

Using Long-Term Care MDS Data: Patient Days and Case Mix

Prepared by

**Health Services Research and Evaluation
American Health Care Association**

Staff:

**Anthony M. Tucker, Ph.D.
Frederic H. Decker, Ph.D.**

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The Long-Term Care Minimum Data Set is a rich source of administrative, demographic and clinical information on services provided in certified nursing facilities. These data underlie clinical and administrative quality assessment and support Medicare and Medicaid payment systems. This report describes the development of analytical resources based on data reported by nursing facilities between 1998 and 2001. The distribution of patients and patient days are reported for calendar year 2000. Measures of average case mix for calendar years 1999 through 2001 are also reported, including those by Medicare and non-Medicare status, as well as type of facility. More detailed measures of the distribution of patient days and case mix by state for calendar year 2000 are also presented.

INTRODUCTION

With the implementation of the Omnibus Budget Reconciliation Act of 1987 (OBRA), a formal schedule was established to collect comprehensive clinical, socio-demographic and administrative data on all nursing home residents admitted to Medicare- and/or Medicaid-certified nursing facilities. Data from the reporting protocols used under this schedule are referred to collectively as the Long-Term Care Minimum Data Set (MDS). The current version (2.0) of the MDS includes more than 300 potential data elements, depending on the general type and specific requirements of each assessment, and is used as the basis for quality and performance measurement for all certified facilities, as well as for payment under Medicare and some state Medicaid programs. The data underlying this report includes 100 percent of the MDS data reported to and maintained by the Centers for Medicare and Medicaid Services (CMS) - covering the last two calendar quarters of 1998 thru January 2002.¹

This report briefly outlines the process the American Health Care Association (AHCA) used to develop initial analytical files derived from MDS data and then provides distributions of patients, patient days, and average case mix derived from those data. The results reported below represent a level of detail on the distribution of patients and case mix across nursing facilities that is not generally available from other sources in such a comprehensive way.

METHODS

The first stage in the development of analytical files based on these data primarily involved establishing a record of the relationship of MDS assessments for each patient over time. Because the original data files are in relatively raw form, this task was complicated by a collection of factors including, but not limited to: incomplete and/or inconsistently reported key dates on the record; apparently missing or otherwise out-of-sequence assessments; the lack of a formal discharge record requirement when a Medicare stay ends but the patient remains in the facility; some duplication of reporting across Medicare and non-Medicare periods of a stay; and the sheer size and complexity of the files.

¹ MDS data were made available to the AHCA as part of a project entitled, "The Acuity of Persons Living in Nursing Homes and the Quality of Care Provided" under CMS data use agreement #11919.

It is important to note that there are two independent but parallel reporting schedules for Medicare and non-Medicare assessments.² Generally, a comprehensive MDS assessment is required upon admission to a certified nursing facility for all patients regardless of payer source (including private-pay patients) followed, at a minimum, by somewhat briefer quarterly assessments and full or comprehensive annual assessments as long as the patient remains in the facility. In addition to this regular OBRA schedule, a more accelerated set of full assessments is required for patients enrolled under Medicare. Requirements for Medicare reporting include 5-day, 14-day, 30-day, 60-day, and 90-day assessments that can serve the dual reporting requirements of the regular OBRA and Medicare reporting schedules. Thus, full MDS data system files include two intertwined series of assessments. Regular OBRA and Medicare assessments can be distinguished largely by record type associated with reasons for assessment. MDS system files also include certain tracking records that reflect discharge from and reentry to facilities.

“Spawning” records. In order to create a formal sequence of MDS assessments, a series of decision rules was established to assign effective start and end dates to each assessment depending on the type of record as well as prior and subsequent records, if any. This process involves arraying all records for a given individual within some defined period, generally a year, and then “spawning” (or creating) one record per assessment that includes core administrative and tracking information for that record, such as patient and facility identification (ID), the type of record and reasons for assessment, effective start and end dates, and a submission date for the assessment.

As an example of the underlying decision rules, a start date must be assigned to each assessment. Both regular OBRA and Medicare admission assessments generally include a date of entry which serves as the effective start date for a nursing facility stay. All assessment records also have an assessment reference date (ARD) that is suppose to fall within a prescribed time frame relative to the type of record. A regular OBRA admission assessment should be completed within 14 days of the admission. The reference date of a Medicare 5-day assessment should be within 5 days of the admission, although there are grace period days that can be used. Because the date of entry may be missing or otherwise suspicious on some admission assessments (e.g., some dates of entry on OBRA records reflect an initial date of entry prior to the current admission) the assessment reference date is used to test the veracity of the recorded date of entry. If the recorded date of entry on a given record is not consistent with the ARD, further decision rules are used to establish a start date for that records. Start dates for non-admission OBRA and Medicare assessments are generally set as the assessment reference date of those records.

Discharge records provide the most reliable end date for each type of assessment. However, other decision rules often need to be applied. For example, the end date associated with an OBRA quarterly assessment that is followed by another related quarterly or annual assessment is set as the date one day prior to the reference date of that following record. Similarly, the end date of most Medicare assessments that are not followed by a discharge record is set relative to the reference date of a subsequent related assessment. Formally, non-admission assessments are

² US Dept. Of Health & Human Services, Centers for Medicare & Medicaid Services, *Long-Term Care Resident Assessment Instrument User’s Manual*, Baltimore, MD, December 2002.

required to be completed within a certain number of days after the prior related assessment. Because that is not always the case, a variety of decision rules are used to establish an assumed end date when needed. Medicare assessments that are followed by non-admission OBRA assessments from the same facility generally suggest that the patient made some transition from Medicare to non-Medicare status. In those cases, the end date of the Medicare record is set at the assessment reference date for that record and the start date of the associated OBRA assessment is set as one day after the end date of the Medicare record.

Stay Records. Once the initial spawning process is complete, a second series of decision rules is used to construct stay records that combine information across associated individual assessments. More precisely, rules are used to establish uninterrupted segments of stays. These rules are reasonably straight forward for regular OBRA stays but a long-term custodial stay may be punctuated with an acute hospital stay and possibly include a Medicare-covered stay period. Medicare stays are subject to additional constraints related to federal regulations that limit Medicare coverage of Part A skilled nursing facility (SNF) stays. For Medicare records, the number of days associated with any given “spell-of-illness” is limited to 100 and, generally, any days over 100 are associated with a non-Medicare stay. While considerable effort has been made to include appropriate rules governing what is covered under Medicare, it has not been possible to reflect the full set of regulations that affect Medicare Part A coverage. One limitation of the MDS data used in this analysis is that person-level identifiers sufficient to link the MDS data with other related CMS data sources (e.g., SNF claims data) that might be useful in refining the existing decision rules are not available on the files. While some stay-oriented results will be presented, in particular length of stay for Medicare coverage, a fuller examination and characterization of nursing home stays across programs is beyond this preliminary report and will be addressed in subsequent analyses.

Resource Utilization Group (RUG) Assignments and Case Mix. Except for a special RUG assignment on all Medicare records, the MDS data AHCA received from CMS did not include a uniform RUG assignment on all assessments. Consequently, uniform RUG category assignments were made for all records using standard (hierarchical) RUG coding provided by CMS.³ Once the RUG assignments were made, case-mix weights associated with each RUG were attached to the records. Case-mix differences examined in this initial analysis are based on the case-mix weights that are routinely applied for payment purposes under the Medicare SNF Prospective Payment System (PPS). While alternative case-mix weighting schemes are available, particularly those defined specifically for Medicaid programs, standard Medicare case-mix weights were applied across all records in this analysis because they are most consistent with the widest current application of the system.

³ The Medicare program uses a special Medicare RUG assignment that includes an accounting of projected therapy minutes for SNF prospective payment purposes. This special assignment is included on MDS Medicare records. Although it can potentially be applied to non-Medicare assessments, the specific variable reflecting projected therapy that is needed to make the special assignment is not uniformly available on non-Medicare assessment records. Thus, caution should be taken in comparing case mix measures in this report with reports of Medicare case mix measures based on SNF PPS data.

As it is applied under Medicare, the RUG system includes 44 categories, each of which falls within one of a hierarchy of seven levels of care.⁴ Each record is associated with one RUG category at a time and the days of care associated with each record are defined by the record's start and end dates. All RUG categories are assigned a nursing-only relative weight but only the 14 Rehabilitation categories are assigned a separate case-mix weight for therapy. For this analysis, separate nursing and therapy case-mix weights were attached to each record. The total relative weight associated with any given record is the RUG weight times the number of days. Records can then be aggregated at various levels, such as type of facility and by state. The mean case-mix weight per patient day is calculated by dividing the total weighted case mix across records for any given aggregation of records by the total patient days associated with those records. In addition to other levels, these data can be aggregated for any given period of time – including a specific day - using the start and end dates included on each record.

