



September 2016

SKILLED NURSING FACILITIES

CMS Should Improve Accessibility and Reliability of Expenditure Data

Accessible Version

GAO Highlights

Highlights of [GAO-16-700](#), a report to congressional requesters

Why GAO Did This Study

Medicare paid \$28.6 billion to SNFs for nearly 1.7 million beneficiaries in 2014. About 15,000 SNFs provide short-term skilled nursing and rehabilitative care after an acute care hospital stay. As of 2014, 70 percent of SNFs were for-profit, 24 percent were nonprofit, and 5 percent were government-operated. About three-fifths of the SNFs were affiliated with chains. The average SNF Medicare margin was 12.5 percent. Some researchers have questioned whether SNF margins come at the expense of patient care in the form of low nurse staffing levels.

GAO was asked to provide information on how SNFs spend their Medicare and other revenues. GAO examined (1) the extent to which the expenditure data CMS collects from SNFs and provides to the public are accessible and reliable, (2) how SNF costs and margins vary by facility characteristics, and (3) how SNF nurse staffing levels vary by facility characteristics and the relationship between SNF nurse staffing levels and margins. GAO analyzed Medicare cost report data for fiscal years 2011 through 2014, the most recent years with complete data available. GAO also interviewed CMS officials, researchers, and beneficiary advocates.

What GAO Recommends

GAO recommends that CMS (1) improve public stakeholders' ability to locate and use SNF expenditure data and (2) ensure the accuracy and completeness of the data. HHS concurred with the first but not the second recommendation, citing resource considerations. GAO continues to believe that CMS should provide reliable SNF expenditure data.

View [GAO-16-700](#). For more information, contact James Cosgrove at (202) 512-7114 or cosgrovej@gao.gov.

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CMS Should Improve Accessibility and Reliability of Expenditure Data

What GAO Found

The Centers for Medicare & Medicaid Services (CMS)—the agency within the Department of Health and Human Services (HHS) that administers Medicare—collects and reports expenditure data from skilled nursing facilities (SNF), but it has not taken key steps to make the data readily accessible to public stakeholders or to ensure their reliability. SNFs are required to self-report their expenditures in annual financial cost reports, and CMS posts the raw data on its website. However, CMS has not provided the data in a readily accessible format and has not posted the data in a place that is easy to find on its website, according to public stakeholders and GAO's observations. In addition, CMS does little to ensure the accuracy and completeness of the data. Federal internal control standards suggest that agencies should make data accessible to the public and ensure data reliability. Until CMS takes steps to make reliable SNF expenditure data easier to use and locate, public stakeholders will have difficulty accessing and placing confidence in the only publicly available source of financial data for many SNFs.

GAO found that, for each fiscal year from 2011 through 2014, direct and indirect care costs were lower as a percentage of revenue, on average, at for-profit SNFs compared with nonprofit and government SNFs. Direct and indirect care costs were similarly lower at chain SNFs compared with independent SNFs. In addition, the median margin, which measures revenue relative to costs, was higher for for-profit and chain SNFs than for other SNFs in each of the 4 years.

The relationship between SNFs' nurse staffing levels (hours per resident day) and their margins varied by ownership type in each fiscal year from 2012 through 2014, the 3 years with complete staffing data. For-profit SNFs generally had lower nurse staffing ratios than did nonprofit and government SNFs. Examining each fiscal year separately, GAO estimated that a SNF's margin had a small, but statistically significant, effect on its case-mix adjusted (that is, adjusted for residents' health care needs) nurse staffing ratios. For example, for each percentage point increase in a for-profit SNF's margin in fiscal year 2014, GAO estimated that the SNF's total nurse staffing ratio (including registered nurses, licensed practical nurses, and certified nursing assistants) decreased by 4.1 minutes per resident day after controlling for other factors. However, in GAO's analyses, these other factors, such as geographic location, were more important predictors of a SNF's case-mix adjusted nurse staffing ratios.

SNFs' Average Nursing Time and Median Margins, by Ownership Type, Fiscal Year 2014

Ownership type	Reported average nursing time per resident day		Median margin
	All nurses	Registered nurses	
For-profit	3 hours, 53 minutes	34 minutes	19%
Nonprofit	4 hours, 7 minutes	38 minutes	15
Government	3 hours, 59 minutes	32 minutes	13

Source: GAO analysis of Medicare cost report data. | GAO-16-700

Note: All nurses include registered nurses, licensed practical nurses, and certified nursing assistants. A margin is the difference between revenues and costs, divided by revenues, and expressed as a percentage.

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Abbreviations

CMS	Centers for Medicare & Medicaid Services
CNA	certified nursing assistant
LPN	licensed practical nurse
PPACA	Patient Protection and Affordable Care Act
RN	registered nurse
SNF	skilled nursing facility

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September 7, 2016

Congressional Requesters

Medicare paid \$28.6 billion to skilled nursing facilities (SNF) for nearly 1.7 million beneficiaries in 2014.¹ The nation's approximately 15,000 SNFs provide short-term skilled nursing and rehabilitative care to Medicare residents following an acute care hospital stay. Most SNFs are distinct units (such as buildings, floors, or wings) within nursing homes that also provide long-term care, which Medicare does not cover. Medicare SNF residents include those recovering from surgeries, such as joint replacements, and health conditions, such as stroke and pneumonia.

To participate in Medicare, SNFs must meet minimum federal quality and life-safety standards and must submit annual cost reports. The cost reports are the only publicly available source of financial data for many SNFs. The reports also capture information on facility characteristics and nurse staffing levels. The Centers for Medicare & Medicaid Services (CMS), the agency that administers Medicare, provides the cost report data to the public and uses the data to update SNF payment rates. Public stakeholders, such as beneficiary advocates and researchers, could use the cost report data to compare SNFs' costs for resident care, among other things. SNFs participating in Medicare can decide how much to spend on resident care and other costs and how much to retain. In 2014, the average SNF Medicare margin, which measures payments relative to costs, was 12.5 percent.²

Some researchers have questioned whether SNFs' margins are coming at the expense of resident quality of care in the form of low nurse staffing

¹Medicare is the federal health insurance program for people age 65 and older, individuals under age 65 with certain disabilities, and individuals diagnosed with end-stage renal disease. At the time of our analysis, 2014 was the most recent year with available data.

²A margin is the difference between revenues and costs, divided by revenues, and expressed as a percentage. For example, the average 2014 margin of 12.5 percent means that the average SNF had a net income of \$12.50 for every hundred dollars of revenue. For for-profit SNFs, a margin is a measure of profitability. For nonprofit and government SNFs, a margin reflects the share of surplus revenue.

levels.³ For example, to increase their margins, SNFs could reduce staffing levels or provide residents with fewer or a less expensive mix of services. SNFs employ three types of nursing staff: registered nurses (RN), licensed practical nurses (LPN), and certified nursing assistants (CNA).⁴ Previous research has demonstrated that higher nurse staffing levels—particularly RN staffing levels—are associated with higher quality of care.⁵ In addition, our past work suggests that SNF ownership type (for-profit, nonprofit, or government) and chain affiliation (chain or independent) may be associated with staffing levels and quality of care. For example, we found in October 2015 that nursing homes that consistently performed poorly on selected quality measures between 2011 and 2014 were more likely to be for-profit or large homes (greater than 100 beds) compared with homes that performed well.⁶ In July 2011, we found that nursing homes owned by private investment firms had lower reported average total nurse staffing levels and more quality of care problems identified in inspections compared with other homes.⁷ Industry representatives contend that SNFs prioritize high-quality care despite pressure to manage operating costs within reimbursement constraints.

You asked us to provide information on how SNFs spend their Medicare and other revenues and how spending may vary by facility characteristics. In this report, we examine

1. the extent to which the expenditure data CMS collects from SNFs and provides to the public are accessible and reliable,
2. how SNF costs and margins vary by facility characteristics, and

³Charlene Harrington et al., *Improving the Financial Accountability of Nursing Facilities* (Washington, D.C.: The Kaiser Commission on Medicaid and the Uninsured, June 2013).

⁴RNs typically manage residents' nursing care and perform complex procedures such as starting intravenous feeding or fluids. LPNs provide routine bedside care such as taking vital signs. CNAs generally assist residents with eating, bathing, dressing, and toileting.

⁵See, for example, Centers for Medicare & Medicaid Services, *Report to Congress: Appropriateness of Minimum Nurse Staffing Ratios in Nursing Homes, Phase II Final* (Baltimore, Md.: December 2001).

⁶GAO, *Nursing Home Quality: CMS Should Continue to Improve Data and Oversight*, [GAO-16-33](#) (Washington, D.C.: Oct. 30, 2015), 15.

