	0.000	-0.202	0.000
Orthopedic (other than PPS)	0.091	0.000	0.015	0.007	0.037	0.000	0.047	0.000	-0.029	0.009	0.024	0.000
Incontinence	-0.264	0.000	-0.281	0.000	-0.271	0.000	-0.222	0.000	-0.245	0.000	-0.274	0.000
Symptoms, signs, & ill-defined conditions	-0.035	0.000	-0.062	0.000	-0.024	0.000	-0.060	0.000	-0.026	0.000	-0.041	0.000
Diagnosis Severity Number of severity ratings >2	0.023	0.000	0.074	0.000	0.035	0.000	0.054	0.000	0.051	0.000	0.051	0.000

TABLE A1-b (*continued*)												
Risk Factor Measured at SOC/ROC	**Community Admission**				**Post Acute**						**All Episodes**	
	Clinically Complex		**Other**		**Clinically Complex**		**Restorative**		**Other**			
	Core Model		**Core Model**		**Core Model**		**Core Model**		**Core Model**		**Core Model**	
	Coef.	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**
Sensory Status												
Partially vision impaired	0.097	0.000	0.077	0.000	-0.038	0.000	-0.057	0.000	-0.036	0.000	-0.001	0.641
Severely vision impaired	-0.075	0.000	-0.077	0.000	-0.271	0.000	-0.275	0.000	-0.253	0.000	-0.202	0.000
Speech: Minimum difficulty	-0.046	0.000	-0.051	0.000	-0.058	0.000	-0.075	0.000	-0.050	0.000	-0.063	0.000
Speech: Moderate difficulty	-0.072	0.000	-0.134	0.000	-0.107	0.000	-0.192	0.000	-0.144	0.000	-0.140	0.000
Speech: Severe difficulty	-0.431	0.000	-0.480	0.000	-0.418	0.000	-0.508	0.000	-0.496	0.000	-0.479	0.000
Integumentary Status												
Surgical wound present	0.212	0.000	0.307	0.000	0.370	0.000	0.411	0.000			0.404	0.000
Stage of most problematic pressure ulcer	-0.119	0.000	-0.124	0.000	-0.100	0.000	-0.108	0.000	-0.101	0.000	-0.117	0.000
Status of most problematic stasis ulcer	-0.033	0.000	-0.050	0.000	-0.078	0.000	-0.131	0.000	-0.104	0.000	-0.085	0.000
Functional Status/Physical Functioning												
ADL/IADL index	-0.138	0.000	-0.152	0.000	-0.155	0.000	-0.147	0.000	-0.162	0.000	-0.149	0.000
Bath: Able w/partial assistance	1.717	0.000	1.539	0.000	1.530	0.000	1.615	0.000	1.404	0.000	1.562	0.000
Bath: Requires assistance	2.985	0.000	2.752	0.000	2.582	0.000	2.682	0.000	2.462	0.000	2.628	0.000
Bath: Unable-Bathed in bed/chair	3.448	0.000	3.074	0.000	2.771	0.000	2.677	0.000	2.673	0.000	2.738	0.000
Bath: Totally dependent	4.297	0.000	4.093	0.000	3.390	0.000	3.389	0.000	3.250	0.000	3.450	0.000
Elimination Status												
Urinary incontinence during the night	-0.189	0.000	-0.178	0.000	-0.135	0.000	-0.153	0.000	-0.155	0.000	-0.165	0.000
Urinary incontinence during the day	0.156	0.000	0.039	0.001	-0.044	0.004	-0.111	0.000	-0.043	0.034	0.008	0.181
Urinary incontinence during the night & day	-0.153	0.000	-0.143	0.000	-0.148	0.000	-0.130	0.000	-0.170	0.000	-0.151	0.000
Urinary catheter present	-0.575	0.000	-0.373	0.000	-0.515	0.000	-0.319	0.000	-0.426	0.000	-0.397	0.000
Bowel incontinent less than weekly	-0.097	0.000	-0.095	0.000	-0.111	0.000	-0.113	0.000	-0.052	0.005	-0.104	0.000
Bowel incontinent 1-3 times/week	-0.068	0.000	-0.123	0.000	-0.168	0.000	-0.235	0.000	-0.158	0.000	-0.159	0.000
Bowel incontinent 4-6 times/week	-0.263	0.000	-0.369	0.000	-0.423	0.000	-0.434	0.000	-0.400	0.000	-0.393	0.000
Bowel incontinent daily or more often	-0.385	0.000	-0.409	0.000	-0.482	0.000	-0.480	0.000	-0.430	0.000	-0.446	0.000
Ostomy	-0.213	0.000	-0.189	0.000	-0.227	0.000	-0.088	0.000	-0.136	0.000	-0.106	0.000

TABLE A1-b (*continued*)												
Risk Factor Measured at SOC/ROC	**Community Admission**				**Post Acute**						**All Episodes**	
	Clinically Complex		**Other**		**Clinically Complex**		**Restorative**		**Other**			
	Core Model		**Core Model**		**Core Model**		**Core Model**		**Core Model**		**Core Model**	
	Coef.	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**
Neuro/Emotional/Behavioral Status												
Cog Func: Requires prompting	0.071	0.000	-0.018	0.004	0.014	0.044	-0.035	0.000	-0.022	0.018	-0.009	0.006
Cog Func: Requires assistance & some direction	0.047	0.001	-0.073	0.000	-0.005	0.624	-0.083	0.000	-0.035	0.018	-0.047	0.000
Cog Func: Requires considerable assistance	-0.051	0.020	-0.163	0.000	-0.079	0.000	-0.163	0.000	-0.109	0.000	-0.129	0.000
Cog Func: Totally dependent	-0.397	0.000	-0.531	0.000	-0.350	0.000	-0.623	0.000	-0.533	0.000	-0.505	0.000
Conf Freq: In new situations	-0.002	0.792	0.021	0.000	-0.020	0.002	-0.044	0.000	-0.031	0.000	-0.022	0.000
Conf Freq: Awakening at night	-0.094	0.000	-0.054	0.001	-0.089	0.000	-0.137	0.000	-0.064	0.010	-0.098	0.000
Conf Freq: Day and evening	-0.147	0.000	-0.106	0.000	-0.157	0.000	-0.209	0.000	-0.147	0.000	-0.167	0.000
Conf Freq: Constantly	-0.261	0.000	-0.150	0.000	-0.244	0.000	-0.293	0.000	-0.228	0.000	-0.243	0.000
Anx Freq: Less than daily	0.013	0.091	0.029	0.000	0.024	0.000	0.036	0.000	0.030	0.000	0.028	0.000
Anx Freq: Daily but not constantly	0.043	0.000	0.097	0.000	0.080	0.000	0.096	0.000	0.116	0.000	0.090	0.000
Anx Freq: All the time	0.171	0.000	0.189	0.000	0.123	0.000	0.130	0.000	0.162	0.000	0.157	0.000
Verbal disruption	-0.087	0.000	-0.113	0.000	-0.134	0.000	-0.109	0.000	-0.110	0.000	-0.117	0.000
Depressive Feelings: Depressed mood	-0.069	0.000	-0.035	0.000	-0.045	0.000	-0.058	0.000	-0.060	0.000	-0.055	0.000
Depressive Feelings: Any other element (2-6)	0.020	0.241	0.033	0.014	-0.009	0.561	-0.046	0.001	0.011	0.641	-0.005	0.475
PRIOR VALUE OF OUTCOME												
Status Prior to Admission												
Bath: Able w/use of devices	-0.157	0.000	-0.318	0.000	-0.286	0.000	-0.259	0.000	-0.359	0.000	-0.265	0.000
Bath: Able w/partial assistance	-0.893	0.000	-0.971	0.000	-0.755	0.000	-0.674	0.000	-0.846	0.000	-0.799	0.000
Bath: Requires assistance	-1.420	0.000	-1.353	0.000	-0.876	0.000	-0.707	0.000	-1.000	0.000	-0.963	0.000
Bath: Unable-Bathed in bed/chair	-1.683	0.000	-1.547	0.000	-0.926	0.000	-0.692	0.000	-1.108	0.000	-0.953	0.000
Bath: Totally dependent	-1.911	0.000	-1.854	0.000	-0.869	0.000	-0.668	0.000	-1.105	0.000	-1.003	0.000
Intercept	-0.649	0.000	-0.460	0.000	-0.156	0.000	-0.230	0.000	0.130	0.000	-0.392	0.000
Pseudo-R2 statistic	0.134		0.157		0.155		0.171		0.140		0.193	
C statistic	0.712		0.729		0.732		0.755		0.718		0.759	
Model N	456,479		1,102,506		908,447		2,279,836		499,743		5,247,007	

TABLE A1-c. Core Risk-Adjustment Model for Improvement in Transferring

Risk Factor Measured at SOC/ROC	Community Admission				Post Acute						All Episodes	
	Clinically Complex		Other		Clinically Complex		Restorative		Other			
	Core Model		Core Model		Core Model		Core Model		Core Model		Core Model	
	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p
DEMOGRAPHICS												
Age below 65	-0.007	0.582	-0.126	0.000	-0.088	0.000	-0.146	0.000	-0.078	0.000	-0.120	0.000
Age 75-84	-0.019	0.054	-0.007	0.342	-0.068	0.000	-0.045	0.000	-0.045	0.000	-0.033	0.000
Age 85+	-0.128	0.000	-0.116	0.000	-0.227	0.000	-0.223	0.000	-0.231	0.000	-0.176	0.000
Gender: female	-0.046	0.000	-0.050	0.000	-0.064	0.000	-0.045	0.000	-0.087	0.000	-0.055	0.000
SOCIOECONOMIC FACTORS												
Any Medicaid	-0.044	0.000	-0.108	0.000	-0.100	0.000	-0.107	0.000	-0.094	0.000	-0.104	0.000
Medicare HMO	-0.011	0.549	-0.070	0.000	-0.033	0.000	-0.134	0.000	-0.031	0.003	-0.079	0.000
PRIOR SERVICE USE												
Discharged past 14 days: Discharge from hospital					0.120	0.000	0.130	0.000	0.133	0.000	0.296	0.000
Discharge from rehab facility					0.041	0.000	0.010	0.050	0.109	0.000	0.169	0.000
Discharge from skilled nursing facility					0.060	0.000	-0.024	0.000	0.073	0.000	0.174	0.000
CLINICAL FACTORS												
Prognoses Overall prognosis good/fair	0.112	0.000	0.164	0.000	0.153	0.000	0.188	0.000	0.185	0.000	0.172	0.000
Rehabilitation prognosis good	0.225	0.000	0.289	0.000	0.208	0.000	0.274	0.000	0.206	0.000	0.267	0.000
Diagnoses Diabetes (PPS Group)	-0.019	0.053	-0.064	0.000	-0.082	0.000	-0.199	0.000	-0.047	0.008	-0.139	0.000
Orthopedic (PPS Group)	0.185	0.000	0.265	0.000	0.066	0.000	0.006	0.124	0.139	0.000	0.109	0.000
Neurological (PPS Group)	0.004	0.760	-0.034	0.001	0.041	0.000	-0.006	0.489	0.040	0.003	-0.008	0.080
Wound/Burn (PPS Group)	-0.171	0.000	-0.195	0.000	-0.257	0.000	-0.176	0.000	-0.003	0.982	-0.220	0.000
Cancer	-0.099	0.000	-0.080	0.000	-0.031	0.005	0.050	0.000	-0.127	0.000	-0.006	0.258
Mental condition	-0.003	0.841	0.023	0.055	0.036	0.013	0.056	0.000	0.094	0.000	0.033	0.000
Dementia	0.092	0.000	0.031	0.017	0.033	0.002	-0.045	0.001	-0.015	0.499	-0.001	0.842
Hypertension	-0.020	0.013	-0.087	0.000	0.005	0.325	-0.006	0.151	-0.032	0.000	-0.057	0.000
Ischemia	0.062	0.000	0.031	0.007	0.117	0.000	0.204	0.000	0.037	0.002	0.113	0.000
Arrhythmia	0.012	0.435	-0.028	0.021	0.036	0.000	0.006	0.385	0.053	0.000	0.018	0.000
Heart failure	-0.058	0.000	-0.092	0.000	-0.070	0.000	-0.103	0.000	-0.042	0.000	-0.098	0.000
COPD	0.062	0.000	0.056	0.000	0.090	0.000	0.017	0.030	0.072	0.000	0.026	0.000
Skin ulcer	-0.227	0.000	-0.214	0.000	-0.193	0.000	-0.192	0.000	-0.232	0.000	-0.225	0.000
Orthopedic (other than PPS)	0.012	0.121	0.065	0.000	-0.054	0.000	-0.049	0.000	-0.042	0.001	-0.048	0.000
Incontinence	-0.245	0.000	-0.275	0.000	-0.225	0.000	-0.194	0.000	-0.184	0.000	-0.260	0.000
Symptoms, signs, & ill-defined conditions	-0.018	0.063	-0.015	0.009	0.026	0.000	0.017	0.000	0.024	0.002	0.024	0.000
Diagnosis Severity Number of severity ratings >2	0.021	0.000	0.047	0.000	0.027	0.000	0.014	0.000	0.025	0.000	0.025	0.000

