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**November 2002**

# SKILLED NURSING FACILITIES

Available Data Show  
Average Nursing Staff  
Time Changed Little  
after Medicare  
Payment Increase



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**Abbreviations**

AAHSA	American Association of Homes and Services for the Aging
AHCA	American Health Care Association
AHA	American Hospital Association
BBA	Balanced Budget Act of 1997
BLS	Bureau of Labor Statistics
BBRA	Medicare, Medicaid, and SCHIP Balanced Budget Refinement Act of 1999
BIPA	Medicare, Medicaid, and SCHIP Benefits Improvement and Protection Act of 2000
CMS	Centers for Medicare & Medicaid Services
CNA	certified nurse aide
FTE	full-time equivalent
HCFA	Health Care Financing Administration
LPN	licensed practical nurse
LVN	licensed vocational nurse
OSCAR	Online Survey Certification and Reporting System
PPS	prospective payment system
RN	registered nurse
RUG	resource utilization group
SNF	skilled nursing facility



United States General Accounting Office  
Washington, DC 20548

November 13, 2002

The Honorable Max Baucus  
Chairman  
The Honorable Charles E. Grassley  
Ranking Minority Member  
Committee on Finance  
United States Senate

The Honorable William M. Thomas  
Chairman  
The Honorable Charles B. Rangel  
Ranking Minority Member  
Committee on Ways and Means  
House of Representatives

The nation's 15,000 skilled nursing facilities (SNF) play an essential role in our health care system, providing Medicare-covered skilled nursing and rehabilitative care each year for 1.4 million Medicare patients who have recently been discharged from acute care hospitals. In recent years, many analysts and other observers, including members of the Congress, have expressed concern about the level of nursing staff in SNFs and the impact of inadequate staffing on the quality of care. In 2000, the Congress responded to these concerns with a temporary increase in Medicare payment intended to encourage SNFs to increase their nursing staff.

Medicare pays SNFs through a prospective payment system (PPS) in which they receive a fixed amount for each day that a patient receives care. This daily payment rate varies according to a patient's expected needs for care, and is the sum of nursing, therapy, and routine cost components.<sup>1</sup> The Congress, through the Medicare, Medicaid, and SCHIP Benefits Improvement and Protection Act of 2000 (BIPA),<sup>2</sup> increased the nursing component of the PPS SNF rate by 16.66 percent, effective April 1, 2001. This raised the overall SNF payment rates by 4 to 12 percent,

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<sup>1</sup>The nursing component includes costs related not only to nursing but to medical social services and nontherapy ancillary services, such as drugs, laboratory tests, and imaging. The therapy component includes costs related to occupational, physical, and speech therapy. The routine cost component includes costs for capital, maintenance, and food.

<sup>2</sup>Pub. L. No. 106-554, App. F, § 312(a), 114 Stat. 2763, 2763A-498.

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depending on the patient's expected care needs. However, the law did not require facilities to spend this additional money on nursing staff. This was not the only recent legislative change to SNF payments. A year earlier, payment rates for certain types of patients had been increased by 20 percent, and for fiscal years 2001 and 2002, overall rates were boosted by 4 percent.<sup>3</sup> The nursing component increase expired on October 1, 2002, and the Congress is considering whether to reinstate it.

BIPA directed us to assess the impact of the increase in the nursing component on SNF nurse staffing ratios. The law also required that we recommend whether the increased payments should continue.<sup>4</sup> Specifically, this report examines whether nurse staffing ratios<sup>5</sup>—overall and for categories of SNFs, such as for-profit and not-for-profit facilities—rose after April 1, 2001, when the payment increase took effect.

To address this issue, we used data from the Online Survey Certification and Reporting System (OSCAR),<sup>6</sup> maintained by the Centers for Medicare & Medicaid Services (CMS),<sup>7</sup> to assess nurse staffing ratios. We examined all SNFs that at the time of our analysis had OSCAR data on staffing levels available both before and after the payment increase. There were slightly over 6,500 SNFs—over one-third of all SNFs—for which these data were available. We tested for differences between these 6,500 and the 13,454 SNFs that were surveyed in calendar year 2000. We found no statistically significant differences in terms of type of facility, size, ownership, and the share of SNF patients paid for by Medicare. However, we found statistically significant differences between these two groups of SNFs in terms of the distribution by state. (See app. I, table 6.) To improve the

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<sup>3</sup>Medicare, Medicaid, and SCHIP Balanced Budget Refinement Act of 1999, Pub. L. No. 106-113, App. F, § 101, 113 Stat. 1501, 1501A-324.

<sup>4</sup>BIPA § 312(b).

<sup>5</sup>A nurse staffing ratio is defined as nursing hours per patient per day. Nursing staff include registered nurses, licensed practical nurses, and aides. In this report, “staffing” refers to these nursing staff.

<sup>6</sup>OSCAR stores data collected during annual inspections or surveys of SNFs conducted by state agencies under contract to CMS. OSCAR is the only uniform data source that contains data on both patients and nursing staff.

<sup>7</sup>CMS administers the Medicare program. On July 1, 2001, the Secretary of Health and Human Services changed the name of the Health Care Financing Administration (HCFA) to CMS. In this report, we will continue to refer to HCFA where our findings apply to the organizational structure and operations associated with that name.

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accuracy of the OSCAR data, we identified over 500 SNFs in our sample that had apparent data entry or other data reporting errors,<sup>8</sup> compared those data to source documents, and made corrections where appropriate. For 179 of these cases, we contacted facilities to resolve data issues. These verification and correction procedures resulted in useable data for about 5,000 SNFs. For each facility, we compared the 2001<sup>9</sup> nurse staffing ratio to the staffing ratio in 2000. We were not able to incorporate data reported after January 2002, in order to accommodate the schedule set by BIPA. To supplement this analysis, we also examined staffing ratio changes from 1999 to 2000. In addition to analyzing these data, we interviewed representatives of three industry associations, CMS officials, and several independent researchers. Although OSCAR data allowed us to compare staffing ratios before and after the 16.66 percent payment increase took effect, our analysis was limited in several ways. OSCAR data pertain to a limited period—2 weeks for staffing and 1 day for the number of patients. Further, staffing cannot be examined separately for Medicare patients, who represent about 11 percent of total SNF patients; Medicaid patients, who represent over 66 percent of total SNF patients; or patients whose care is paid for by other sources, who represent about 23 percent of total SNF patients. For more details on our data and methods, see appendix I. We performed our work from November 2001 through October 2002 in accordance with generally accepted government auditing standards.

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## Results in Brief

Our analysis of available data shows that, in the aggregate, SNFs' nurse staffing ratios changed little after the increase in the nursing component of the Medicare payment rate took effect. Overall, SNFs' average nursing time increased by 1.9 minutes per patient day, relative to their average in 2000 of about 3 and one-half hours of nursing time per patient day. There was a small shift in the mix of nursing time that SNFs provided, with slightly less registered nurse (RN) time coupled with slightly more licensed practical nurse (LPN) and nurse aide time. For most types of

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<sup>8</sup>CMS officials have stated that OSCAR data are accurate in the aggregate—that is, at national and state levels—but have indicated that data on some individual facilities may not be accurate. We report OSCAR data only at national and state levels. See HCFA, *Report to Congress: Appropriateness of Minimum Nurse Staffing Ratios in Nursing Homes, Phase I* (Baltimore, Md.: July 2000).

<sup>9</sup>Our 2001 OSCAR data include May through December 2001, after the payment increase took effect. As a result, we only reviewed data for an 8-month period after the payment increase was implemented. We were not able to review data for a later period when facilities might have used the payment increase differently.