⁷GAO, *Nursing Homes: Private Investment Homes Sometimes Differed from Others in Deficiencies, Staffing, and Financial Performance*, [GAO-11-571](#) (Washington, D.C.: July 15, 2011).

3. how SNF nurse staffing levels vary by facility characteristics and the relationship between SNF nurse staffing levels and margins.

To examine the extent to which the expenditure data CMS collects from SNFs and provides to the public are accessible and reliable, we reviewed SNF expenditure data requirements in the Patient Protection and Affordable Care Act (PPACA) and Medicare cost report documentation.⁸ We also compared CMS's expenditure reporting with that of another organization, the California HealthCare Foundation, which publicly reports cost, finance, and quality measures for nursing homes in the state on its CalQualityCare.org website. In addition, we interviewed CMS officials, two academic researchers who have studied this topic for many years, and representatives from two beneficiary advocacy organizations familiar with SNF expenditure data to obtain their views on CMS's expenditure reporting. We also contacted two SNF trade associations. Representatives from one association told us they did not have expertise on cost reporting, and representatives from the second association did not respond. Finally, we reviewed CMS's efforts to make SNF expenditure data accessible to the public and to ensure the reliability of the data against the relevant standards for internal control in the federal government.⁹

To examine how SNF costs and margins vary by facility characteristics, we analyzed Medicare cost report data for fiscal years 2011 through 2014—the most recent years with complete data available as of July 2015, when we began our analyses. While the cost reports include some data related specifically to Medicare residents, they also contain data for all facility residents regardless of payer. Generally, the cost reports cover a 12-month period of operations and reflect SNFs' fiscal years, which comprise different ranges of months. We first organized each SNF's costs into four categories: direct care, indirect care, capital-related assets, and

⁸See Pub. L. No. 111-148, § 6104, 124 Stat. 119, 711 (2010) (codified at 42 U.S.C. § 1395yy(f)).

⁹GAO, *Standards for Internal Control in the Federal Government*, [GAO-14-704G](#) (Washington, D.C.: September 2014). Internal control is a process effected by an entity's oversight body, management, and other personnel that provides reasonable assurance that the objectives of an entity will be achieved.

administrative services.¹⁰ We then calculated how much each SNF spent for each category as a percentage of revenue and computed each SNF's margin, reflecting the percentage of revenue each SNF retained. We then compared SNF costs and margins by ownership type and chain affiliation.

To examine how SNF nurse staffing levels vary by facility characteristics and the relationship between SNF nurse staffing levels and margins, we first used nurse work time as a proxy for nurse staffing levels. Using cost report data, we calculated each SNF's total nurse time worked (RNs, LPNs, and CNAs combined) and total RN time worked, and expressed the totals as a ratio of nurse time per resident day. Because the time needed for treating residents varies with their clinical conditions and treatments, we adjusted each SNF's staffing ratios on the basis of its Medicare residents' health care needs. This process is known as case-mix adjustment. We then used multiple linear regression analysis, a statistical procedure that allowed us to assess the relationship between a SNF's margin and its case-mix adjusted total nurse and total RN time per resident day, controlling for other factors. The other factors in our models included a SNF's average hourly RN wage, average resident length of stay, chain affiliation, number of beds, number of competitors within 15 miles, ownership type, proportion of Medicare days, and urban or rural status. Our models also accounted for the state where each SNF was located. We restricted our analyses to fiscal years 2012 through 2014 because nurse staffing data were incomplete for fiscal year 2011 and were generally unavailable beyond fiscal year 2014 when we began our analyses. For each of the 3 years, we performed analyses for all SNFs and by ownership type and chain affiliation.

We limited our analyses of Medicare cost report data to freestanding SNFs—that is, those not based in a hospital—in the 50 states and Washington, D.C. We excluded hospital-based SNFs from our analyses because their costs may be driven in part by hospitals' methods for allocating overhead costs among departments. In addition, CMS requires hospital-based SNFs to submit the Medicare hospital cost report, which does not gather SNF direct care staffing data, rather than the SNF cost

¹⁰Direct care includes costs for inpatient routine services. Indirect care includes costs such as employee benefits, housekeeping, laundry and linen service, medical records and library, and nursing administration. Capital-related assets include costs for buildings and fixtures as well as movable equipment. Administrative services include administrative and general costs. Table 3 in app. I contains a full list of costs in each category.

report. The Medicare Payment Advisory Commission reported that hospital-based SNFs accounted for 5 percent of all SNFs and 3 percent of Medicare SNF spending in 2014.¹¹

The Medicare cost report data we used for our analyses had some limitations. Although the cost reports provided the most suitable data for our analyses, they are not routinely audited and are subject to limited verification. In addition, because SNFs are not reimbursed directly on the basis of their costs, the level of effort SNFs put into accurately completing the cost reports is uncertain. Furthermore, prior research has demonstrated that it is possible for SNFs to conceal profit in management fees, lease agreements, interest payments to owners, and purchases from related-party organizations.¹² It is not possible to detect this activity using cost report data. To the extent that profit is “hidden” in various cost categories, our findings may understate a SNF’s margin.

We took several steps to assess the reliability of the Medicare cost report data we used in this report. We interviewed CMS officials, reviewed cost report documentation, and excluded SNFs that reported implausible values for their costs, revenues, nursing hours, number of beds, and number of inpatient days.¹³ We used standard statistical techniques to identify outliers and eliminate SNFs that reported extreme values among the dependent variables used in our regression analyses as well as SNFs whose reported values had a disproportionate effect on our regression results. Finally, because SNFs sometimes file more than one cost report for a single fiscal year (e.g., amended or partial year reports), we ensured that each SNF we included had only one cost report per year. Our exclusions removed between 5 percent and 14 percent of all SNFs that

¹¹Medicare Payment Advisory Commission, *Report to the Congress: Medicare Payment Policy* (Washington, D.C.: Mar. 15, 2016), 179.

¹²Charlene Harrington, Leslie Ross, and Taewoon Kang, “Hidden Owners, Hidden Profits, and Poor Nursing Home Care: A Case Study,” *International Journal of Health Services*, vol. 45, no. 4 (October 2015).

¹³For example, we removed between 23 and 72 SNFs in each of the 4 years we examined because they reported invalid zip codes (which we used to determine the number of competitors within 15 miles) or did not report their urban or rural status. In addition, we removed SNFs that had unusual cost reporting periods (i.e., not between 10 and 14 months), filed an abridged cost report because they provided few Medicare-covered services, and reported terminating or ceasing participation in the Medicare program during the cost reporting period.

submitted a cost report each year. Our final population ranged from 11,132 to 13,255 SNFs in each year. On the basis of these steps, we concluded that the Medicare cost report data were sufficiently reliable for the purposes of this report. See appendix I for additional detail on the methods and results of our expenditure analyses.

We conducted this performance audit from July 2015 to September 2016 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Background

To qualify for SNF care, Medicare beneficiaries typically need to be admitted to a SNF within 30 days after discharge from a hospital stay of at least 3 days and need care for a condition that was treated during the hospital stay or that arose while receiving SNF care. Medicare may cover up to 100 days per episode of SNF care.¹⁴ Many SNFs also provide long-term care, which Medicare does not cover, to Medicaid or private paying residents. Medicaid, the joint federal-state program for certain low-income individuals, is the primary payer for over 60 percent of SNF residents.¹⁵ Industry advocates have raised questions about Medicaid payment rates in many states being lower than the costs of providing care. While Medicare and Medicaid separately certify SNFs, nearly all SNFs have dual certification and participate in both programs. SNF residents who do not qualify for Medicare or Medicaid may have private insurance pay for their care or they may pay out of pocket.

SNF Characteristics

SNFs differ by type of ownership. As of 2014, 70 percent of SNFs were for-profit, 24 percent were nonprofit, and 5 percent were operated by

¹⁴An episode of care is a period that begins when a beneficiary is admitted to a SNF and ends when a beneficiary has not been an inpatient of a SNF for 60 consecutive days.

¹⁵According to the Medicare Payment Advisory Commission, Medicare-covered SNF days typically comprise a small share of a SNF's total resident days but a disproportionately larger share of its revenues. The commission reported that the median Medicare share of total days was 12 percent in 2014, but Medicare accounted for 21 percent of revenue. *Report to the Congress: Medicare Payment Policy*, 179-180.

government agencies. In general, for-profit SNFs have a goal of making profits that are distributed among their owners and stockholders. For example, several studies have demonstrated that for-profit SNFs generally have lower nurse-to-resident staffing ratios compared with nonprofit SNFs, likely allowing them to reduce their personnel costs and increase their margins.¹⁶ Nonprofit SNFs receive favorable tax status because they are not allowed to operate for the benefit of private interests.