TABLE A1-c (*continued*)												
Risk Factor Measured at SOC/ROC	**Community Admission**				**Post Acute**						**All Episodes**	
	Clinically Complex		**Other**		**Clinically Complex**		**Restorative**		**Other**			
	Core Model		**Core Model**		**Core Model**		**Core Model**		**Core Model**		**Core Model**	
	Coef.	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**
Sensory Status												
Partially vision impaired	-0.101	0.000	-0.059	0.000	-0.117	0.000	-0.091	0.000	-0.081	0.000	-0.100	0.000
Severely vision impaired	-0.100	0.000	-0.092	0.000	-0.236	0.000	-0.199	0.000	-0.171	0.000	-0.174	0.000
Speech: Minimum difficulty	-0.110	0.000	-0.095	0.000	-0.082	0.000	-0.073	0.000	-0.070	0.000	-0.090	0.000
Speech: Moderate difficulty	-0.096	0.000	-0.122	0.000	-0.114	0.000	-0.128	0.000	-0.104	0.000	-0.125	0.000
Speech: Severe difficulty	-0.376	0.000	-0.342	0.000	-0.335	0.000	-0.346	0.000	-0.341	0.000	-0.363	0.000
Integumentary Status												
Surgical wound present	0.155	0.000	0.238	0.000	0.275	0.000	0.232	0.000			0.268	0.000
Stage of most problematic pressure ulcer	-0.111	0.000	-0.121	0.000	-0.104	0.000	-0.106	0.000	-0.093	0.000	-0.117	0.000
Status of most problematic stasis ulcer	-0.041	0.000	-0.064	0.000	-0.104	0.000	-0.125	0.000	-0.099	0.000	-0.099	0.000
Functional Status/Physical Functioning												
ADL/IADL index	-0.122	0.000	-0.129	0.000	-0.114	0.000	-0.098	0.000	-0.123	0.000	-0.110	0.000
Transfer: Unable but pivots	2.442	0.000	2.216	0.000	1.984	0.000	1.978	0.000	1.791	0.000	1.965	0.000
Transfer: Needs assistance	2.879	0.000	2.578	0.000	2.005	0.000	1.845	0.000	1.888	0.000	1.992	0.000
Transfer: Bedfast (Levels 4, 5)	3.006	0.000	2.723	0.000	1.863	0.000	1.678	0.000	1.826	0.000	1.871	0.000
Elimination Status												
Urinary incontinence during the night	-0.086	0.000	-0.147	0.000	-0.127	0.000	-0.144	0.000	-0.152	0.000	-0.140	0.000
Urinary incontinence during the day	-0.136	0.000	-0.165	0.000	-0.202	0.000	-0.161	0.000	-0.164	0.000	-0.174	0.000
Urinary incontinence during the night & day	-0.241	0.000	-0.236	0.000	-0.253	0.000	-0.220	0.000	-0.247	0.000	-0.242	0.000
Urinary catheter present	-0.696	0.000	-0.519	0.000	-0.575	0.000	-0.384	0.000	-0.504	0.000	-0.479	0.000
Bowel incontinent less than weekly	-0.095	0.000	-0.072	0.000	-0.091	0.000	-0.108	0.000	-0.077	0.000	-0.097	0.000
Bowel incontinent 1-3 times/week	-0.143	0.000	-0.180	0.000	-0.206	0.000	-0.230	0.000	-0.182	0.000	-0.204	0.000
Bowel incontinent 4-6 times/week	-0.302	0.000	-0.340	0.000	-0.393	0.000	-0.407	0.000	-0.353	0.000	-0.378	0.000
Bowel incontinent daily or more often	-0.405	0.000	-0.346	0.000	-0.411	0.000	-0.414	0.000	-0.299	0.000	-0.385	0.000
Ostomy	-0.193	0.000	-0.090	0.000	-0.071	0.002	0.111	0.000	-0.096	0.002	0.061	0.000

TABLE A1-c (*continued*)												
Risk Factor Measured at SOC/ROC	**Community Admission**				**Post Acute**						**All Episodes**	
	Clinically Complex		**Other**		**Clinically Complex**		**Restorative**		**Other**			
	Core Model		**Core Model**		**Core Model**		**Core Model**		**Core Model**		**Core Model**	
	Coef.	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**
Neuro/Emotional/Behavioral Status												
Cog Func: Requires prompting	0.058	0.000	-0.018	0.009	0.005	0.522	-0.043	0.000	-0.015	0.136	-0.017	0.000
Cog Func: Requires assistance & some direction	0.129	0.000	0.038	0.001	0.061	0.000	-0.058	0.000	0.046	0.006	0.018	0.001
Cog Func: Requires considerable assistance	0.040	0.098	0.006	0.709	-0.001	0.945	-0.130	0.000	-0.021	0.438	-0.044	0.000
Cog Func: Totally dependent	-0.170	0.000	-0.231	0.000	-0.286	0.000	-0.506	0.000	-0.286	0.000	-0.332	0.000
Conf Freq: In new situations	-0.028	0.005	0.020	0.001	-0.036	0.000	-0.030	0.000	-0.035	0.000	-0.021	0.000
Conf Freq: Awakening at night	-0.036	0.143	0.026	0.139	-0.073	0.000	-0.048	0.001	-0.052	0.059	-0.037	0.000
Conf Freq: Day and evening	0.027	0.085	0.057	0.000	-0.021	0.074	-0.049	0.000	-0.001	0.940	-0.007	0.197
Conf Freq: Constantly	0.102	0.000	0.172	0.000	0.052	0.013	0.026	0.132	0.071	0.015	0.079	0.000
Anx Freq: Less than daily	-0.001	0.921	0.009	0.109	0.005	0.397	0.009	0.026	0.019	0.031	0.007	0.011
Anx Freq: Daily but not constantly	0.060	0.000	0.086	0.000	0.071	0.000	0.073	0.000	0.091	0.000	0.079	0.000
Anx Freq: All the time	0.130	0.000	0.190	0.000	0.140	0.000	0.141	0.000	0.169	0.000	0.158	0.000
Verbal disruption	-0.044	0.086	-0.044	0.018	-0.087	0.000	-0.048	0.013	-0.025	0.449	-0.056	0.000
Depressive Feelings: Depressed mood	-0.046	0.000	-0.016	0.007	-0.047	0.000	-0.036	0.000	-0.025	0.009	-0.034	0.000
Depressive Feelings: Any other element (2-6)	0.001	0.944	-0.005	0.741	-0.056	0.001	-0.053	0.000	-0.020	0.433	-0.037	0.000
PRIOR VALUE OF OUTCOME												
Status Prior to Admission												
Transfer: Able w/minimal assistance	-0.853	0.000	-0.890	0.000	-0.678	0.000	-0.559	0.000	-0.759	0.000	-0.690	0.000
Transfer: Unable but pivots	-1.600	0.000	-1.494	0.000	-0.774	0.000	-0.560	0.000	-0.929	0.000	-0.867	0.000
Transfer: Needs assistance	-2.024	0.000	-1.949	0.000	-0.969	0.000	-0.709	0.000	-1.287	0.000	-1.101	0.000
Transfer: Bedfast (Levels 4, 5)	-1.928	0.000	-1.826	0.000	-0.719	0.000	-0.499	0.000	-0.990	0.000	-0.819	0.000
Intercept	0.726	0.000	0.767	0.000	0.898	0.000	0.880	0.000	1.045	0.000	0.713	0.000
Pseudo-R2 statistic	0.122		0.134		0.115		0.098		0.101		0.130	
C statistic	0.701		0.710		0.693		0.679		0.682		0.706	
Model N	386,945		905,886		735,585		1,834,816		374,983		4,238,214	

TABLE A1-d. Core Risk-Adjustment Model for Improvement in Management of Oral Medications

Risk Factor Measured at SOC/ROC	Community Admission				Post Acute						All Episodes	
	Clinically Complex		Other		Clinically Complex		Restorative		Other			
	Core Model		Core Model		Core Model		Core Model		Core Model		Core Model	
	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p
DEMOGRAPHICS												
Age below 65	0.067	0.000	-0.039	0.001	0.082	0.000	-0.103	0.000	-0.012	0.445	-0.042	0.000
Age 75-84	-0.168	0.000	-0.174	0.000	-0.244	0.000	-0.254	0.000	-0.184	0.000	-0.219	0.000
Age 85+	-0.413	0.000	-0.430	0.000	-0.553	0.000	-0.627	0.000	-0.466	0.000	-0.533	0.000
Gender: female	0.071	0.000	0.065	0.000	0.102	0.000	0.108	0.000	0.097	0.000	0.089	0.000
SOCIOECONOMIC FACTORS												
Any Medicaid	-0.129	0.000	-0.149	0.000	-0.156	0.000	-0.180	0.000	-0.127	0.000	-0.154	0.000
Medicare HMO	-0.060	0.003	-0.007	0.548	-0.023	0.027	-0.021	0.003	-0.033	0.003	-0.015	0.001
PRIOR SERVICE USE												
Discharged past 14 days: Discharge from hospital					0.178	0.000	0.200	0.000	0.147	0.000	0.327	0.000
Discharge from rehab facility					0.192	0.000	0.177	0.000	0.130	0.000	0.316	0.000
Discharge from skilled nursing facility					0.076	0.000	0.030	0.000	0.049	0.005	0.201	0.000
CLINICAL FACTORS												
Prognoses Overall prognosis good/fair	0.084	0.000	0.098	0.000	0.122	0.000	0.130	0.000	0.151	0.000	0.115	0.000
Rehabilitation prognosis good	0.156	0.000	0.115	0.000	0.167	0.000	0.184	0.000	0.150	0.000	0.168	0.000
Diagnoses Diabetes (PPS Group)	0.012	0.238	0.059	0.000	-0.018	0.042	-0.059	0.000	-0.048	0.007	-0.022	0.000
Orthopedic (PPS Group)	0.004	0.751	0.037	0.000	0.063	0.000	0.040	0.000	0.039	0.003	0.044	0.000
Neurological (PPS Group)	-0.150	0.000	-0.064	0.000	-0.127	0.000	-0.134	0.000	-0.082	0.000	-0.125	0.000
Wound/Burn (PPS Group)	-0.186	0.000	-0.095	0.000	-0.097	0.002	-0.042	0.020	-0.111	0.451	-0.129	0.000
Cancer	-0.093	0.000	-0.076	0.000	-0.107	0.000	-0.107	0.000	-0.129	0.000	-0.106	0.000
Mental condition	-0.318	0.000	-0.352	0.000	-0.238	0.000	-0.312	0.000	-0.347	0.000	-0.320	0.000
Dementia	-0.427	0.000	-0.460	0.000	-0.543	0.000	-0.572	0.000	-0.539	0.000	-0.487	0.000
Hypertension	0.169	0.000	0.160	0.000	0.101	0.000	0.092	0.000	0.027	0.001	0.101	0.000
Ischemia	0.130	0.000	0.128	0.000	0.060	0.000	0.033	0.000	0.034	0.004	0.055	0.000
Arrhythmia	0.009	0.566	0.018	0.190	-0.017	0.037	-0.055	0.000	-0.045	0.000	-0.035	0.000
Heart failure	0.021	0.067	-0.010	0.341	-0.047	0.000	-0.111	0.000	-0.068	0.000	-0.068	0.000
COPD	0.089	0.000	0.142	0.000	0.137	0.000	0.033	0.000	0.155	0.000	0.081	0.000
Skin ulcer	-0.045	0.028	0.031	0.018	0.017	0.184	-0.037	0.000	-0.022	0.203	-0.028	0.000
Orthopedic (other than PPS)	0.127	0.000	0.009	0.199	0.152	0.000	0.113	0.000	0.036	0.010	0.093	0.000
Incontinence	-0.217	0.000	-0.181	0.000	-0.195	0.000	-0.161	0.000	-0.160	0.000	-0.178	0.000
Symptoms, signs, & ill-defined conditions	-0.055	0.000	-0.100	0.000	-0.065	0.000	-0.137	0.000	-0.083	0.000	-0.097	0.000
Diagnosis Severity Number of severity ratings >2	0.037	0.000	0.098	0.000	0.038	0.000	0.074	0.000	0.075	0.000	0.067	0.000

TABLE A1-d (*continued*)												
Risk Factor Measured at SOC/ROC	**Community Admission**				**Post Acute**						**All Episodes**	
	Clinically Complex		**Other**		**Clinically Complex**		**Restorative**		**Other**			
	Core Model		**Core Model**		**Core Model**		**Core Model**		**Core Model**		**Core Model**	
	Coef.	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**
Sensory Status												
Partially vision impaired	0.039	0.000	0.058	0.000	-0.093	0.000	-0.099	0.000	-0.074	0.000	-0.042	0.000
Severely vision impaired	-0.317	0.000	-0.232	0.000	-0.596	0.000	-0.587	0.000	-0.493	0.000	-0.460	0.000
Speech: Minimum difficulty	-0.143	0.000	-0.103	0.000	-0.130	0.000	-0.154	0.000	-0.138	0.000	-0.137	0.000
Speech: Moderate difficulty	-0.227	0.000	-0.289	0.000	-0.302	0.000	-0.364	0.000	-0.331	0.000	-0.304	0.000
Speech: Severe difficulty	-0.663	0.000	-0.778	0.000	-0.823	0.000	-0.887	0.000	-0.856	0.000	-0.826	0.000
Integumentary Status												
Surgical wound present	0.203	0.000	0.325	0.000	0.383	0.000	0.471	0.000			0.456	0.000
Stage of most problematic pressure ulcer	-0.084	0.000	-0.098	0.000	-0.056	0.000	-0.066	0.000	-0.070	0.000	-0.075	0.000
Status of most problematic stasis ulcer	0.049	0.000	0.058	0.000	0.010	0.329	-0.005	0.601	0.018	0.147	0.027	0.000
Functional Status/Physical Functioning												
ADL/IADL index	-0.078	0.000	-0.082	0.000	-0.086	0.000	-0.074	0.000	-0.092	0.000	-0.079	0.000
Oral Med: Totally dependent	1.579	0.000	1.052	0.000	1.177	0.000	0.839	0.000	1.093	0.000	0.952	0.000
Elimination Status												
Urinary incontinence during the night	-0.140	0.000	-0.154	0.000	-0.109	0.000	-0.170	0.000	-0.118	0.000	-0.150	0.000
Urinary incontinence during the day	0.029	0.080	0.006	0.656	-0.091	0.000	-0.156	0.000	-0.089	0.000	-0.057	0.000
Urinary incontinence during the night & day	-0.047	0.000	-0.084	0.000	-0.084	0.000	-0.117	0.000	-0.090	0.000	-0.099	0.000
Urinary catheter present	-0.223	0.000	-0.114	0.000	-0.291	0.000	-0.188	0.000	-0.177	0.000	-0.200	0.000
Bowel incontinent less than weekly	-0.051	0.010	-0.062	0.000	-0.052	0.001	-0.085	0.000	-0.013	0.550	-0.062	0.000
Bowel incontinent 1-3 times/week	-0.067	0.000	-0.079	0.000	-0.166	0.000	-0.192	0.000	-0.160	0.000	-0.133	0.000
Bowel incontinent 4-6 times/week	-0.315	0.000	-0.339	0.000	-0.450	0.000	-0.404	0.000	-0.400	0.000	-0.387	0.000
Bowel incontinent daily or more often	-0.419	0.000	-0.379	0.000	-0.520	0.000	-0.475	0.000	-0.426	0.000	-0.449	0.000
Ostomy	-0.086	0.072	0.040	0.113	-0.022	0.393	0.031	0.018	0.055	0.119	0.045	0.000