All Medicare MDS assessments support RUG category assignment. However, while admission and annual OBRA assessments are required to include all the data elements necessary to support RUG assignment, federal regulations do not make that requirement of regular quarterly submissions. Many states have additional reporting requirements that support RUG assignment, typically because those states use the RUG system in some way to set state Medicaid payment rates for nursing facility care. Where states do not have such requirements, a high proportion of assessments tends to be assigned a default (i.e., the lowest) case-mix weight. In order to use available case-mix information as effectively as possible, a “current” RUG assignment, based on the most recent previous non-default RUG assignment, has been defined for records that are otherwise assigned the default RUG category. For example, a common series of OBRA assessments for any given year period includes one annual and three quarterly assessments. In states where quarterly assessments do not support RUG assignment, the RUG category associated with the most recent previous annual or admission assessment is attached to the quarterly assessment. Even with this adjustment, the percentage of non-Medicare days associated with the default RUG category is relatively high in states with limited reporting requirements. While the “current” RUG assignment is generally used for the analysis described here, some of the results presented below reflect just those states that supported RUG assignments in respective years on all OBRA assessments.

RESULTS

Distribution of Patients and Patient Days

Table 1 shows the distribution of all patients included in the AHCA MDS database residing in certified nursing facilities during CY 2000 by age category, gender and Medicare/Non-Medicare program status.⁵ Nearly 90 percent of all nursing facility patients, and a slightly higher percentage of non-Medicare patients, were 65 years of age or older in that year. Two-thirds of

⁴ The 7 levels of RUG categories in descending hierarchical orders (and the number of RUG categories at each level) include: Rehabilitation (14); Extensive Services (3); Special Care (3); Clinically Complex(6); Impaired Cognition (4); Behavior Problems (4); and, Reduced Physical Function (10). A 45th category is used as a default assignment when an MDS assessment is incomplete or otherwise unavailable. The lowest nursing-only weight is used for the default category.

⁵ The most detailed distributions of patients and patient days presented in this report are based on CY 2000 MDS assessments because there are modest transition effects associated with the introduction of Medicare reporting requirements evident in data for 1999 and a limited potential reporting lag for 2001. Because those effects are limited, they do not tend to affect case mix measures as reported for this analysis.

**TABLE 1:
DISTRIBUTION OF PATIENTS BY AGE, GENDER, AND PROGRAM STATUS: CY 2000**

	% of program category		Female		Male	
	Total	% of row	Total	% of row	Total	% of row
All Patients						
0-17	7,435	0.2%	4,114	55.3%	3,321	44.7%
18-44	68,235	2.2%	27,714	40.6%	40,521	59.4%
45-54	92,031	3.0%	43,123	46.9%	48,908	53.1%
55-64	170,761	5.6%	88,054	51.6%	82,707	48.4%
65-74	495,498	16.2%	293,321	59.2%	202,177	40.8%
75-84	1,100,865	36.1%	747,952	67.9%	352,913	32.1%
85-94	966,900	31.7%	749,896	77.6%	217,004	22.4%
95+	148,340	4.9%	127,310	85.8%	21,030	14.2%
Total	3,050,065	100%	2,081,484	68.2%	968,581	31.8%
Medicare						
0-17	2,486	0.2%	1,647	66.3%	839	33.7%
18-44	14,792	1.0%	6,188	41.8%	8,604	58.2%
45-54	25,932	1.8%	12,565	48.5%	13,367	51.5%
55-64	60,617	4.2%	32,047	52.9%	28,570	47.1%
65-74	286,705	20.0%	171,622	59.9%	115,083	40.1%
75-84	588,273	41.0%	386,385	65.7%	201,888	34.3%
85-94	412,863	28.8%	302,621	73.3%	110,242	26.7%
95+	43,131	3.0%	34,730	80.5%	8,401	19.5%
Total	1,434,799	100%	947,805	66.1%	486,994	33.9%
Non-Medicare						
0-17	5,307	0.3%	2,707	51.0%	2,600	49.0%
18-44	57,312	2.8%	23,042	40.2%	34,270	59.8%
45-54	73,040	3.5%	33,665	46.1%	39,375	53.9%
55-64	125,827	6.1%	63,534	50.5%	62,293	49.5%
65-74	274,163	13.3%	159,145	58.0%	115,018	42.0%
75-84	683,413	33.1%	477,125	69.8%	206,288	30.2%
85-94	717,015	34.8%	572,392	79.8%	144,623	20.2%
95+	126,182	6.1%	110,105	87.3%	16,077	12.7%
Total	2,062,259	100%	1,441,715	69.9%	620,544	30.1%

Source: AHCA calculations based on the Long-Term Care Minimum Data Set

patients were women. An increasing percentage of patients are women as the age category increases. Over 3 million individuals had at least one stay in a (Medicare- and/or Medicaid-certified) nursing facility according to the MDS files: more than 1.4 million individuals had a Medicare stay and 2 million had a non-Medicare stay. Of the total population, close to 455 thousand had both a Medicare and a non-Medicare stay during the year.

Patient Days. Table 2 is a summary of total patient days by Medicare/Non-Medicare status. These (MDS-based) results, as well as comparable results for 1999 and 2001 (not shown) comport well with known patterns of the distribution of patient days across program status and type of facility. Compared with AHCA analysis based on 100 percent Medicare SNF claim records for CY 2000,⁶ the total Medicare days of 46.7 million from the MDS data was approximately 6 percent higher than total covered days of 44.1 in the claims data, and 6.6 percent higher than the 43.8 million days reported by the Medicare Payment Advisory Commission (MedPAC).⁷ The higher MDS-based results are primarily attributable to limits in the modeling of Medicare Part A coverage rules noted above. Total covered and non-covered days included in the Medicare claims file equaled roughly 49 million for the same period. To the extent that they are high as reported in Table 2 due to weaknesses in accounting for Medicare coverage rules, MDS-based Medicare patient days should otherwise be considered Non-Medicare patient days. Thus, total MDS-based patient days shown in Table 2 are not likely to be high simply because of over-reporting of Medicare days.

**TABLE 2:
TOTAL PATIENT DAYS BY DATA SOURCE,
MEDICARE/NON-MEDICARE STATUS AND TYPE OF FACILITY: CY 2000**

	Total		Freestanding		Hospital-Based	
	Days	% of row	Days	% of row	Days	% of row
MDS-based						
Medicare	46,715,407	100%	39,562,256	84.7%	7,153,151	15.3%
Non-Medicare	483,291,958	100%	461,163,490	95.4%	22,128,468	4.6%
Total	530,007,365	100%	500,725,746	94.5%	29,281,619	5.5%
OSCAR-based						
Medicare	47,447,417	100%	40,079,105	84.5%	7,368,312	15.5%
Non-Medicare	496,733,553	100%	473,350,728	95.3%	23,365,532	4.7%
Total	544,180,970	100%	513,429,833	94.3%	30,733,844	5.6%

Source: AHCA calculations based on the Long-Term Care Minimum Data Set and Online Survey, Certification and Reporting (OSCAR) data.

⁶ AHCA treatment of Medicare claims data for CY 2000 is reported in some detail in Tucker, A, and F. Decker, "Case-Mix Comparison Between Hospital-Based and Freestanding Facilities: A Preliminary Report," April 2003 – available at http://www.ahca.org/research/casemix_030415.pdf [June, 2004]. Note that case mix reported Tucker and Decker, 2003 is based on the "special" Medicare SNF PPS RUG assignment.

⁷ Medicare Payment Advisory Commission, "Report to Congress: Medicare Payment Policy", March 2004, Washington, DC. MedPAC data include Puerto Rico, the Virgin Islands and unknown - which are not included in AHCA data.

A full analysis of length of stay across facilities and payment programs is beyond the scope of this report, particularly because of the number of definitional issues that need to be addressed to report non-Medicare stay data. However, one measure that is relatively straightforward and commonly reported in other sources is the average length of stay for Medicare stays. In its March 2004 report, MedPAC reported average days per discharge to be 24.0 for SNF services in 2000. Comparable results drawn from the MDS data were remarkably close: the average number of days associated with Medicare stays in 2000 that had a record of discharge was 24.8 days. Freestanding and hospital-based facilities had average Medicare stays of 28.5 and 14.6 days, respectively.