SNFs also vary by chain affiliation. About three-fifths of SNFs were owned or operated by chains (entities that own multiple facilities), while the remainder were independent in 2014, the latest year for which data were available. While most chain-affiliated SNFs are for-profit, some are nonprofit or government-operated. Chains may develop complex administrative structures to spread expenses across multiple SNFs. Researchers have raised questions about the effects of chain ownership on SNF quality of care.

SNF Nurse Staffing and Quality of Care

SNFs employ three types of nursing staff: RNs, LPNs, and CNAs.¹⁷ As we have previously reported, the responsibilities and salaries of these three types of nurses are related to their levels of education.¹⁸ The staffing mix, or the balance SNFs maintain among RNs, LPNs, and CNAs, is generally related to the needs of the residents served. For example, a higher proportion of RNs may be employed to meet residents' needs in SNFs that serve more residents with acute care needs or in SNFs with specialty care units (such as units for residents who require ventilators). However,

¹⁶For example, see Charlene Harrington et al., "Nurse Staffing and Deficiencies in the Largest For-Profit Nursing Home Chains and Chains Owned by Private Equity Companies," *Health Services Research*, vol. 47, no. 1 (2012); Charlene Harrington et al., "Ownership, Financing, and Management Strategies of the Ten Largest For-Profit Nursing Home Chains in the United States," *International Journal of Health Services*, vol. 41, no. 4 (2011); and The Henry J. Kaiser Family Foundation, *Overview of Nursing Facility Capacity, Financing, and Ownership in the United States in 2011* (Washington, D.C.: The Kaiser Commission on Medicaid and the Uninsured, June 2013).

¹⁷In some states, LPNs are known as licensed vocational nurses. We use the term LPN to refer to both LPNs and licensed vocational nurses. In addition to nursing staff, SNFs employ a variety of other health care professionals, including physicians, social workers, physical therapists, and other types of therapists.

¹⁸[GAO-11-571](#), 12.

SNFs may be unable to pursue their ideal staffing mix for reasons such as high turnover among LPNs and CNAs.

Licensed Nurses and Nurse Aides

- **Registered nurses (RN)** have at least a 2-year degree and are licensed in a state. Because of their advanced training and ability to provide skilled nursing care, RNs are paid more than other nursing staff. Generally, RNs are responsible for managing residents' nursing care and performing complex procedures, such as starting intravenous feeding or fluids.
- **Licensed practical nurses (LPN)** have a 1-year degree, are also licensed by the state, and typically provide routine bedside care, such as taking vital signs.
- **Certified nursing assistants (CNA)** are nurse aides or orderlies who work under the direction of licensed nurses, have at least 75 hours of training, and have passed a competency exam. CNAs' responsibilities usually include assisting residents with eating, dressing, bathing, and toileting. CNAs typically have more contact with residents than other nursing staff and provide the greatest number of hours of care per resident day. CNAs generally are paid less than RNs and LPNs.

Source: GAO. | GAO-16-700

There are no federal minimum standards linking SNFs' nurse staffing to the number of residents, but SNFs that participate in both Medicare and Medicaid are required to have sufficient nursing staff to provide nursing and related services to allow each resident to attain or maintain the highest practicable physical, mental, and psychosocial well-being.¹⁹ In general, every SNF must have licensed nurses (RNs or LPNs) on duty around the clock, including one RN on duty for at least 8 consecutive hours per day, 7 days per week. According to one study, 34 states had established additional minimum requirements for the number of nursing hours per resident day as of 2010.²⁰

¹⁹42 U.S.C. § 1395i-3(b)(4)(A)(i); 42 C.F.R. §§ 483.1(b), 483.30 (2015).

²⁰Charlene Harrington, *Nursing Home Staffing Standards in State Statutes and Regulations* (San Francisco, Calif.: University of California San Francisco, December 2010).

Researchers have found that higher total nurse staffing levels (RNs, LPNs, and CNAs combined) and higher RN staffing levels are typically associated with higher quality of care, as shown by a wide range of indicators. For example, lower total nurse and RN staffing levels have been linked to higher rates of deficiency citations, which may involve actual harm or immediate jeopardy to residents. In addition, higher total nurse and RN staffing levels have been associated with better health outcomes, such as fewer cases of pressure ulcers, urinary tract infections, malnutrition, and dehydration, as well as improved resident functional status.²¹ In 2001, a CMS contractor reported the effect of nurse staffing on quality of care in SNFs. The contractor identified staffing thresholds in both a short-stay sample of Medicare SNF admissions and a long-stay sample of nursing home residents who were in the facility for at least 90 days. These thresholds demonstrated incremental benefits of nurse staffing; once these thresholds were met, there were no additional benefits in terms of quality. For the short-stay sample, the thresholds were 0.55 hours per resident day for RNs and 3.51 hours per resident day for all nurses. For the long-stay sample, the thresholds were 0.75 hours per resident day for RNs and 4.08 hours per resident day for all nurses.²²

PPACA Requirements for Reporting SNF Expenditures

PPACA required SNFs to separately report expenditures for wages and benefits for direct care staff, including specific data on RNs, LPNs, CNAs, and other medical and therapy staff, and required CMS to redesign the cost report in consultation with private sector accountants experienced with SNF cost reports to meet this requirement. The act also required CMS, in consultation with others, to categorize the expenditures listed on the cost report, regardless of any source of payment for such expenditures, into four functional accounts—direct care (including nursing, therapy, and medical services), indirect care (including

²¹GAO, *Nursing Homes: Quality of Care More Related to Staffing Than Spending*, [GAO-02-431R](#) (Washington, D.C.: June 13, 2002); Charlene Harrington, “Quality of Care in Nursing Home Organizations: Establishing a Health Services Research Agenda,” *Nursing Outlook*, vol. 53, no. 6 (2005); Institute of Medicine, Committee on the Work Environment for Nurses and Patient Safety, *Keeping Patients Safe: Transforming the Work Environment of Nurses* (Washington, D.C.: The National Academies Press, 2004); and Institute of Medicine, Committee on Improving Quality in Long-Term Care, *Improving the Quality of Long-term Care* (Washington, D.C.: The National Academies Press, 2001).

²²These nurse staffing thresholds can be compared with the average case-mix adjusted nursing hours per resident day described in table 1. Centers for Medicare & Medicaid Services, *Appropriateness of Minimum Nurse Staffing Ratios*.

housekeeping and dietary services), capital assets (including building and land costs), and administrative services—annually. Finally, the act required CMS to make information on SNFs’ expenditures “readily available to interested parties upon request.”²³

CMS Has Not Made SNF Expenditure Data Readily Accessible and Does Not Adequately Ensure Data Reliability

CMS Has Not Taken Steps Needed to Make SNF Expenditure Data Posted on Its Website Readily Accessible

CMS collects detailed SNF expenditure data in Medicare cost reports and posts the raw data on its website for the public. On their cost reports, SNFs must disclose total costs and allocate general services costs such as housekeeping and nursing administration. CMS officials told us they modified the cost report as required by PPACA in December 2011. Effective for cost reporting periods beginning on or after January 1, 2012, CMS required SNFs to provide expenditure data for full-time and part-time direct care employees who are directly hired and under contract.²⁴ CMS officials said the agency implemented the PPACA requirement to make information on SNFs’ expenditures “readily available to interested parties upon request” by posting the raw data on its website. The CMS website contains the raw cost report data that SNFs submitted for fiscal years 1995 through 2015. The website also notes that CMS “has made a reasonable effort to ensure that the provided data/records/reports are up-

²³Pub. L. No. 111-148, § 6104, 124 Stat. 119, 711 (2010) (codified at 42 U.S.C. § 1395yy(f)(4)).

²⁴CMS estimates that providing these additional data will increase the average record keeping time for each SNF by 5 hours and the average reporting time by 1 hour. CMS officials told us they consulted with a small group of private sector accountants who were very experienced in the nursing home field before they modified the cost report to collect data on direct care wages and benefits. After making the modifications, CMS officials said they held a discussion with officials from the Medicare Payment Advisory Commission.

to-date, accurate, complete, and comprehensive at the time of disclosure.”

However, CMS has not taken two key steps to make SNF expenditure data readily accessible on the basis of our interviews with public stakeholders and our observations. First, CMS has not provided the expenditure data in an accessible way. The data’s format, volume, and organization can make it difficult for public stakeholders to use the data. CMS posts data for each fiscal year across three separate files. Because of how CMS formats the data, users need certain software packages and programming skills to analyze data for each fiscal year. In addition, CMS has acknowledged that the data files are so large that some users have been unable to download them. One of the researchers we interviewed stated that the amount of time needed to analyze the data typically requires a grant. CMS also does not organize SNF expenditures in a meaningful way for analysis. For example, 12 of the 15 cost centers in the general services category are related to indirect care, so a user must make additional calculations to determine a SNF’s total indirect care costs. Second, CMS has not provided the expenditure data in a place that is easy to find on its website. For example, representatives of the two beneficiary advocacy organizations we interviewed told us they were unable to find the cost report data on the CMS website and noted the importance of making the SNF expenditure data easy to locate.