TABLE A1-d (*continued*)												
Risk Factor Measured at SOC/ROC	**Community Admission**				**Post Acute**						**All Episodes**	
	Clinically Complex		**Other**		**Clinically Complex**		**Restorative**		**Other**			
	Core Model		**Core Model**		**Core Model**		**Core Model**		**Core Model**		**Core Model**	
	Coef.	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**
Neuro/Emotional/Behavioral Status												
Cog Func: Requires prompting	-0.070	0.000	-0.179	0.000	-0.139	0.000	-0.186	0.000	-0.173	0.000	-0.161	0.000
Cog Func: Requires assistance & some direction	-0.217	0.000	-0.375	0.000	-0.294	0.000	-0.373	0.000	-0.305	0.000	-0.330	0.000
Cog Func: Requires considerable assistance	-0.459	0.000	-0.543	0.000	-0.506	0.000	-0.620	0.000	-0.584	0.000	-0.549	0.000
Cog Func: Totally dependent	-0.964	0.000	-0.922	0.000	-0.887	0.000	-0.980	0.000	-1.120	0.000	-0.957	0.000
Conf Freq: In new situations	-0.187	0.000	-0.146	0.000	-0.159	0.000	-0.207	0.000	-0.157	0.000	-0.183	0.000
Conf Freq: Awakening at night	-0.400	0.000	-0.277	0.000	-0.338	0.000	-0.362	0.000	-0.332	0.000	-0.344	0.000
Conf Freq: Day and evening	-0.544	0.000	-0.462	0.000	-0.505	0.000	-0.581	0.000	-0.471	0.000	-0.528	0.000
Conf Freq: Constantly	-0.837	0.000	-0.766	0.000	-0.842	0.000	-0.999	0.000	-0.779	0.000	-0.872	0.000
Anx Freq: Less than daily	0.068	0.000	0.111	0.000	0.092	0.000	0.116	0.000	0.093	0.000	0.102	0.000
Anx Freq: Daily but not constantly	0.183	0.000	0.211	0.000	0.197	0.000	0.233	0.000	0.230	0.000	0.216	0.000
Anx Freq: All the time	0.331	0.000	0.341	0.000	0.293	0.000	0.319	0.000	0.317	0.000	0.324	0.000
Verbal disruption	-0.207	0.000	-0.320	0.000	-0.221	0.000	-0.319	0.000	-0.280	0.000	-0.283	0.000
Depressive Feelings: Depressed mood	-0.071	0.000	-0.039	0.000	-0.079	0.000	-0.081	0.000	-0.058	0.000	-0.072	0.000
Depressive Feelings: Any other element (2-6)	0.063	0.002	0.101	0.000	0.054	0.002	0.020	0.204	0.015	0.548	0.049	0.000
PRIOR VALUE OF OUTCOME												
Status Prior to Admission												
Oral Med: Able if prepared	-0.931	0.000	-0.956	0.000	-0.779	0.000	-0.789	0.000	-0.814	0.000	-0.840	0.000
Oral Med: Totally dependent	-1.767	0.000	-1.496	0.000	-0.884	0.000	-0.791	0.000	-0.992	0.000	-1.005	0.000
Intercept	0.420	0.000	0.410	0.000	0.526	0.000	0.590	0.000	0.601	0.000	0.420	0.000
Pseudo-R2 statistic	0.121		0.108		0.137		0.152		0.118		0.153	
C statistic	0.715		0.708		0.715		0.724		0.701		0.729	
Model N	347,257		737,008		642,433		1,159,983		359,665		3,246,343	

TABLE A1-e. Core Risk-Adjustment Model for Improvement in Pain Interfering with Activity												
Risk Factor Measured at SOC/ROC	Community Admission				Post Acute						All Episodes	
	Clinically Complex		Other		Clinically Complex		Restorative		Other			
	Core Model		Core Model		Core Model		Core Model		Core Model		Core Model	
	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p
DEMOGRAPHICS												
Age below 65	-0.151	0.000	-0.183	0.000	-0.195	0.000	-0.249	0.000	-0.201	0.000	-0.202	0.000
Age 75-84	0.049	0.000	0.049	0.000	0.082	0.000	0.115	0.000	0.086	0.000	0.089	0.000
Age 85+	0.073	0.000	0.103	0.000	0.139	0.000	0.212	0.000	0.138	0.000	0.154	0.000
Gender: female	-0.109	0.000	-0.128	0.000	-0.123	0.000	-0.116	0.000	-0.127	0.000	-0.123	0.000
SOCIOECONOMIC FACTORS												
Any Medicaid	-0.070	0.000	-0.101	0.000	-0.008	0.369	0.021	0.001	-0.019	0.141	-0.033	0.000
Medicare HMO	-0.077	0.000	-0.146	0.000	-0.040	0.000	-0.159	0.000	0.001	0.962	-0.118	0.000
PRIOR SERVICE USE												
Discharged past 14 days: Discharge from hospital					0.033	0.003	0.068	0.000	0.050	0.010	0.103	0.000
Discharge from rehab facility					0.021	0.041	0.020	0.000	-0.001	0.940	0.048	0.000
Discharge from skilled nursing facility					-0.038	0.001	-0.062	0.000	-0.047	0.013	-0.011	0.003
CLINICAL FACTORS												
Prognoses Overall prognosis good/fair	0.176	0.000	0.226	0.000	0.178	0.000	0.244	0.000	0.202	0.000	0.230	0.000
Rehabilitation prognosis good	0.346	0.000	0.281	0.000	0.194	0.000	0.190	0.000	0.206	0.000	0.246	0.000
Diagnoses Diabetes (PPS Group)	0.034	0.000	0.005	0.653	0.035	0.000	0.079	0.000	0.039	0.043	0.020	0.000
Orthopedic (PPS Group)	-0.062	0.000	-0.060	0.000	-0.103	0.000	-0.206	0.000	-0.118	0.000	-0.159	0.000
Neurological (PPS Group)	0.012	0.392	-0.007	0.548	0.075	0.000	0.082	0.000	0.030	0.074	0.033	0.000
Wound/Burn (PPS Group)	0.115	0.000	0.271	0.000	0.030	0.246	0.078	0.000	-0.017	0.892	0.142	0.000
Cancer	-0.256	0.000	-0.195	0.000	-0.193	0.000	0.032	0.000	-0.296	0.000	-0.091	0.000
Mental condition	-0.019	0.219	0.107	0.000	-0.060	0.000	0.044	0.000	0.042	0.012	0.029	0.000
Dementia	0.177	0.000	0.178	0.000	0.175	0.000	0.145	0.000	0.169	0.000	0.151	0.000
Hypertension	0.124	0.000	0.126	0.000	0.097	0.000	0.111	0.000	0.086	0.000	0.118	0.000
Ischemia	0.094	0.000	0.085	0.000	0.073	0.000	0.202	0.000	0.027	0.044	0.129	0.000
Arrhythmia	0.025	0.101	0.017	0.176	0.075	0.000	0.139	0.000	0.080	0.000	0.098	0.000
Heart failure	-0.059	0.000	-0.076	0.000	-0.026	0.000	0.030	0.000	-0.011	0.299	-0.021	0.000
COPD	-0.050	0.000	-0.011	0.345	-0.020	0.003	0.027	0.002	0.033	0.010	-0.006	0.138
Skin ulcer	0.083	0.000	0.136	0.000	0.001	0.935	0.103	0.000	0.051	0.001	0.078	0.000
Orthopedic (other than PPS)	-0.054	0.000	-0.206	0.000	-0.250	0.000	-0.176	0.000	-0.240	0.000	-0.192	0.000
Incontinence	-0.210	0.000	-0.109	0.000	-0.092	0.000	-0.047	0.004	-0.077	0.007	-0.132	0.000
Symptoms, signs, & ill-defined conditions	-0.035	0.000	-0.051	0.000	-0.036	0.000	-0.005	0.278	-0.034	0.000	-0.026	0.000
Diagnosis Severity Number of severity ratings >2	-0.032	0.000	-0.012	0.000	-0.005	0.019	-0.011	0.000	-0.015	0.000	-0.010	0.000

TABLE A1-e (*continued*)												
Risk Factor Measured at SOC/ROC	**Community Admission**				**Post Acute**						**All Episodes**	
	Clinically Complex		**Other**		**Clinically Complex**		**Restorative**		**Other**			
	Core Model		**Core Model**		**Core Model**		**Core Model**		**Core Model**		**Core Model**	
	Coef.	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**
Sensory Status												
Partially vision impaired	0.073	0.000	0.070	0.000	0.005	0.482	0.038	0.000	0.016	0.085	0.045	0.000
Severely vision impaired	0.010	0.627	0.049	0.001	-0.024	0.215	0.036	0.018	0.028	0.296	0.019	0.019
Speech: Minimum difficulty	-0.049	0.000	0.040	0.000	-0.002	0.763	0.037	0.000	0.016	0.147	0.019	0.000
Speech: Moderate difficulty	0.083	0.000	0.141	0.000	0.099	0.000	0.138	0.000	0.108	0.000	0.127	0.000
Speech: Severe difficulty	0.142	0.000	0.245	0.000	0.088	0.000	0.213	0.000	0.216	0.000	0.198	0.000
Integumentary Status												
Surgical wound present	0.063	0.000	0.214	0.000	0.229	0.000	0.207	0.000			0.212	0.000
Stage of most problematic pressure ulcer	-0.038	0.000	-0.067	0.000	-0.049	0.000	-0.044	0.000	-0.061	0.000	-0.055	0.000
Status of most problematic stasis ulcer	-0.013	0.129	-0.016	0.002	-0.050	0.000	-0.085	0.000	-0.066	0.000	-0.046	0.000
Functional Status/Physical Functioning												
ADL/IADL index	0.008	0.000	-0.004	0.000	-0.004	0.001	-0.010	0.000	-0.016	0.000	-0.005	0.000
Elimination Status												
Urinary incontinence during the night	-0.170	0.000	-0.077	0.000	-0.105	0.000	-0.058	0.000	-0.078	0.000	-0.081	0.000
Urinary incontinence during the day	0.273	0.000	0.170	0.000	0.104	0.000	0.056	0.000	0.103	0.000	0.164	0.000
Urinary incontinence during the night & day	-0.156	0.000	-0.055	0.000	-0.108	0.000	-0.044	0.000	-0.036	0.001	-0.069	0.000
Urinary catheter present	-0.279	0.000	-0.013	0.322	-0.185	0.000	0.056	0.000	-0.050	0.020	-0.024	0.000
Bowel incontinent less than weekly	-0.045	0.010	-0.016	0.200	-0.059	0.000	-0.030	0.010	-0.029	0.200	-0.037	0.000
Bowel incontinent 1-3 times/week	0.076	0.000	0.059	0.000	-0.003	0.814	0.002	0.850	0.027	0.182	0.033	0.000
Bowel incontinent 4-6 times/week	0.019	0.455	-0.014	0.449	-0.036	0.111	-0.014	0.453	-0.022	0.508	-0.015	0.124
Bowel incontinent daily or more often	0.030	0.140	0.022	0.125	-0.012	0.497	-0.004	0.748	0.048	0.053	0.011	0.141
Ostomy	-0.096	0.017	-0.050	0.013	0.016	0.499	0.234	0.000	-0.028	0.421	0.149	0.000

TABLE A1-e (*continued*)

Risk Factor Measured at SOC/ROC	Community Admission				Post Acute						All Episodes	
	Clinically Complex		Other		Clinically Complex		Restorative		Other			
	Core Model		Core Model		Core Model		Core Model		Core Model		Core Model	
	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p
Neuro/Emotional/Behavioral Status Cog Func: Requires prompting	0.121	0.000	0.075	0.000	0.040	0.000	0.036	0.000	0.047	0.000	0.059	0.000
Cog Func: Requires assistance & some direction	0.206	0.000	0.164	0.000	0.125	0.000	0.108	0.000	0.114	0.000	0.138	0.000
Cog Func: Requires considerable assistance	0.236	0.000	0.200	0.000	0.174	0.000	0.126	0.000	0.147	0.000	0.169	0.000
Cog Func: Totally dependent	0.250	0.000	0.298	0.000	0.150	0.000	0.092	0.011	0.213	0.001	0.194	0.000
Conf Freq: In new situations	0.023	0.014	0.047	0.000	0.002	0.824	0.044	0.000	0.005	0.594	0.035	0.000
Conf Freq: Awakening at night	-0.008	0.741	0.072	0.000	0.008	0.723	0.016	0.334	-0.021	0.511	0.024	0.010
Conf Freq: Day and evening	0.050	0.002	0.069	0.000	0.022	0.096	0.072	0.000	0.022	0.251	0.053	0.000
Conf Freq: Constantly	0.161	0.000	0.177	0.000	0.084	0.002	0.210	0.000	0.122	0.003	0.165	0.000
Anx Freq: Less than daily	-0.107	0.000	-0.107	0.000	-0.111	0.000	-0.079	0.000	-0.100	0.000	-0.094	0.000
Anx Freq: Daily but not constantly	-0.227	0.000	-0.186	0.000	-0.181	0.000	-0.154	0.000	-0.151	0.000	-0.172	0.000
Anx Freq: All the time	-0.292	0.000	-0.229	0.000	-0.191	0.000	-0.196	0.000	-0.096	0.001	-0.205	0.000
Verbal disruption	-0.048	0.058	0.017	0.386	-0.060	0.013	-0.077	0.000	-0.020	0.583	-0.040	0.000
Depressive Feelings: Depressed mood	-0.148	0.000	-0.159	0.000	-0.144	0.000	-0.144	0.000	-0.147	0.000	-0.149	0.000
Depressive Feelings: Any other element (2-6)	-0.200	0.000	-0.267	0.000	-0.249	0.000	-0.293	0.000	-0.205	0.000	-0.264	0.000
PRIOR VALUE OF OUTCOME												
Pain daily but not constantly	0.488	0.000	0.289	0.000	0.297	0.000	0.181	0.000	0.218	0.000	0.254	0.000
Pain all the time	1.440	0.000	1.403	0.000	1.468	0.000	1.660	0.000	1.203	0.000	1.495	0.000
Status Prior to Admission Intractable pain prior 2 weeks	-0.195	0.000	-0.341	0.000	-0.387	0.000	-0.327	0.000	-0.433	0.000	-0.339	0.000
Intercept	-0.369	0.000	-0.269	0.000	0.033	0.111	-0.052	0.000	0.103	0.000	-0.188	0.000
Pseudo-R2 statistic	0.051		0.049		0.045		0.052		0.036		0.047	
C statistic	0.631		0.625		0.621		0.631		0.607		0.623	
Model N	364,500		829,064		610,879		1,751,832		294,519		3,850,794	

TABLE A1-f. Core Risk-Adjustment Model for Improvement in Status of Surgical Wound

