

# Regulation of Nursing Facilities in the United States: An Analysis of Resources and Performance of State Survey Agencies

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**Purpose:** This study was undertaken to examine the resources, staffing, and performance of the state survey agencies that have primary responsibility for regulating nursing facilities—licensing them at a state level and certifying them for participation in Medicare and Medicaid on behalf of the Center for Medicare and Medicaid Services (CMS; formerly the Health Care Financing Administration). **Design and Methods:** A telephone and fax survey of survey agencies in all 50 states and the District of Columbia was used, supplemented by secondary data collected from CMS's On-Line Certification and Reporting (OSCAR) system. **Results:** Total state agency expenditures on nursing facility regulation in 2000 were \$382.2 million, which is less than one half of 1% of the total expenditures on nursing facilities in the United States. About 3,000 full-time equivalent surveyors are employed to regulate more than 17,000 nursing facilities in the United States. Nursing facility licensing and certification dominates the work of state survey agencies, although they are responsible for regulating many other health care organizations. Spending has risen recently, but resource levels vary greatly across states, and most state agencies report significant funding shortfalls that impact on their ability to perform their regulatory function. On a range of indicators, the performance of state survey agencies varies

fivefold. Some of that state variation is explained by differences in resource levels for regulation, but most is not. **Implications:** State survey agencies probably need more funding to fulfill their responsibilities properly, but other changes are also needed to improve their performance, including more support and oversight by CMS and more effective regulatory design.

**Key Words:** Nursing homes, Licensing and certification, HCFA, CMS, Long-term care

More than 1.6 million Americans, mostly seniors, live in nursing facilities. The United States spent \$90 billion in 1999 on nursing facility care, or about \$55,900 per resident per year, most of which (60%) came from public funds through the Medicaid and Medicare programs (Heffler et al., 2001). There were more than 17,000 nursing facilities, with a total of over 1,834,000 beds in 1998 (AHCA, 1999). About 65% of nursing facilities are in the for-profit sector, and 56% are owned or operated by multifacility corporations, some of which have become very large and control many thousands of beds in hundreds of facilities (Harrington, Carrillo, Thollaug, Summers, & Wellin, 2000).

The quality of nursing facility care has been a recurrent matter of public policy concern in the United States for at least 30 years. A succession of reports in the 1970s and 1980s highlighted long-standing, widespread, serious quality of care problems, including some horrific instances of the mistreatment and abuse of highly vulnerable nursing facility residents (Mendelson, 1974; USGAO, 1987; Vladeck, 1980). In 1987, following the publication of a highly critical Institute of Medicine report (Institute of Medicine 1986), Congress enacted a wholesale reform of the federal regulatory arrangements for nursing facilities participating in Medicare and Medicaid. Those reforms were gradually implemented between 1988 and 1995, but quality problems have persisted, and the effectiveness of the current system of regulation has been repeatedly questioned (USGAO, 1998, 1999a, 1999b; USOIG, 1999). Although some argue that

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This study was prepared for the Henry J. Kaiser Family Foundation (Grant 95-1394A). The findings and analysis represent those of the authors and not necessarily those of the funding agency. At the time of writing, Kieran Walshe was a Harkness Fellow in Health Policy, supported by the Commonwealth Fund, a New York City-based private independent foundation. The views presented here are those of the authors and not necessarily those of the Commonwealth Fund, its directors, officers, or staff.

Data from the telephone survey were collected by Mary Millman, JD, from state Licensing and Certification officials. We also thank Allan Stegemann for his thoughtful and insightful review of the paper, and two anonymous reviewers for their helpful comments.

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nursing facilities are more heavily regulated than other health care organizations, the numerous public scandals associated with poor nursing home care and the vulnerability of residents continue to result in calls for improved oversight of the industry by the U.S. Senate Special Committee on Aging (1998, 1999). Although there is rather limited evidence of the effectiveness of current regulatory arrangements (Walshe, 2001), a second report from the Institute of Medicine concluded that regulation has brought some improvements in the quality of nursing facility care, but that further reforms were needed in the survey and enforcement process to make the regulatory process more effective (Wunderlich & Kohler, 2001). The Institute of Medicine Committee also recommended that a study should be undertaken on whether more funding for nursing facility regulation was required (Wunderlich & Kohler, 2001).