CMS officials told us they did not know who would use SNF expenditure data or for what purpose. Public stakeholders could make better use of SNF expenditure data if CMS took steps to make the data more accessible. For example, representatives of the two beneficiary advocacy organizations and one researcher we interviewed said CMS could incorporate summary expenditure measures into Nursing Home Compare, the CMS website that contains summary measures of SNF quality. Prior research has demonstrated that presenting cost and finance measures in a manner that consumers can easily interpret, displaying them alongside quality data, and focusing on information that is relevant to consumers can help increase their effectiveness.²⁵ For example, the

²⁵For example, see John F.P. Bridges et al., *Public Reporting of Cost Measures in Health: An Environmental Scan of Current Practices and Assessment of Consumer Centeredness*, 15-EHC009-EF (Rockville, Md.: Agency for Healthcare Research and Quality, March 2015); and Julia James, “Health Policy Brief: Public Reporting on Quality and Costs,” *Health Affairs* (Mar. 8, 2012).

California HealthCare Foundation's CalQualityCare.org website provides ideas on how to communicate SNF expenditure measures to consumers. This website allows consumers to find facility data and compare long-term care providers across California.²⁶

CMS officials told us that adding SNF expenditure measures to Nursing Home Compare is a possibility in the next 2 to 5 years. The officials noted that, as of December 2015, CMS had not begun considering the posting of SNF expenditure data on Nursing Home Compare nor begun systematically evaluating how to publicly report expenditure measures. The officials explained that the agency is currently focused on implementing an electronic system for collecting SNF direct care staffing data (known as the Payroll-Based Journal) and making changes to existing measures in Nursing Home Compare this year.²⁷ In March 2016, CMS released a public data set on its website that contains information on utilization, payments, and submitted charges for services SNFs provided to Medicare beneficiaries in 2013. Upon releasing the data set, CMS officials stated they were committed to greater data transparency.

In making data accessible to public stakeholders, federal internal control standards related to external communication suggest that agencies consider the audience, nature of information, availability, cost, and legal or regulatory requirements to ensure that information is communicated in a quality manner.²⁸ Until CMS takes steps to make SNF expenditure data easier to use and locate, public stakeholders will have difficulty accessing the only publicly available source of financial data for many SNFs.

²⁶In addition to quality measures, the website contains the following cost and finance measures: average total expenditures per resident day, expenditures as a percentage of revenues, average charges per resident day, resident care days by payment source, net operating income or loss, and operating margins. According to one researcher we interviewed, research has yet to be conducted on the effectiveness of publicly reporting these cost and finance measures. The researcher and CMS officials noted that it remains unknown whether reporting these measures at the national level would be beneficial to consumers.

²⁷In accordance with PPACA, CMS recently launched the Payroll-Based Journal system. This system requires facilities to electronically submit direct care staffing information based on payroll and other auditable data. According to a CMS official, these data are at the employee level and cover every day of the year. The official noted that these data are difficult to manipulate and of much greater utility for staffing reporting on Nursing Home Compare. Voluntary reporting began October 1, 2015.

²⁸[GAO-14-704G](#), 62.

CMS Does Not Adequately Ensure the Reliability of SNF Expenditure Data

Despite CMS’s statement that it has made a reasonable effort to ensure the accuracy of SNF cost report data, we found that the agency performs minimal quality control of the SNF expenditure data in the Medicare cost reports to ensure data reliability. Instead, CMS largely relies on SNFs to validate their own data. CMS requires SNFs to self-certify to the accuracy and completeness of their cost report data. However, according to CMS officials and one researcher we interviewed, there is little incentive for SNFs to ensure the accuracy and completeness of their data because the data do not affect the amount of Medicare payments each SNF receives. However, CMS does use the cost report data to update overall SNF payment rates. Despite this, CMS officials told us the agency conducts “extremely limited” reviews of cost report data because of funding and resource constraints. The officials said they rarely adjust SNFs’ reported costs and focus instead on improper payment reviews. For these reasons, CMS officials and the two researchers we interviewed told us they could not place full confidence in the reliability of the SNF expenditure data in the cost reports.

Federal internal control standards require agencies to use quality information.²⁹ The standards highlight the importance of processing obtained data into quality information, central to which is its accessibility and reliability. Reliable information that is accurate and complete can help agencies evaluate performance, make informed decisions, address risks, and achieve key objectives. Until CMS takes steps to ensure the accuracy and completeness of the SNF expenditure data, the data’s reliability cannot be ensured.

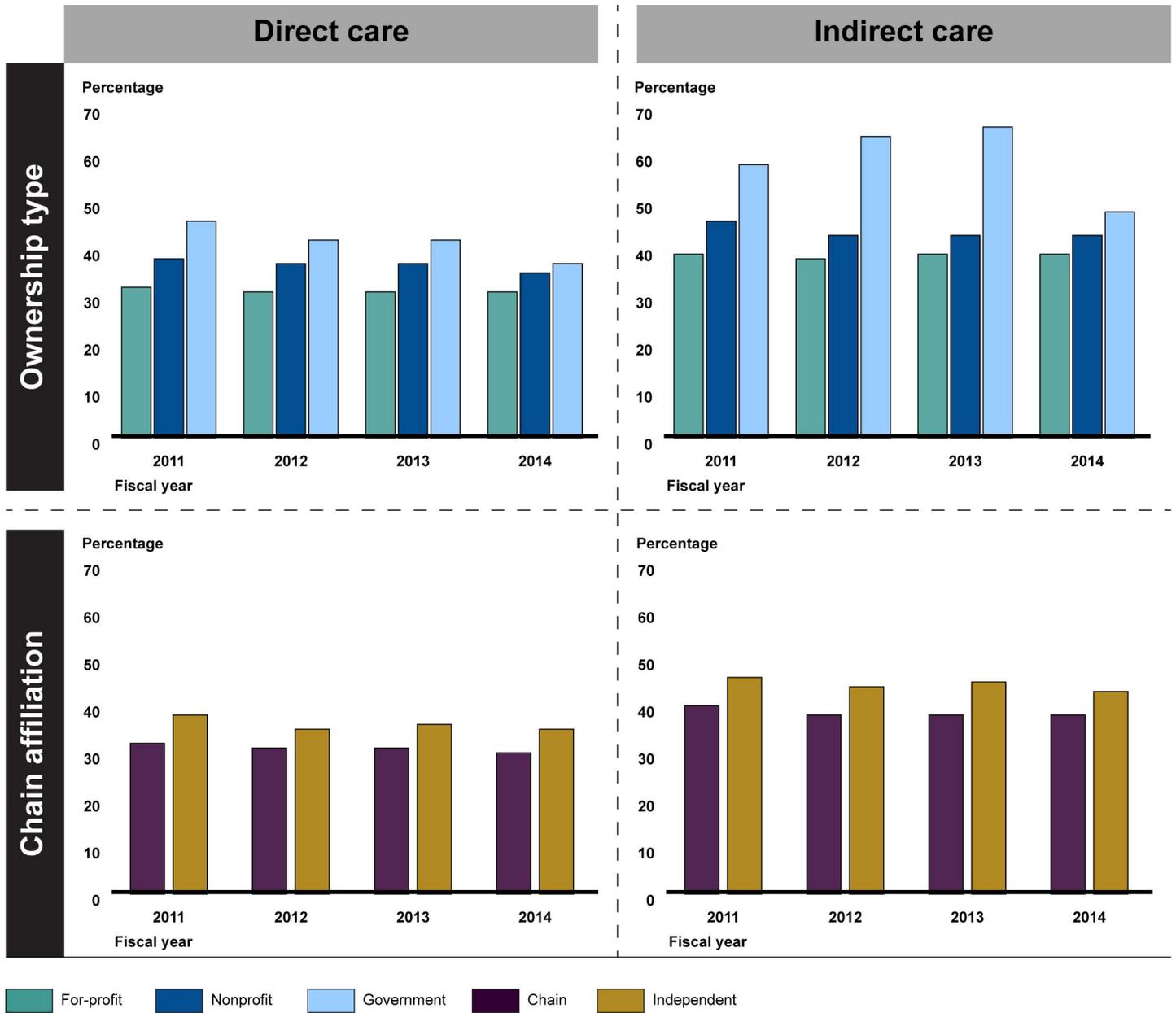
²⁹GAO-14-704G, 59.