Risk Factor Measured at SOC/ROC	Community Admission				Post Acute						All Episodes	
	Clinically Complex		Other		Clinically Complex		Restorative		Other			
	Core Model		Core Model		Core Model		Core Model		Core Model		Core Model	
	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p
DEMOGRAPHICS												
Age below 65	-0.128	0.055	-0.130	0.000	-0.231	0.000	-0.227	0.000			-0.227	0.000
Age 75-84	0.174	0.008	0.112	0.000	0.139	0.000	0.111	0.000			0.116	0.000
Age 85+	0.227	0.012	0.267	0.000	0.225	0.000	0.197	0.000			0.211	0.000
Gender: female	0.109	0.033	0.140	0.000	0.100	0.000	0.094	0.000			0.097	0.000
SOCIOECONOMIC FACTORS												
Any Medicaid	0.086	0.212	-0.016	0.627	-0.133	0.000	-0.114	0.000			-0.103	0.000
Medicare HMO	-0.132	0.225	-0.118	0.001	-0.063	0.014	-0.077	0.000			-0.073	0.000
PRIOR SERVICE USE												
Discharged past 14 days: Discharge from hospital					0.172	0.000	0.146	0.000			0.269	0.000
Discharge from rehab facility					0.237	0.000	0.213	0.000			0.271	0.000
Discharge from skilled nursing facility					0.114	0.000	0.137	0.000			0.197	0.000
CLINICAL FACTORS												
Prognoses Overall prognosis good/fair	0.384	0.000	0.500	0.000	0.288	0.000	0.364	0.000			0.373	0.000
Rehabilitation prognosis good	0.191	0.006	0.165	0.000	0.097	0.000	0.109	0.000			0.129	0.000
Diagnoses Diabetes (PPS Group)	-0.316	0.000	-0.221	0.001	-0.123	0.000	-0.335	0.000			-0.267	0.000
Orthopedic (PPS Group)	0.256	0.005	0.325	0.000	0.231	0.000	0.330	0.000			0.329	0.000
Neurological (PPS Group)	0.024	0.892	0.073	0.511	0.244	0.000	0.139	0.000			0.149	0.000
Wound/Burn (PPS Group)	-0.312	0.000	-0.171	0.000	-0.460	0.000	-0.399	0.000			-0.373	0.000
Cancer	-0.107	0.194	-0.057	0.043	-0.021	0.403	-0.163	0.000			-0.132	0.000
Mental condition	0.127	0.405	0.019	0.764	0.107	0.033	0.088	0.000			0.093	0.000
Dementia	0.226	0.162	0.210	0.084	0.248	0.000	0.074	0.221			0.133	0.001
Hypertension	0.072	0.164	0.068	0.016	0.107	0.000	0.054	0.000			0.053	0.000
Ischemia	0.165	0.026	0.109	0.036	0.105	0.000	0.111	0.000			0.105	0.000
Arrhythmia	0.038	0.713	0.257	0.000	0.129	0.000	0.119	0.000			0.129	0.000
Heart failure	-0.193	0.018	-0.095	0.155	-0.028	0.243	0.023	0.229			-0.025	0.071
COPD	0.063	0.425	0.042	0.549	0.118	0.000	0.050	0.015			0.058	0.000
Skin ulcer	-0.121	0.088	-0.046	0.128	-0.366	0.000	-0.357	0.000			-0.323	0.000
Orthopedic (other than PPS)	0.140	0.041	0.251	0.000	0.387	0.000	0.267	0.000			0.276	0.000
Incontinence	0.107	0.587	-0.063	0.536	0.013	0.888	0.078	0.074			0.042	0.241
Symptoms, signs, & ill-defined conditions	-0.068	0.392	-0.116	0.002	-0.054	0.015	0.017	0.083			0.002	0.773
Diagnosis Severity Number of severity ratings >2	-0.024	0.262	0.023	0.004	-0.020	0.001	0.014	0.000			0.009	0.000

TABLE A1-f (*continued*)												
Risk Factor Measured at SOC/ROC	**Community Admission**				**Post Acute**						**All Episodes**	
	Clinically Complex		**Other**		**Clinically Complex**		**Restorative**		**Other**			
	Core Model		**Core Model**		**Core Model**		**Core Model**		**Core Model**		**Core Model**	
	Coef.	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**
Sensory Status												
Partially vision impaired	-0.068	0.243	-0.012	0.676	-0.074	0.000	-0.021	0.046			-0.043	0.000
Severely vision impaired	-0.190	0.223	0.041	0.627	-0.238	0.000	0.011	0.780			-0.072	0.016
Speech: Minimum difficulty	-0.034	0.651	0.025	0.487	0.002	0.944	0.003	0.783			0.001	0.946
Speech: Moderate difficulty	-0.092	0.557	0.010	0.901	-0.059	0.312	-0.031	0.340			-0.041	0.111
Speech: Severe difficulty	-0.296	0.195	-0.034	0.747	-0.195	0.024	-0.080	0.042			-0.105	0.002
Integumentary Status												
Surgical wound status: not healing	1.019	0.000	1.480	0.000	1.354	0.000	1.677	0.000			1.559	0.000
Stage of most problematic pressure ulcer	-0.114	0.008	-0.180	0.000	-0.045	0.002	0.007	0.417			-0.033	0.000
Status of most problematic stasis ulcer	-0.182	0.006	-0.248	0.000	-0.147	0.000	-0.197	0.000			-0.200	0.000
Functional Status/Physical Functioning												
ADL/IADL index	-0.001	0.926	0.008	0.024	0.009	0.002	0.026	0.000			0.022	0.000
Elimination Status												
Urinary incontinence during the day	0.013	0.944	0.042	0.655	0.062	0.375	0.036	0.257			0.037	0.171
Urinary incontinence during the night & day	0.032	0.644	0.021	0.527	-0.004	0.877	-0.020	0.071			-0.016	0.085
Urinary catheter present	-0.325	0.028	-0.151	0.020	-0.143	0.002	-0.063	0.000			-0.084	0.000
Bowel incontinent less than weekly	0.049	0.758	-0.072	0.383	-0.070	0.208	-0.060	0.042			-0.060	0.015
Bowel incontinent 1-3 times/week	-0.297	0.030	-0.195	0.015	-0.137	0.010	-0.076	0.011			-0.120	0.000
Bowel incontinent 4-6 times/week	-0.159	0.496	-0.338	0.012	-0.137	0.142	-0.221	0.000			-0.229	0.000
Bowel incontinent daily or more often	-0.517	0.004	-0.269	0.007	-0.355	0.000	-0.235	0.000			-0.283	0.000
Ostomy	-0.297	0.130	-0.371	0.000	-0.185	0.000	-0.132	0.000			-0.144	0.000

TABLE A1-f (*continued*)												
Risk Factor Measured at SOC/ROC	**Community Admission**				**Post Acute**						**All Episodes**	
	Clinically Complex		**Other**		**Clinically Complex**		**Restorative**		**Other**			
	Core Model		**Core Model**		**Core Model**		**Core Model**		**Core Model**		**Core Model**	
	Coef.	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**
Neuro/Emotional/Behavioral Status												
Cog Func: Requires prompting	0.034	0.671	0.028	0.473	0.023	0.367	-0.009	0.484			-0.002	0.861
Cog Func: Requires assistance & some direction	0.121	0.393	0.110	0.117	0.072	0.156	0.027	0.325			0.045	0.044
Cog Func: Requires considerable assistance	0.004	0.989	0.247	0.064	0.119	0.246	0.030	0.583			0.061	0.172
Cog Func: Totally dependent	0.331	0.372	0.013	0.953	0.041	0.808	-0.059	0.506			-0.047	0.504
Conf Freq: In new situations	0.009	0.893	0.102	0.001	0.024	0.254	0.064	0.000			0.059	0.000
Conf Freq: Awakening at night	-0.497	0.009	-0.532	0.000	0.065	0.420	-0.061	0.160			-0.096	0.006
Conf Freq: Day and evening	-0.014	0.925	-0.066	0.366	-0.066	0.201	-0.026	0.348			-0.043	0.061
Conf Freq: Constantly	0.417	0.149	0.281	0.050	-0.035	0.771	0.084	0.205			0.100	0.056
Anx Freq: Less than daily	-0.011	0.859	0.021	0.433	0.031	0.101	0.022	0.010			0.022	0.002
Anx Freq: Daily but not constantly	-0.046	0.538	-0.033	0.315	0.013	0.552	-0.008	0.461			-0.005	0.558
Anx Freq: All the time	-0.422	0.036	0.098	0.308	0.011	0.870	-0.037	0.242			-0.021	0.442
Verbal disruption	0.153	0.504	-0.139	0.275	-0.127	0.157	-0.349	0.000			-0.267	0.000
Depressive Feelings: Depressed mood	-0.026	0.680	-0.079	0.008	-0.038	0.054	-0.058	0.000			-0.059	0.000
Depressive Feelings: Any other element (2-6)	0.020	0.897	-0.234	0.007	-0.062	0.305	-0.171	0.000			-0.158	0.000
Intercept	-0.104	0.485	-0.617	0.000	0.027	0.646	-0.188	0.000			-0.315	0.000
Pseudo-R2 statistic	0.078		0.097		0.061		0.060				0.063	
C statistic	0.667		0.686		0.654		0.655				0.659	
Model N	8,044		49,645		100,686		589,392				750,164	

TABLE A1-g. Core Risk-Adjustment Model for Improvement of Dyspnea

Risk Factor Measured at SOC/ROC	Community Admission				Post Acute						All Episodes	
	Clinically Complex		Other		Clinically Complex		Restorative		Other			
	Core Model		Core Model		Core Model		Core Model		Core Model		Core Model	
	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p
DEMOGRAPHICS												
Age below 65	-0.038	0.001	0.006	0.531	-0.090	0.000	-0.103	0.000	-0.071	0.000	-0.074	0.000
Age 75-84	0.069	0.000	0.084	0.000	0.053	0.000	-0.000	0.930	0.081	0.000	0.042	0.000
Age 85+	0.076	0.000	0.113	0.000	0.082	0.000	-0.015	0.009	0.117	0.000	0.058	0.000
Gender: female	0.005	0.541	0.046	0.000	-0.002	0.644	0.034	0.000	0.029	0.000	0.023	0.000
SOCIOECONOMIC FACTORS												
Any Medicaid	-0.041	0.000	-0.106	0.000	-0.044	0.000	-0.055	0.000	-0.023	0.055	-0.067	0.000
Medicare HMO	0.132	0.000	0.130	0.000	0.088	0.000	0.087	0.000	0.078	0.000	0.102	0.000
PRIOR SERVICE USE												
Discharged past 14 days:												
Discharge from hospital					0.047	0.000	0.107	0.000	0.018	0.306	0.230	0.000
Discharge from rehab facility					0.170	0.000	0.185	0.000	0.145	0.000	0.295	0.000
Discharge from skilled nursing facility					0.142	0.000	0.100	0.000	0.115	0.000	0.245	0.000
CLINICAL FACTORS												
Prognoses												
Overall prognosis good/fair	0.172	0.000	0.198	0.000	0.237	0.000	0.245	0.000	0.272	0.000	0.230	0.000
Rehabilitation prognosis good	0.275	0.000	0.224	0.000	0.241	0.000	0.273	0.000	0.231	0.000	0.260	0.000
Diagnoses												
Diabetes (PPS Group)	-0.032	0.000	-0.091	0.000	-0.028	0.000	-0.101	0.000	0.042	0.013	-0.091	0.000
Orthopedic (PPS Group)	0.224	0.000	0.325	0.000	0.171	0.000	0.247	0.000	0.252	0.000	0.284	0.000
Neurological (PPS Group)	0.153	0.000	0.218	0.000	0.237	0.000	0.179	0.000	0.275	0.000	0.194	0.000
Wound/Burn (PPS Group)	-0.197	0.000	-0.225	0.000	-0.283	0.000	-0.226	0.000	-0.051	0.690	-0.248	0.000
Cancer	-0.251	0.000	-0.238	0.000	-0.291	0.000	-0.242	0.000	-0.205	0.000	-0.254	0.000
Mental condition	-0.036	0.017	-0.016	0.163	-0.051	0.000	0.022	0.065	0.099	0.000	-0.006	0.293
Dementia	0.177	0.000	0.145	0.000	0.158	0.000	0.161	0.000	0.143	0.000	0.120	0.000
Hypertension	-0.003	0.682	-0.057	0.000	0.033	0.000	0.011	0.023	0.046	0.000	-0.040	0.000
Ischemia	0.048	0.000	-0.033	0.002	-0.001	0.861	-0.058	0.000	-0.020	0.053	-0.027	0.000
Arrhythmia	-0.023	0.091	-0.037	0.001	-0.013	0.073	-0.071	0.000	0.018	0.074	-0.038	0.000
Heart failure	-0.169	0.000	-0.219	0.000	-0.189	0.000	-0.292	0.000	-0.209	0.000	-0.234	0.000
COPD	-0.421	0.000	-0.584	0.000	-0.509	0.000	-0.713	0.000	-0.642	0.000	-0.586	0.000
Skin ulcer	-0.054	0.001	-0.116	0.000	-0.138	0.000	-0.180	0.000	-0.091	0.000	-0.146	0.000
Orthopedic (other than PPS)	0.101	0.000	0.090	0.000	0.048	0.000	0.174	0.000	0.070	0.000	0.087	0.000
Incontinence	-0.251	0.000	-0.269	0.000	-0.283	0.000	-0.230	0.000	-0.179	0.000	-0.267	0.000
Symptoms, signs, & ill-defined conditions	-0.037	0.000	-0.023	0.000	-0.043	0.000	-0.053	0.000	0.023	0.003	-0.028	0.000
Diagnosis Severity												
Number of severity ratings >2	0.006	0.037	0.023	0.000	0.028	0.000	0.018	0.000	-0.007	0.006	0.014	0.000

TABLE A1-g (*continued*)												
Risk Factor Measured at SOC/ROC	**Community Admission**				**Post Acute**						**All Episodes**	
	Clinically Complex		**Other**		**Clinically Complex**		**Restorative**		**Other**			
	Core Model		**Core Model**		**Core Model**		**Core Model**		**Core Model**		**Core Model**	
	Coef.	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**
Sensory Status												
Partially vision impaired	-0.128	0.000	-0.152	0.000	-0.169	0.000	-0.180	0.000	-0.147	0.000	-0.178	0.000
Severely vision impaired	-0.120	0.000	-0.117	0.000	-0.129	0.000	-0.169	0.000	-0.118	0.000	-0.152	0.000
Speech: Minimum difficulty	-0.084	0.000	-0.082	0.000	-0.082	0.000	-0.093	0.000	-0.060	0.000	-0.089	0.000
Speech: Moderate difficulty	-0.021	0.175	-0.052	0.000	-0.059	0.000	-0.070	0.000	-0.014	0.433	-0.055	0.000
Speech: Severe difficulty	-0.092	0.000	-0.072	0.000	-0.107	0.000	-0.106	0.000	-0.075	0.005	-0.096	0.000
Integumentary Status												
Surgical wound present	0.058	0.000	0.141	0.000	0.293	0.000	0.291	0.000			0.332	0.000
Stage of most problematic pressure ulcer	-0.021	0.008	-0.021	0.000	-0.025	0.000	-0.042	0.000	-0.021	0.017	-0.032	0.000
Status of most problematic stasis ulcer	-0.052	0.000	-0.065	0.000	-0.079	0.000	-0.100	0.000	-0.065	0.000	-0.079	0.000
Functional Status/Physical Functioning												
ADL/IADL index	-0.001	0.686	-0.004	0.000	-0.006	0.000	0.003	0.000	-0.019	0.000	-0.001	0.004
Elimination Status												
Urinary incontinence during the night	-0.097	0.000	-0.070	0.000	-0.055	0.000	-0.095	0.000	-0.038	0.003	-0.074	0.000
Urinary incontinence during the day	0.127	0.000	0.048	0.000	0.018	0.270	-0.048	0.001	0.014	0.537	0.025	0.000
Urinary incontinence during the night & day	-0.183	0.000	-0.177	0.000	-0.147	0.000	-0.171	0.000	-0.117	0.000	-0.170	0.000
Urinary catheter present	-0.283	0.000	-0.189	0.000	-0.265	0.000	-0.169	0.000	-0.124	0.000	-0.193	0.000
Bowel incontinent less than weekly	-0.018	0.282	-0.003	0.808	-0.031	0.028	-0.045	0.000	0.041	0.045	-0.022	0.001
Bowel incontinent 1-3 times/week	-0.003	0.854	-0.007	0.507	-0.055	0.000	-0.079	0.000	-0.022	0.245	-0.042	0.000
Bowel incontinent 4-6 times/week	-0.011	0.646	-0.024	0.199	-0.077	0.000	-0.107	0.000	-0.062	0.043	-0.066	0.000
Bowel incontinent daily or more often	-0.110	0.000	-0.088	0.000	-0.091	0.000	-0.117	0.000	-0.086	0.000	-0.106	0.000
Ostomy	-0.049	0.224	0.001	0.957	0.003	0.885	0.067	0.000	0.050	0.115	0.062	0.000