This study examines the resources, staffing, and performance of the state survey agencies, which have primary responsibility for regulating nursing facilities—licensing them at a state level and certifying them for participation in Medicare and Medicaid on behalf of the Center for Medicare and Medicaid Services (CMS; formerly known as the Health Care Financing Administration). It provides an overview of the development of the current arrangements for regulating nursing facilities and summarizes concerns about state survey agency performance. This article then describes and analyzes the results of a study that collected quantitative and qualitative data on resources, staffing, and performance directly from state survey agencies through a telephone and fax survey of state licensing and certification agency directors. These data are supplemented by secondary data from CMS's On-Line Survey Certification and Reporting (OSCAR) system. The relationships between state survey agency resources and performance are examined, controlling for nursing facility characteristics at a state level, using a backward stepwise regression model. This article concludes by discussing the policy implications of its findings for future funding and management of state survey agencies.

### *The Development of Nursing Facility Regulation*

Congress passed a major reform of nursing facility regulation in the Omnibus Budget Reconciliation Act of 1987 (OBRA, 1987) to address the long-standing concerns about quality of care. The Omnibus Budget Reconciliation Act (OBRA) and the subsequent regulations (USDHHS, 1988, 1989, 1994, 1995a, 1995b) mandated uniform comprehensive assessments of all nursing facility residents after admission and periodically thereafter; developed quality indicators that were more outcome-oriented than process-oriented; and changed federal survey procedures to make them more oriented toward the residents through interviews and assessments of residents rather than simply reviewing medical records. Deficiencies found during surveys of nursing facilities were required to be rated based on their scope and severity for the purposes of

enforcement, and a range of new enforcement mechanisms were created, including the authority to impose intermediate sanctions (civil money penalties, the denial of payment for new admissions, and the imposition of temporary management), as well as the ultimate sanction of decertification (USDHHS, 1995a, 1995b).

State survey agencies are responsible both for licensing nursing facilities that meet state legal requirements, and for certifying those that meet the conditions for participation in the Medicare and Medicaid programs. Nursing facilities must be licensed to operate under state rules, but only have to meet the federal certification requirements if they wish to participate in the Medicare and Medicaid programs, although almost all do. State survey agencies have contracts with CMS to undertake the certification process and are funded by CMS to do so. Under federal regulations, the federal government pays for all of the certification activities for Medicare facilities at the state level and for 75% of the certification activities for Medicaid facilities, and states must fund the remainder (USGAO, 2000). States must bear the entire costs for state-level licensing activities.

State agencies survey nursing facilities on average every 12 months and conduct additional surveys when complaints are made about poor quality of care. State surveyors are trained to follow federal regulations for surveying facilities and to record deficiencies using procedures laid down by CMS in its *State Operations Manual* (USHCFA, 2000c). State agencies are also responsible for investigating complaints about the quality of nursing facility care within federal guidelines. When they find that a facility fails to meet a specific federal requirement, a deficiency notice is issued. State surveyors are responsible for rating the scope and severity of deficiencies. State survey agencies are responsible for taking enforcement actions for Medicaid-certified facilities, and they work with federal officials on enforcement actions for Medicare-certified facilities. Thus, the federal nursing facility regulatory system is largely decentralized or devolved to states and relies on state agencies for all the first-line regulatory activities.

### *Survey and Enforcement of Regulations*

Implementation of the OBRA 1987 regulatory reforms has not been straightforward (Edelman, 1997, 1998). From an initial peak in 1991, the number of deficiencies found by surveyors steadily declined by 44% in 1997 (Harrington & Carrillo, 1999), a trend that was believed to reflect diminishing oversight rather than improving quality. Few deficiencies were ranked in the highest categories of scope and severity (although the proportion was rising), and sanctions were rarely applied (USOIG, 1999). There was wide variation in the numbers and types of deficiencies recorded across states, suggesting that they were not all using the regulatory process consistently. The U.S. General Accounting Office (USGAO, 1998) conducted a study of the federal and state enforcement

programs in California and reported to Congress that “nursing homes have not been and currently are not sufficiently monitored to guarantee the safety and welfare of their residents” (p. 3). Another USGAO study (1999a) found that one fourth of nursing facilities nationwide continue to be cited for deficiencies that either caused actual harm or the potential for death and serious injury. The Inspector General (USOIG, 1999) and CMS (USHCFA, 1998b) drew similar conclusions from separate studies.