For-Profit SNFs Generally Had Lower Direct and Indirect Care Costs as a Percentage of Revenue and Higher Margins than Did Nonprofit and Government SNFs

Our analysis found that, for each fiscal year from 2011 through 2014, direct and indirect care costs were lower as a percentage of revenue, on average, at for-profit SNFs compared with nonprofit and government SNFs. Costs were similarly lower at chain SNFs compared with independent SNFs.³⁰ Over the 4-year period we examined, the percentage of revenue spent on direct and indirect care remained relatively constant, on average, at for-profit and nonprofit SNFs but decreased at government SNFs. For both chain and independent SNFs, the percentage of revenue spent on direct and indirect care remained relatively constant, on average, from fiscal years 2011 through 2014. (See fig. 1.)

³⁰Direct care includes costs for inpatient routine services. Indirect care includes the following cost centers: central services and supply; dietary; employee benefits; housekeeping; laundry and linen service; medical records and library; nursing administration; nursing and allied health education; other general service costs; pharmacy; plant operation, maintenance, and repairs; and social services.

Figure 1: Average Costs Related to Direct Care and Indirect Care as a Percentage of Revenue for Skilled Nursing Facilities (SNF), by Organization Type, Fiscal Years 2011-2014



Source: GAO analysis of Medicare cost report data. | GAO-16-700

Note: A fiscal year refers to each SNF's cost reporting year, which covers different ranges of months. Direct care includes costs for inpatient routine services. Indirect care includes dietary, employee benefits, housekeeping, and other costs.

For for-profit and nonprofit SNFs, both overall costs and total revenues increased, on average, in each of the 4 years we examined. For example, for-profit and nonprofit SNFs generally had small annual increases in their direct care costs. However, because their revenue also increased slightly each year, on average, their direct care costs remained relatively constant as a percentage of revenue. Both overall costs and direct care costs decreased, on average, at government SNFs in each fiscal year from 2011 through 2014. Total revenues also decreased, on average, at government SNFs between fiscal years 2011 and 2014.

Regardless of ownership type and chain affiliation, SNFs' costs for capital-related assets and administrative services accounted for a similar percentage of revenue, on average, during each fiscal year from 2011 through 2014.³¹ According to the cost report data, capital-related asset costs accounted for 4 percent to 7 percent of revenue, on average, at for-profit, nonprofit, and government SNFs in each year. Similarly, costs for capital-related assets at chain and independent SNFs generally accounted for 5 percent to 6 percent of revenue, on average, in each year. During these 4 years, costs for administrative services accounted for 8 percent to 9 percent of revenue, on average, regardless of ownership type and chain affiliation.

In addition, median margins were higher for for-profit and chain SNFs than for other SNFs. As a group, for-profit SNFs had a higher median margin (between 16 percent and 19 percent) than nonprofit and government SNFs (between 12 percent and 15 percent and between 3 percent and 13 percent, respectively) for each fiscal year between 2011 and 2014. Similarly, median margins were generally higher at chain SNFs (between 16 percent and 19 percent) than at independent SNFs (between 12 percent and 17 percent) in each year. All SNF organization types had positive median all-payer margins each year, meaning that their payments more than covered their costs.

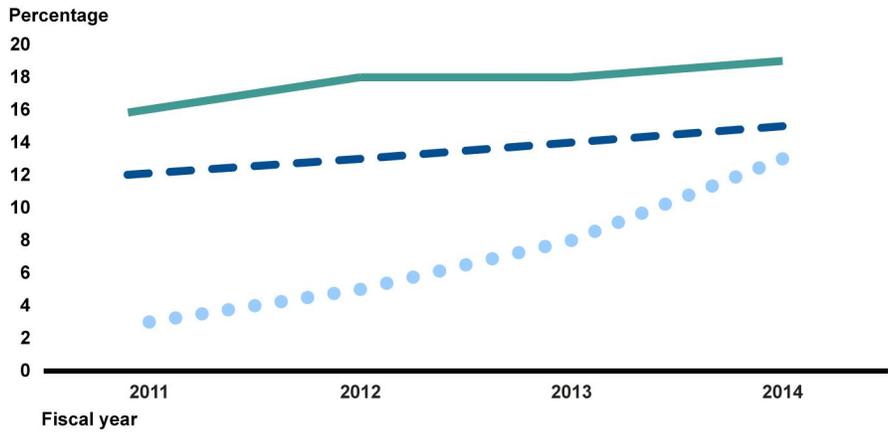
Moreover, from fiscal years 2011 through 2014, median margins increased regardless of ownership type and chain affiliation, but the amount of the increase differed between organization types. The median

³¹Examining capital-related assets and administrative services is useful because these categories indicate revenue not spent on resident care. Capital-related assets include costs for buildings and fixtures and movable equipment. Administrative services include administrative and general costs.

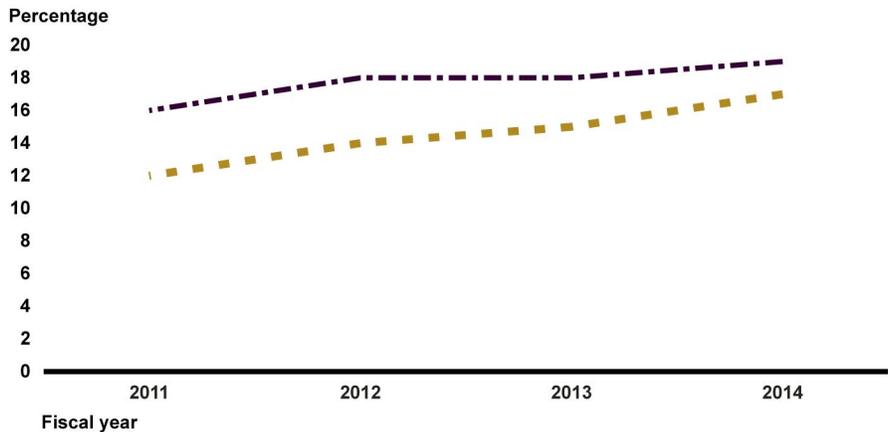
margin increased more at government SNFs than at for-profit and nonprofit SNFs and more at independent SNFs than at chain SNFs. During the 4-year period, the median margin at government SNFs increased 10 percentage points (from 3 percent to 13 percent), while it increased 3 percentage points at for-profit SNFs (from 16 percent to 19 percent) and at nonprofit SNFs (from 12 percent to 15 percent). In addition, independent SNFs' median margin increased by 5 percentage points (from 12 percent to 17 percent) and chain SNFs' median margin increased by 3 percentage points (from 16 percent to 19 percent). (See fig. 2.)

Figure 2: Median Margins for Skilled Nursing Facilities (SNF), by Organization Type, Fiscal Years 2011-2014

OWNERSHIP TYPE



CHAIN AFFILIATION



- For-profit
- - - Nonprofit
- . . . Government
- . - . - . Chain
- - - Independent

Source: GAO analysis of Medicare cost report data. | GAO-16-700

Note: A margin is the difference between revenues and costs, divided by revenues, and expressed as a percentage. A fiscal year refers to each SNF's cost reporting year, which covers different ranges of months.

For-Profit SNFs Had Lower Nurse Staffing Levels Than Other SNFs, and Nurse Staffing Levels Estimated to Decline Slightly as Margins Increase

SNFs' nursing staff levels, as measured by nurse time per resident day, were relatively stable for fiscal years 2012 through 2014, but there was some variation by type of ownership. For-profit SNFs generally had less nursing time per resident day in each of the 3 years we examined. After our adjustment for resident case-mix, we continued to observe the same trends.³² These trends were generally consistent with the small annual increases in direct care costs we observed at for-profit and nonprofit SNFs during this period. Table 1 shows SNFs' reported (unadjusted) and adjusted total nurse and RN time per resident day.

Table 1: Nursing Time at Skilled Nursing Facilities (SNF), by Ownership Type, Fiscal Years 2012-2014

Ownership type		Average reported (unadjusted) nursing hours per resident day		Average case-mix adjusted nursing hours per resident day	
		All nurses ^a	Registered nurses	All nurses ^a	Registered nurses
For-profit	FY 2012	3.74	0.48	3.30	0.18
	FY 2013	3.75	0.51	3.32	0.19
	FY 2014	3.89	0.57	3.46	0.22
Nonprofit	FY 2012	3.99	0.61	3.58	0.23
	FY 2013	4.05	0.65	3.63	0.25
	FY 2014	4.11	0.64	3.68	0.25
Government	FY 2012	4.11	0.55	3.67	0.21
	FY 2013	4.23	0.55	3.75	0.21
	FY 2014	3.99	0.53	3.52	0.20

Legend: FY = fiscal year

Source: GAO analysis of Medicare cost report data. | GAO-16-700

^aIncludes registered nurses, licensed practical nurses, and certified nursing assistants.