TABLE A1-g (*continued*)												
Risk Factor Measured at SOC/ROC	**Community Admission**				**Post Acute**						**All Episodes**	
	Clinically Complex		**Other**		**Clinically Complex**		**Restorative**		**Other**			
	Core Model		**Core Model**		**Core Model**		**Core Model**		**Core Model**		**Core Model**	
	Coef.	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**
Neuro/Emotional/Behavioral Status												
Cog Func: Requires prompting	0.079	0.000	0.018	0.011	0.038	0.000	0.014	0.022	0.045	0.000	0.027	0.000
Cog Func: Requires assistance & some direction	0.120	0.000	0.086	0.000	0.106	0.000	0.089	0.000	0.166	0.000	0.101	0.000
Cog Func: Requires considerable assistance	0.124	0.000	0.116	0.000	0.072	0.001	0.066	0.001	0.152	0.000	0.094	0.000
Cog Func: Totally dependent	0.165	0.000	0.010	0.739	-0.071	0.062	-0.104	0.005	0.059	0.259	-0.005	0.755
Conf Freq: In new situations	-0.005	0.554	-0.030	0.000	-0.054	0.000	-0.075	0.000	-0.035	0.000	-0.054	0.000
Conf Freq: Awakening at night	-0.064	0.006	0.014	0.436	-0.070	0.000	-0.074	0.000	-0.092	0.001	-0.060	0.000
Conf Freq: Day and evening	-0.001	0.926	0.019	0.078	-0.046	0.000	-0.047	0.000	-0.023	0.160	-0.030	0.000
Conf Freq: Constantly	0.093	0.000	0.137	0.000	0.070	0.003	0.031	0.164	0.121	0.000	0.083	0.000
Anx Freq: Less than daily	-0.093	0.000	-0.093	0.000	-0.104	0.000	-0.098	0.000	-0.091	0.000	-0.099	0.000
Anx Freq: Daily but not constantly	-0.129	0.000	-0.094	0.000	-0.106	0.000	-0.085	0.000	-0.101	0.000	-0.098	0.000
Anx Freq: All the time	-0.121	0.000	-0.067	0.000	-0.103	0.000	-0.075	0.000	-0.106	0.000	-0.086	0.000
Verbal disruption	-0.015	0.554	-0.027	0.169	-0.059	0.008	-0.098	0.000	-0.162	0.000	-0.062	0.000
Depressive Feelings: Depressed mood	-0.068	0.000	-0.052	0.000	-0.069	0.000	-0.098	0.000	-0.063	0.000	-0.080	0.000
Depressive Feelings: Any other element (2-6)	-0.106	0.000	-0.081	0.000	-0.134	0.000	-0.120	0.000	-0.104	0.000	-0.122	0.000
PRIOR VALUE OF OUTCOME												
Dyspnea with moderate exertion	1.064	0.000	0.898	0.000	1.146	0.000	1.109	0.000	1.142	0.000	1.050	0.000
Dyspnea with minimal exertion	1.523	0.000	1.320	0.000	1.678	0.000	1.583	0.000	1.652	0.000	1.525	0.000
Dyspnea when at rest	1.911	0.000	1.600	0.000	2.003	0.000	1.798	0.000	1.917	0.000	1.823	0.000
Intercept	-1.037	0.000	-0.812	0.000	-0.853	0.000	-0.632	0.000	-0.752	0.000	-0.850	0.000
Pseudo-R2 statistic	0.085		0.075		0.105		0.096		0.101		0.100	
C statistic	0.667		0.658		0.687		0.686		0.683		0.684	
Model N	393,243		768,024		768,766		1,401,118		426,210		3,757,360	

TABLE A1-h. Core Risk-Adjustment Model for Improvement in Urinary Incontinence

Risk Factor Measured at SOC/ROC	Community Admission				Post Acute						All Episodes	
	Clinically Complex		Other		Clinically Complex		Restorative		Other			
	Core Model		Core Model		Core Model		Core Model		Core Model		Core Model	
	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p
DEMOGRAPHICS												
Age below 65	-0.042	0.011	-0.212	0.000	-0.126	0.000	-0.226	0.000	-0.195	0.000	-0.189	0.000
Age 75-84	-0.023	0.049	-0.033	0.000	-0.031	0.001	-0.052	0.000	-0.052	0.000	-0.036	0.000
Age 85+	-0.066	0.000	-0.098	0.000	-0.102	0.000	-0.152	0.000	-0.126	0.000	-0.109	0.000
Gender: female	-0.138	0.000	-0.139	0.000	-0.152	0.000	-0.090	0.000	-0.116	0.000	-0.124	0.000
SOCIOECONOMIC FACTORS												
Any Medicaid	-0.087	0.000	-0.148	0.000	-0.058	0.000	-0.093	0.000	-0.084	0.000	-0.104	0.000
Medicare HMO	0.172	0.000	0.177	0.000	0.214	0.000	0.179	0.000	0.212	0.000	0.200	0.000
PRIOR SERVICE USE												
Discharged past 14 days: Discharge from hospital					0.038	0.005	0.072	0.000	0.031	0.170	0.312	0.000
Discharge from rehab facility					0.165	0.000	0.115	0.000	0.125	0.000	0.345	0.000
Discharge from skilled nursing facility					0.032	0.022	-0.068	0.000	-0.009	0.669	0.205	0.000
CLINICAL FACTORS												
Prognoses Overall prognosis good/fair	0.057	0.000	0.044	0.000	0.100	0.000	0.133	0.000	0.088	0.000	0.090	0.000
Rehabilitation prognosis good	0.161	0.000	0.169	0.000	0.173	0.000	0.190	0.000	0.196	0.000	0.187	0.000
Diagnoses Diabetes (PPS Group)	-0.012	0.298	-0.027	0.081	-0.051	0.000	-0.029	0.140	-0.022	0.343	-0.068	0.000
Orthopedic (PPS Group)	0.058	0.000	0.100	0.000	0.022	0.023	0.011	0.056	0.067	0.000	0.055	0.000
Neurological (PPS Group)	0.016	0.267	0.012	0.319	0.046	0.000	-0.012	0.283	0.077	0.000	0.020	0.001
Wound/Burn (PPS Group)	-0.201	0.000	-0.128	0.000	-0.237	0.000	-0.227	0.000	-0.108	0.550	-0.205	0.000
Cancer	0.017	0.499	0.093	0.000	-0.011	0.470	-0.010	0.337	0.043	0.038	0.021	0.002
Mental condition	-0.030	0.117	-0.006	0.671	-0.047	0.009	-0.005	0.732	0.037	0.063	-0.016	0.031
Dementia	-0.036	0.011	-0.036	0.013	-0.043	0.001	-0.132	0.000	-0.063	0.011	-0.067	0.000
Hypertension	-0.004	0.650	-0.038	0.000	-0.018	0.013	-0.022	0.001	-0.046	0.000	-0.050	0.000
Ischemia	-0.005	0.695	-0.023	0.095	0.003	0.760	0.018	0.075	-0.012	0.447	-0.011	0.034
Arrhythmia	-0.010	0.580	-0.018	0.230	0.025	0.017	0.008	0.425	0.039	0.009	0.013	0.014
Heart failure	-0.009	0.429	-0.028	0.017	-0.020	0.018	-0.057	0.000	0.008	0.541	-0.040	0.000
COPD	0.027	0.025	0.024	0.105	0.028	0.001	0.025	0.032	0.023	0.148	0.000	0.962
Skin ulcer	-0.139	0.000	-0.094	0.000	-0.164	0.000	-0.152	0.000	-0.182	0.000	-0.162	0.000
Orthopedic (other than PPS)	0.032	0.001	-0.011	0.141	-0.031	0.000	-0.026	0.000	-0.067	0.000	-0.042	0.000
Incontinence	-0.396	0.000	-0.431	0.000	-0.357	0.000	-0.290	0.000	-0.348	0.000	-0.393	0.000
Symptoms, signs, & ill-defined conditions	-0.027	0.014	-0.036	0.000	0.005	0.538	-0.045	0.000	-0.003	0.763	-0.022	0.000
Diagnosis Severity Number of severity ratings >2	-0.010	0.004	0.034	0.000	0.003	0.392	0.033	0.000	-0.007	0.047	0.022	0.000

TABLE A1-h (*continued*)												
Risk Factor Measured at SOC/ROC	**Community Admission**				**Post Acute**						**All Episodes**	
	Clinically Complex		**Other**		**Clinically Complex**		**Restorative**		**Other**			
	Core Model		**Core Model**		**Core Model**		**Core Model**		**Core Model**		**Core Model**	
	Coef.	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**
Sensory Status												
Partially vision impaired	-0.082	0.000	-0.072	0.000	-0.120	0.000	-0.077	0.000	-0.079	0.000	-0.099	0.000
Severely vision impaired	-0.091	0.000	-0.003	0.858	-0.112	0.000	-0.087	0.000	-0.126	0.000	-0.083	0.000
Speech: Minimum difficulty	-0.103	0.000	-0.069	0.000	-0.101	0.000	-0.066	0.000	-0.084	0.000	-0.086	0.000
Speech: Moderate difficulty	-0.165	0.000	-0.100	0.000	-0.153	0.000	-0.118	0.000	-0.123	0.000	-0.132	0.000
Speech: Severe difficulty	-0.355	0.000	-0.309	0.000	-0.350	0.000	-0.326	0.000	-0.387	0.000	-0.346	0.000
Integumentary Status												
Surgical wound present	0.014	0.476	0.065	0.000	0.183	0.000	0.184	0.000			0.200	0.000
Stage of most problematic pressure ulcer	-0.104	0.000	-0.125	0.000	-0.093	0.000	-0.054	0.000	-0.081	0.000	-0.091	0.000
Status of most problematic stasis ulcer	0.011	0.323	0.013	0.060	-0.013	0.302	-0.034	0.002	-0.001	0.916	-0.006	0.180
Functional Status/Physical Functioning												
ADL/IADL index	-0.040	0.000	-0.049	0.000	-0.029	0.000	-0.026	0.000	-0.040	0.000	-0.036	0.000
Elimination Status												
Urinary incontinence during the day	0.151	0.000	0.281	0.000	0.293	0.000	0.378	0.000	0.311	0.000	0.288	0.000
Urinary incontinence during the night & day	0.014	0.249	0.061	0.000	0.041	0.000	0.096	0.000	0.052	0.000	0.059	0.000
Urinary catheter present	0.119	0.000	0.197	0.000	0.195	0.000	0.278	0.000	0.044	0.016	0.208	0.000
Bowel incontinent less than weekly	-0.099	0.000	-0.102	0.000	-0.111	0.000	-0.133	0.000	-0.148	0.000	-0.122	0.000
Bowel incontinent 1-3 times/week	-0.173	0.000	-0.258	0.000	-0.262	0.000	-0.274	0.000	-0.291	0.000	-0.262	0.000
Bowel incontinent 4-6 times/week	-0.430	0.000	-0.548	0.000	-0.487	0.000	-0.495	0.000	-0.537	0.000	-0.510	0.000
Bowel incontinent daily or more often	-0.495	0.000	-0.613	0.000	-0.533	0.000	-0.513	0.000	-0.560	0.000	-0.547	0.000
Ostomy	-0.319	0.000	-0.388	0.000	-0.489	0.000	-0.329	0.000	-0.369	0.000	-0.350	0.000

TABLE A1-h (*continued*)												
Risk Factor Measured at SOC/ROC	**Community Admission**				**Post Acute**						**All Episodes**	
	Clinically Complex		**Other**		**Clinically Complex**		**Restorative**		**Other**			
	Core Model		**Core Model**		**Core Model**		**Core Model**		**Core Model**		**Core Model**	
	Coef.	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**
Neuro/Emotional/Behavioral Status												
Cog Func: Requires prompting	-0.036	0.004	-0.087	0.000	-0.066	0.000	-0.086	0.000	-0.058	0.000	-0.078	0.000
Cog Func: Requires assistance & some direction	-0.045	0.011	-0.110	0.000	-0.075	0.000	-0.147	0.000	-0.103	0.000	-0.110	0.000
Cog Func: Requires considerable assistance	-0.148	0.000	-0.254	0.000	-0.201	0.000	-0.306	0.000	-0.240	0.000	-0.249	0.000
Cog Func: Totally dependent	-0.420	0.000	-0.519	0.000	-0.428	0.000	-0.571	0.000	-0.505	0.000	-0.517	0.000
Conf Freq: In new situations	-0.014	0.228	-0.050	0.000	-0.076	0.000	-0.057	0.000	-0.031	0.012	-0.053	0.000
Conf Freq: Awakening at night	-0.086	0.001	-0.076	0.000	-0.117	0.000	-0.106	0.000	-0.118	0.000	-0.102	0.000
Conf Freq: Day and evening	-0.069	0.000	-0.134	0.000	-0.127	0.000	-0.143	0.000	-0.085	0.000	-0.124	0.000
Conf Freq: Constantly	-0.190	0.000	-0.238	0.000	-0.229	0.000	-0.236	0.000	-0.204	0.000	-0.232	0.000
Anx Freq: Less than daily	0.007	0.519	-0.011	0.132	-0.046	0.000	-0.022	0.000	-0.019	0.091	-0.022	0.000
Anx Freq: Daily but not constantly	0.029	0.017	0.069	0.000	0.020	0.036	0.044	0.000	0.073	0.000	0.047	0.000
Anx Freq: All the time	0.134	0.000	0.181	0.000	0.099	0.000	0.133	0.000	0.177	0.000	0.146	0.000
Verbal disruption	-0.079	0.003	-0.124	0.000	-0.173	0.000	-0.128	0.000	-0.055	0.122	-0.121	0.000
Depressive Feelings: Depressed mood	-0.044	0.000	-0.029	0.000	-0.074	0.000	-0.091	0.000	-0.050	0.000	-0.067	0.000
Depressive Feelings: Any other element (2-6)	0.029	0.168	0.048	0.005	-0.008	0.688	-0.056	0.002	-0.009	0.771	-0.009	0.336
Intercept	0.152	0.000	0.168	0.000	0.438	0.000	0.286	0.000	0.500	0.000	0.121	0.000
Pseudo-R2 statistic	0.047		0.068		0.056		0.056		0.064		0.078	
C statistic	0.623		0.648		0.631		0.629		0.637		0.656	
Model N	254,379		555,796		373,327		727,277		203,474		2,114,252	