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SNFs, increases in staffing ratios were small. Further, we found that the share of SNF patients covered by Medicare was not a factor in whether facilities increased their nursing time. Similarly, SNFs that had total revenues considerably in excess of costs before the added payments took effect did not increase their staffing substantially more than others. Although facilities with relatively low staffing ratios in 2000 increased their staffing ratios in 2001, highly staffed SNFs decreased their staffing ratios. We observed a similar pattern of staffing changes between 1999 and 2000, before the increased nursing component payment was implemented. This indicates that the nursing component payment increase was likely not a factor in the added nursing time among lower-staffed facilities. However, unlike most facilities, SNFs in four states increased their staffing by 15 to 27 minutes per patient day; three of these states—Arkansas, North Dakota, and Oklahoma—had made Medicaid payment or policy changes aimed at raising or maintaining facilities' nursing staff.

Our analysis of available data on SNF nursing staff indicates that, in the aggregate, SNFs did not have significantly higher nursing staff time after the increase to the nursing component of Medicare's payment. We believe that the Congress should consider our finding that increasing the Medicare payment rate was not effective in raising nurse staffing as it determines whether to reinstate the increase to the nursing component of the Medicare SNF rate.

In written comments on a draft of this report, CMS stated that our findings are consistent with its expectations as well as its understanding of other research in this area. Industry representatives provided oral comments in response to a draft of this report. Saying that our statements were too strong given the limitations of the study, they objected to our conclusions and matter for congressional consideration in the draft report. In conducting our study, we recognized the limitations of the data and the analyses we could perform and, when possible, performed tests to determine whether they affected our results. Taking account of these tests as well as the consistency of our results, we determined that the evidence was sufficient to conclude that the increased payment did not result in higher nursing staff time. However, we modified our conclusions to reiterate the limitations of our study. We rephrased the matter for congressional consideration to reflect the fact that the increase has lapsed since we drafted this report.

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## Background

Medicare covers SNF care for beneficiaries who need daily skilled nursing care or therapy for conditions related to a hospital stay of at least 3 consecutive calendar days, if the hospital discharge occurred within a specific period—generally, no more than 30 days—prior to admission to the SNF. For qualified beneficiaries, Medicare will pay for medically necessary SNF services, including room and board; nursing care; and ancillary services, such as drugs, laboratory tests, and physical therapy, for up to 100 days per spell of illness.<sup>10</sup> In 2002, beneficiaries are responsible for a \$101.50 daily copayment after the 20th day of SNF care, regardless of the cost of services received.

Eighty-eight percent of SNFs are freestanding—that is, not attached to a hospital. The remainder are hospital-based.<sup>11</sup> SNFs differ by type of ownership: 66 percent of SNFs are for-profit entities, 28 percent of SNFs are not-for-profit, and a small fraction of SNFs—about 5 percent—are government-owned.<sup>12</sup> About three-fifths of SNFs are owned or operated by chains—corporations operating multiple facilities.

To be a SNF, a facility must meet federal standards to participate in the Medicare program.<sup>13</sup> SNFs provide skilled care to Medicare patients and usually also provide care to Medicaid and private pay patients. Medicare pays for a relatively small portion of patients cared for in SNFs—about 11 percent. Over 66 percent of SNF patients have their care paid for by Medicaid, and another 23 percent have their care paid for by other sources or pay for the care themselves.

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## Medicare Payment for SNF Care

In the Balanced Budget Act of 1997 (BBA), the Congress established the PPS for SNFs.<sup>14</sup> Under the PPS, SNFs receive a daily payment that covers almost all services provided to Medicare beneficiaries during a SNF stay,

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<sup>10</sup>A spell of illness is a period that begins when a Medicare beneficiary is admitted to a hospital and ends when a beneficiary has not been an inpatient of a hospital or SNF for 60 consecutive days. A beneficiary may have more than one spell of illness per year that is covered by Medicare.

<sup>11</sup>CMS considers a facility to be hospital-based if it is “under the administrative control of a hospital.”

<sup>12</sup>Government-owned facilities are operated primarily by counties or cities.

<sup>13</sup>State agencies, under contract to CMS, conduct initial and follow-up visits to assess compliance with federal standards—Medicare’s and Medicaid’s conditions of participation.

<sup>14</sup>Pub. L. No. 105-33, § 4432, 111 Stat. 251, 414.



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which is adjusted for geographic differences in labor costs and differences in the resource needs of patients. Adjustments for resource needs are based on a patient classification system that assigns each patient to 1 of 44 payment groups, known as resource utilization groups (RUG).<sup>15</sup> For each group, the daily payment rate is the sum of the payments for three components: (1) the nursing component, which includes costs related to nursing as well as to medical social services and nontherapy ancillary services, (2) the therapy component, which includes costs related to occupational, physical, and speech therapy, and (3) the routine cost component, which includes costs for capital, maintenance, and food. The routine cost component is the same for all patient groups, while the nursing and therapy components vary according to the expected needs of each group. Before the 16.66 percent increase provided by BIPA took effect, the nursing component varied from 26 percent to 74 percent of the daily payment rate, depending on the patient's RUG.<sup>16</sup> In 2001, Medicare expenditures on SNF care were \$13.3 billion. The 16.66 percent increase in the nursing component raised Medicare payments about \$1 billion annually—about 8 percent of Medicare's total annual spending on SNF care.

The increase in the nursing component is one of several temporary changes made to the PPS payment rates since the PPS was implemented in 1998. The Medicare, Medicaid, and SCHIP Balanced Budget Refinement Act of 1999 (BBRA) raised the daily payment rates by 20 percent for 15 high-cost RUGs beginning in April 2000.<sup>17</sup> BBRA also increased the daily rate for all RUGs by 4 percent for fiscal years 2001 and 2002.<sup>18</sup> BIPA upped the daily payment rates by 6.7 percent for 14 RUGs, effective April 2001.<sup>19</sup> This increase was budget neutral; that is, it modified BBRA's 20 percent increase for 15 RUGs by taking the funds directed at 3 rehabilitation RUGs

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<sup>15</sup>These groups are based on patient clinical condition, functional status, and use or expected use of certain types of services. Each RUG describes patients with similar care needs and has a corresponding payment rate.

<sup>16</sup>These figures are for facilities in urban areas. For facilities in rural areas, the nursing component ranged from 23 percent to 72 percent of the total rate.

<sup>17</sup>Pub. L. No. 106-113, App. F, § 101, 113 Stat. 1501, 1501A-324.

<sup>18</sup>The 4 percent increase is based on the PPS daily rates that would have been in effect for those years without the 20 percent temporary increase for the 15 high-cost RUGs noted above.

<sup>19</sup>BIPA § 314.

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and applying those funds to all 14 rehabilitation RUGs.<sup>20</sup> Two of these temporary payment changes, the 20 percent and 6.7 percent increases, will remain in effect until CMS refines the RUG system. CMS has announced that, although it is examining possible refinements, the system will not be changed for the 2003 payment year.<sup>21</sup>

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## SNF Staffing

In providing care to their patients, SNFs employ over 850,000 licensed nurses and nurse aides nationwide.<sup>22</sup> Licensed nurses include RNs and LPNs.<sup>23</sup> RNs generally manage patients' nursing care and perform more complex procedures, such as starting intravenous fluids. LPNs provide routine bedside care, such as taking vital signs and supervising nurse aides. Aides generally have more contact with patients than other members of the SNF staff. Their responsibilities may include assisting individuals with eating, dressing, bathing, and toileting, under the supervision of licensed nursing and medical staff.