Examining each fiscal year separately, we estimated that a SNF's margin generally had a small, but statistically significant, effect on its nursing time

³²In general, throughout the 3-year period, SNFs' case-mix adjusted nursing time per resident day was below the staffing thresholds identified by a CMS contractor in 2001. These thresholds demonstrated incremental benefits of nurse staffing; once these thresholds were met, there were no additional benefits in terms of quality. For short-stay residents, the contractor identified staffing level thresholds of 0.55 hours per resident day for RNs and 3.51 hours per resident day for all nurses. For long-stay residents, the contractor identified thresholds of 0.75 hours per resident day for RNs and 4.08 hours per resident day for all nurses. Centers for Medicare & Medicaid Services, *Appropriateness of Minimum Nurse Staffing Ratios*.

per resident day. After controlling for other factors, we estimated that a SNF's case-mix adjusted total nurse and RN time per resident day (reflecting the time nurses spend on both direct patient care and administrative duties) decreased slightly as its margin increased. For fiscal year 2012, we estimated that if a SNF with a margin of 20 percent and a case-mix adjusted total nurse time of 4 hours per resident day increased its margin to 21 percent, its total nurse time would fall to 3 hours and 51.9 minutes per resident day (a decrease of 8.1 minutes). For the same year, we estimated that a SNF's case-mix adjusted RN time per resident day decreased by 0.6 minutes for each percentage point increase in its margin. Similarly, for fiscal year 2013, we estimated that a 1 percentage point increase in a SNF's margin decreased its case-mix adjusted total nurse time per resident day by 5.1 minutes and its case-mix adjusted RN time per resident day by 0.4 minutes. Finally, for fiscal year 2014, we estimated that a SNF's case-mix adjusted total nurse time per resident day decreased by 7.4 minutes and its case-mix adjusted RN time per resident day decreased by 0.2 minutes for each percentage point increase in its margin.

In each of the 3 fiscal years, which we examined separately, the relationship between SNF nursing time and margins varied by ownership type. Table 2 shows our estimates for the change in a SNF's case-mix adjusted total nurse and RN time per resident day for each percentage point increase in its margin. For example, for fiscal year 2012, we estimated that if a for-profit SNF with a margin of 20 percent and a case-mix adjusted total nurse time of 4 hours per resident day increased its margin to 21 percent, holding all other variables constant, its total nurse time would fall to 3 hours and 49 minutes per resident day (a decrease of 11.0 minutes).

Table 2: Estimated Effect of a 1 Percentage Point Increase in a Skilled Nursing Facility’s (SNF) Margin on Its Case-Mix Adjusted Nursing Time, by Ownership Type, Fiscal Years 2012-2014

Nursing time in minutes per resident day						
Ownership type	All nurses ^a			Registered nurses		
	FY 2012	FY 2013	FY 2014	FY 2012	FY 2013	FY 2014
For-profit SNFs	-11.0 ^b	-6.5 ^b	-4.1 ^b	-0.5 ^c	-0.2	-0.0
Nonprofit SNFs	-15.3 ^b	-14.7 ^b	-16.7 ^b	-1.4 ^b	-1.0 ^c	-1.4 ^c
Government SNFs	-1.3	-0.8	-35.4 ^b	-0.2	-0.7	-1.6 ^c

Legend: FY = Fiscal year

Source: GAO analysis of Medicare cost report data. | GAO-16-700

Notes: This table is a summary of results from 18 regression models. The models included the following independent variables: average hourly registered nurse wage, average resident length of stay, chain affiliation (chain or independent), number of beds, number of competitors within 15 miles, proportion of Medicare days, and urban or rural status. The models also accounted for the state where each SNF was located. The number of for-profit SNFs ranged from 8,118 to 9,499, the number of nonprofit SNFs ranged from 1,728 to 2,567, and the number of government SNFs ranged from 410 to 546. All nurses include registered nurses, licensed practical nurses, and certified nursing assistants.

^aIncludes registered nurses, licensed practical nurses, and certified nursing assistants.

^bSignificant at the <.0001 level.

^cSignificant at the .01 level.

The relationship between a SNF’s total nurse time per resident day and its margin also differed slightly by chain affiliation. We estimated that the total nurse time per resident day decreased slightly more at SNFs that were part of chains than at those that were independent. For example, we estimated that for each percentage point increase in a SNF’s margin, the case-mix adjusted total nurse time per resident day decreased by 6.9 minutes at chain-affiliated SNFs and by 4.3 minutes at independent SNFs in fiscal year 2014. For each of the 3 years we examined, a chain-affiliated SNF’s margin did not have a statistically significant effect on its RN time per resident day.

Although the effect of margins in our regression analyses was statistically significant, margins were not the strongest predictor of case-mix adjusted total nurse and RN time per resident day. Accounting for the state where each SNF was located was very important in explaining its nursing time. This could be attributable to variation across states in staffing requirements, Medicaid reimbursement rates, or other factors. Because of the strong effect of the state where each SNF was located, we needed to statistically control for a SNF’s state to isolate the effects of a SNF’s total nurse and RN time per resident day on its margin. In addition, we

estimated that a SNF's proportion of Medicare days increased its total nurse and RN time per resident day. See appendix I for additional detail on the methods and results of our expenditure analyses.

Conclusions

The collection of SNF expenditure data gives CMS the opportunity to provide information to the public on SNFs' relative expenditures. Data that are readily accessible to the public and validated for completeness and accuracy to ensure reliability can contribute to SNF data transparency. However, public stakeholders have experienced difficulty accessing the data—including locating and using the data—and CMS efforts to ensure data accessibility and reliability have been limited.

Recommendations for Executive Action

To improve the accessibility and reliability of SNF expenditure data, we recommend the Acting Administrator of CMS take the following two actions:

1. Take steps to improve the accessibility of SNF expenditure data, making it easier for public stakeholders to locate and use the data.
2. Take steps to ensure the accuracy and completeness of SNF expenditure data.

Agency Comments and Our Evaluation

We provided a draft of this report to HHS for comment. In its written comments, HHS concurred with our recommendation to improve the accessibility of SNF expenditure data. HHS disagreed with our recommendation that it take steps to ensure the accuracy and completeness of the SNF expenditure data. HHS said that it has made a reasonable effort to ensure the accuracy of the expenditure data, that the data are used for general purposes, and that the amount of time and resources that may be required to verify the accuracy and completeness of the data could be substantial and might not create significant benefit to the agency or the public. However, during the course of our work, CMS told us that the agency conducts only "extremely limited" reviews of the expenditure data due to resource constraints. Moreover, we found that CMS uses the expenditure data to update overall SNF payment rates, in addition to more general purposes. Therefore, we continue to believe that CMS should take steps to ensure reliable expenditure data that are accurate and complete. HHS's comments on a draft of this report are reproduced in appendix II.

As agreed with your offices, unless you publicly announce the contents of this report earlier, we plan no further distribution until 30 days from the report date. At that time, we will send copies to the appropriate congressional committees, the Secretary of Health and Human Services, and the Acting CMS Administrator. In addition, the report will be available at no charge on the GAO website at <http://www.gao.gov>.

If you or your staffs have any questions about this report, please contact me at (202) 512-7114 or cosgrovej@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made key contributions to this report are listed in appendix III.

A handwritten signature in black ink, appearing to read 'James Cosgrove', with a stylized, cursive script.

James Cosgrove
Director, Health Care

List of Requesters

The Honorable Frank Pallone, Jr.
Ranking Member
Committee on Energy and Commerce
House of Representatives

The Honorable Sander M. Levin
Ranking Member
Committee on Ways and Means
House of Representatives

The Honorable Jim McDermott
Ranking Member
Subcommittee on Health
Committee on Ways and Means
House of Representatives

The Honorable Janice Schakowsky
House of Representatives

Appendix I: Additional Detail on the Methods and Results of Our Expenditure Analyses

This appendix describes our methodology for examining (1) how skilled nursing facility (SNF) costs and margins vary by facility characteristics and (2) how SNF nurse staffing levels vary by facility characteristics and the relationship between SNF nurse staffing levels and margins. The appendix also provides further details of the results of our analyses.

Examining SNF Costs and Margins by Facility Characteristics

To examine how SNF costs and margins vary by facility characteristics, we developed cost categories, calculated the total costs for each category as a percentage of revenue, and made comparisons across SNF groups. We organized each SNF's costs into four categories: direct care, indirect care, capital-related assets, and administrative services. Officials from the Centers for Medicare & Medicaid Services (CMS) said the categories we used included the appropriate expenses listed on the cost reports. Table 3 provides a crosswalk between the cost categories we used and the cost centers from the cost report.