One of the most serious findings was that state surveyors were often unable to detect serious quality of care problems. Using concurrent reviews (where state surveyors visited the facilities at the same time as researchers), the USGAO (1998) concluded that CMS policies were not effective in ensuring that the deficiencies are identified, corrected, and remained corrected. They found that CMS and the states allowed most facilities to correct violations without penalties. Only a few facilities were terminated from the program, and most of these were later reinstated and continued to have violations.

The U.S. Senate Special Committee on Aging held a series of hearings between 1998 and 2000 regarding the USGAO’s studies, and urged CMS to improve its survey and enforcement process. President Clinton and CMS began a new initiative to improve the enforcement process (USDHHS, 1998), including strengthening regulatory enforcement and expanding the oversight of state inspections. CMS argued that additional funding was needed for the enforcement program (USHCFA, 1998a), and the Congressional budget passed some increases in funding for state programs in the fall of 1998. The most recent CMS reports to the U.S. Senate Special Committee on Aging show some improvements in state regulatory activity (USHCFA, 2000a, 2001a). Even so, the recent Institute of Medicine report recommended further reforms of nursing facility regulation, including a greater focus on dealing with poor quality providers, efforts to make state survey and enforcement activities more uniform, more use of assistance and sanctions to improve performance, and an examination of whether increased funding for regulation is needed (Wunderlich & Kohler, 2001).

## Methods

### *Research Issues and Hypotheses*

This study set out to examine the resources, staffing, and performance of state licensing and certification agencies that have primary responsibility for licensing nursing facilities at a state level and certifying them to participate in the federal Medicare and Medicaid programs. It had three main aims: (1) to describe the level, distribution, sources, uses, and adequacy of resources for nursing facilities regulation; (2) to examine variations in state survey agencies’ performance across a number of performance indicators; and (3) to explore the relationship between resources and performance. With these aims in mind, we se-

lected two measures of state agency resources and seven state agency performance indicators for analysis. From the literature, we identified a number of other variables that might be expected to impact on state agency performance and that we used as control variables in our analysis. Each of these measures is described in Table 1.

### *Measuring State Survey Agency Resources*

This survey focused on the effect of state survey agency resources on agency performance. Previous studies have shown a wide variation in state agency performance by state agencies (Harrington & Carrillo, 1999). At the same time, reports have also shown a wide variation in the total funds for nursing facility regulatory activities across states (Zimmerman & Stegemann, 1999). This raises questions about whether some variation in performance is related to inadequate survey agency resources.

The new federal enforcement processes may have substantially increased the workload burdens on state survey agencies. These added requirements without sufficient agency funds may have detracted from the actual process of the detection of poor care. Perhaps, the federal funds for the enforcement effort were not sufficient at the federal and/or the state levels to maintain in-depth surveys of states. In 1998, CMS made these arguments that additional funding was needed for the enforcement program (USHCFA, 1998a), and the Congressional budget passed some increases in funding for state programs in the fall of 1998. Under the federal regulations, the federal government pays for all of the certification activities for Medicare facilities at the state level and for 75% of the certification activities for Medicaid facilities, and the states are required to pay 25% of the costs in matching funds (USGAO, 2000). States must bear the entire costs for licensing activities. States may use state general funds, state licensing fees, and other sources of state funds to meet the 25% matching requirement for the Medicaid certification activities.

Although new funds of \$8 million were appropriated by Congress and from CMS’s budget in 1999 and \$23.5 million was appropriated by Congress in 2000 for nursing facility initiatives, it was not known whether these funds were sufficient to cover the new costs of the regulatory initiatives (USGAO, 2000). CMS reported a total of \$137.3 million for the Medicaid long-term care facility survey and certification activities, and about \$86 million (estimated at 59% of total Medicare survey funds) for Medicare survey and certification funds in 1995 (USHCFA, 2001b). Even with the new nursing facility initiative, the total Medicaid survey and certification funds was \$147.8 million (but the proportion for nursing home surveys was unknown), and Medicare was \$135.9 million for nursing facilities in 2000. This represents an average increase of only 5.4% annually over the 5-year period.