Several studies have shown that nursing staff levels are linked to quality of care.<sup>24</sup> The Social Security Act, which established and governs the Medicare program, requires that SNFs have sufficient nursing staff to provide nursing and related services to attain or maintain the highest practicable physical, mental, and psychosocial well-being of each patient, as determined by patient assessments and individual plans of care.<sup>25</sup> More specifically, SNFs must have an RN on duty for at least 8 consecutive hours a day for 7 days per week, and must have 24 hours of licensed nurse

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<sup>20</sup>The remaining 12 RUGs retained the 20 percent increase.

<sup>21</sup>BIPA requires that CMS submit a report to the Congress on possible alternatives to the current RUG patient classification system by January 1, 2005. BIPA § 311(e).

<sup>22</sup>This figure represents the number of full-time equivalents.

<sup>23</sup>In some parts of the United States, LPNs are known as licensed vocational nurses (LVN).

<sup>24</sup>See U.S. General Accounting Office, *Nursing Homes: Quality of Care More Related to Staffing than Spending*, [GAO-02-431R](#) (Washington, D.C.: June 13, 2002); Centers for Medicare & Medicaid Services, *Report to Congress: Appropriateness of Minimum Nurse Staffing Ratios in Nursing Homes, Phase II Final Report* (Baltimore, Md.: December 2001); U.S. Department of Health and Human Services, *Quality of Care in Nursing Homes: An Overview*, Office of Inspector General (Washington, D.C.: March 1999); and Institute of Medicine, *Nursing Staff in Hospitals and Nursing Homes: Is it Adequate?* (Washington, D.C.: National Academy Press, 1996).

<sup>25</sup>42 U.S.C. § 1395i-3(b) (2000).

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coverage per day.<sup>26</sup> SNFs also must designate an RN to serve as the director of nursing on a full-time basis, and must designate a licensed nurse to serve as a charge nurse on each tour of duty.<sup>27</sup>

SNF staffing varies by type of facility and by state. Hospital-based SNFs tend to have higher staffing ratios than other SNFs. In 2001, hospital-based SNFs provided 5.5 hours of nursing time per patient day, compared with 3.1 hours among freestanding SNFs. Hospital-based SNFs also rely more heavily on licensed nursing staff than do freestanding facilities, which rely more on nurse aides. Staffing also differs by state—from 2 hours and 54 minutes per patient day in South Dakota in 2000 to 4 hours and 58 minutes per patient day in Alaska.

Many states have established their own nursing staff requirements for state licensure, which vary considerably. Some states require a minimum number of nursing hours per patient per day, while others require a minimum number of nursing staff relative to patients. Some states' requirements apply only to licensed nurses, while others apply to nurse aides as well. Some states also require an RN to be present 24 hours per day, 7 days per week. As of 1999, 37 states had nursing staff requirements that differed from federal requirements. Since 1998, many states have raised their minimum staffing requirements or have implemented other changes aimed at increasing staffing in nursing homes, such as increasing workers' wages or raising reimbursement rates for providers whose staffing exceeds minimum requirements.

While states have set minimum requirements for nursing staff, there are indications of an emerging shortage of nursing staff, particularly RNs, in a variety of health care settings.<sup>28</sup> The unemployment rate for RNs in 2000 was about 1 percent—very low by historical standards. As a result, SNFs must compete with other providers, such as hospitals, for a limited supply of nursing staff. According to associations representing the industry,

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<sup>26</sup> 42 C.F.R. § 483.30 (2001).

<sup>27</sup> The Department of Health and Human Services may waive the requirement that a SNF provide the services of an RN for 8 hours a day, 7 days a week, including a director of nursing, in certain circumstances. However, according to CMS, few facilities have those requirements waived.

<sup>28</sup> See U.S. General Accounting Office, *Nursing Workforce: Emerging Nurse Shortages Due to Multiple Factors*, GAO-01-944 (Washington, D.C.: July 10, 2001), and Centers for Medicare & Medicaid Services, *Report to Congress: Appropriateness of Minimum Nurse Staffing Ratios in Nursing Homes, Phase II Final Report*, ch. 4.

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nursing homes have had difficulty recruiting and retaining staff. The American Health Care Association (AHCA)<sup>29</sup> reported vacancy rates for nursing staff in nursing homes for 2001 ranging from 11.9 percent for aides to 18.5 percent for staff RNs.<sup>30</sup> Labor shortages are generally expected to result in increased compensation—wages and benefits—as employers seek to recruit new workers and retain existing staff. Our analysis of Bureau of Labor Statistics (BLS) data shows that, from 1999 to 2000, average wages for nurses and aides employed by the nursing home industry increased by 6.3 percent, compared to 2.9 percent among workers in private industry and state and local government.<sup>31</sup> Industry officials, citing a survey they commissioned, told us that wages have risen more rapidly since 2000.<sup>32</sup>

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## SNF Staffing Changed Little after Payment Increase Took Effect

In general, SNF staffing changed little after April 1, 2001, when the increase in the nursing component of the PPS payment took effect. There was no substantial change in SNFs' overall staffing ratios, though their mix of nursing hours shifted somewhat: SNFs provided slightly less RN time and slightly more LPN and nurse aide time in 2001. For most categories of SNFs—such as freestanding SNFs and SNFs not owned by chains—increases in staffing ratios were small. Although SNFs with relatively low staffing ratios in 2000 increased their staffing ratios in 2001, SNFs with relatively high staffing ratios decreased their staffing. Our analysis indicates that the nursing component payment increase was unlikely to have been a factor in these staffing changes. Unlike most facilities nationwide, SNFs in four states increased their staffing by 15 or more minutes per patient day, following payment or policy changes in three of the states aimed at increasing or maintaining SNF nursing staff.

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<sup>29</sup>AHCA represents for-profit and not-for-profit nursing facilities.

<sup>30</sup>American Health Care Association, *Results of the 2001 AHCA Nursing Position Vacancy and Turnover Survey* (Washington, D.C.: Feb. 7, 2002).

<sup>31</sup>These figures are based on data from BLS's Occupational Employment Statistics and National Compensation Survey for 1999 and 2000. BLS's 2001 Occupational Employment Statistics were not available at the time of our analysis.

<sup>32</sup>The 2001 Nursing Facility Compensation Survey, sponsored by AHCA and the Alliance for Quality Nursing Home Care, was conducted by Muse and Associates and Buck Consultants.

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SNF Staffing Changed  
Little after Payment  
Increase, Though Mix of  
Staffing Shifted Somewhat

No substantial change in SNFs' overall staffing ratios occurred after the nursing component payment was increased. Between 2000 and 2001,<sup>33</sup> SNFs' average amount of nursing time changed little, remaining slightly under 3 and one-half hours per patient day.<sup>34</sup> Although there was an increase of 1.9 minutes per patient day, it was not statistically significant.<sup>35</sup> (See table 1.) According to our calculations, this change was less than the estimated average increase, across all SNF patients, of about 10 minutes per patient day that could have resulted if SNFs had devoted the entire nursing component increase to more nursing time.<sup>36</sup>

There was a small shift in the mix of nursing time that SNFs provided. On average, RN time decreased by 1.7 minutes per patient day. This was coupled with slight increases in LPN and nurse aide time, which rose by 0.7 and 2.9 minutes per patient day, respectively.

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<sup>33</sup>The 2001 data are from May through December 2001, after the increased nursing component payment took effect.

<sup>34</sup>These staffing ratios, and the ratios presented throughout this report, are based on SNFs' overall direct care nursing staff and the total number of patients; they are, therefore, facilitywide staffing ratios, rather than ratios specific to Medicare patients.

<sup>35</sup>That is, the change was too small to be statistically distinguished from zero. Since we were only able to review data for a limited period after the payment increase was implemented, we compared SNFs' staffing ratio changes over time to test whether this affected our results. When we compared the change in staffing ratios among facilities surveyed soon after the payment increase to those surveyed later in 2001, we found no significant difference. This suggests that our results were not affected by examining staffing soon after the payment change. SNFs responded similarly to the increase regardless of how much time had elapsed since its implementation.