Table 3: Components of Cost Categories

Cost category	Cost center from the Medicare cost report
Direct care	Inpatient routine services
Indirect care	Central services and supply Dietary Employee benefits Housekeeping Laundry and linen service Medical records and library Nursing administration Nursing and allied health education Other general service costs Pharmacy Plant operation, maintenance, and repairs Social services
Capital-related assets	Capital-related costs – buildings and fixtures Capital-related costs – movable equipment
Administrative services	Administrative and general

Source: Centers for Medicare & Medicaid Services information. | GAO-16-700

We then calculated each SNF's costs as a percentage of revenue. We also computed each SNF's margin, reflecting the percentage of revenue each SNF retained. While SNFs may be part of larger nursing homes that operate multiple lines of business (such as hospices, ancillary services,

and home health care services), we focused our analyses on the SNF line of business. We compared SNF costs and margins by ownership type and chain affiliation.

Examining How SNF Nurse Staffing Levels Vary by Facility Characteristics and the Relationship between SNF Nurse Staffing Levels and Margins

To examine how SNF nurse staffing levels vary by facility characteristics and the relationship between SNF nurse staffing levels and margins, we performed statistical analyses to identify factors associated with each SNF's total nurse and registered nurse (RN) staffing levels. To measure nurse staffing levels, we calculated each SNF's total nurse and RN time per resident day. A SNF's total nurse time per resident day reflects the number of hours that RNs, licensed practical nurses (LPN), and certified nursing assistants (CNA) worked per resident day. We computed each SNF's total nurse and RN time per resident day using a complex formula. We first calculated a SNF's total paid hours for full-time and part-time RNs, LPNs, and CNAs who are both directly hired and under contract.¹ Because the time needed for treating residents varies with their clinical conditions and treatments, we then adjusted each SNF's nursing time per resident day on the basis of its Medicare residents' health care needs. This process is known as case-mix adjustment. We developed our formula based largely on CMS's methodology for case-mix adjusting nurse staffing measures for Nursing Home Compare, the CMS website that contains summary measures of SNF quality data.² CMS's approach is based on the distribution of a SNF's residents' assignments into one of 53 different payment groups, called resource utilization groups. Each group describes residents with similar therapy, nursing, and special care needs. CMS's model uses the estimated RN, LPN, and CNA minutes for each resource utilization group based on the results from the Staff Time Measurement Studies conducted in 1995 and 1997.

For our analyses, we used a different source of data than what CMS uses for Nursing Home Compare. CMS obtains staffing data from Form CMS-671 (Long Term Care Facility Application for Medicare and Medicaid)

¹Paid hours include regular hours; overtime hours; paid holiday, vacation, sick, and other paid-time-off hours; and hours associated with severance pay. Paid hours exclude non-paid lunch periods and on-call hours. An overtime hour is calculated as one hour when an RN, LPN, or CNA is paid time and a half. The cost report form instructs SNFs not to include hours for nurses who perform solely administrative functions.

²Centers for Medicare & Medicaid Services, *Design for Nursing Home Compare Five-Star Quality Rating System: Technical Users' Guide* (Baltimore, Md.: February 2015).

from the Certification and Survey Provider Enhanced Reports (CASPER) system and census data from Form CMS-672 (Resident Census and Conditions of Residents). CMS officials advised us against using the CASPER data. CMS has observed that the CASPER data, which are collected over a 2-week period at the time of a SNF's annual inspection survey, generally indicate higher RN staffing levels and lower LPN and CNA staffing levels compared with the Medicare cost reports. Table 4 shows CMS's analysis of the staffing levels using 2013 data from the Medicare cost reports and CASPER.

Table 4: Average Nursing Time per Resident Day for Skilled Nursing Facilities (SNF) from Medicare Cost Reports and the Certification and Survey Provider Enhanced Reports (CASPER), 2013

Nurse type	Nursing hours per resident day from Medicare cost report	Nursing hours per resident day from CASPER
Registered nurse	0.54	0.73
Licensed practical nurse	0.93	0.83
Certified nursing assistant	2.53	2.42
All nurses	3.98	3.98

Source: Centers for Medicare & Medicaid Services' (CMS) analysis of Medicare cost report data from fiscal year 2013 and CASPER data from December 2013. | GAO-16-700

Note: Numbers may not add because of rounding. CMS excluded SNFs with fewer than 1.5 or more than 12 total nursing hours per resident day from either data source.

Because of the available data in the cost reports, there were some limitations with our case-mix adjustment calculation. While the cost reports include data on the resource needs for Medicare residents, they do not capture data on the resource needs for non-Medicare residents. Accordingly, we estimated a SNF's resident case-mix based only on its Medicare residents' resource utilization groups. In addition, the cost reports obtain data on 13 additional resource utilization groups that CMS implemented in 2010 to reflect updated staff time measurement data. For our calculation, we could not use Medicare days attributable to these groups on the cost reports. Finally, because SNFs' staffing data on the cost reports were incomplete for fiscal year 2011 and were generally unavailable beyond fiscal year 2014 when we began our analyses, we limited our analyses to fiscal years 2012 through 2014.

Our formula for calculating the case-mix adjusted total nurse and RN hours per resident day was as follows:

$$\text{Hours}_{\text{Adjusted}} = (\text{Hours}_{\text{Reported}} / \text{Hours}_{\text{Expected}}) * \text{Hours}_{\text{National Average}}$$

In this calculation:

- $\text{Hours}_{\text{Adjusted}}$ is the case-mix adjusted total nurse or RN hours per resident day.
- $\text{Hours}_{\text{Reported}}$ is each SNF's number of reported total nurse or RN hours per resident day.
- $\text{Hours}_{\text{Expected}}$ is each SNF's number of expected total nurse or RN hours per resident day.
- $\text{Hours}_{\text{National Average}}$ is the national average of reported total nurse or RN hours per resident day.

We then used multiple linear regression analysis, a statistical procedure that allowed us to assess the relationship between a SNF's margin and its case-mix adjusted total nurse and RN time per resident day, controlling for other factors. The other factors in our models included a SNF's average hourly RN wage, average resident length of stay, chain affiliation, number of beds, number of competitors within 15 miles, ownership type, proportion of Medicare days, and urban or rural status. Our models also accounted for the state where each SNF was located. We performed separate regressions for all SNFs in fiscal years 2012, 2013, and 2014. We also performed regressions by ownership type and chain affiliation.

Table 5 shows the results of our regressions for all SNFs where the dependent variable is the case-mix adjusted total nursing hours per resident day, and table 6 shows the results of our regressions for all SNFs where the dependent variable is the case-mix adjusted RN hours per resident day. The tables include regression coefficients and R² statistics. Regression coefficients can be interpreted as the predicted change in nursing time per resident day for every unit change in the independent variable. In general, it is not meaningful to compare the size of these coefficients because our independent variables are on different scales. We used R² statistics to estimate how much of the variation in the nursing time per resident day can be explained by all the independent variables in our models. Taken together, the independent variables explained between 27 percent and 31 percent of the variation in the case-mix adjusted total nursing hours per resident day and between 36 percent and 39 percent of the variation in the case-mix adjusted RN hours per resident day for fiscal years 2012 through 2014. Accounting for the state where each SNF was located was very important in explaining its nursing time per resident day. This could be attributable to variation across states in staffing requirements, Medicaid reimbursement rates, or other factors.

**Appendix I: Additional Detail on the Methods
and Results of Our Expenditure Analyses**

Table 5: Regression Analysis on the Effect of Various Independent Variables on Skilled Nursing Facilities' (SNF) Case-Mix Adjusted Total Nursing Hours per Resident Day, Fiscal Years 2012-2014

Independent variable	Regression coefficient		
	FY 2012	FY 2013	FY 2014
Margin	-0.13 ^a	-0.09 ^a	-0.12 ^a
Average resident length of stay	-0.00 ^a	-0.00 ^a	-0.00 ^a
Average hourly registered nurse wage	-0.00	-0.00 ^a	-0.00 ^b
Chain affiliation	-0.18 ^a	-0.16 ^a	-0.14 ^a
Number of beds	0.00 ^a	0.00 ^a	0.00 ^a
Number of competitors within 15 miles	-0.00 ^a	-0.00 ^a	-0.00 ^b
Ownership type	n/a	n/a	n/a
For-profit	-0.36 ^a	-0.41 ^a	-0.40 ^a
Nonprofit	-0.04	-0.06 ^c	-0.02
Government (reference group)	^d	^d	^d
Proportion of Medicare days	0.96 ^a	1.09 ^a	1.12 ^a
Urban status	0.08 ^a	0.06 ^a	0.06 ^a
Intercept	3.92 ^a	3.73 ^a	3.42 ^a
R-Square	0.28	0.27	0.31
Number of SNFs	11,417	12,219	10,280

Legend: FY = fiscal year; n/a = not applicable

Source: GAO analysis of Medicare cost report data. | GAO-16-700

Note: This table is a summary of results from three models, corresponding to each fiscal year. The models also included state dummy variables.