There are only limited sources available for comprehensive national reporting of non-Medicare patient days in nursing facilities. Online Survey, Certification and Reporting (OSCAR) data are the most consistent and comprehensive source of data on non-Medicare days.⁸ OSCAR data are drawn from the ongoing CMS survey of Medicare- and/or Medicaid-certified nursing facilities,⁹ reflecting point-in-time estimates of patient days. Surveys are conducted for all certified nursing facilities at least every 15 months. In order to estimate total patient days for a given annual period from OSCAR data, the sum of survey day estimates can be multiplied by the number of days in a year. This estimate is crude because it requires the (generally defensible) assumption that those estimates can be treated as a representative annual sample as a whole.

Table 2 also reflects estimates of patient days based on data drawn from a historical database of OSCAR data that is maintained by AHCA. These estimates were based on the point-in-time measures of patient days for each of four quarterly summaries, which were annualized and then averaged across the quarterly summaries. OSCAR-based estimates of patient days tend to be 2 to 5 percent higher than MDS-based estimates across programs and type of facility for CY 2000.

Table 3 presents the distribution of patient days by state for Medicare and non-Medicare populations for CY 2000.¹⁰ Overall, these data suggest that Medicare-covered days were roughly 8.8 percent of total patient days within a range of from 4.09 percent (Iowa) to 13.76 percent (Idaho) across states.¹¹ Conversely, non-Medicare patient days were roughly 91.2 percent overall within a range of from 86.24 percent (Idaho) to 95.91 percent (Iowa) across states. Table 4 presents results comparable to those in Table 3 but with separate distributions for freestanding and hospital-based facilities. Read in the context of Table 3, the 8.8 percent of patient days attributable to Medicare (Table 3) can be broken down into 7.46 percent and 1.35 percent provided in freestanding and hospital-based facilities, respectively. Together, 5.53 percent of all patient days in nursing facilities were provided in hospital-based facilities.

⁸ In addition to OSCAR data, the National Center for Health Statistics publishes a National Nursing Home Survey that includes data regarding the number of resident admissions and average length of stay by payer sources based on point-in-time survey data. However, those data are not appropriate to make dependable estimates of total Medicare or Non-Medicare days without considerable adjustment and the most recent available data cover 1999.

⁹ Both MDS and OSCAR data reflect government certified facilities. Private facilities are not included.

¹⁰ Although the MDS data include some information about payer source that might be used to estimate Medicaid and private-pay patient days within the broader category of non-Medicare days, the payer-source variables are known to be inconsistently reported, particularly in the early years of MDS reporting, and require more testing before they can be used for that purpose.

¹¹ It is important to note that these data reflect all certified facilities, including those that do not provide Medicare coverage.

**TABLE 3:
DISTRIBUTION OF PATIENT DAYS BY STATE AND
MEDICARE/NON-MEDICARE STATUS: CY 2000**

STATE	Medicare			Non-Medicare		
	Days	% of column	% of row	Days	% of column	% of row
All States	46,715,407	100%	8.81%	483,291,958	100%	91.19%
Alabama	842,287	1.80%	9.95%	7,626,121	1.58%	90.05%
Alaska	19,431	0.04%	8.87%	199,572	0.04%	91.13%
Arizona	398,459	0.85%	8.19%	4,469,581	0.92%	91.81%
Arkansas	405,999	0.87%	6.03%	6,324,979	1.31%	93.97%
California	3,105,130	6.65%	8.52%	33,324,178	6.90%	91.48%
Colorado	387,612	0.83%	6.37%	5,699,206	1.18%	93.63%
Connecticut	1,228,970	2.63%	11.52%	9,443,723	1.95%	88.48%
Delaware	123,187	0.26%	9.78%	1,136,994	0.24%	90.22%
District of Col.	69,498	0.15%	7.04%	918,064	0.19%	92.96%
Florida	3,415,615	7.31%	13.52%	21,843,375	4.52%	86.48%
Georgia	963,888	2.06%	7.36%	12,136,794	2.51%	92.64%
Hawaii	98,360	0.21%	7.58%	1,200,030	0.25%	92.42%
Idaho	230,676	0.49%	13.76%	1,445,273	0.30%	86.24%
Illinois	2,222,547	4.76%	7.40%	27,804,838	5.75%	92.60%
Indiana	1,539,166	3.29%	10.04%	13,793,983	2.85%	89.96%
Iowa	431,750	0.92%	4.09%	10,135,720	2.10%	95.91%
Kansas	393,842	0.84%	5.16%	7,233,195	1.50%	94.84%
Kentucky	814,524	1.74%	9.74%	7,550,956	1.56%	90.26%
Louisiana	532,117	1.14%	4.93%	10,254,620	2.12%	95.07%
Maine	305,383	0.65%	11.56%	2,337,071	0.48%	88.44%
Maryland	920,144	1.97%	10.11%	8,176,836	1.69%	89.89%
Massachusetts	1,647,238	3.53%	9.37%	15,923,859	3.29%	90.63%
Michigan	1,648,119	3.53%	10.75%	13,676,549	2.83%	89.25%
Minnesota	970,906	2.08%	7.06%	12,780,491	2.64%	92.94%
Mississippi	432,071	0.92%	7.85%	5,070,143	1.05%	92.15%
Missouri	958,381	2.05%	6.75%	13,229,656	2.74%	93.25%
Montana	173,384	0.37%	8.02%	1,988,990	0.41%	91.98%
Nebraska	311,251	0.67%	5.84%	5,022,778	1.04%	94.16%
Nevada	147,834	0.32%	10.08%	1,318,768	0.27%	89.92%
New Hampshire	223,422	0.48%	8.52%	2,399,073	0.50%	91.48%
New Jersey	1,738,833	3.72%	10.77%	14,405,436	2.98%	89.23%
New Mexico	123,220	0.26%	5.65%	2,057,659	0.43%	94.35%
New York	3,873,131	8.29%	9.64%	36,323,806	7.52%	90.36%
North Carolina	1,472,990	3.15%	11.11%	11,783,656	2.44%	88.89%
North Dakota	124,534	0.27%	5.45%	2,159,971	0.45%	94.55%
Ohio	2,618,253	5.60%	8.95%	26,621,654	5.51%	91.05%

**TABLE 3 (continued):
DISTRIBUTION OF PATIENT DAYS BY STATE AND
MEDICARE/NON-MEDICARE STATUS: CY 2000**

STATE	Medicare			Non-Medicare		
	Days	% of column	% of row	Days	% of column	% of row
Oklahoma	432,257	0.93%	5.14%	7,973,272	1.65%	94.86%
Oregon	256,575	0.55%	7.22%	3,295,506	0.68%	92.78%
Pennsylvania	2,799,107	5.99%	9.32%	27,234,116	5.64%	90.68%
Rhode Island	245,223	0.52%	7.50%	3,025,682	0.63%	92.50%
South Carolina	617,603	1.32%	10.70%	5,156,726	1.07%	89.30%
South Dakota	141,285	0.30%	5.55%	2,404,374	0.50%	94.45%
Tennessee	1,196,737	2.56%	9.57%	11,302,321	2.34%	90.43%
Texas	2,296,403	4.92%	7.18%	29,682,549	6.14%	92.82%
Utah	255,258	0.55%	12.52%	1,784,308	0.37%	87.48%
Vermont	119,423	0.26%	9.74%	1,106,781	0.23%	90.26%
Virginia	1,024,276	2.19%	10.28%	8,936,578	1.85%	89.72%
Washington	841,535	1.80%	10.94%	6,849,567	1.42%	89.06%
West Virginia	381,508	0.82%	10.31%	3,320,626	0.69%	89.69%
Wisconsin	1,120,440	2.40%	8.19%	12,558,966	2.60%	91.81%
Wyoming	75,625	0.16%	8.23%	842,988	0.17%	91.77%

Source: AHCA HSRE calculations based on Long-Term Care Minimum Data Set for calendar year 2000

Distribution of Average Patient Case Mix

Table 5 presents the distribution of patient days by RUG category level for Medicare (section a) and non-Medicare (section b) populations for CY 2000. Separate results are shown for freestanding and hospital-based facilities. Generally, 65 percent of Medicare patient days were assigned to a Rehabilitation (Rehab) RUG category. The next highest percentage of patient days were assigned an Extensive Service RUG category. Hospital-based facilities have a slightly lower percentage of Rehab RUG days and a notably higher percentage of Extensive Service RUG days. Only 3.25 percent of Medicare patient days were assigned the lowest level of RUG categories.

The distribution of patient days by RUG category level is markedly different for non-Medicare-covered care because non-Medicare coverage is largely custodial while Medicare-covered days are more generally related to acute care episodes of care and more intense service needs. Roughly 5 percent of non-Medicare patient days are associated with a Rehab RUG category and close to 40 percent are associated with the lowest level of RUG category assignment. Hospital-based facilities generally have a similar but slightly higher percentage of the four highest levels of RUG categories as compared to freestanding facilities.