<sup>36</sup>The estimates ranged from 9.4 to 10.1 minutes, depending on whether we assumed relatively large—10 percent—or small—3 percent—increases in wage rates from 2000 to 2001.

**Table 1: Average SNF Staffing Time by Type of Nurse, 2000 and 2001**

Nursing staff	Average nursing time per patient day		Change in minutes <sup>a</sup>
	Calendar year 2000	May - December 2001	
RNs	30.0 minutes	28.3 minutes	-1.7 minutes
LPNs <sup>b</sup>	42.9 minutes	43.6 minutes	0.7 minutes
Aides <sup>c</sup>	2 hours, 10.0 minutes	2 hours, 12.9 minutes	2.9 minutes
Total	3 hours, 22.9 minutes	3 hours, 24.8 minutes	1.9 minutes

Note: Data include freestanding and hospital-based SNFs.

<sup>a</sup>For each category of nursing staff, the change in minutes was significant at the .05 level. The total change in nursing time, however, was not significant.

<sup>b</sup>LPNs are also known as LVNs.

<sup>c</sup>Aides include certified nurse aides, nurse aides in training, and medication aides/technicians.

Source: GAO analysis of CMS's OSCAR data.

For most categories of SNFs, changes in staffing ratios were small. For example, freestanding facilities, which account for about 90 percent of SNFs nationwide, increased their nursing time by 2.1 minutes per patient day on average. Nonchain SNFs had an increase of 3.9 minutes per patient day. Hospital-based facilities and those owned by chains had nominal changes in nursing time. The changes in staffing for for-profit, not-for-profit, and government-owned facilities also were small. (See app. II.)

The share of a SNF's patients who were covered by Medicare was not a factor in whether facilities increased their nursing time. SNFs that relied more on Medicare would have received a larger increase in revenue due to the nursing component change, and might have been better able than others to raise staffing ratios. However, we found that freestanding SNFs in which Medicare paid for a relatively large share of patients<sup>37</sup> increased their nursing time by 1.3 minutes per patient day—less than SNFs with

<sup>37</sup>For this analysis, we consider patients to be Medicare-covered if they are receiving Medicare-covered SNF care. Although a SNF may have a large number of patients who are Medicare beneficiaries, not all such patients necessarily receive Medicare-covered SNF care. For example, patients receiving long-term custodial care could be eligible for Medicare-covered services, but their SNF stays would not be paid for by Medicare.

somewhat smaller shares of Medicare patients, and not substantially more than SNFs with the smallest share of Medicare patients.<sup>38</sup> (See table 2.)

**Table 2: Average Change in Nursing Time between 2000 and 2001 for Freestanding SNFs, Grouped by Medicare Patient Share**

Medicare patient share in 2000 (percentage) <sup>a</sup>	Change in minutes of nursing time per patient day <sup>b</sup>
Less than 3.8	0.8 minutes
3.8 to 7.1	3.6 minutes
7.2 to 11.4	2.9 minutes
11.5 and higher	1.3 minutes

Note: The 2001 data are from May through December 2001, after the nursing component payment increase took effect.

<sup>a</sup>The four groups of SNFs are roughly equal in size.

<sup>b</sup>Between any two groups of SNFs (rows), there were no statistically significant differences in the change in minutes. For the two middle groups of SNFs, the change in minutes between 2000 and 2001 was significant at the .05 level.

Source: GAO analysis of CMS's OSCAR data.

Similarly, SNFs' financial status was not an important factor affecting changes in nursing time. Although SNFs with higher total margins in 2000<sup>39</sup>—that is, those with revenues substantially in excess of costs—might have been best able to afford increases in nursing staff, those with the highest total margins did not raise their staffing substantially more than others. Changes in nursing time were minimal, regardless of SNFs' financial status in 2000. For SNFs in the three groups with the highest margins, increases were about 3 to 4 minutes per day, compared to 2 minutes per day for those with the lowest margins. (See table 3.)

<sup>38</sup>The average staffing levels in 2000 were similar for the groups with the highest and lowest Medicare patient shares—3 hours, 11 minutes of nursing time per patient day for the highest group, and 3 hours, 8 minutes for the lowest group.

<sup>39</sup>A margin is the difference between revenues and costs, divided by revenues, and expressed as a percentage.

**Table 3: Average Change in Nursing Time between 2000 and 2001 for Freestanding SNFs, Grouped by Total Margin**

Total margins in 2000 (range) <sup>a</sup>	Change in minutes of nursing time per patient day <sup>b</sup>
Less than -3.4	2.1 minutes
-3.4 to 2.2	2.9 minutes
2.3 to 7.4	4.2 minutes
7.5 and higher	3.7 minutes

Note: The 2001 data are from May through December 2001, after the nursing component payment increase took effect.

<sup>a</sup>Total margins are expressed as percentages and are based on a SNF's cost reporting year, which corresponds to its fiscal year that begins during the federal fiscal year. The four groups of SNFs are roughly equal in size.

<sup>b</sup>Between any two groups of SNFs (rows), there were no statistically significant differences in the change in minutes. For each group of SNFs, however, the change in minutes between 2000 and 2001 was significant at the .05 level, except for the lowest group (with total margins less than -3.4 percent).

Source: GAO analysis of CMS's OSCAR data and 2000 Medicare cost reports.

### Lower-Staffed SNFs Added More Nursing Time, but the Increased Medicare Nursing Payment Likely Was Not the Cause

SNFs with relatively low initial staffing ratios—which may have had the greatest need for more staff—increased their staffing ratios substantially, while SNFs that initially were more highly staffed had a comparable decrease in staffing. Among freestanding SNFs that had the lowest staffing ratios in 2000, staffing time increased by 18.9 minutes per patient day.<sup>40</sup> (See table 4.) Nearly all of the increase—over 15 minutes—was due to an increase in nurse aide time. LPN time increased by 3.2 minutes and RN time by 11 seconds on average. Among facilities with the highest staffing ratios in 2000, staffing decreased by 17.7 minutes.<sup>41</sup> For these SNFs, as for those with the lowest staffing ratios, most of the overall change occurred among nurse aides: aide time decreased by over 10 minutes in 2001, while LPN and RN time decreased by 2.7 and 4.6 minutes, respectively.

Despite the staffing increases among lower-staffed facilities, our analysis indicates that these staffing changes may not have resulted from the nursing component payment increase. We found that similar staffing changes occurred between 1999 and 2000—prior to the nursing component increase. Low-staffed facilities increased their staffing by 15.2

<sup>40</sup>When we looked at median changes in staffing rather than average changes, we found that these SNFs had a median increase of 13.6 minutes of nursing time.

<sup>41</sup>These SNFs had a median decrease of 11 minutes.



minutes per patient day in 2000, while high-staffed facilities decreased their staffing by 19.8 minutes.<sup>42</sup> The changes that occurred during the two periods were similar, suggesting that the payment increase probably did not cause the change in the latter period.

**Table 4: Average Change in Nursing Time between 2000 and 2001 for Freestanding SNFs, Grouped by 2000 Staffing Ratios<sup>a</sup>**

Staffing ratio in 2000 (range) <sup>a</sup>	Change in minutes of nursing time per patient day <sup>b</sup>
Less than 2 hours, 42 minutes	18.9 minutes
2 hours, 42 minutes to 3 hours, 1 minute	7.6 minutes
3 hours, 2 minutes to 3 hours, 25 minutes	0.9 minutes
3 hours, 26 minutes and higher	- 17.7 minutes

Note: The 2001 data are from May through December 2001, after the nursing component payment increase took effect.

<sup>a</sup>The four groups of SNFs are roughly equal in size.