^aSignificant at the <.0001 level.

^bSignificant at the .01 level.

^cSignificant at the .05 level.

^dNot available because the method calculates coefficients for the included groups relative to the reference group.

**Appendix I: Additional Detail on the Methods
and Results of Our Expenditure Analyses**

Table 6: Regression Analysis on the Effect of Various Independent Variables on Skilled Nursing Facilities' (SNF) Case-Mix Adjusted Registered Nurse Hours per Resident Day, Fiscal Years 2012-2014

Independent variable	Regression coefficient		
	FY 2012	FY 2013	FY 2014
Margin	-0.01 ^a	-0.01 ^a	-0.00 ^c
Average resident length of stay	-0.00 ^a	-0.00 ^a	-0.00 ^a
Average hourly registered nurse wage	-0.00 ^b	-0.00 ^a	-0.00 ^a
Chain affiliation	0.01 ^b	0.01 ^a	0.01 ^a
Number of beds	0.00 ^c	0.00 ^b	0.00 ^b
Number of competitors within 15 miles	-0.00	0.00	-0.00
Ownership type	n/a	n/a	n/a
For-profit	-0.03 ^a	-0.03 ^a	-0.02 ^a
Nonprofit	-0.01	-0.01	-0.00
Government (reference group)	^d	^d	^d
Proportion of Medicare days	0.15 ^a	0.18 ^a	0.20 ^a
Urban status	0.01 ^a	0.01 ^a	0.01 ^a
Intercept	0.30 ^a	0.31 ^a	0.27 ^a
R-Square	0.36	0.36	0.39
Number of SNFs	11,998	12,743	10,628

Legend: FY = fiscal year; n/a = not applicable

Source: GAO analysis of Medicare cost report data. | GAO-16-700

Note: This table is a summary of results from three models, corresponding to each fiscal year. The models also included state dummy variables.

^aSignificant at the <.0001 level.

^bSignificant at the .01 level.

^cSignificant at the .05 level.

^dNot available because the method calculates coefficients for the included groups relative to the reference group.

Appendix II: Comments from the Department of Health and Human Services



DEPARTMENT OF HEALTH & HUMAN SERVICES

OFFICE OF THE SECRETARY

Assistant Secretary for Legislation
Washington, DC 20201

AUG 22 2016

James Cosgrove
Director, Health Care
U.S. Government Accountability Office
441 G Street NW
Washington, DC 20548

Dear Mr. Cosgrove:

Attached are comments on the U.S. Government Accountability Office's (GAO) report entitled, "*Skilled Nursing Facilities: CMS Should Improve Accessibility and Reliability of Expenditure Data*" (GAO-16-700).

The Department appreciates the opportunity to review this report prior to publication.

Sincerely,

A handwritten signature in black ink that reads "Jim R. Esquea".

Jim R. Esquea
Assistant Secretary for Legislation

Attachment

GENERAL COMMENTS OF THE DEPARTMENT OF HEALTH AND HUMAN SERVICES (HHS) ON THE GOVERNMENT ACCOUNTABILITY OFFICE'S DRAFT REPORT ENTITLED: SKILLED NURSING FACILITIES: CMS SHOULD IMPROVE ACCESSIBILITY AND RELIABILITY OF EXPENDITURE DATA (GAO-16-700)

The Department of Health and Human Services (HHS) appreciates the opportunity to review and comment on the Government Accountability Office's (GAO's) draft report. HHS is committed to increasing the transparency of federal health programs and making sure that skilled nursing facility (SNF) expenditure data remains available and accessible to the public.

SNFs provide care to beneficiaries who need daily skilled care given by, or under the supervision of, skilled nursing or therapy staff. Medicare Part A beneficiaries may qualify for coverage of up to 100 days of SNF services in a benefit period if they have a medically necessary inpatient hospital stay of three consecutive days or more that occurred within a short time period (generally, 30 days) prior to entering the SNF.

The Improving Medicare Post-Acute Care Transformation Act of 2014 (IMPACT Act) requires SNFs to submit annual cost reports to HHS, which serve as comprehensive resources for information on SNF costs and services. HHS has made a reasonable effort to ensure that the provided reports are up-to-date, accurate, complete, and comprehensive at the time of disclosure.

On March 9, 2016, HHS released SNF utilization and payment data for calendar year 2013 based on SNF Part A institutional claims. This data contained information on 15,055 skilled nursing facilities, over 2.5 million stays, and almost \$27 billion in Medicare payments¹.

GAO's recommendations and HHS' responses are below.

GAO Recommendation

To improve the accessibility and reliability of SNF expenditure data, we recommend the Acting Administrator of the Centers for Medicare & Medicaid Services (CMS) take steps to improve the accessibility of SNF expenditure data, making it easier for public stakeholders to locate and use the data.

HHS Response

HHS concurs with this recommendation. As part of HHS' efforts to promote better care, smarter spending, and healthier people, HHS is committed to promoting data transparency. HHS will review the feasibility of increasing the accessibility of this data.

GAO Recommendation

To improve the accessibility and reliability of SNF expenditure data, we recommend the Acting Administrator of CMS take steps to ensure the accuracy and completeness of SNF expenditure data.

¹ <https://www.cms.gov/Newsroom/MediaReleaseDatabase/Press-releases/2016-Press-releases-items/2016-03-09.html>

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HHS Response

HHS does not concur with this recommendation. HHS collects SNF expenditure data in cost reports for general information purposes. HHS takes a risk-based approach to determining priorities and allocation of resources. The amount of time and resources that may be required to verify the accuracy and completeness of SNF expenditure data could be substantial, without the potential of creating a significant benefit to the agency or the public.

HHS thanks GAO for their efforts on this issue and looks forward to working with GAO on this and other issues in the future

Appendix III: GAO Contact and Staff Acknowledgments

GAO Contact

James Cosgrove, (202) 512-7114 or cosgrovej@gao.gov

Staff Acknowledgments

In addition to the contact named above, Martin T. Gahart, Assistant Director; David Grossman, Analyst-in-Charge; Todd D. Anderson; and Jane Eyre made key contributions to this report. Also contributing were Elizabeth T. Morrison, Vikki Porter, Eric Wedum, and Jennifer Whitworth.

Appendix IV: Accessible Data

Agency Comment Letter

Text of Appendix II:
Comments from the
Department of Health and
Human Services

Page 1

DEPARTMENT OF HEALTH & HUMAN SERVICES

OFFICE OF THE SECRETARY

Assistant Secretary for Legislation

Washington, DC 20201

AUG 22 2016

James Cosgrove

Director, Health Care

U.S. Government Accountability Office

441 G Street NW

Washington, DC 20548

Dear Mr. Cosgrove:

Attached are comments on the U .S. Government Accountability Office's (GAO) report entitled, "Skilled Nursing Facilities: CMS Should Improve Accessibility and Reliability of Expenditure Data " (GAO-16-700).

The Department appreciates the opportunity to review this report prior to publication.

Sincerely,

Jim R. Esquea

Assistant Secretary for Legislation

Attachment

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GENERAL COMMENTS OF THE DEPARTMENT OF HEALTH AND HUMAN SERVICES (HHS) ON THE GOVERNMENT ACCOUNTABILITY OFFICE'S DRAFT REPORT ENTITLED: SKILLED NURSING FACILITIES: CMS SHOULD IMPROVE ACCESSIBILITY AND RELIABILITY OF EXPENDITURE DATA (GAO-16-700)

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Data Tables

Data Table for Figure 1: Average Costs Related to Direct Care and Indirect Care as a Percentage of Revenue for Skilled Nursing Facilities (SNF), by Organization Type, Fiscal Years 2011-2014

Costs as a percentage of revenue

	Type of organization	Direct care				Indirect care			
		FY 2011	FY 2012	FY 2013	FY 2014	FY 2011	FY 2012	FY 2013	FY 2014
<i>Ownership type</i>	For-profit SNFs	32%	31%	31%	31%	39%	38%	39%	39
	Nonprofit SNFs	38	37	37	35	46	43	43	43
	Government SNFs	46	42	42	37	58	64	66	48
<i>Chain</i>	Chain SNFs	32	31	31	30	40	38	38	38
<i>Affiliation</i>	Independent SNFs	38	35	36	35	46	44	45	43

Data Table for Figure 2: Median Margins for Skilled Nursing Facilities (SNF), by Organization Type, Fiscal Years 2011-2014

	Type of organization	FY 2011	FY 2012	FY 2013	FY 2014
<i>Ownership type</i>	For-profit SNFs	16%	18%	18%	19%
	Nonprofit SNFs	12	13	14	15
	Government SNFs	3	5	8	13
<i>Chain</i>	Chain SNFs	16	18	18	19
<i>Affiliation</i>	Independent SNFs	12	14	15	17

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