**TABLE 4:
DISTRIBUTION OF PATIENT DAYS BY STATE, MEDICARE/NON-MEDICARE STATUS AND TYPE OF FACILITY: CY 2000**

STATE	Medicare						Non-Medicare					
	Freestanding			Hospital-Based			Freestanding			Hospital-Based		
	Days (000)	% of col.	% of row	Days (000)	% of col.	% of row	Days (000)	% of col.	% of row	Days (000)	% of col.	% of row
All States	39,562	100%	7.46%	7,153	100%	1.35%	461,163	100%	87.01%	22,128	100%	4.18%
Alabama	783	1.98%	9.24%	60	0.83%	0.70%	7,220	1.57%	85.25%	407	1.84%	4.80%
Alaska	9	0.02%	3.99%	11	0.15%	4.88%	137	0.03%	62.78%	62	0.28%	28.35%
Arizona	326	0.82%	6.69%	73	1.02%	1.49%	4,319	0.94%	88.72%	151	0.68%	3.10%
Arkansas	320	0.81%	4.75%	86	1.21%	1.28%	6,135	1.33%	91.15%	190	0.86%	2.82%
California	2,440	6.17%	6.70%	665	9.30%	1.83%	30,909	6.70%	84.85%	2,415	10.91%	6.63%
Colorado	321	0.81%	5.28%	66	0.93%	1.09%	5,465	1.19%	89.78%	234	1.06%	3.85%
Connecticut	1,194	3.02%	11.19%	35	0.48%	0.32%	9,113	1.98%	85.38%	331	1.50%	3.10%
Delaware	101	0.25%	7.99%	22	0.31%	1.78%	1,028	0.22%	81.55%	109	0.49%	8.68%
Distr. of Col.	48	0.12%	4.87%	21	0.30%	2.17%	782	0.17%	79.17%	136	0.62%	13.79%
Florida	3,018	7.63%	11.95%	397	5.56%	1.57%	21,394	4.64%	84.70%	450	2.03%	1.78%
Georgia	835	2.11%	6.37%	129	1.80%	0.98%	10,565	2.29%	80.65%	1,571	7.10%	12.00%
Hawaii	67	0.17%	5.17%	31	0.44%	2.41%	869	0.19%	66.93%	331	1.50%	25.49%
Idaho	181	0.46%	10.78%	50	0.70%	2.98%	1,297	0.28%	77.39%	148	0.67%	8.85%
Illinois	1,744	4.41%	5.81%	478	6.69%	1.59%	27,379	5.94%	91.18%	426	1.92%	1.42%
Indiana	1,230	3.11%	8.02%	310	4.33%	2.02%	13,572	2.94%	88.51%	222	1.00%	1.45%
Iowa	296	0.75%	2.80%	136	1.90%	1.29%	9,689	2.10%	91.68%	447	2.02%	4.23%
Kansas	275	0.70%	3.61%	119	1.66%	1.56%	6,696	1.45%	87.79%	537	2.43%	7.05%
Kentucky	631	1.60%	7.55%	183	2.56%	2.19%	7,126	1.55%	85.18%	425	1.92%	5.08%
Louisiana	351	0.89%	3.26%	181	2.53%	1.68%	10,091	2.19%	93.55%	164	0.74%	1.52%
Maine	283	0.72%	10.72%	22	0.31%	0.83%	2,275	0.49%	86.10%	62	0.28%	2.34%
Maryland	784	1.98%	8.62%	136	1.90%	1.50%	7,991	1.73%	87.84%	186	0.84%	2.05%
Massachusetts	1,444	3.65%	8.22%	203	2.84%	1.16%	15,845	3.44%	90.18%	79	0.36%	0.45%
Michigan	1,600	4.04%	10.44%	48	0.68%	0.32%	13,275	2.88%	86.62%	402	1.82%	2.62%
Minnesota	838	2.12%	6.09%	133	1.86%	0.97%	11,225	2.43%	81.63%	1,555	7.03%	11.31%
Mississippi	341	0.86%	6.19%	91	1.28%	1.66%	4,601	1.00%	83.63%	469	2.12%	8.52%

TABLE 4 (continued):

DISTRIBUTION OF PATIENT DAYS BY STATE, MEDICARE/NON-MEDICARE STATUS AND TYPE OF FACILITY: CY 2000

STATE	Medicare						Non-Medicare					
	Freestanding			Hospital-Based			Freestanding			Hospital-Based		
	Days (000)	% of col.	% of row	Days (000)	% of col.	% of row	Days (000)	% of col.	% of row	Days (000)	% of col.	% of row
Missouri	675	1.71%	4.76%	284	3.97%	2.00%	12,877	2.79%	90.76%	352	1.59%	2.48%
Montana	107	0.27%	4.97%	66	0.92%	3.05%	1,483	0.32%	68.57%	506	2.29%	23.41%
Nebraska	225	0.57%	4.22%	86	1.21%	1.62%	4,494	0.97%	84.25%	529	2.39%	9.92%
Nevada	112	0.28%	7.64%	36	0.50%	2.44%	1,169	0.25%	79.72%	150	0.68%	10.20%
New Hampshire	217	0.55%	8.28%	6	0.09%	0.24%	2,342	0.51%	89.29%	58	0.26%	2.20%
New Jersey	1,663	4.20%	10.30%	76	1.06%	0.47%	14,076	3.05%	87.19%	329	1.49%	2.04%
New Mexico	99	0.25%	4.55%	24	0.34%	1.10%	2,032	0.44%	93.19%	25	0.11%	1.16%
New York	3,507	8.86%	8.72%	366	5.12%	0.91%	32,665	7.08%	81.26%	3,659	16.54%	9.10%
North Carolina	1,310	3.31%	9.88%	163	2.28%	1.23%	11,192	2.43%	84.43%	591	2.67%	4.46%
North Dakota	93	0.23%	4.06%	32	0.44%	1.39%	1,775	0.38%	77.71%	385	1.74%	16.84%
Ohio	2,227	5.63%	7.62%	391	5.47%	1.34%	26,274	5.70%	89.86%	347	1.57%	1.19%
Oklahoma	297	0.75%	3.54%	135	1.89%	1.61%	7,906	1.71%	94.06%	67	0.30%	0.80%
Oregon	245	0.62%	6.89%	12	0.16%	0.33%	3,226	0.70%	90.81%	70	0.32%	1.96%
Pennsylvania	2,339	5.91%	7.79%	460	6.43%	1.53%	26,786	5.81%	89.19%	448	2.02%	1.49%
Rhode Island	231	0.58%	7.06%	14	0.20%	0.44%	3,021	0.66%	92.37%	4	0.02%	0.13%
South Carolina	519	1.31%	8.99%	99	1.38%	1.71%	4,970	1.08%	86.07%	187	0.84%	3.23%
South Dakota	121	0.31%	4.77%	20	0.28%	0.78%	1,908	0.41%	74.94%	497	2.24%	19.51%
Tennessee	926	2.34%	7.41%	270	3.78%	2.16%	10,844	2.35%	86.76%	458	2.07%	3.67%
Texas	1,800	4.55%	5.63%	496	6.94%	1.55%	29,517	6.40%	92.30%	165	0.75%	0.52%
Utah	206	0.52%	10.10%	49	0.69%	2.41%	1,747	0.38%	85.64%	38	0.17%	1.84%
Vermont	116	0.29%	9.44%	4	0.05%	0.30%	1,061	0.23%	86.52%	46	0.21%	3.75%
Virginia	923	2.33%	9.27%	101	1.41%	1.01%	8,543	1.85%	85.77%	394	1.78%	3.95%
Washington	767	1.94%	9.98%	74	1.04%	0.96%	6,661	1.44%	86.60%	189	0.85%	2.46%
West Virginia	248	0.63%	6.70%	133	1.86%	3.60%	3,191	0.69%	86.19%	130	0.59%	3.50%
Wisconsin	1,064	2.69%	7.78%	57	0.79%	0.41%	11,726	2.54%	85.72%	833	3.76%	6.09%
Wyoming	66	0.17%	7.14%	10	0.14%	1.09%	680	0.15%	74.07%	163	0.73%	17.70%

Source: AHCA HSRE calculations based on Long-Term Care Minimum Data Set for calendar year 2000