TABLE A1-i. Core Risk-Adjustment Model for Acute Care Hospitalization

Risk Factor Measured at SOC/ROC	Community Admission				Post Acute						All Episodes	
	Clinically Complex		Other		Clinically Complex		Restorative		Other			
	Core Model		Core Model		Core Model		Core Model		Core Model		Core Model	
	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p
DEMOGRAPHICS												
Age below 65	0.045	0.037	-0.057	0.002	0.318	0.000	0.445	0.000	0.230	0.000	0.256	0.000
Age 75-84	0.012	0.507	-0.055	0.000	-0.144	0.000	-0.077	0.000	-0.180	0.000	-0.096	0.000
Age 85+	-0.040	0.040	-0.073	0.000	-0.224	0.000	-0.118	0.000	-0.295	0.000	-0.156	0.000
Gender: female	-0.047	0.001	-0.101	0.000	0.004	0.649	-0.060	0.000	-0.038	0.002	-0.044	0.000
SOCIOECONOMIC FACTORS												
Any Medicaid	0.638	0.000	0.733	0.000	0.776	0.000	0.705	0.000	0.899	0.000	0.779	0.000
Medicare HMO	0.356	0.000	0.558	0.000	0.826	0.000	0.932	0.000	0.803	0.000	0.777	0.000
PRIOR SERVICE USE												
Discharged past 14 days: Discharge from hospital					-0.196	0.000	-0.197	0.000	-0.160	0.000	0.287	0.000
Discharge from rehab facility					-0.292	0.000	-0.255	0.000	-0.151	0.000	0.032	0.000
Discharge from skilled nursing facility					-0.413	0.000	-0.323	0.000	-0.286	0.000	-0.032	0.000
CLINICAL FACTORS												
Prognoses												
Overall prognosis good/fair	-0.170	0.000	-0.236	0.000	-0.198	0.000	-0.249	0.000	-0.219	0.000	-0.223	0.000
Rehabilitation prognosis good	-0.241	0.000	-0.256	0.000	-0.290	0.000	-0.434	0.000	-0.273	0.000	-0.329	0.000
Diagnoses												
Diabetes (PPS Group)	0.113	0.000	0.347	0.000	0.228	0.000	0.432	0.000	0.223	0.000	0.324	0.000
Orthopedic (PPS Group)	-0.263	0.000	-0.350	0.000	-0.232	0.000	-0.400	0.000	-0.115	0.000	-0.377	0.000
Neurological (PPS Group)	-0.125	0.000	-0.252	0.000	-0.377	0.000	-0.361	0.000	-0.279	0.000	-0.267	0.000
Wound/Burn (PPS Group)	0.086	0.054	-0.015	0.579	0.430	0.000	0.391	0.000	0.441	0.007	0.246	0.000
Cancer	0.434	0.000	0.556	0.000	0.372	0.000	0.491	0.000	0.536	0.000	0.502	0.000
Mental condition	0.201	0.000	0.382	0.000	0.322	0.000	0.093	0.000	0.427	0.000	0.302	0.000
Dementia	-0.177	0.000	-0.069	0.011	-0.237	0.000	-0.094	0.006	-0.086	0.022	-0.071	0.000
Hypertension	0.002	0.862	0.091	0.000	0.061	0.000	0.053	0.000	0.089	0.000	0.140	0.000
Ischemia	0.064	0.001	0.195	0.000	0.050	0.000	-0.001	0.946	0.140	0.000	0.095	0.000
Arrhythmia	0.125	0.000	0.225	0.000	-0.006	0.651	0.038	0.016	-0.005	0.795	0.046	0.000
Heart failure	0.372	0.000	0.444	0.000	0.280	0.000	0.446	0.000	0.273	0.000	0.383	0.000
COPD	0.192	0.000	0.380	0.000	0.050	0.000	0.238	0.000	0.135	0.000	0.216	0.000
Skin ulcer	0.091	0.001	0.041	0.036	0.189	0.000	0.285	0.000	0.083	0.000	0.179	0.000
Orthopedic (other than PPS)	-0.270	0.000	-0.156	0.000	-0.157	0.000	-0.393	0.000	0.046	0.034	-0.185	0.000
Incontinence	0.108	0.000	0.238	0.000	0.221	0.000	0.190	0.000	0.201	0.000	0.183	0.000
Symptoms, signs, & ill-defined conditions	0.048	0.004	0.085	0.000	0.033	0.002	0.064	0.000	-0.021	0.116	0.039	0.000
Diagnosis Severity												
Number of severity ratings >2	0.053	0.000	0.016	0.000	-0.009	0.008	0.016	0.000	0.053	0.000	0.027	0.000

TABLE A1-i (*continued*)												
Risk Factor Measured at SOC/ROC	**Community Admission**				**Post Acute**						**All Episodes**	
	Clinically Complex		**Other**		**Clinically Complex**		**Restorative**		**Other**			
	Core Model		**Core Model**		**Core Model**		**Core Model**		**Core Model**		**Core Model**	
	Coef.	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**
Sensory Status												
Partially vision impaired	0.144	0.000	0.126	0.000	0.240	0.000	0.169	0.000	0.136	0.000	0.198	0.000
Severely vision impaired	0.200	0.000	0.072	0.009	0.133	0.000	0.108	0.000	0.042	0.227	0.135	0.000
Speech: Minimum difficulty	0.092	0.000	0.007	0.593	0.036	0.002	0.029	0.018	0.063	0.000	0.051	0.000
Speech: Moderate difficulty	0.049	0.071	-0.028	0.209	-0.011	0.590	-0.007	0.760	0.022	0.410	0.005	0.615
Speech: Severe difficulty	-0.030	0.413	-0.190	0.000	-0.005	0.855	-0.064	0.014	-0.124	0.000	-0.096	0.000
Integumentary Status												
Surgical wound present	0.140	0.000	-0.069	0.000	-0.368	0.000	-0.412	0.000			-0.460	0.000
Stage of most problematic pressure ulcer	0.090	0.000	0.123	0.000	0.145	0.000	0.146	0.000	0.128	0.000	0.139	0.000
Status of most problematic stasis ulcer	0.156	0.000	0.204	0.000	0.227	0.000	0.295	0.000	0.218	0.000	0.226	0.000
Functional Status/Physical Functioning												
ADL/IADL index	0.070	0.000	0.065	0.000	0.100	0.000	0.095	0.000	0.098	0.000	0.085	0.000
Elimination Status												
Urinary incontinence during the night	-0.049	0.062	-0.068	0.001	-0.124	0.000	-0.068	0.000	-0.136	0.000	-0.088	0.000
Urinary incontinence during the day	-0.118	0.000	-0.108	0.000	0.074	0.007	0.017	0.587	0.013	0.728	-0.007	0.605
Urinary incontinence during the night & day	-0.032	0.054	-0.093	0.000	-0.027	0.021	-0.062	0.000	-0.096	0.000	-0.054	0.000
Urinary catheter present	0.560	0.000	0.562	0.000	0.528	0.000	0.475	0.000	0.517	0.000	0.518	0.000
Bowel incontinent less than weekly	0.055	0.074	0.030	0.246	0.058	0.014	0.135	0.000	0.027	0.418	0.070	0.000
Bowel incontinent 1-3 times/week	0.065	0.008	0.090	0.000	0.142	0.000	0.223	0.000	0.150	0.000	0.140	0.000
Bowel incontinent 4-6 times/week	-0.001	0.975	0.096	0.001	0.152	0.000	0.309	0.000	0.190	0.000	0.163	0.000
Bowel incontinent daily or more often	0.206	0.000	0.164	0.000	0.366	0.000	0.405	0.000	0.348	0.000	0.324	0.000
Ostomy	0.136	0.021	0.282	0.000	0.297	0.000	0.434	0.000	0.402	0.000	0.352	0.000

TABLE A1-i (*continued*)												
Risk Factor Measured at SOC/ROC	**Community Admission**				**Post Acute**						**All Episodes**	
	Clinically Complex		**Other**		**Clinically Complex**		**Restorative**		**Other**			
	Core Model		**Core Model**		**Core Model**		**Core Model**		**Core Model**		**Core Model**	
	Coef.	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**
Neuro/Emotional/Behavioral Status												
Cog Func: Requires prompting	-0.031	0.105	0.022	0.154	0.063	0.000	0.016	0.223	0.002	0.898	0.031	0.000
Cog Func: Requires assistance & some direction	-0.022	0.427	-0.001	0.962	0.020	0.301	-0.043	0.040	-0.002	0.929	-0.000	0.973
Cog Func: Requires considerable assistance	-0.059	0.140	-0.052	0.113	-0.038	0.203	-0.118	0.000	-0.089	0.031	-0.069	0.000
Cog Func: Totally dependent	-0.151	0.008	-0.114	0.013	0.003	0.952	-0.142	0.002	-0.094	0.102	-0.120	0.000
Conf Freq: In new situations	0.069	0.000	0.070	0.000	0.037	0.001	0.061	0.000	0.052	0.001	0.067	0.000
Conf Freq: Awakening at night	0.021	0.627	0.098	0.005	0.038	0.210	0.059	0.074	0.048	0.257	0.066	0.000
Conf Freq: Day and evening	0.033	0.212	0.053	0.013	-0.065	0.001	-0.015	0.444	-0.082	0.001	-0.001	0.906
Conf Freq: Constantly	-0.153	0.000	-0.099	0.003	-0.229	0.000	-0.106	0.002	-0.187	0.000	-0.147	0.000
Anx Freq: Less than daily	0.073	0.000	0.088	0.000	0.063	0.000	0.052	0.000	0.079	0.000	0.073	0.000
Anx Freq: Daily but not constantly	0.119	0.000	0.122	0.000	0.089	0.000	0.109	0.000	0.113	0.000	0.112	0.000
Anx Freq: All the time	0.084	0.056	0.121	0.001	0.055	0.069	0.128	0.000	0.093	0.019	0.100	0.000
Verbal disruption	-0.059	0.141	0.025	0.441	0.041	0.188	0.022	0.531	0.178	0.000	0.030	0.057
Depressive Feelings: Depressed mood	0.067	0.000	0.087	0.000	0.075	0.000	0.176	0.000	0.079	0.000	0.121	0.000
Depressive Feelings: Any other element (2-6)	0.106	0.001	0.171	0.000	0.205	0.000	0.242	0.000	0.130	0.000	0.202	0.000
Intercept	-3.839	0.000	-3.851	0.000	-3.412	0.000	-3.793	0.000	-3.664	0.000	-4.129	0.000
Pseudo-R2 statistic	0.019		0.017		0.045		0.031		0.038		0.034	
C statistic	0.669		0.687		0.728		0.755		0.721		0.735	
Model N	547,561		1,339,228		1,089,908		2,602,341		662,319		6,241,350	

TABLE A1-j. Core Risk-Adjustment Model for Discharge to Community

Risk Factor Measured at SOC/ROC	Community Admission				Post Acute						All Episodes	
	Clinically Complex		Other		Clinically Complex		Restorative		Other			
	Core Model		Core Model		Core Model		Core Model		Core Model		Core Model	
	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p
DEMOGRAPHICS												
Age below 65	0.265	0.000	0.212	0.000	0.065	0.002	0.056	0.002	0.111	0.000	0.132	0.000
Age 75-84	0.022	0.230	0.017	0.263	-0.047	0.001	-0.053	0.000	-0.025	0.232	-0.025	0.000
Age 85+	-0.038	0.062	-0.042	0.006	-0.151	0.000	-0.189	0.000	-0.102	0.000	-0.115	0.000
Gender: female	0.028	0.059	0.038	0.000	0.031	0.008	0.013	0.169	0.025	0.098	0.025	0.000
SOCIOECONOMIC FACTORS												
Any Medicaid	-0.093	0.000	-0.025	0.140	0.057	0.003	0.120	0.000	0.051	0.049	0.004	0.674
Medicare HMO	0.291	0.000	0.256	0.000	0.222	0.000	0.307	0.000	0.249	0.000	0.278	0.000
PRIOR SERVICE USE												
Discharged past 14 days:												
Discharge from hospital					-0.028	0.275	-0.007	0.724	-0.052	0.199	0.028	0.000
Discharge from rehab facility					0.190	0.000	0.169	0.000	0.166	0.000	0.221	0.000
Discharge from skilled nursing facility					0.198	0.000	0.262	0.000	0.192	0.000	0.289	0.000
CLINICAL FACTORS												
Prognoses												
Overall prognosis good/fair	0.602	0.000	0.844	0.000	0.768	0.000	0.862	0.000	0.910	0.000	0.819	0.000
Rehabilitation prognosis good	0.304	0.000	0.349	0.000	0.313	0.000	0.457	0.000	0.400	0.000	0.390	0.000
Diagnoses												
Diabetes (PPS Group)	-0.115	0.000	-0.254	0.000	-0.135	0.000	-0.098	0.005	-0.022	0.580	-0.218	0.000
Orthopedic (PPS Group)	0.292	0.000	0.467	0.000	0.128	0.000	0.228	0.000	0.210	0.000	0.298	0.000
Neurological (PPS Group)	0.000	0.984	0.182	0.000	0.101	0.000	0.079	0.000	0.082	0.007	0.084	0.000
Wound/Burn (PPS Group)	0.281	0.000	0.104	0.000	-0.275	0.000	-0.293	0.000	0.226	0.414	-0.058	0.002
Cancer	-1.344	0.000	-1.506	0.000	-1.400	0.000	-1.184	0.000	-1.346	0.000	-1.355	0.000
Mental condition	0.019	0.530	-0.106	0.000	-0.025	0.387	0.081	0.006	0.084	0.009	-0.024	0.049
Dementia	0.151	0.000	0.124	0.000	0.116	0.000	0.093	0.004	0.098	0.018	0.094	0.000
Hypertension	0.098	0.000	0.024	0.063	0.099	0.000	0.088	0.000	0.193	0.000	0.042	0.000
Ischemia	0.037	0.086	-0.043	0.072	0.028	0.083	0.059	0.002	0.132	0.000	0.041	0.000
Arrhythmia	-0.067	0.011	-0.081	0.001	0.005	0.788	-0.009	0.612	0.097	0.000	-0.001	0.940
Heart failure	-0.166	0.000	-0.339	0.000	-0.165	0.000	-0.291	0.000	-0.161	0.000	-0.223	0.000
COPD	-0.169	0.000	-0.240	0.000	-0.111	0.000	-0.173	0.000	0.010	0.683	-0.137	0.000
Skin ulcer	0.168	0.000	0.127	0.000	-0.008	0.740	-0.112	0.000	0.205	0.000	0.038	0.000
Orthopedic (other than PPS)	0.192	0.000	0.296	0.000	0.125	0.000	0.251	0.000	0.212	0.000	0.181	0.000
Incontinence	-0.116	0.000	-0.122	0.000	-0.223	0.000	-0.236	0.000	-0.146	0.001	-0.168	0.000
Symptoms, signs, & ill-defined conditions	-0.072	0.000	-0.082	0.000	-0.070	0.000	-0.048	0.000	0.017	0.301	-0.054	0.000
Diagnosis Severity												
Number of severity ratings >2	-0.032	0.000	-0.061	0.000	0.003	0.517	-0.042	0.000	-0.070	0.000	-0.039	0.000