The hypothesis tested in this study was that the variation in the funding for nursing facility regulatory programs would explain some of the differences

Table 1. Measures of Resources, Performance, and Control Variables Selected for Analysis

Measure	Variable	Rationale
Resource variables	Nursing facilities licensing and certification expenditure per nursing facility bed	States' ability to implement the regulatory arrangements laid down by CMS may be affected by the overall level of resources available to them.
	% of nursing facilities licensing and certification expenditure derived from federal government sources	States that invest their own resources in licensing and certification may be both better predisposed toward regulation and more able to implement regulatory arrangements.
Performance indicators	Mean number of deficiencies issued per facility surveyed	The number of deficiencies issued varies widely across states and can be seen as an indicator of the stringency of regulation (Harrington & Carillo, 1999).
	% of facility surveys on which no deficiencies are issued	States that issue fewer deficiencies or give more facilities no deficiencies may not be following CMS procedures properly, or may be failing to identify deficiencies or failing to record them properly (USGAO, 1998, 1999a).
	% of facility surveys on which a deficiency of level G or above is issued	Serious deficiencies (which have caused or could cause harm or immediate jeopardy to residents) are more likely to be contested, and there is evidence that some states are reluctant to record them (USGAO, 1998, 1999a, 1999d).
	Mean time between surveys	Federal requirement is for a mean of 12 months (365 days) or less, and states with a higher mean are not in compliance with CMS requirements (OBRA, 1987; USHCFA, 1998a, 2000b, 2001b).
	% of surveys that take place more than 18 months after previous survey	Despite the federal requirement for a maximum gap of 15 months, there is evidence that some states allow some facilities to go for extended periods without survey (USHCFA, 1998a, 2000b, 2001b).
	Number of complaints investigated per nursing facility bed	Management of complaints varies widely across states, and some discourage the filing of complaints (USGAO, 1999c).
Control variables	% of all complaints investigated	States vary in the priority they give to investigating complaints, despite a CMS requirement that all complaints of immediate jeopardy or actual harm be investigated (USGAO, 2000).
	% of nursing facilities operated by chains or networks	Chains of nursing facilities have potential cost and marketing advantages (Arling et al., 1987; Cohen & Dubay, 1990; Davis, 1993), but may have lower staffing levels and more deficiencies (Harrington, Swan, Mullen, & Carrillo, 2000; Harrington, Woolhandler, Mullan, Carrillo, & Himmelstein, 2001).
	% of nursing facilities operated for profit	Nonprofit facilities have better outcomes in some studies and fewer deficiencies (Aaronson, Zinn, & Rosko, 1994; Davis, 1993; Harrington, Swan, et al., 2000; Harrington et al., 2001; Harrington, Zimmerman, Karon, Robinson, & Beutel, 2000; Spector, Selden, & Cohen, 1998).
	% residents funded by Medicaid	Facilities with higher percentages of Medicaid residents have been found to have poorer quality of care (Fottler, Smith, & James, 1981; Harrington et al., 2001; Harrington, Zimmerman, et al., 2000; Nyman, 1988; Zinn, 1993).
	% of beds not certified for Medicare and/or Medicaid	Medicare-certified nursing facilities have fewer deficiencies and better staffing (Harrington, Carrillo, Mullan, & Swan, 1998; Kanda & Mezey, 1991). States with more uncertified facilities may have poorer quality and require more regulatory oversight.
	Staff hours per resident day	Facilities with more staffing have a better quality of care, fewer deficiencies, and better outcomes (Aaronson et al., 1994; Bliesmer, Kane, & Shannon, 1998; Cherry, 1991; Cohen & Spector, 1996; Harrington, Zimmerman, et al., 2000; Linn, Gurel, & Linn, 1977; Munroe, 1990; Nyman, 1988; Spector & Takada, 1991; USHCFA, 2000b).
	Mean size of nursing facilities, in beds	Larger facilities have been found to have more deficiencies (Harrington, Zimmerman, et al., 2000) and lower staffing levels (Fottler et al., 1981; Kanda & Mezey, 1991).
	Mean % occupancy of nursing facilities	Low occupancy rates can indicate financial problems for nursing facilities, which may impact on quality of care.

Note: CMS = Center for Medicaid and Medicare Services.

in regulatory performance. We compared the total state spending (federal and state) on nursing facility regulation standardized by the number of beds in a state. We also tested whether state agencies that had higher percentages of federal resources (with less state matching funds) would have poorer state agency performance. Those states that invest greater amounts in the regulatory program may place a greater importance on the program and therefore have better performance measures.