<sup>b</sup>Between any two groups of SNFs (rows) the differences in the changes in minutes were statistically significant. For each group of SNFs, except the group with 3 hours, 2 minutes to 3 hours, 25 minutes of nursing time, the change in minutes was significant at the .05 level.

Source: GAO analysis of CMS's OSCAR data.

## In Several States, Staffing Ratios Rose Substantially

Unlike most facilities nationwide, SNFs in four states—Arkansas, Nebraska, North Dakota, and Oklahoma—increased their staffing by 15 to 27 minutes per patient day, on average.<sup>43</sup> These increases could be related to state policies: according to state officials, three of the states had made Medicaid payment or policy changes aimed at increasing or maintaining facilities' nursing staff. North Dakota authorized a payment rate increase, effective July 2001, that could be used for staff pay raises or improved benefits. Oklahoma increased its minimum requirements for staffing ratios in both September 2000 and September 2001, provided added funds to offset the costs of those increases, and raised the minimum wage for nursing staff such as RNs, LPNs, and aides. Arkansas switched to a full

<sup>42</sup>This pattern appears to reflect a common statistical phenomenon in which high and low values tend to move closer to the average over time.

<sup>43</sup>Our sample included 30 percent of the facilities in Arkansas, 38 percent of the facilities in Nebraska, 62 percent of the facilities in North Dakota, and 16 percent of the facilities in Oklahoma. SNFs in four other states had staffing increases of 15 minutes or more, but those changes were not statistically significant.

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cost-based reimbursement system for Medicaid services in January 2001, in part to provide facilities with stronger incentives to increase staffing; the state had previously relied on minimum nurse staffing ratios. In Nebraska, no new state policies specific to nursing staff in SNFs were put in place during 2000 or 2001.

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## Conclusions

The change to the nursing component of the SNF PPS payment rate was one of several increases to the rates since the PPS was implemented in 1998. This temporary increase, enacted in the context of payment and workforce uncertainty, was intended to encourage SNFs to increase their nursing staff, although they were not required to spend the added payments on staff. In our analysis of the best available data, we did not find a significant overall increase in nurse staffing ratios following the change in the nursing component of the Medicare payment rate. Although the payment change could have paid for about 10 added minutes of nursing time per patient day for all SNF patients, we found that on average SNFs increased their staffing ratios by less than 2 minutes per patient day. Nurse staffing ratios fell in some SNFs during this period and increased in others by roughly an equal amount—the same pattern that occurred before the payment increase took effect. Our analysis—overall and for different types of SNFs—shows that increasing the nursing component of the Medicare payment rate was not effective in raising nurse staffing.

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## Matter for Congressional Consideration

Our analysis of available data on SNF nursing staff indicates that, in the aggregate, SNFs did not have significantly higher nursing staff time after the increase to the nursing component of Medicare's payment. We believe that the Congress should consider our finding that increasing the Medicare payment rate was not effective in raising nurse staffing as it determines whether to reinstate the increase to the nursing component of the Medicare SNF rate.

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## Agency Comments and Our Evaluation

We received written comments on a draft of this report from CMS and oral comments from representatives of the American Association of Homes and Services for the Aging (AAHSA), which represents not-for-profit nursing facilities; AHCA, which represents for-profit and not-for-profit nursing facilities; and the American Hospital Association (AHA), which represents hospitals.

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## CMS

CMS said that our findings are consistent with its expectations as well as its understanding of other research in this area. CMS also stated that our

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report is a useful contribution to the ongoing examination of SNF care under the PPS. CMS's comments appear in appendix III.

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## Industry Associations

Representatives from the three associations who reviewed the draft report shared several concerns. First, indicating that our statements were too strong given the limitations of the study, they objected to the report's conclusions and matter for congressional consideration. Second, they noted that the draft should have included information about the context in which SNFs were operating at the time of the Medicare payment increase, specifically, the nursing shortage and SNF staff recruitment and retention difficulties. Finally, they noted that SNFs could have used the increased Medicare payments to raise wages or improve benefits rather than hire additional nursing staff.

The industry representatives expressed several concerns about the limitations of our data and analysis. The AAHSA representatives noted that, for individual SNFs, the accuracy of OSCAR is questionable; they agreed, however, that the average staffing ratios we reported for different types of SNFs looked reasonable and were consistent with their expectations. The AHA representatives said that, while OSCAR data are adequate for examining staffing ratios, we should nonetheless have used other sources of nurse staffing data—such as payroll records and Medicaid cost reports—before making such a strong statement to the Congress. The AHCA representatives noted that, due to the limitations of OSCAR data, our analyses of staffing ratios reflect staffing for all SNF patients rather than staffing specifically for SNF patients whose stays are covered by Medicare. They stressed that the small increase in staffing for patients overall could have represented a much larger increase for Medicare-covered SNF patients. In addition, representatives from both AHCA and AHA were concerned that our period of study after the payment increase—May through December 2001—was too short to determine whether SNFs were responding to the added payments. They also cited delays in SNFs being paid under the increased rates as an explanation for our findings. The AHCA representatives further noted that the lack of change in staffing was not surprising, given the short period, and that the payment increase was temporary, applied to only one payer, and affected only about 10 to 12 percent of SNFs' business. AAHSA representatives noted that, to be meaningful, staffing ratios must be adjusted for acuity—the severity of patients' conditions.

Representatives from all three groups also stated that the report lacked sufficient information on contextual factors that could have affected SNF

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staffing ratios during our period of study. They said that we should have provided information on the nursing shortage as well as on SNF staff recruitment and retention difficulties. They further stated that SNFs' difficulties in recruiting and retaining staff could explain why we found little change in nurse staffing ratios. The AAHSA representatives were concerned that the report omitted information on the economic slowdown's effect on state budgets and Medicaid payment rates, which could have discouraged SNFs from hiring during the period of the increased nursing component. Finally, both AAHSA and AHA representatives commented that the report gave too little attention to state minimum staffing requirements, indicating that SNFs would be more responsive to those requirements than to the Medicare payment increase. The AAHSA representatives noted that facilities may have increased their nursing staff to meet state minimum staffing requirements prior to the Medicare increase. The AHA representatives stated that we may not have found staffing increases because, when states require a minimum level of staff, facilities tend to staff only to that minimum. They also commented that state requirements may have had a greater effect on staffing than the nursing component increase, which was temporary and had only been in effect for a limited time.

Representatives from all three groups noted that facilities could have opted to raise wages, improve benefits, or take other steps to recruit or retain staff, rather than hire additional nurses or aides. AHA added that we did not consider whether, prior to the rate increase, nurse staffing was adequate; if it was, SNFs may have chosen to spend the added Medicare payments on retention rather than on hiring. In addition, AAHSA and AHCA representatives noted that we did not address what would happen to nursing staff and margins if the payment increase were not in place. The AAHSA representatives stated that, without the increase, staffing might have decreased. AHCA representatives noted that we should have considered the implications for SNF margins of not continuing the payment increase.

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## Our Response

As noted throughout the draft report, in conducting our study we considered the limitations of the data and the analyses we could perform. We therefore tested whether these limitations affected our results. Taking account of those tests and the consistency of our findings across categories of SNFs, we determined that the available evidence was sufficient to conclude that the increased payment did not result in higher nursing staff time. Our evidence consistently shows that staffing ratios changed little after the nursing component payment increase was

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implemented. However, we modified our conclusions to reiterate the limitations of our study.