**TABLE 5:
DISTRIBUTION OF PATIENT DAYS BY RUG LEVEL, MEDICARE/NON-MEDICARE
STATUS, AND TYPE OF FACILITY: CY 2000**

a) RUG Level	Medicare					
	Total		Freestanding		Hospital-Based	
	Days	% of col.	Days	% of col.	Days	% of col.
Total	46,715,407	100%	39,562,256	100%	7,153,151	100%
1: Rehabilitation	30,687,309	65.69%	26,185,138	66.19%	4,502,171	62.94%
2: Extensive Services	5,362,056	11.48%	4,010,178	10.14%	1,351,878	18.90%
3: Special Care	4,455,433	9.54%	3,725,209	9.42%	730,224	10.21%
4: Clinically Complex	4,227,395	9.05%	3,789,418	9.58%	437,977	6.12%
5: Impaired Cognition	414,802	0.89%	399,824	1.01%	14,978	0.21%
6: Behavioral	39,556	0.08%	38,178	0.10%	1,378	0.02%
7: Reduced Physical	1,516,609	3.25%	1,403,977	3.55%	112,632	1.57%
Default	12,247	0.03%	10,334	0.03%	1,913	0.03%

b) RUG Level	Non-Medicare					
	Total		Freestanding		Hospital-Based	
	Days	% of col.	Days	% of col.	Days	% of col.
Total	483,291,958	100%	461,163,490	100%	22,128,468	100%
1: Rehabilitation	23,311,852	4.82%	22,001,262	4.77%	1,310,590	5.92%
2: Extensive Services	9,932,764	2.06%	8,804,237	1.91%	1,128,527	5.10%
3: Special Care	38,120,460	7.89%	36,001,581	7.81%	2,118,879	9.58%
4: Clinically Complex	93,187,079	19.28%	88,425,043	19.17%	4,762,036	21.52%
5: Impaired Cognition	79,821,349	16.52%	77,130,227	16.73%	2,691,122	12.16%
6: Behavioral	7,986,876	1.65%	7,724,496	1.68%	262,380	1.19%
7: Reduced Physical	198,794,733	41.13%	190,270,528	41.26%	8,524,205	38.52%
Default	32,136,845	6.65%	30,806,116	6.68%	1,330,729	6.01%

Notes: Standard (hierarchical) RUG assignments were applied across all (Medicare and Non-Medicare) records.

In order to show the level of differences in RUG distributions that might be associated with the use of the “current” RUG assignment described above for Non-Medicare assessments, Table 6 shows results comparable to Table 5 but limited to states that required data sufficient to make RUG assignment in quarterly OBRA assessments in CY 2000. While there is a slight increase in the percentage of days attributable to a Rehab RUG for the Medicare population using a standard assignment in the selected states (section a), there is a slight decrease in that percentage for the non-Medicare population.

In addition to the overall (combined) case-mix weight, this analysis reflects separate weights for nursing and therapy resources. Table 7 shows average case-mix weights for Medicare and non-

**TABLE 6:
DISTRIBUTION OF PATIENT DAYS BY RUG LEVEL, MEDICARE/NON-MEDICARE
STATUS, AND TYPE OF FACILITY (Selected States): CY 2000**

a)	Medicare (Selected States)					
	Total		Freestanding		Hospital-Based	
	Days	% of col.	Days	% of col.	Days	% of col.
RUG Level						
Total	26,184,138	100%	22,010,538	100%	4,173,600	100%
1: Rehabilitation	17,468,816	66.72%	14,795,567	67.22%	2,673,249	64.05%
2: Extensive Services	2,930,368	11.19%	2,179,863	9.90%	750,505	17.98%
3: Special Care	2,455,222	9.38%	2,035,987	9.25%	419,235	10.04%
4: Clinically Complex	2,276,189	8.69%	2,023,111	9.19%	253,078	6.06%
5: Impaired Cognition	198,350	0.76%	190,828	0.87%	7,522	0.18%
6: Behavioral	19,084	0.07%	18,269	0.08%	815	0.02%
7: Reduced Physical	830,700	3.17%	762,813	3.47%	67,887	1.63%
Default	5,409	0.02%	4,100	0.02%	1,309	0.03%

b)	Non-Medicare (Selected States)					
	Total		Freestanding		Hospital-Based	
	Days	% of col.	Days	% of col.	Days	% of col.
RUG Level						
Total	261,099,738	100%	250,547,803	100%	10,551,935	100%
1: Rehabilitation	11,541,712	4.42%	10,983,590	4.38%	558,122	5.29%
2: Extensive Services	5,201,196	1.99%	4,777,397	1.91%	423,799	4.02%
3: Special Care	22,205,369	8.50%	21,098,370	8.42%	1,106,999	10.49%
4: Clinically Complex	55,246,709	21.16%	52,689,897	21.03%	2,556,812	24.23%
5: Impaired Cognition	44,745,662	17.14%	43,420,487	17.33%	1,325,175	12.56%
6: Behavioral	4,654,907	1.78%	4,541,107	1.81%	113,800	1.08%
7: Reduced Physical	115,598,737	44.27%	111,184,124	44.38%	4,414,613	41.84%
Default	1,905,446	0.73%	1,852,831	0.74%	52,615	0.50%

Notes: Standard (hierarchical) RUG assignments were applied across all (Medicare and Non-Medicare) records. States include: CO, FL, ID, IL, IN, KS, KY, ME, MO, MS, MT, NC, ND, NY, OH, PA, SD, TX, VA, VT, WA

Medicare populations for all certified nursing facilities, as well as separate average weights for freestanding and hospital-based facilities. Based on all states, as shown in the leftmost columns of the table, the average nursing weight for non-Medicare patient days is roughly two-thirds of that for Medicare patient days. The average therapy weight for non-Medicare patient days is a small fraction of that for the Medicare population. The average combined nursing and therapy case mix for the non-Medicare population is less than half that of the Medicare population. These results are generally consistent with the fact that Medicare coverage is associated with more intense resource use related to acute care services and non-Medicare populations are largely defined as custodial care.

**TABLE 7:
AVERAGE CASE MIX BY MEDICARE/NON-MEDICARE STATUS
AND TYPE OF FACILITY: CY 2000**

	ALL STATES			SELECTED STATES		
	Case-Mix Weight			Case-Mix Weight		
	Nursing	Therapy	Combined	Nursing	Therapy	Combined
Medicare						
All Facilities	1.077	0.729	1.807	1.082	0.729	1.810
Freestanding	1.068	0.747	1.815	1.073	0.747	1.820
Hospital-Based	1.131	0.631	1.762	1.126	0.634	1.760
Non-Medicare						
All Facilities	0.728	0.044	0.773	0.746	0.039	0.784
Freestanding	0.726	0.044	0.770	0.744	0.038	0.782
Hospital-Based	0.773	0.055	0.829	0.783	0.048	0.831

Notes: The category "Selected States" includes states that require OBRA quarterly reporting of MDS data sufficient to make RUG assignments. Only states that met this requirement for the full year are included. For CY 2000: CO, FL, ID, IL, IN, KS, KY, ME, MO, MS, MT, NC, ND, NY, OH, PA, SD, TX, VA, VT, WA. Source: AHCA calculations based on the Long-Term Care Minimum Data Set

For Medicare days in the columns labeled All States, hospital-based facilities tend to have a higher nursing case mix (by 5.9%), a lower therapy case mix (by 15.5%), and a lower combined case mix (by 2.9%) than do freestanding facilities. Differences in Medicare case mix across hospital-based and freestanding facilities were much the same in the group of selected states reported in Table 7, although the difference in the nursing weight was not as high (4.9%) and the difference in the combined weight was slightly higher (3.3%) across types of facilities. Hospital-based facilities tend to have a higher non-Medicare case mix for both component and combined case-mix measures. The percentage difference for the non-Medicare therapy case mix is close to 25 percent higher for hospital-based over freestanding facilities, although that difference does not significantly affect the overall therapy case mix because of the low percentage of non-Medicare patient days associated with hospital-based facilities.

There is a noticeable but relatively modest difference between all and selected states for non-Medicare case mix averages. Generally, the nursing case mix goes up and the therapy case mix goes down in the selected states. The average non-Medicare nursing case mix increases by roughly 2.4 percent in the selected states, although that increase is closer to 1 percent for hospital-based facilities. The average non-Medicare therapy case mix goes down by close to 13 percent but the combined weight average is higher overall in the selected states (by less than 2 percent) because the RUG categories that are associated with the therapy weight (Rehab RUG categories) are a small percentage of non-Medicare patient days overall. One possible explanation for differences that do exist between all and the selected states is that, in the selected states, the assignment associated with any given assessment is closer in time to the assessment

than in the other states. The other states rely more on admission assessments that may tend to reflect more initial therapy needs than is the case on a longer-term basis. This also suggests, more generally, that MDS-based case mix measures drawn only from admission and/or annual assessments may overstate the ongoing overall case mix of a population to some degree.