### *Measuring Facility Characteristics That May Impact on Quality and State Agency Performance*

It was also expected that selected characteristics of nursing facilities would impact on quality. If these characteristics were associated with decreased quality, then they may increase the workload for survey agencies. For this study, we selected seven facility variables found to be important in previous studies of

nursing facility quality and/or deficiencies as control variables: (1) if a facility was a multifacility organization, (2) if it was for-profit, (3) the percent of residents paid by Medicaid, (4) the percent of beds not certified for Medicare and Medicaid, (5) the average staff hours per resident day, (6) the size of the facility, and (7) facility occupancy. See Table 1 for the rationale for each and the related literature. All of these variables were considered to have a potential impact on the quality of care delivered by facilities; therefore, they could impact on the performance indicators for state licensing and certification agencies.

### *Measuring State Survey Agency Performance*

Short of USGAO or CMS observations of state survey inspections, it is difficult to develop measures of state agency regulatory performance, and the choice of indicators is somewhat constrained by data availability. For purposes of this study, we examined seven statistical indicators of performance based on those identified by CMS, the USGAO, or others in the literature (Harrington & Carrillo, 1999; USGAO, 1998, 1999a, 1999b; USHCFA, 1998b). Since the U.S. Senate Special Committee on Aging hearings in 1998 and 1999, CMS has been providing statistical reports on some of these indicators to the Committee on its efforts to improve regulatory activities.

Two measures of performance are the average number of deficiencies issued per facility and the percentage of facilities that receive no deficiencies. A third related measure of performance is the number of facilities that are given deficiencies rated by surveyors at the G level or above, meaning that the deficiencies are serious and have caused or have the potential to cause harm or immediate jeopardy to resident health and safety (USDHHS, 1995b). The USGAO (1998, 1999a) found that surveyors sometimes fail to identify deficiencies that exist or do not issue deficiencies when problems are identified and thus may not be following CMS survey and enforcement procedures. The USGAO (1998, 1999a, 1999d) found that some agencies are reluctant to rank deficiencies at the higher levels of scope and severity because more deficiencies are contested through the informal dispute resolution process, and appealed and increased enforcement actions are then required to be taken by state agencies. Thus, state agencies with higher levels of resources should be more likely to issue deficiencies that are rated as more serious because they would not be as concerned about the cost consequences of such actions.

The quality of care may be expected to vary across states, so this can explain some of the differences in the number of deficiencies or no deficiencies issued by state agencies. It could also result in fewer facilities with the most serious deficiencies. Unfortunately, there is no way to separate these two factors in which deficiencies are used as an indicator, and no other source of data is available to make this distinction. Nonetheless, deficiencies and the severity of deficiencies represent a type of measure of stringency in regulatory activity that is used in this study to examine state differences.

Another performance measure identified by CMS is the mean time between surveys as a performance measure (USHCFA, 1998a, 2000b, 2001a). Federal requirements call for state agencies to survey nursing facilities every 9–15 months and, on average, every 12 months (or 365 days) (OBRA, 1987). Those states that survey less often than every 365 days, on average, are not in compliance with CMS requirements. CMS (USHCFA 1998a, 2000b, 2001b), has also identified some states that survey some facilities less often than the maximum federal requirement of at least every 15 months. Another performance measure was the percentage of surveys that take place more than 18 months after the last survey.

Finally, state agencies are also responsible for investigating complaints about the quality of nursing facility care within federal guidelines. The USGAO (1999c) estimated that 20% of total nursing home licensing and certification expenditures was spent on complaint investigations in 1998. CMS regulations require complaints that can cause immediate jeopardy to the health and safety of residents to be investigated within 2 days and other complaints of actual harm to be investigated within 10 days (timeframe adopted in 1999) (USGAO, 2000). The USGAO (1999c) found that some states use procedures that discourage the public from filing complaints; states use widely varying categories for prioritizing complaints; complaints are given inappropriately low investigation status by states; states often fail to investigate within federal timeframes; and the investigation procedures are weak and ineffective. These problems are compounded by differences in state reporting of the number of complaints received and investigated. These problems, however, could not be identified in this study.