TABLE A1-j (*continued*)												
Risk Factor Measured at SOC/ROC	**Community Admission**				**Post Acute**						**All Episodes**	
	Clinically Complex		**Other**		**Clinically Complex**		**Restorative**		**Other**			
	Core Model		**Core Model**		**Core Model**		**Core Model**		**Core Model**		**Core Model**	
	Coef.	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**
Sensory Status												
Partially vision impaired	-0.155	0.000	-0.125	0.000	-0.131	0.000	-0.077	0.000	-0.061	0.000	-0.135	0.000
Severely vision impaired	-0.191	0.000	-0.045	0.090	-0.057	0.066	-0.046	0.119	0.002	0.955	-0.081	0.000
Speech: Minimum difficulty	-0.024	0.205	-0.071	0.000	-0.052	0.001	-0.052	0.000	-0.053	0.008	-0.064	0.000
Speech: Moderate difficulty	-0.024	0.380	-0.109	0.000	-0.050	0.038	-0.073	0.001	0.011	0.728	-0.066	0.000
Speech: Severe difficulty	-0.063	0.075	-0.057	0.026	-0.014	0.651	-0.009	0.751	0.076	0.066	-0.016	0.241
Integumentary Status												
Surgical wound present	0.096	0.001	0.219	0.000	0.340	0.000	0.276	0.000			0.380	0.000
Stage of most problematic pressure ulcer	-0.181	0.000	-0.192	0.000	-0.173	0.000	-0.170	0.000	-0.192	0.000	-0.183	0.000
Status of most problematic stasis ulcer	0.015	0.403	-0.055	0.000	-0.093	0.000	-0.104	0.000	-0.089	0.000	-0.074	0.000
Functional Status/Physical Functioning												
ADL/IADL index	-0.055	0.000	-0.077	0.000	-0.122	0.000	-0.122	0.000	-0.127	0.000	-0.097	0.000
Elimination Status												
Urinary incontinence during the night	0.018	0.519	0.200	0.000	0.071	0.001	0.116	0.000	0.132	0.000	0.114	0.000
Urinary incontinence during the day	0.133	0.000	0.178	0.000	0.011	0.772	0.070	0.036	0.238	0.000	0.096	0.000
Urinary incontinence during the night & day	-0.030	0.083	0.150	0.000	-0.013	0.368	0.081	0.000	0.122	0.000	0.061	0.000
Urinary catheter present	-0.637	0.000	-0.522	0.000	-0.605	0.000	-0.466	0.000	-0.428	0.000	-0.530	0.000
Bowel incontinent less than weekly	-0.059	0.059	-0.092	0.000	-0.093	0.001	-0.119	0.000	0.021	0.608	-0.084	0.000
Bowel incontinent 1-3 times/week	-0.078	0.002	-0.178	0.000	-0.158	0.000	-0.219	0.000	-0.153	0.000	-0.168	0.000
Bowel incontinent 4-6 times/week	-0.107	0.003	-0.124	0.000	-0.200	0.000	-0.298	0.000	-0.163	0.000	-0.186	0.000
Bowel incontinent daily or more often	0.022	0.468	-0.121	0.000	-0.173	0.000	-0.262	0.000	-0.217	0.000	-0.164	0.000
Ostomy	0.076	0.258	-0.077	0.030	-0.033	0.449	-0.231	0.000	-0.074	0.179	-0.102	0.000

TABLE A1-j (*continued*)												
Risk Factor Measured at SOC/ROC	**Community Admission**				**Post Acute**						**All Episodes**	
	Clinically Complex		**Other**		**Clinically Complex**		**Restorative**		**Other**			
	Core Model		**Core Model**		**Core Model**		**Core Model**		**Core Model**		**Core Model**	
	Coef.	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**
Neuro/Emotional/Behavioral Status												
Cog Func: Requires prompting	-0.020	0.331	0.001	0.950	-0.027	0.112	-0.005	0.738	-0.029	0.185	-0.025	0.001
Cog Func: Requires assistance & some direction	0.030	0.294	0.082	0.000	0.051	0.038	0.037	0.097	0.050	0.121	0.045	0.000
Cog Func: Requires considerable assistance	-0.142	0.000	0.015	0.629	-0.080	0.020	-0.055	0.079	0.082	0.082	-0.043	0.005
Cog Func: Totally dependent	-0.185	0.000	-0.058	0.139	-0.163	0.001	-0.105	0.022	0.111	0.091	-0.079	0.000
Conf Freq: In new situations	-0.085	0.000	-0.121	0.000	-0.070	0.000	-0.062	0.000	-0.049	0.013	-0.090	0.000
Conf Freq: Awakening at night	-0.146	0.001	-0.253	0.000	-0.230	0.000	-0.229	0.000	-0.161	0.001	-0.223	0.000
Conf Freq: Day and evening	-0.204	0.000	-0.237	0.000	-0.218	0.000	-0.205	0.000	-0.184	0.000	-0.221	0.000
Conf Freq: Constantly	-0.170	0.000	-0.144	0.000	-0.073	0.041	-0.136	0.000	-0.079	0.105	-0.120	0.000
Anx Freq: Less than daily	-0.064	0.000	-0.068	0.000	-0.057	0.000	-0.024	0.043	-0.040	0.028	-0.056	0.000
Anx Freq: Daily but not constantly	-0.136	0.000	-0.117	0.000	-0.110	0.000	-0.069	0.000	-0.088	0.000	-0.106	0.000
Anx Freq: All the time	-0.051	0.267	0.024	0.530	-0.137	0.000	-0.042	0.245	0.010	0.857	-0.047	0.011
Verbal disruption	0.002	0.955	0.111	0.001	0.003	0.926	0.077	0.046	-0.052	0.320	0.047	0.005
Depressive Feelings: Depressed mood	-0.085	0.000	-0.140	0.000	-0.181	0.000	-0.210	0.000	-0.183	0.000	-0.177	0.000
Depressive Feelings: Any other element (2-6)	-0.068	0.041	-0.296	0.000	-0.334	0.000	-0.420	0.000	-0.417	0.000	-0.327	0.000
Intercept	3.142	0.000	3.360	0.000	3.804	0.000	3.895	0.000	3.638	0.000	3.592	0.000
Pseudo-R2 statistic	0.047		0.070		0.071		0.059		0.083		0.065	
C statistic	0.690		0.737		0.752		0.750		0.762		0.752	
Model N	502,274		1,265,064		1,003,911		2,505,964		613,390		5,890,599	

TABLE A1-k. Core Risk-Adjustment Model for Emergent Care

Risk Factor Measured at SOC/ROC	Community Admission				Post Acute						All Episodes	
	Clinically Complex		Other		Clinically Complex		Restorative		Other			
	Core Model		Core Model		Core Model		Core Model		Core Model		Core Model	
	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p
DEMOGRAPHICS												
Age below 65	0.077	0.000	0.032	0.023	0.262	0.000	0.335	0.000	0.242	0.000	0.228	0.000
Age 75-84	-0.004	0.803	-0.012	0.297	-0.104	0.000	-0.052	0.000	-0.078	0.000	-0.055	0.000
Age 85+	-0.016	0.351	0.005	0.695	-0.172	0.000	-0.091	0.000	-0.149	0.000	-0.083	0.000
Gender: female	0.009	0.457	-0.012	0.161	0.016	0.026	-0.041	0.000	-0.003	0.763	-0.015	0.000
SOCIOECONOMIC FACTORS												
Any Medicaid	0.400	0.000	0.461	0.000	0.404	0.000	0.293	0.000	0.501	0.000	0.405	0.000
Medicare HMO	0.176	0.000	0.293	0.000	0.389	0.000	0.318	0.000	0.387	0.000	0.333	0.000
PRIOR SERVICE USE												
Discharged past 14 days: Discharge from hospital					-0.090	0.000	-0.008	0.488	-0.101	0.000	0.378	0.000
Discharge from rehab facility					-0.304	0.000	-0.289	0.000	-0.211	0.000	-0.046	0.000
Discharge from skilled nursing facility					-0.272	0.000	-0.212	0.000	-0.204	0.000	0.045	0.000
CLINICAL FACTORS												
Prognoses Overall prognosis good/fair	-0.201	0.000	-0.185	0.000	-0.193	0.000	-0.225	0.000	-0.231	0.000	-0.210	0.000
Rehabilitation prognosis good	-0.304	0.000	-0.260	0.000	-0.263	0.000	-0.267	0.000	-0.262	0.000	-0.277	0.000
Diagnoses Diabetes (PPS Group)	-0.045	0.002	0.145	0.000	0.003	0.749	0.123	0.000	0.097	0.000	0.075	0.000
Orthopedic (PPS Group)	-0.212	0.000	-0.214	0.000	-0.193	0.000	-0.224	0.000	-0.080	0.000	-0.217	0.000
Neurological (PPS Group)	-0.099	0.000	-0.166	0.000	-0.205	0.000	-0.136	0.000	-0.166	0.000	-0.135	0.000
Wound/Burn (PPS Group)	-0.052	0.186	-0.052	0.013	0.066	0.052	0.026	0.189	0.636	0.000	0.028	0.026
Cancer	0.271	0.000	0.378	0.000	0.188	0.000	0.179	0.000	0.287	0.000	0.244	0.000
Mental condition	0.110	0.000	0.176	0.000	0.199	0.000	0.062	0.000	0.215	0.000	0.149	0.000
Dementia	-0.117	0.000	-0.016	0.436	-0.183	0.000	-0.039	0.097	0.003	0.923	-0.048	0.000
Hypertension	-0.147	0.000	-0.053	0.000	-0.076	0.000	-0.047	0.000	-0.009	0.413	-0.031	0.000
Ischemia	-0.031	0.070	0.074	0.000	0.050	0.000	0.130	0.000	0.090	0.000	0.083	0.000
Arrhythmia	0.063	0.003	0.188	0.000	0.022	0.040	0.060	0.000	0.048	0.002	0.056	0.000
Heart failure	0.296	0.000	0.359	0.000	0.175	0.000	0.252	0.000	0.178	0.000	0.237	0.000
COPD	0.144	0.000	0.344	0.000	0.030	0.000	0.181	0.000	0.138	0.000	0.141	0.000
Skin ulcer	0.010	0.671	-0.015	0.338	0.037	0.010	0.046	0.000	-0.010	0.589	0.030	0.000
Orthopedic (other than PPS)	-0.246	0.000	-0.113	0.000	-0.135	0.000	-0.139	0.000	-0.016	0.373	-0.124	0.000
Incontinence	0.027	0.282	0.085	0.000	0.077	0.002	0.023	0.309	0.021	0.501	0.060	0.000
Symptoms, signs, & ill-defined conditions	0.097	0.000	0.102	0.000	0.087	0.000	0.079	0.000	0.036	0.001	0.082	0.000
Diagnosis Severity Number of severity ratings >2	0.045	0.000	0.054	0.000	-0.016	0.000	0.024	0.000	0.050	0.000	0.027	0.000

TABLE A1-k (*continued*)												
Risk Factor Measured at SOC/ROC	**Community Admission**				**Post Acute**						**All Episodes**	
	Clinically Complex		**Other**		**Clinically Complex**		**Restorative**		**Other**			
	Core Model		**Core Model**		**Core Model**		**Core Model**		**Core Model**		**Core Model**	
	Coef.	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**
Sensory Status												
Partially vision impaired	-0.017	0.156	-0.056	0.000	0.056	0.000	0.014	0.062	0.024	0.036	0.017	0.000
Severely vision impaired	0.093	0.001	-0.030	0.175	0.040	0.065	0.009	0.674	0.009	0.769	0.032	0.003
Speech: Minimum difficulty	0.069	0.000	0.036	0.001	0.039	0.000	0.021	0.011	0.054	0.000	0.043	0.000
Speech: Moderate difficulty	0.043	0.062	0.018	0.301	0.012	0.473	0.011	0.475	0.009	0.690	0.018	0.024
Speech: Severe difficulty	-0.034	0.273	-0.129	0.000	0.016	0.482	0.007	0.724	-0.051	0.091	-0.046	0.000
Integumentary Status												
Surgical wound present	0.185	0.000	0.036	0.005	-0.140	0.000	-0.151	0.000			-0.164	0.000
Stage of most problematic pressure ulcer	0.048	0.000	0.059	0.000	0.086	0.000	0.098	0.000	0.069	0.000	0.083	0.000
Status of most problematic stasis ulcer	0.068	0.000	0.090	0.000	0.095	0.000	0.122	0.000	0.096	0.000	0.101	0.000
Functional Status/Physical Functioning												
ADL/IADL index	0.035	0.000	0.033	0.000	0.046	0.000	0.037	0.000	0.052	0.000	0.039	0.000
Elimination Status												
Urinary incontinence during the night	0.047	0.027	0.038	0.008	0.001	0.940	0.049	0.000	-0.024	0.180	0.031	0.000
Urinary incontinence during the day	-0.117	0.000	-0.129	0.000	-0.052	0.030	-0.004	0.866	-0.036	0.271	-0.057	0.000
Urinary incontinence during the night & day	-0.052	0.000	-0.055	0.000	-0.035	0.000	-0.004	0.655	-0.064	0.000	-0.029	0.000
Urinary catheter present	0.449	0.000	0.533	0.000	0.430	0.000	0.404	0.000	0.469	0.000	0.436	0.000
Bowel incontinent less than weekly	0.069	0.008	0.027	0.176	0.089	0.000	0.086	0.000	0.045	0.098	0.070	0.000
Bowel incontinent 1-3 times/week	0.048	0.027	0.015	0.376	0.089	0.000	0.106	0.000	0.060	0.011	0.068	0.000
Bowel incontinent 4-6 times/week	0.000	0.994	0.030	0.212	0.100	0.000	0.145	0.000	0.049	0.149	0.078	0.000
Bowel incontinent daily or more often	0.096	0.000	0.063	0.001	0.174	0.000	0.221	0.000	0.181	0.000	0.159	0.000
Ostomy	0.052	0.330	0.139	0.000	0.152	0.000	0.226	0.000	0.226	0.000	0.186	0.000