Comparable results based on the Medicare population in the selected states are within less than .5 percent of those for all states. This is largely because there are no changes in RUG assignments associated with the Medicare data in these states.

Finally, Table 8 presents measures of average case mix for CY 1999 through CY 2001 (including the measures shown in Table 7) to provide an overview of how those measures have changed across that period. Generally, the combined measure of case mix went down between 1999 and 2000 and then had a minimal increase in 2001. The nursing-only weight increased each year during that time but the therapy-only weight went down in 2000 and remained the same for 2001. While the pattern for the nursing-only weight is the same (e.g., increasing across the period), the rebound in the combined weight for 2001 seems to be related to an increase in the therapy-only case mix for freestanding facilities. Therapy-only case mix for hospital-based facilities went down between 1999 and 2001. A very similar pattern of increased nursing-only case mix and a sharp decrease in the therapy-only case mix between 1999 and 2000 is evident for the non-Medicare results, although the combined nursing and therapy case mix increased slightly but steadily overall during that period. Results based on selected states are also much the same with at least one exception that hospital-based facilities maintained a downward trend in 2001. Addendum Table 1 presents patient days and average case mix by Medicare and non-Medicare program status and type of facility by state for calendar year 2000.

Summary Comments

While these are preliminary results that will be subject to continuing refinement over time, both the measures and patterns of the distribution of patient days and average case mix based on the AHCA MDS database comport remarkably well with those drawn from other comprehensive data sources. Important areas of future refinement include the integration of more detailed payer information, particularly Medicaid status, and further analysis of nursing facility stays. More importantly, over the coming year we expect to explore more fully how the analysis of LTC MDS data can contribute to better understanding of both existing and new measures of quality in nursing facilities. We will begin to explore the development of risk-adjusted quality indicators to measure change in a patient's condition over time as determinants of quality and the basis for analysis of the state of quality. We also expect to explore how to compare quality as measured by clinical quality indicators with quality as indicated by certification survey results reflected in OSCAR data.

**TABLE 8:
AVERAGE CASE MIX BY MEDICARE/NON-MEDICARE STATUS
AND TYPE OF FACILITY: CY 1999-2001**

		1999			2000			2001		
ALL STATES		Case-Mix Weight			Case-Mix Weight			Case-Mix Weight		
		Nursing	Therapy	Combined	Nursing	Therapy	Combined	Nursing	Therapy	Combined
Medicare	All	1.069	0.770	1.839	1.077	0.729	1.807	1.083	0.729	1.812
	FS	1.058	0.795	1.853	1.068	0.747	1.815	1.075	0.746	1.821
	HB	1.121	0.654	1.775	1.131	0.631	1.762	1.136	0.617	1.753
Non-Medicare	All	0.701	0.061	0.762	0.728	0.044	0.773	0.736	0.046	0.782
	FS	0.699	0.061	0.760	0.726	0.044	0.770	0.734	0.046	0.779
	HB	0.738	0.071	0.809	0.773	0.055	0.829	0.778	0.049	0.827
SELECTED STATES		Nursing	Therapy	Combined	Nursing	Therapy	Combined	Nursing	Therapy	Combined
Medicare	All	1.072	0.775	1.848	1.082	0.729	1.810	1.087	0.724	1.812
	FS	1.062	0.799	1.861	1.073	0.747	1.820	1.081	0.741	1.822
	HB	1.116	0.672	1.788	1.126	0.634	1.760	1.131	0.612	1.743
Non-Medicare	All	0.735	0.047	0.781	0.746	0.039	0.784	0.748	0.040	0.788
	FS	0.733	0.046	0.779	0.744	0.038	0.782	0.746	0.041	0.787
	HB	0.774	0.070	0.845	0.783	0.048	0.831	0.775	0.039	0.815

Notes: The category "Selected States" includes states that require OBRA quarterly reporting of MDS data sufficient to make RUG assignments.

For CY 2000: CO, FL, ID, IL, IN, KS, KY, ME, MO, MS, MT, NC, ND, NY, OH, PA, SD, TX, VA, VT, WA.

Source: AHCA calculations based on the Long-Term Care Minimum Data Set

**ADDENDUM TABLE 1:
PATIENT DAYS & AVG. CASE MIX BY STATE, MEDICARE/NON-MEDICARE STATUS & TYPE OF FACILITY: CY 2000**

STATE	MEDICARE					NON-MEDICARE				
	Days	% of Days	Nursing Case-Mix	Therapy Case-Mix	Combined Case-Mix	Days	% of Days	Nursing Case-Mix	Therapy Case-Mix	Combined Case-Mix
All States	46,715,407	100%	1.077	0.729	1.807	483,291,958	100%	0.728	0.044	0.773
F	39,562,256	84.7%	1.068	0.747	1.815	461,163,490	95.4%	0.726	0.044	0.770
H	7,153,151	15.3%	1.131	0.631	1.762	22,128,468	4.6%	0.773	0.055	0.829
AK	19,431	0.04%	1.091	0.415	1.506	199,572	0.04%	0.797	0.067	0.864
F	8,738	45.0%	1.104	0.340	1.445	137,488	68.9%	0.804	0.048	0.851
H	10,693	55.0%	1.081	0.476	1.556	62,084	31.1%	0.782	0.108	0.891
AL	842,287	1.80%	1.056	0.838	1.894	7,626,121	1.58%	0.698	0.039	0.737
F	782,599	92.9%	1.052	0.847	1.899	7,219,561	94.7%	0.698	0.040	0.738
H	59,688	7.1%	1.108	0.714	1.822	406,560	5.3%	0.695	0.021	0.716
AR	405,999	0.87%	1.085	0.692	1.777	6,324,979	1.31%	0.673	0.022	0.695
F	319,551	78.7%	1.061	0.710	1.771	6,135,006	97.0%	0.672	0.022	0.693
H	86,448	21.3%	1.174	0.625	1.799	189,973	3.0%	0.700	0.036	0.736
AZ	398,459	0.85%	1.073	0.780	1.853	4,469,581	0.92%	0.733	0.081	0.814
F	325,690	81.7%	1.054	0.809	1.863	4,318,789	96.6%	0.730	0.078	0.808
H	72,769	18.3%	1.159	0.649	1.808	150,792	3.4%	0.827	0.148	0.975
CA	3,105,130	6.65%	1.084	0.781	1.865	33,324,178	6.90%	0.761	0.098	0.860
F	2,439,684	78.6%	1.065	0.809	1.874	30,908,883	92.8%	0.751	0.096	0.846
H	665,446	21.4%	1.156	0.676	1.831	2,415,295	7.2%	0.895	0.134	1.029
CO	387,612	0.83%	1.035	0.860	1.895	5,699,206	1.18%	0.722	0.040	0.762
F	321,135	82.8%	1.025	0.886	1.910	5,464,907	95.9%	0.721	0.039	0.760
H	66,477	17.2%	1.083	0.736	1.818	234,299	4.1%	0.750	0.064	0.813

**ADDENDUM TABLE 1 (continued):
PATIENT DAYS & AVG. CASE MIX BY STATE, MEDICARE/NON-MEDICARE STATUS & TYPE OF FACILITY: CY 2000**