Recognizing the variation in state nursing facility complaint reporting systems, we developed two survey agency performance measures related to complaints about quality. First, the mean number of complaints investigated per 100 nursing facility beds was an indicator of complaint investigation activity. Second, the percentage of total complaints investigated within a state was selected as an indicator, assuming that states with a higher percentage of total complaints investigated were performing better than those with low investigation rates.

There are many other state agency performance indicators identified by Abt and CMS (USHCFA, 1998b) and the USGAO (2000). One is the predictability of the annual surveys. CMS agreed to conducting 10% of standard surveys outside of the normal workday (weekends or early mornings or evenings). At this time, the numbers of staggered surveys are still small and do not seem to be the best indicator. Other indicators, such as determining the appropriateness of the surveyor findings and the scope and severity of determinations (USGAO, 1999b), are beyond the scope of this study.

### *Data Collection and Analyses*

Data for this study were collected from two sources. First, a telephone and fax survey of state

licensing and certification agency directors or their designees was conducted during the year 2000. All 50 states and the District of Columbia participated in the survey. In the telephone survey, state licensing and certification officials were asked a series of structured questions about resources and whether resources were adequate to meet state and federal regulatory requirements, and state survey agency staff, recruitment, and retention. State officials were also asked to provide statistical data for 1999 and 2000 (by fax) on the sources and levels of resources and staff numbers and characteristics. Where responses to the telephone survey and statistical data were unclear, follow-up telephone calls were made for clarification.

Second, statistical data from the OSCAR system, on which state survey agencies record their survey activities, were used. OSCAR data were from three sources. First, OSCAR data from 15,086 nursing facilities with 1,578,309 beds surveyed in calendar year 1999 were used in the analysis (prepared by Harrington, Carrillo, et al., 2000). These data contained about 89% of total certified nursing facilities (because not all facilities are surveyed each calendar year) and was considered representative of the total certified nursing facilities in the United States. These data included numbers and types of deficiencies recorded; numbers of complaints recorded and investigated; facility characteristics, such as ownership and affiliation; Medicaid resident rates; occupancy rates; and staffing levels—all aggregated to the state level. Second, OSCAR data summarized in the American Health Care Association's (1999) annual nursing facilities sourcebook were also used, including the numbers of nursing facilities, numbers of nursing facility beds, and the numbers of Medicaid/Medicare certified beds. The third source of OSCAR data was reports compiled by CMS for the U.S. Senate Special Committee on Aging (USHCFA, 2000b). These data included the 1999 mean time between surveys and the percentage of surveys undertaken more than 18 months after a previous survey.

These data were then analyzed to examine overall rates and distributions and to explore differences between states; results are presented later. For the purposes of the analyses, the District of Columbia was included as if it were a state. To explore the relationships between indicators of performance for state survey agencies and levels of funding, we first identified a set of independent variables, which included two agency funding variables and seven control variables measuring various characteristics of nursing facility provision. Then, a set of eight dependent variables was identified, each of which could be seen as an indicator of the performance of state survey agencies. A correlation matrix was produced to check for collinearity, but the correlations were modest and in the subsequent regression analyses, tolerance tests showed that collinearity was not a problem. Then, a stepwise backwards regression analysis using SPSS was performed for each dependent variable in turn. For each regression analysis, the model with the greatest explanatory power (the largest significant adjusted value of  $R^2$ ) was selected.

## Results

### *Resources for the Licensing and Certification of Nursing Facilities*

State survey agencies in the United States reported total expenditures on licensing and certification activities related to nursing facilities of \$382.2 million in 2000, of which the majority (60.8%) was funded by CMS, whereas 28.1% was financed by states themselves; the remaining 11.1% came from other sources, such as licensing fees charged to nursing facilities. The total expenditure on nursing facilities regulation was less than one half of 1% (.4%) of the \$90 billion (and .7% of the \$54 billion in government funds) spent on nursing facility care in the United States in 1999 (Heffler et al., 2001). State agencies reported spending an average of \$22,433 per nursing facility, or \$208 per nursing facility bed for regulatory activities in 2000, including annual surveys, complaint visits, and other oversight activities.