TABLE A1-k (*continued*)												
Risk Factor Measured at SOC/ROC	**Community Admission**				**Post Acute**						**All Episodes**	
	Clinically Complex		**Other**		**Clinically Complex**		**Restorative**		**Other**			
	Core Model		**Core Model**		**Core Model**		**Core Model**		**Core Model**		**Core Model**	
	Coef.	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**
Neuro/Emotional/Behavioral Status												
Cog Func: Requires prompting	-0.018	0.281	0.000	0.967	0.050	0.000	0.031	0.001	-0.007	0.625	0.024	0.000
Cog Func: Requires assistance & some direction	-0.020	0.402	-0.007	0.680	0.054	0.001	0.021	0.148	-0.021	0.333	0.017	0.027
Cog Func: Requires considerable assistance	-0.017	0.616	-0.033	0.198	0.056	0.028	-0.031	0.201	-0.066	0.060	-0.012	0.343
Cog Func: Totally dependent	-0.049	0.327	-0.004	0.909	0.103	0.008	-0.001	0.982	-0.061	0.232	-0.011	0.538
Conf Freq: In new situations	0.058	0.000	0.042	0.000	0.035	0.000	0.034	0.000	0.050	0.000	0.043	0.000
Conf Freq: Awakening at night	0.067	0.063	0.130	0.000	0.082	0.001	0.105	0.000	0.122	0.000	0.107	0.000
Conf Freq: Day and evening	0.062	0.006	0.106	0.000	0.030	0.060	0.052	0.000	0.003	0.890	0.061	0.000
Conf Freq: Constantly	-0.061	0.079	-0.006	0.807	-0.131	0.000	-0.060	0.022	-0.108	0.004	-0.061	0.000
Anx Freq: Less than daily	0.095	0.000	0.126	0.000	0.100	0.000	0.108	0.000	0.107	0.000	0.109	0.000
Anx Freq: Daily but not constantly	0.202	0.000	0.198	0.000	0.156	0.000	0.190	0.000	0.184	0.000	0.184	0.000
Anx Freq: All the time	0.242	0.000	0.289	0.000	0.207	0.000	0.236	0.000	0.209	0.000	0.238	0.000
Verbal disruption	0.049	0.130	0.043	0.089	0.103	0.000	0.071	0.006	0.102	0.003	0.066	0.000
Depressive Feelings: Depressed mood	0.108	0.000	0.153	0.000	0.105	0.000	0.178	0.000	0.128	0.000	0.151	0.000
Depressive Feelings: Any other element (2-6)	0.254	0.000	0.271	0.000	0.233	0.000	0.301	0.000	0.221	0.000	0.273	0.000
Intercept	-2.867	0.000	-3.128	0.000	-2.366	0.000	-2.713	0.000	-2.737	0.000	-3.088	0.000
Pseudo-R2 statistic	0.018		0.015		0.025		0.018		0.023		0.022	
C statistic	0.640		0.633		0.645		0.643		0.646		0.650	
Model N	538,245		1,321,405		1,075,583		2,577,451		653,131		6,165,808	

TABLE A1-l. Core Risk-Adjustment Model for Emergent Care for Wound Infection

Risk Factor Measured at SOC/ROC	Community Admission				Post Acute						All Episodes	
	Clinically Complex		Other		Clinically Complex		Restorative		Other			
	Core Model		Core Model		Core Model		Core Model		Core Model		Core Model	
	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p
DEMOGRAPHICS												
Age below 65	0.186	0.007	0.263	0.000	0.379	0.000	0.467	0.000	0.305	0.000	0.380	0.000
Age 75-84	-0.126	0.047	-0.119	0.008	-0.311	0.000	-0.155	0.000	-0.249	0.000	-0.193	0.000
Age 85+	-0.184	0.010	-0.193	0.000	-0.429	0.000	-0.346	0.000	-0.462	0.000	-0.329	0.000
Gender: female	-0.100	0.033	0.036	0.259	-0.070	0.014	-0.059	0.001	-0.062	0.202	-0.048	0.000
SOCIOECONOMIC FACTORS												
Any Medicaid	0.325	0.000	0.269	0.000	0.243	0.000	0.168	0.000	0.292	0.000	0.227	0.000
Medicare HMO	0.344	0.000	0.459	0.000	0.479	0.000	0.302	0.000	0.310	0.000	0.362	0.000
PRIOR SERVICE USE												
Discharged past 14 days: Discharge from hospital					-0.203	0.002	0.028	0.491	-0.293	0.021	0.183	0.000
Discharge from rehab facility					-0.285	0.000	-0.355	0.000	-0.090	0.489	-0.190	0.000
Discharge from skilled nursing facility					-0.239	0.000	-0.265	0.000	-0.043	0.728	-0.072	0.003
CLINICAL FACTORS												
Prognoses												
Overall prognosis good/fair	-0.120	0.073	0.021	0.694	-0.023	0.630	0.069	0.117	-0.056	0.483	0.004	0.858
Rehabilitation prognosis good	-0.160	0.003	-0.188	0.000	-0.195	0.000	-0.180	0.000	-0.178	0.003	-0.183	0.000
Diagnoses												
Diabetes (PPS Group)	0.084	0.150	0.265	0.000	-0.046	0.260	0.155	0.005	0.220	0.012	0.105	0.000
Orthopedic (PPS Group)	-0.557	0.000	-0.696	0.000	-0.419	0.000	-0.436	0.000	-0.053	0.579	-0.462	0.000
Neurological (PPS Group)	-0.429	0.000	-0.666	0.000	-0.744	0.000	-0.867	0.000	-0.468	0.000	-0.677	0.000
Wound/Burn (PPS Group)	1.259	0.000	1.018	0.000	0.927	0.000	0.756	0.000	2.352	0.000	0.928	0.000
Cancer	-0.205	0.098	-0.129	0.050	-0.269	0.000	-0.078	0.015	-0.254	0.024	-0.129	0.000
Mental condition	-0.045	0.678	-0.144	0.049	-0.295	0.001	-0.009	0.867	-0.240	0.027	-0.156	0.000
Dementia	-0.230	0.009	-0.307	0.002	-0.474	0.000	-0.238	0.050	-0.557	0.009	-0.235	0.000
Hypertension	-0.194	0.000	-0.068	0.081	-0.109	0.000	-0.079	0.001	-0.038	0.518	-0.071	0.000
Ischemia	-0.011	0.877	-0.034	0.659	0.020	0.601	0.009	0.779	-0.010	0.914	0.020	0.361
Arrhythmia	0.184	0.039	0.154	0.040	-0.203	0.000	-0.270	0.000	-0.050	0.588	-0.157	0.000
Heart failure	0.150	0.013	-0.119	0.069	-0.230	0.000	-0.233	0.000	-0.105	0.143	-0.150	0.000
COPD	-0.383	0.000	-0.153	0.066	-0.477	0.000	-0.251	0.000	-0.344	0.000	-0.348	0.000
Skin ulcer	1.238	0.000	1.008	0.000	0.857	0.000	0.647	0.000	1.748	0.000	0.909	0.000
Orthopedic (other than PPS)	-0.367	0.000	-0.235	0.000	-0.239	0.000	-0.196	0.000	-0.101	0.307	-0.198	0.000
Incontinence	-0.170	0.116	0.135	0.063	0.115	0.229	0.098	0.241	-0.196	0.213	0.062	0.139
Symptoms, signs, & ill-defined conditions	-0.029	0.648	-0.111	0.006	-0.143	0.000	-0.177	0.000	-0.170	0.004	-0.169	0.000
Diagnosis Severity												
Number of severity ratings >2	0.021	0.269	0.052	0.000	0.014	0.232	0.016	0.008	0.064	0.000	0.028	0.000

TABLE A1-I (*continued*)												
Risk Factor Measured at SOC/ROC	**Community Admission**				**Post Acute**						**All Episodes**	
	Clinically Complex		**Other**		**Clinically Complex**		**Restorative**		**Other**			
	Core Model		**Core Model**		**Core Model**		**Core Model**		**Core Model**		**Core Model**	
	Coef.	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**
Sensory Status												
Partially vision impaired	0.060	0.222	-0.033	0.351	-0.028	0.410	-0.012	0.647	-0.033	0.585	-0.010	0.551
Severely vision impaired	0.019	0.870	-0.064	0.463	-0.033	0.696	-0.053	0.514	0.203	0.137	-0.008	0.850
Speech: Minimum difficulty	0.046	0.473	-0.081	0.068	-0.014	0.742	-0.034	0.267	-0.069	0.332	-0.037	0.062
Speech: Moderate difficulty	0.058	0.561	-0.009	0.898	-0.023	0.767	-0.111	0.090	-0.111	0.390	-0.040	0.267
Speech: Severe difficulty	-0.098	0.436	-0.208	0.022	0.082	0.391	-0.111	0.167	0.016	0.917	-0.080	0.074
Integumentary Status												
Surgical wound present	1.016	0.000	1.061	0.000	0.945	0.000	1.054	0.000			1.032	0.000
Stage of most problematic pressure ulcer	0.271	0.000	0.200	0.000	0.242	0.000	0.183	0.000	0.085	0.007	0.229	0.000
Status of most problematic stasis ulcer	0.441	0.000	0.491	0.000	0.423	0.000	0.474	0.000	0.483	0.000	0.497	0.000
Functional Status/Physical Functioning												
ADL/IADL index	0.031	0.000	0.030	0.000	0.030	0.000	0.020	0.000	0.036	0.000	0.027	0.000
Elimination Status												
Urinary incontinence during the night	-0.099	0.306	0.000	0.994	-0.191	0.003	0.027	0.501	-0.085	0.398	-0.032	0.236
Urinary incontinence during the day	-0.242	0.078	-0.401	0.000	-0.171	0.132	-0.069	0.397	-0.235	0.235	-0.202	0.000
Urinary incontinence during the night & day	-0.022	0.716	-0.204	0.000	-0.100	0.014	-0.025	0.380	-0.077	0.275	-0.073	0.000
Urinary catheter present	0.121	0.213	0.135	0.035	0.259	0.000	0.131	0.001	0.483	0.000	0.192	0.000
Bowel incontinent less than weekly	0.004	0.973	0.041	0.631	0.091	0.281	0.066	0.331	0.121	0.391	0.064	0.108
Bowel incontinent 1-3 times/week	0.134	0.116	0.102	0.137	0.256	0.000	0.066	0.272	0.120	0.299	0.139	0.000
Bowel incontinent 4-6 times/week	0.092	0.432	0.250	0.005	0.086	0.360	0.108	0.222	-0.347	0.056	0.119	0.009
Bowel incontinent daily or more often	0.223	0.015	0.395	0.000	0.332	0.000	0.318	0.000	0.362	0.001	0.343	0.000
Ostomy	0.190	0.235	0.165	0.093	0.518	0.000	0.283	0.000	0.559	0.000	0.327	0.000

TABLE A1-I (*continued*)												
Risk Factor Measured at SOC/ROC	**Community Admission**				**Post Acute**						**All Episodes**	
	Clinically Complex		**Other**		**Clinically Complex**		**Restorative**		**Other**			
	Core Model		**Core Model**		**Core Model**		**Core Model**		**Core Model**		**Core Model**	
	Coef.	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**	**Coef.**	**p**
Neuro/Emotional/Behavioral Status												
Cog Func: Requires prompting	-0.152	0.031	-0.024	0.625	-0.006	0.900	-0.034	0.308	-0.054	0.477	-0.041	0.055
Cog Func: Requires assistance & some direction	-0.098	0.333	-0.075	0.312	-0.018	0.808	0.021	0.722	-0.015	0.901	-0.025	0.471
Cog Func: Requires considerable assistance	-0.163	0.253	0.084	0.425	0.177	0.113	-0.020	0.849	0.012	0.946	0.060	0.261
Cog Func: Totally dependent	-0.234	0.200	0.106	0.433	0.177	0.236	0.048	0.747	0.197	0.384	0.095	0.176
Conf Freq: In new situations	-0.042	0.498	-0.096	0.023	-0.065	0.091	-0.041	0.119	0.016	0.802	-0.059	0.001
Conf Freq: Awakening at night	-0.165	0.327	-0.180	0.168	0.010	0.929	-0.187	0.064	-0.144	0.502	-0.133	0.023
Conf Freq: Day and evening	-0.000	1.000	-0.099	0.166	-0.162	0.024	-0.201	0.001	0.053	0.644	-0.121	0.000
Conf Freq: Constantly	0.019	0.887	-0.086	0.397	-0.212	0.078	-0.124	0.276	-0.192	0.314	-0.098	0.071
Anx Freq: Less than daily	0.139	0.011	0.085	0.022	0.094	0.007	0.123	0.000	-0.001	0.988	0.104	0.000
Anx Freq: Daily but not constantly	0.174	0.007	0.107	0.016	0.050	0.219	0.180	0.000	0.011	0.880	0.125	0.000
Anx Freq: All the time	0.208	0.177	0.074	0.528	-0.034	0.759	0.200	0.006	-0.149	0.453	0.099	0.046
Verbal disruption	0.327	0.006	0.086	0.403	0.206	0.044	0.170	0.063	-0.306	0.151	0.141	0.004
Depressive Feelings: Depressed mood	0.046	0.392	0.119	0.002	0.090	0.008	0.109	0.000	0.161	0.008	0.104	0.000
Depressive Feelings: Any other element (2-6)	0.045	0.694	0.201	0.024	0.304	0.000	0.322	0.000	0.061	0.699	0.238	0.000
Intercept	-6.073	0.000	-6.284	0.000	-5.448	0.000	-5.960	0.000	-6.202	0.000	-6.149	0.000
Pseudo-R2 statistic	0.009		0.006		0.010		0.005		0.010		0.006	
C statistic	0.814		0.785		0.800		0.739		0.789		0.776	
Model N	547,561		1,339,228		1,089,908		2,602,341		662,319		6,241,350	

To obtain a printed copy of this report, send the full report title and your mailing information to:

U.S. Department of Health and Human Services
Office of Disability, Aging and Long-Term Care Policy
Room 424E, H.H. Humphrey Building
200 Independence Avenue, S.W.
Washington, D.C. 20201
FAX: 202-401-7733
Email: webmaster.DALTCP@hhs.gov

RETURN TO:

Office of Disability, Aging and Long-Term Care Policy (DALTCP) Home
[http://aspe.hhs.gov/_/office_specific/daltcp.cfm]

Assistant Secretary for Planning and Evaluation (ASPE) Home
[http://aspe.hhs.gov]

U.S. Department of Health and Human Services Home
[http://www.hhs.gov]