STATE	MEDICARE					NON-MEDICARE				
	Days	% of Days	Nursing Case-Mix	Therapy Case-Mix	Combined Case-Mix	Days	% of Days	Nursing Case-Mix	Therapy Case-Mix	Combined Case-Mix
CT	1,228,970	2.63%	1.008	0.643	1.651	9,443,723	1.95%	0.698	0.062	0.760
F	1,194,348	97.2%	1.007	0.643	1.650	9,112,846	96.5%	0.697	0.063	0.760
H	34,622	2.8%	1.039	0.639	1.679	330,877	3.5%	0.712	0.043	0.754
DC	69,498	0.15%	1.077	0.641	1.718	918,064	0.19%	0.705	0.042	0.747
F	48,117	69.2%	1.068	0.695	1.762	781,845	85.2%	0.699	0.040	0.739
H	21,381	30.8%	1.096	0.520	1.617	136,219	14.8%	0.741	0.048	0.789
DE	123,187	0.26%	1.065	0.716	1.781	1,136,994	0.24%	0.695	0.035	0.730
F	100,716	81.8%	1.060	0.725	1.785	1,027,622	90.4%	0.693	0.035	0.728
H	22,471	18.2%	1.087	0.676	1.763	109,372	9.6%	0.712	0.042	0.754
FL	3,415,615	7.31%	1.057	0.898	1.955	21,843,375	4.52%	0.755	0.061	0.816
F	3,018,248	88.4%	1.053	0.909	1.963	21,393,507	97.9%	0.754	0.060	0.814
H	397,367	11.6%	1.088	0.810	1.898	449,868	2.1%	0.804	0.110	0.914
GA	963,888	2.06%	1.081	0.687	1.768	12,136,794	2.51%	0.701	0.026	0.727
F	834,958	86.6%	1.079	0.702	1.780	10,565,331	87.1%	0.698	0.027	0.725
H	128,930	13.4%	1.094	0.591	1.685	1,571,463	12.9%	0.719	0.023	0.742
HI	98,360	0.21%	1.089	0.655	1.744	1,200,030	0.25%	0.768	0.028	0.795
F	67,077	68.2%	1.067	0.770	1.837	869,028	72.4%	0.752	0.026	0.778
H	31,283	31.8%	1.136	0.409	1.545	331,002	27.6%	0.808	0.033	0.841
IA	431,750	0.92%	1.095	0.679	1.774	10,135,720	2.10%	0.683	0.024	0.707
F	295,667	68.5%	1.067	0.715	1.782	9,688,581	95.6%	0.682	0.024	0.705
H	136,083	31.5%	1.155	0.602	1.757	447,139	4.4%	0.716	0.033	0.749

ADDENDUM TABLE 1 (continued):

PATIENT DAYS & AVG. CASE MIX BY STATE, MEDICARE/NON-MEDICARE STATUS & TYPE OF FACILITY: CY 2000

STATE	MEDICARE					NON-MEDICARE				
	Days	% of Days	Nursing Case-Mix	Therapy Case-Mix	Combined Case-Mix	Days	% of Days	Nursing Case-Mix	Therapy Case-Mix	Combined Case-Mix
ID	230,676	0.49%	1.054	0.756	1.810	1,445,273	0.30%	0.752	0.029	0.781
F	180,730	78.3%	1.049	0.759	1.808	1,297,031	89.7%	0.751	0.030	0.780
H	49,946	21.7%	1.072	0.748	1.820	148,242	10.3%	0.762	0.025	0.788
IL	2,222,547	4.76%	1.086	0.798	1.885	27,804,838	5.75%	0.679	0.023	0.702
F	1,744,343	78.5%	1.071	0.832	1.903	27,379,051	98.5%	0.676	0.022	0.699
H	478,204	21.5%	1.143	0.675	1.818	425,787	1.5%	0.840	0.091	0.931
IN	1,539,166	3.29%	1.071	0.757	1.828	13,793,983	2.85%	0.737	0.031	0.768
F	1,229,525	79.9%	1.059	0.776	1.835	13,571,961	98.4%	0.737	0.030	0.767
H	309,641	20.1%	1.122	0.680	1.802	222,022	1.6%	0.762	0.082	0.844
KS	393,842	0.84%	1.085	0.745	1.830	7,233,195	1.50%	0.707	0.021	0.728
F	275,192	69.9%	1.052	0.839	1.891	6,695,857	92.6%	0.707	0.021	0.727
H	118,650	30.1%	1.161	0.526	1.687	537,338	7.4%	0.717	0.020	0.737
KY	814,524	1.74%	1.136	0.560	1.697	7,550,956	1.56%	0.785	0.024	0.809
F	631,382	77.5%	1.124	0.585	1.710	7,126,035	94.4%	0.781	0.024	0.805
H	183,142	22.5%	1.177	0.474	1.652	424,921	5.6%	0.847	0.026	0.872
LA	532,117	1.14%	1.168	0.589	1.757	10,254,620	2.12%	0.667	0.029	0.696
F	351,260	66.0%	1.121	0.720	1.841	10,090,560	98.4%	0.665	0.028	0.693
H	180,857	34.0%	1.259	0.334	1.593	164,060	1.6%	0.806	0.075	0.881
MA	1,647,238	3.53%	1.066	0.648	1.714	15,923,859	3.29%	0.715	0.065	0.781
F	1,443,825	87.7%	1.060	0.630	1.690	15,844,922	99.5%	0.714	0.063	0.777
H	203,413	12.3%	1.106	0.779	1.885	78,937	0.5%	0.909	0.543	1.452

ADDENDUM TABLE 1 (continued):

PATIENT DAYS & AVG. CASE MIX BY STATE, MEDICARE/NON-MEDICARE STATUS & TYPE OF FACILITY: CY 2000

STATE	MEDICARE					NON-MEDICARE				
	Days	% of Days	Nursing Case-Mix	Therapy Case-Mix	Combined Case-Mix	Days	% of Days	Nursing Case-Mix	Therapy Case-Mix	Combined Case-Mix
MD	920,144	1.97%	1.091	0.733	1.825	8,176,836	1.69%	0.736	0.053	0.790
F	784,061	85.2%	1.088	0.728	1.816	7,990,663	97.7%	0.733	0.051	0.784
H	136,083	14.8%	1.108	0.765	1.873	186,173	2.3%	0.875	0.145	1.019
ME	305,383	0.65%	1.078	0.704	1.782	2,337,071	0.48%	0.804	0.021	0.825
F	283,386	92.8%	1.079	0.717	1.796	2,275,193	97.4%	0.803	0.021	0.824
H	21,997	7.2%	1.069	0.533	1.602	61,878	2.6%	0.824	0.029	0.853
MI	1,648,119	3.53%	1.039	0.841	1.880	13,676,549	2.83%	0.701	0.049	0.750
F	1,599,649	97.1%	1.038	0.847	1.885	13,274,823	97.1%	0.701	0.049	0.750
H	48,470	2.9%	1.067	0.636	1.703	401,726	2.9%	0.714	0.029	0.743
MN	970,906	2.08%	1.065	0.611	1.676	12,780,491	2.64%	0.696	0.048	0.744
F	837,669	86.3%	1.063	0.631	1.694	11,225,378	87.8%	0.697	0.051	0.748
H	133,237	13.7%	1.074	0.488	1.562	1,555,113	12.2%	0.690	0.024	0.715
MO	958,381	2.05%	1.098	0.733	1.832	13,229,656	2.74%	0.701	0.024	0.725
F	674,684	70.4%	1.063	0.823	1.886	12,877,313	97.3%	0.700	0.024	0.724
H	283,697	29.6%	1.183	0.519	1.701	352,343	2.7%	0.732	0.046	0.778
MS	432,071	0.92%	1.078	0.797	1.874	5,070,143	1.05%	0.740	0.029	0.769
F	340,663	78.8%	1.065	0.791	1.856	4,601,286	90.8%	0.737	0.030	0.767
H	91,408	21.2%	1.123	0.818	1.940	468,857	9.2%	0.764	0.023	0.787
MT	173,384	0.37%	1.074	0.593	1.668	1,988,990	0.41%	0.707	0.013	0.721
F	107,411	61.9%	1.061	0.621	1.682	1,482,840	74.6%	0.706	0.014	0.719
H	65,973	38.1%	1.095	0.549	1.644	506,150	25.4%	0.712	0.012	0.724

ADDENDUM TABLE 1 (continued):

PATIENT DAYS & AVG. CASE MIX BY STATE, MEDICARE/NON-MEDICARE STATUS & TYPE OF FACILITY: CY 2000

STATE	MEDICARE					NON-MEDICARE				
	Days	% of Days	Nursing Case-Mix	Therapy Case-Mix	Combined Case-Mix	Days	% of Days	Nursing Case-Mix	Therapy Case-Mix	Combined Case-Mix
NC	1,472,990	3.15%	1.063	0.614	1.677	11,783,656	2.44%	0.748	0.021	0.769
F	1,309,888	88.9%	1.056	0.638	1.694	11,192,432	95.0%	0.746	0.020	0.767
H	163,102	11.1%	1.117	0.419	1.535	591,224	5.0%	0.787	0.034	0.821
ND	124,534	0.27%	1.064	0.349	1.413	2,159,971	0.45%	0.727	0.010	0.736
F	92,798	74.5%	1.062	0.348	1.410	1,775,230	82.2%	0.724	0.010	0.734
H	31,736	25.5%	1.071	0.352	1.423	384,741	17.8%	0.736	0.009	0.746
NE	311,251	0.67%	1.093	0.653	1.746	5,022,778	1.04%	0.717	0.031	0.749
F	224,929	72.3%	1.072	0.669	1.742	4,493,719	89.5%	0.713	0.030	0.743
H	86,322	27.7%	1.147	0.611	1.759	529,059	10.5%	0.754	0.041	0.795
NH	223,422	0.48%	1.032	0.767	1.798	2,399,073	0.50%	0.704	0.035	0.739
F	217,166	97.2%	1.030	0.773	1.803	2,341,505	97.6%	0.703	0.036	0.738
H	6,256	2.8%	1.076	0.556	1.632	57,568	2.4%	0.749	0.030	0.778
NJ	1,738,833	3.72%	1.081	0.701	1.781	14,405,436	2.98%	0.690	0.045	0.735
F	1,662,769	95.6%	1.080	0.711	1.790	14,075,957	97.7%	0.688	0.045	0.734
H	76,064	4.4%	1.107	0.479	1.587	329,479	2.3%	0.747	0.048	0.795
NM	123,220	0.26%	1.064	0.714	1.778	2,057,659	0.43%	0.694	0.043	0.737
F	99,228	80.5%	1.050	0.772	1.822	2,032,355	98.8%	0.692	0.041	0.734
H	23,992	19.5%	1.119	0.477	1.596	25,304	1.2%	0.794	0.184	0.978
NV	147,834	0.32%	1.055	0.837	1.892	1,318,768	0.27%	0.753	0.089	0.842
F	112,002	75.8%	1.049	0.907	1.957	1,169,108	88.7%	0.743	0.083	0.826
H	35,832	24.2%	1.074	0.616	1.690	149,660	11.3%	0.831	0.132	0.963