Regarding the representatives' specific concerns about the limitations of our data and analysis:

- In the draft report, we detailed our efforts to correct OSCAR data errors. We have no evidence that OSCAR data are biased in the aggregate or that errors in OSCAR data would have understated the change in nurse staffing ratios.
- In the draft report we noted that neither payroll records nor Medicaid cost reports were feasible sources of staffing data for this study. We have no reason to think that our results would have been different if we had used those data sources because a HCFA study found that those other sources yielded comparable aggregate staffing levels to those in OSCAR.<sup>44</sup> We believe that the data from OSCAR were appropriate for examining staffing ratio changes because OSCAR is the only nationally uniform data source that allowed us to compare staffing ratios before and after the payment increase.
- In the draft report, we stated that while nurse staffing ratios apply to all SNF patients and not just Medicare patients, we found no relationship between changes in staffing ratios and the percentage of a SNF's patients paid for by Medicare. Specifically, staffing increases were no larger in SNFs with a greater percentage of Medicare patients than in those with a smaller percentage of Medicare patients.
- The staffing changes in SNFs surveyed in the months just after the payment increase was implemented differed little from staffing changes of those SNFs surveyed later in 2001. Because we found no relationship between SNFs' staffing ratio changes and the amount of time that had passed since the payment increase (which ranged from 1 to 9 months), we believe that our period of study was sufficiently long to determine whether SNFs were responding to the payment increase. We have added information on this analysis to the report.
- We agree that adjusting for patients' acuity is particularly important for comparing staffing among different facilities; however, acuity averaged over all facilities varies little over short periods.<sup>45</sup> Moreover, unless

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<sup>44</sup>See HCFA, *Report to Congress: Appropriateness of Minimum Nurse Staffing Ratios in Nursing Homes, Phase I*. HCFA's analysis was based in part on data from a special survey of payroll records from facilities in Ohio.

<sup>45</sup>See Medicare Payment Advisory Commission, *Report to the Congress: Medicare Payment Policy* (Washington, D.C.: March 2001).

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patients' acuity declined after the nursing component increase—and we have no evidence that it did—adjusting for acuity would not have affected our finding that nursing staff time changed little.

Regarding representatives' concerns that we did not include sufficient information on external factors affecting SNFs:

- We added information to the report on issues related to the nursing workforce.
- Hiring difficulties would not have prevented SNFs from expanding the hours of their existing nursing staff or using temporary nurses and aides from staffing agencies—which would have been reflected in staffing ratios.
- With respect to the possible influence of a weak economy on Medicaid payments and SNF staffing levels, we noted in the draft report that the pattern of nursing staff changes from 2000 to 2001 was similar to the pattern from 1999 to 2000—a period when the economy was considerably stronger.
- If SNFs increased nursing staff in response to new state requirements during 2001, our study would have attributed these increases to the Medicare payment change.

Regarding the representatives' statements about alternate ways SNFs could have used the increased Medicare payments:

- To the extent that SNFs used the added Medicare payments for higher wages or benefits, they may have reduced staff vacancies, which in turn may have resulted in higher staffing ratios. However, we found little change in nurse staffing ratios after the Medicare payment increase.

Regarding the representatives' statements about the adequacy of SNF staffing:

- Because staffing adequacy was not within the scope of our study, we did not consider whether staffing was adequate prior to the rate increase, or whether this influenced SNFs' hiring decisions. The Congress directed CMS to address this issue, which it did in two reports. The first report, published in 2000, suggested that staffing might not be adequate in a significant number of SNFs. This was reaffirmed in CMS's recent report.<sup>46</sup>

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<sup>46</sup>See HCFA, *Report to Congress: Appropriateness of Minimum Nurse Staffing Ratios in Nursing Homes, Phase I* and CMS, *Report to Congress: Appropriateness of Minimum Nurse Staffing Ratios in Nursing Homes, Phase II Final Report*.

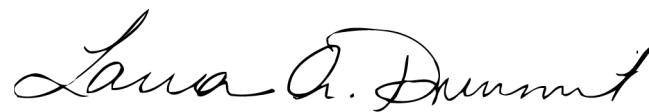
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CMS, AAHSA, AHCA, and AHA also provided technical comments, which we incorporated as appropriate.

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We are sending copies of this report to the Administrator of CMS, interested congressional committees, and other interested parties. We will also provide copies to others upon request. In addition, the report is available at no charge on the GAO Web site at <http://www.gao.gov>.

If you or your staffs have any questions, please call me at (202) 512-7114. Other GAO contacts and staff acknowledgments are listed in appendix IV.

A handwritten signature in cursive script that reads "Laura A. Dummit".

Laura A. Dummit  
Director, Health Care—Medicare Payment Issues

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# Appendix I: Data Source and Data Verification Methods for Nurse Staffing Ratio Analysis

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This appendix describes the selection of the data source for our analysis, the characteristics of that data source, and procedures used to verify data accuracy and make adjustments.

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## Data Sources Considered

To assess the impact on nurse staffing ratios of the April 1, 2001, increase in the nursing component of the SNF payment, we needed a nationally uniform data source that included the number of patients and the number of nursing staff (full-time equivalents (FTE)) or nursing hours, for two periods—before April 1, 2001, to establish a baseline, and after April 1, 2001. We considered several sources of nursing staff data, including SNF payroll data, Medicaid cost reports, and CMS's OSCAR system.

We determined that payroll records could not be used for several reasons. CMS has collected and analyzed nursing home payroll data in several states and has found that it is difficult to ensure that the staffing data refer to hours worked (as required for an analysis of nurse staffing ratios) rather than hours paid, which includes time such as vacation and sick leave.<sup>1</sup> CMS also found that although current nursing home payroll records were usually available, older records were difficult to obtain; consequently, it is unlikely that we would have been able to get records prior to the rate increase. Finally, payroll records do not include information on the number of patients and would have had to be supplemented with other data.

Similarly, Medicaid cost reports were not an appropriate source of data. While these reports by SNFs to state Medicaid agencies contain data on both patients and nursing staff, Medicaid cost reports do not permit a comparison of staffing ratios before and after the 16.66 percent increase in the nursing component because these reports cover a 12-month period that cannot be subdivided. Furthermore, these reports do not contain nationally uniform staffing data because the categories and definitions differ from state to state. Finally, the 2001 reports were not available in time for our analysis.

OSCAR is the only uniform data source that contains data on both patients and nursing staff. Moreover, OSCAR data are collected at least every 15

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<sup>1</sup>See CMS, *Report to Congress: Appropriateness of Minimum Nurse Staffing Ratios in Nursing Homes, Phase II Final Report* (Baltimore, Md.: December 2001).



months, allowing us to compare staffing ratios before and after the 16.66 percent increase in the nursing component.

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## OSCAR Data

The states and the federal government share responsibility for monitoring compliance with federal standards in the nation's roughly 15,000 SNFs. To be certified for participation in Medicare, Medicaid, or both, a SNF must have had an initial survey as well as subsequent, periodic surveys to establish compliance. On average, SNFs are surveyed every 12 to 15 months by state agencies under contract to CMS. In a standard survey,<sup>2</sup> a team of state surveyors spends several days at the SNF, conducting a broad review of care and services to ensure that the facility complies with federal standards and meets the assessed needs of the patients. Data on facility characteristics, patient characteristics, and staffing levels are collected on standard forms. These forms are filled out by each facility at the beginning of the survey and are certified by the facility as being accurate. After the survey is completed, the state agency enters the data from these forms into OSCAR, which stores data from the most current and previous three surveys.

Although OSCAR was the most suitable data source available for our analysis, it has several limitations. First, OSCAR provides a 2-week snapshot of staffing and a 1 day snapshot of patients at the time of the survey, so it may not accurately depict the facility's staffing and number of patients over a longer period. Second, staffing is reported across the entire facility, while the number of patients are reported only for Medicare- and Medicaid-certified beds. OSCAR, like other data sources, does not distinguish between staffing for Medicare patients and staffing for other patient groups. Finally, the Health Care Financing Administration (HCFA) reported that OSCAR data are unreliable at the individual SNF level.<sup>3</sup> However, the agency's recent analysis has concluded that the OSCAR-based staffing measures appear "reasonably accurate" at the aggregate level (e.g., across states). Neither CMS nor the states attempt to verify the accuracy of the staffing data regularly.

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<sup>2</sup>In addition to the standard survey, state agencies conduct other surveys including complaint surveys.

<sup>3</sup>See HCFA, *Report to Congress: Appropriateness of Minimum Nurse Staffing Ratios in Nursing Homes, Phase I* (Baltimore, Md.: July 2000).

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**Limitations to Our Analysis** In addition to limitations inherent in OSCAR data, our analysis was limited in several ways. First, our sample included only SNFs for which OSCAR data were available both before and after the 16.66 percent increase in the nursing component took effect. Second, our analysis of staffing ratios after the increase took effect was limited to data collected from May through December 2001. As a result, we only reviewed data for 8 months after the payment increase was implemented, although our results do not appear to be affected by any seasonal trends in staffing.<sup>4</sup> We were not able to review data for a later period when facilities might have used the payment increase differently.<sup>5</sup> Finally, due to data entry lags, when we drew our sample in January 2002, OSCAR did not include data from some facilities surveyed from May through December 2001.<sup>6</sup>

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**Creation of the Sample** To determine the change in nurse staffing ratios, we selected all facilities surveyed from May through December 2001 that also had a survey during 2000, which could serve as the comparison. This sample contained OSCAR data for 6,522 facilities. (See table 5.) Although not a statistical sample that can be projected to all SNFs using statistical principles, the sample is unlikely to be biased because it was selected on the basis of survey month. Our sampling procedure, in which selection depended solely on the time of survey, was unlikely to yield a sample with characteristics that differ substantially from those of the entire population of SNFs. We found no significant differences between these 6,522 SNFs and the 13,454 SNFs that were surveyed in calendar year 2000, in terms of various characteristics—the proportion that are hospital-based, the proportion that are for-profit, the share of a facility's patients that are paid for by Medicare, and the

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<sup>4</sup>To test whether our results reflected any seasonal trends in staffing, we examined the change in nurse staffing ratios among facilities surveyed from May through December of both 2000 and 2001. We found that these facilities had a small change in their nurse staffing ratios that was similar to the change among facilities that were surveyed at any time during calendar year 2000 and from May to December 2001.

<sup>5</sup>Although the payment increase began with services furnished on or after April 1, 2001, according to CMS, facilities would not have begun to receive the added payments until May 1, 2001, because of the time it takes to process claims. We compared the change in staffing ratios among facilities surveyed in May and June 2001 to those surveyed in July and August 2001 and found no significant difference. This suggests that the results were not affected by examining staffing soon after the payment change.

<sup>6</sup>We compared the change in staffing ratios among SNFs surveyed from May through August 2001 to the change among those surveyed later in the year—the period for which state agencies had not yet entered all survey data into OSCAR—and found no significant difference.

capacity of the facilities. However, our sample was not distributed across states like the population of SNFs. (See table 6.) This may be because state agencies differ in the amount of time required to complete entry of survey data into OSCAR. In addition, we excluded from our sample 449 SNFs that, based on their 2000 Medicare claims data, had received payments from Medicare that were not determined under the PPS. The resulting sample had 6,073 facilities—over one-third of all SNFs.

**Table 5: Creation of Our Sample of SNFs**

	<b>Number of SNFs</b>
Total SNFs in 2000 OSCAR file (no duplicates)	13,454
Total SNFs in 2001 OSCAR file	14,760
SNFs surveyed from May 2001 through December 2001	6,775
SNFs also with survey in calendar year 2000	6,522
SNFs that had received Medicare payments not determined under the PPS	-449
Original sample	6,073

Source: GAO analysis of CMS's OSCAR data and Medicare claims data.

**Table 6: Distribution of SNFs across States (in Percentages)**

	<b>All SNFs with OSCAR data in calendar year 2000 (n=13,454)</b>	<b>Sample SNFs<sup>a</sup> (n=6,522)</b>
Alabama	1.34	1.84
Alaska	0.10	0.08
Arizona	0.99	0.86
Arkansas	1.40	1.15
California	7.50	7.65
Colorado	1.32	1.27
Connecticut	1.77	2.02
Delaware	0.27	0.28
District of Columbia	0.13	0.11
Florida	5.01	5.24
Georgia	2.19	2.81
Hawaii	0.27	0.25
Idaho	0.54	0.69
Illinois	4.60	4.35
Indiana	3.43	3.77
Iowa	2.00	2.18
Kansas	1.86	1.59

**Appendix I: Data Source and Data Verification  
Methods for Nurse Staffing Ratio Analysis**

	<b>All SNFs with OSCAR data in calendar year 2000 (n=13,454)</b>	<b>Sample SNFs<sup>a</sup> (n=6,522)</b>
Kentucky	2.01	2.13
Louisiana	1.79	1.79
Maine	0.85	0.95
Maryland	1.68	0.61
Massachusetts	3.20	2.59
Michigan	2.80	3.51
Minnesota	2.75	2.81
Mississippi	0.97	1.18
Missouri	3.26	2.61
Montana	0.65	0.58
Nebraska	1.05	1.23
Nevada	0.33	0.21
New Hampshire	0.38	0.32
New Jersey	2.42	1.98
New Mexico	0.46	0.43
New York	4.39	3.31
North Carolina	2.83	3.13
North Dakota	0.63	0.81
Ohio	5.72	5.80
Oklahoma	1.46	0.52
Oregon	0.88	1.07
Pennsylvania	5.34	5.78
Rhode Island	0.62	0.64
South Carolina	1.22	1.29
South Dakota	0.64	0.66
Tennessee	1.84	1.98
Texas	7.20	7.41
Utah	0.57	0.74
Vermont	0.28	0.31
Virginia	1.61	1.72
Washington	1.86	2.12
West Virginia	0.81	0.37
Wisconsin	2.53	3.01
Wyoming	0.24	0.26

Note: These percentages do not add to 100 because we did not include the small percentage of SNFs located in Puerto Rico, Guam, and the United States Virgin Islands.

<sup>a</sup>The sample includes all SNFs with OSCAR data for both calendar year 2000 and May to December 2001.

Source: GAO analysis of CMS's OSCAR data.

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## Validating and Correcting OSCAR Data

To assess the accuracy of the OSCAR data in our sample, we applied decision rules developed by CMS for its study of minimum nurse staffing ratios to identify facilities with data that appeared to represent data entry or other reporting errors.<sup>7</sup> In addition, we identified facilities in our sample that had changes in their nurse staffing ratios greater than 100 percent, but that did not report 100 percent changes in both total patients and total beds. Using these rules, we identified 570 facilities for review. For 536 of these facilities, we obtained the original forms completed by SNF staff and used for entering data into OSCAR, from the state survey agencies. We compared the data on the forms to the OSCAR entries and identified 159 facilities with data entry errors. For these facilities, we corrected the data, although 12 continued to be outliers and were excluded. For 179 facilities, we telephoned the SNF to verify its data; 65 facilities confirmed that OSCAR correctly reported their data. Based on the information gathered in these calls, we were able to correct the data for an additional 47 facilities. We also excluded 35 facilities for which we could not correct the data. In addition, we excluded 915 SNFs with more total beds than certified beds because they may have inaccurate staffing ratios.<sup>8</sup> Other facilities were excluded because we did not receive their forms, we were unable to call the SNFs, or we did not receive replies from them. After these exclusions, our final sample contained 4,981 SNFs. (See table 7.)