ADDENDUM TABLE 1 (continued):

PATIENT DAYS & AVG. CASE MIX BY STATE, MEDICARE/NON-MEDICARE STATUS & TYPE OF FACILITY: CY 2000

STATE	MEDICARE					NON-MEDICARE				
	Days	% of Days	Nursing Case-Mix	Therapy Case-Mix	Combined Case-Mix	Days	% of Days	Nursing Case-Mix	Therapy Case-Mix	Combined Case-Mix
NY	3,873,131	8.29%	1.059	0.528	1.587	36,323,806	7.52%	0.763	0.055	0.818
F	3,506,695	90.5%	1.060	0.534	1.594	32,664,783	89.9%	0.760	0.057	0.817
H	366,436	9.5%	1.054	0.473	1.527	3,659,023	10.1%	0.785	0.039	0.824
OH	2,618,253	5.60%	1.115	0.803	1.918	26,621,654	5.51%	0.795	0.058	0.853
F	2,227,038	85.1%	1.114	0.803	1.917	26,274,327	98.7%	0.794	0.056	0.850
H	391,215	14.9%	1.117	0.805	1.922	347,327	1.3%	0.921	0.167	1.088
OK	432,257	0.93%	1.102	0.773	1.875	7,973,272	1.65%	0.660	0.021	0.680
F	297,294	68.8%	1.061	0.923	1.984	7,906,006	99.2%	0.660	0.020	0.680
H	134,963	31.2%	1.193	0.443	1.637	67,266	0.8%	0.677	0.038	0.715
OR	256,575	0.55%	1.052	0.843	1.895	3,295,506	0.68%	0.744	0.065	0.808
F	244,899	95.4%	1.051	0.851	1.902	3,225,722	97.9%	0.743	0.064	0.807
H	11,676	4.6%	1.086	0.679	1.765	69,784	2.1%	0.792	0.085	0.877
PA	2,799,107	5.99%	1.117	0.694	1.812	27,234,116	5.64%	0.797	0.052	0.849
F	2,339,407	83.6%	1.117	0.692	1.809	26,786,487	98.4%	0.796	0.051	0.847
H	459,700	16.4%	1.121	0.707	1.828	447,629	1.6%	0.849	0.126	0.975
RI	245,223	0.52%	1.062	0.614	1.676	3,025,682	0.63%	0.683	0.052	0.735
F	230,846	94.1%	1.061	0.612	1.673	3,021,435	99.9%	0.682	0.051	0.733
H	14,377	5.9%	1.084	0.650	1.733	4,247	0.1%	1.053	0.982	2.035
SC	617,603	1.32%	1.079	0.758	1.838	5,156,726	1.07%	0.713	0.024	0.738
F	519,036	84.0%	1.081	0.728	1.809	4,970,133	96.4%	0.713	0.024	0.737
H	98,567	16.0%	1.070	0.921	1.991	186,593	3.6%	0.726	0.023	0.749

ADDENDUM TABLE 1 (continued):

PATIENT DAYS & AVG. CASE MIX BY STATE, MEDICARE/NON-MEDICARE STATUS & TYPE OF FACILITY: CY 2000

STATE	MEDICARE					NON-MEDICARE				
	Days	% of Days	Nursing Case-Mix	Therapy Case-Mix	Combined Case-Mix	Days	% of Days	Nursing Case-Mix	Therapy Case-Mix	Combined Case-Mix
SD	141,285	0.30%	1.068	0.574	1.643	2,404,374	0.50%	0.720	0.011	0.731
F	121,319	85.9%	1.072	0.590	1.662	1,907,627	79.3%	0.718	0.011	0.729
H	19,966	14.1%	1.047	0.479	1.526	496,747	20.7%	0.728	0.012	0.739
TN	1,196,737	2.56%	1.096	0.727	1.823	11,302,321	2.34%	0.714	0.034	0.748
F	926,375	77.4%	1.083	0.764	1.847	10,844,067	95.9%	0.712	0.034	0.746
H	270,362	22.6%	1.142	0.599	1.741	458,254	4.1%	0.768	0.028	0.796
TX	2,296,403	4.92%	1.078	0.782	1.860	29,682,549	6.14%	0.700	0.023	0.723
F	1,800,220	78.4%	1.048	0.860	1.908	29,517,457	99.4%	0.700	0.023	0.723
H	496,183	21.6%	1.185	0.501	1.686	165,092	0.6%	0.769	0.103	0.872
UT	255,258	0.55%	1.062	0.929	1.991	1,784,308	0.37%	0.692	0.036	0.728
F	206,037	80.7%	1.056	0.924	1.980	1,746,730	97.9%	0.688	0.033	0.721
H	49,221	19.3%	1.088	0.949	2.036	37,578	2.1%	0.885	0.169	1.054
VA	1,024,276	2.19%	1.077	0.841	1.918	8,936,578	1.85%	0.767	0.032	0.799
F	923,300	90.1%	1.073	0.857	1.930	8,543,039	95.6%	0.764	0.032	0.797
H	100,976	9.9%	1.118	0.695	1.813	393,539	4.4%	0.816	0.022	0.838
VT	119,423	0.26%	1.059	0.632	1.691	1,106,781	0.23%	0.765	0.020	0.784
F	115,756	96.9%	1.058	0.627	1.685	1,060,856	95.9%	0.766	0.020	0.786
H	3,667	3.1%	1.085	0.789	1.874	45,925	4.1%	0.727	0.011	0.739
WA	841,535	1.80%	1.084	0.709	1.793	6,849,567	1.42%	0.790	0.037	0.827
F	767,418	91.2%	1.082	0.698	1.780	6,660,584	97.2%	0.789	0.037	0.826
H	74,117	8.8%	1.101	0.820	1.922	188,983	2.8%	0.803	0.059	0.862

ADDENDUM TABLE 1 (continued):

PATIENT DAYS & AVG. CASE MIX BY STATE, MEDICARE/NON-MEDICARE STATUS & TYPE OF FACILITY: CY 2000

STATE	MEDICARE					NON-MEDICARE				
	Days	% of Days	Nursing Case-Mix	Therapy Case-Mix	Combined Case-Mix	Days	% of Days	Nursing Case-Mix	Therapy Case-Mix	Combined Case-Mix
WI	1,120,440	2.40%	1.044	0.806	1.850	12,558,966	2.60%	0.671	0.045	0.716
F	1,063,760	94.9%	1.043	0.809	1.852	11,726,187	93.4%	0.670	0.046	0.715
H	56,680	5.1%	1.060	0.745	1.805	832,779	6.6%	0.688	0.031	0.719
WV	381,508	0.82%	1.121	0.663	1.784	3,320,626	0.69%	0.732	0.037	0.769
F	248,184	65.1%	1.098	0.695	1.793	3,191,040	96.1%	0.731	0.038	0.769
H	133,324	34.9%	1.165	0.603	1.768	129,586	3.9%	0.745	0.024	0.769
WY	75,625	0.16%	1.036	0.724	1.760	842,988	0.17%	0.671	0.028	0.699
F	65,584	86.7%	1.030	0.719	1.750	680,397	80.7%	0.668	0.030	0.698
H	10,041	13.3%	1.075	0.753	1.827	162,591	19.3%	0.685	0.020	0.705

Source: AHCA calculations based on the Long-Term Care Minimum Data Set