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<sup>7</sup>These rules identified facilities that reported more patients than beds, 12 or more hours of nursing time per patient day, less than 30 minutes of nursing time per patient day, and any hours coded as “999”—which could indicate reporting error. Other researchers who use OSCAR data have developed similar decision rules. Although we also initially used a CMS rule to identify facilities that had no staff registered nurse (RN) hours but 60 or more beds, we did not exclude facilities based on this rule because we later determined it was not a good indicator of problem data. After reviewing the federal SNF staffing regulations and discussing these requirements with a number of SNFs, we determined that a SNF could have 60 or more beds and have no RNs except for administrative staff. 42 C.F.R. § 483.23 (2001).

<sup>8</sup>Facilities are instructed to report only patients in certified beds. As a result, the number of patients reported in OSCAR for these facilities may not truly reflect the number of patients who received care from nursing staff.

**Table 7: Exclusions from the Sample**

	<b>Number of SNFs</b>
Original sample	6,073
Facilities with edited data that were still identified as outliers	12
Facilities for which we could not correct the data	35
Facilities that had closed	3
Facilities with more total beds than certified beds	915 <sup>a</sup>
Facilities for which we did not receive forms	34
Facilities that we were unable to call	81
Facilities that did not reply	12
<b>Final sample</b>	<b>4,981</b>

<sup>a</sup>These SNFs were excluded because they may have inaccurate staffing ratios. Facilities are instructed to report only patients in certified beds. As a result, the number of patients reported in OSCAR for these facilities may not reflect the number of patients who received care from nursing staff.

Source: GAO analysis of CMS's OSCAR data.

## Nurse Staffing Ratios

We calculated nurse staffing ratios—hours per patient day—for each facility by dividing the total nursing hours<sup>9</sup> by the estimated number of patient days.<sup>10</sup> We calculated nurse staffing ratios for all nursing staff as well as for each category of staff: RNs, LPNs, and aides. We also calculated the change in these ratios for each facility in our sample. We analyzed these changes in nurse staffing ratios overall and for several categories of SNFs, including for-profit, not-for-profit, and government-owned facilities. We also analyzed these changes based on each facility's prior year staffing ratio. Finally, we supplemented the staffing data with cost and payment data from Medicare cost reports for 2000 and related the changes in nurse staffing ratios to each SNF's total margin—a measure of its financial status. We tested whether staffing ratio changes from 2000 to 2001 were statistically significant—that is, statistically distinguishable from zero. In

<sup>9</sup>Total nursing hours includes the number of full-time, part-time, and contract RN, licensed practical nurse (LPN), certified nurse aide (CNA), CNA-in-training, and medication technician hours reported in OSCAR for a 2-week period. Nursing hours do not include RN directors of nursing or nurses with administrative duties. In addition, nursing hours reflect the amount of time that nursing staff were at work, but do not necessarily reflect the time they spent with patients. For example, they may spend a portion of their day in training or on breaks.

<sup>10</sup>We estimated patient days by multiplying by 14 the number of patients reported in OSCAR for 1 day.

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**Appendix I: Data Source and Data Verification  
Methods for Nurse Staffing Ratio Analysis**

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addition, for the analyses of SNFs' prior year staffing and their financial status, we tested whether, between any two groups of SNFs, the difference in their staffing ratio changes was statistically significant.

# Appendix II: Average Change in Nursing Staff Time between 2000 and 2001, Grouped by Category of SNF

Category	Average nursing time per patient day		Change in minutes
	Calendar year 2000	May-December 2001	
Hospital-based	5 hours, 32.1 minutes	5 hours, 32.0 minutes	-0.1 minutes
Freestanding	3 hours, 6.7 minutes	3 hours, 8.9 minutes	2.1 minutes
For-profit	3 hours, 8.3 minutes	3 hours, 9.5 minutes	1.3 minutes
Not-for-profit	3 hours, 51.9 minutes	3 hours, 54.6 minutes	2.7 minutes
Government	3 hours, 53.8 minutes	3 hours, 58.9 minutes	5.0 minutes
Chain	3 hours, 14.9 minutes	3 hours, 15.4 minutes	0.5 minutes
Nonchain	3 hours, 34.7 minutes	3 hours, 38.6 minutes	3.9 minutes

Note: For freestanding and nonchain SNFs, the change in minutes between 2000 and 2001 was significant at the .05 level. Due to rounding, the reported change in minutes does not always match the 2000 and 2001 figures exactly.

Source: GAO analysis of CMS's OSCAR data.



# Appendix III: Comments from the Centers for Medicare & Medicaid Services



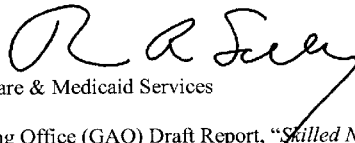
DEPARTMENT OF HEALTH & HUMAN SERVICES

Centers for Medicare & Medicaid Services

*Administrator*  
Washington, DC 20201

**DATE:** SEP 25 2002

**TO:** Laura A. Dummit  
Director, Health Care—Medicare Payment Issues  
General Accounting Office

**FROM:** Thomas A. Scully   
Administrator  
Centers for Medicare & Medicaid Services

**SUBJECT:** General Accounting Office (GAO) Draft Report, "*Skilled Nursing Facilities: Available Data Show Average Nursing Staff Time Changed Little After Medicare Payment Increase*" GAO-02-1051

As requested, we have reviewed the above-captioned report, which GAO developed in response to Section 312 of the Benefits Improvement and Protection Act of 2000 (BIPA, P.L. 106-554, Appendix F). The BIPA legislation provided for a temporary, 16.66 percent increase in the nursing component of the case-mix adjusted payment rates for skilled nursing facilities (SNFs), from April 1, 2001, through September 30, 2002. It also directed GAO to study the payment increase impact on nurse staffing ratios in SNFs, and to submit its findings to the Congress, including a recommendation on whether the payment increase should be continued.

The report finds that there was no significant overall increase in nurse staffing ratios after the payment increase went into effect. It attributes the modest staffing changes that did occur mainly to other factors, such as payment or policy changes in individual state Medicaid programs aimed at increasing nurse staffing. Accordingly, GAO recommends that the Congress consider permitting the payment increase to expire.

We believe that the report represents a useful contribution to the ongoing examination of SNF care under the prospective payment system, and we appreciate receiving the opportunity to review it. The GAO's findings in this report are consistent with our expectations, as well as our understanding of other findings in this area.

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# Appendix IV: GAO Contacts and Staff Acknowledgments

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## GAO Contacts

Jonathan Ratner, (202) 512-7107  
Phyllis Thorburn, (202) 512-7012

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## Acknowledgments

Major contributors to this report were Robin Burke, Jessica Farb, and Dae Park.

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# Related GAO Products

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*Skilled Nursing Facilities: Providers Have Responded to New Payment System By Changing Practices.* [GAO-02-841](#). Washington, D.C.: August 23, 2002.

*Nursing Homes: Quality of Care More Related to Staffing than Spending.* [GAO-02-431R](#). Washington, D.C.: June 13, 2002.

*Nursing Homes: Federal Efforts to Monitor Resident Assessment Data Should Complement State Activities.* [GAO-02-279](#). Washington, D.C.: February 15, 2002.

*Nursing Workforce: Emerging Nurse Shortages Due to Multiple Factors.* [GAO-01-944](#). Washington, D.C.: July 10, 2001.

*Nursing Homes: Success of Quality Initiatives Requires Sustained Federal and State Commitment.* [GAO/T-HEHS-00-209](#). Washington, D.C.: September 28, 2000.

*Nursing Homes: Sustained Efforts Are Essential to Realize Potential of the Quality Initiatives.* [GAO/HEHS-00-197](#). Washington, D.C.: September 28, 2000.

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