Nursing facility licensing and certification dominates the work of state survey agencies, taking up 64.8% of their overall funding, whereas the remaining 35.2% covers the licensing and certification of all other health care organizations (such as hospitals, clinics, home health care agencies, etc.). Spending on nursing facilities licensing and certification has been increasing, as shown by Table 2. State survey agencies reported that total spending in 2000 was 9.6% higher than that in 1999, with most of the increase coming from a rise in federal funding and fee income. However, the nature and scope of licensing and certification activities required of state survey agencies by CMS and by state legislation have been increasing too, as a consequence of the new CMS regulations in 1995 and the more recent nursing homes initiative. Many state survey agencies indicated that they did not have sufficient resources to conduct their mandates. Overall, 37 (72.5%) state agencies reported that their current level of federal resources was not adequate to meet CMS's certification requirements, and 23 (45.1%) said that their state resources were insufficient to undertake state licensing requirements. State agency officials complained that the new federal funding increases for nursing facilities certification were insufficient to cover the new work they

**Table 2. Sources of Expenditures on Nursing Facility Licensure and Certification by State Survey Agencies in 1999 and 2000**

Nursing Facility Licensing and Certification Activities	1999 (\$)	2000 (\$)	% Change
Federal funding from CMS	208,424,397	232,322,942	11.5
State funding	103,644,638	107,454,888	3.7
Other sources of funding (fees, etc.)	36,612,728	42,455,446	16.0
Total expenditures	348,681,763	382,233,276	9.6

*Note:* CMS = Center for Medicaid and Medicare Services.  
*Source:* State survey agency telephone survey in 2000.

were being asked to do by CMS (e.g., staggered surveys, more complaint visits). In some states, the 1998–1999 funding increases had been delayed or came too late to be used during the state fiscal year.

Overall, 26 (50.9%) states said that their licensing and certification activities had been curtailed or restricted by a lack of funding, with most of those (14 states) indicating that it had particularly impacted their ability to undertake investigations of complaints about nursing facilities. Although increased federal funding for nursing facilities licensing and certification is now available, 20 (39.2%) state survey agencies reported that their use of that funding was being impeded at a state level by legislatures and/or administrations that had imposed hiring caps or moratoriums or were not supportive of increased regulation. Some states have wanted to hold down the overall number of state employees. Others reported that their state was not willing to make its matching contribution, and so they had not received the federal funding they could have had received; and some reported that the process for getting increased state funding was slow and difficult.

There were substantial differences in expenditure on nursing facilities licensing and certification across states, with some states apparently spending over eight times as much per bed as others. Although the mean level of state agency spending per bed reported for 2000 was \$208, it ranged from \$94 in West Virginia to \$770 in Alaska. (Alaska is a special case, however, because of its small number of facilities and large geographical area.) Overall, 15 (29.4%) states reported spending less than \$150 per nursing facility bed, whereas 11 (21.6%) states said that they spent more than \$300 per bed. The level of state agency spending per facility survey also varied widely from \$8,577 in West Virginia to \$80,440 in Delaware, with a mean of \$24,247. Although some of this variation might be explained by differences in geography, economies of scale in larger states, and differences in the nature and extent of state-level regulatory requirements, it is likely that it also represents significant differences in agency behavior, performance, and attitudes toward regulation. Indeed, one measure of this might be the extent to which states contribute to funding nursing facilities regulation. Federal funding covers 60.8% of the costs on average, but some states reported that they invest much more themselves than others. For example, California reported just 35.8% of funding for nursing facilities regulation from federal sources, with 28.2% coming from state revenues and 36.1% from other sources, such as licensing fees. In comparison, Montana reported 87.8% of funding from federal sources, the state provides 12.3%, and no income from other sources was reported.

### *State Survey Agency Staffing*

Much of the resources invested in nursing facilities licensing and certification were used to employ agency staff who conduct the agency's federal and state mandates to survey nursing facilities, and investigate complaints and other problems. State survey

agencies reported that they employed a total of 2,999 full-time equivalent (FTE) surveyors in 2000 to fulfill their nursing facility licensing and certification functions, of whom 71% were qualified nurses. Some states also employed specialist surveyors from other professional backgrounds, such as dietitians (44 states, 86.2%), social workers (38, 74.5%), pharmacists (29, 56.9%), therapists (14, 27.5%), and doctors (11, 21.6%), who not only provided assistance with nursing facility monitoring, but could also be assigned to the regulation of other types of providers (e.g., home health agencies). On average, across the United States, there was 1 FTE nursing facility surveyor for each 611.8 nursing facility beds, or 1 FTE surveyor for every 5.7 nursing facilities in 2000. Again, there were wide variations across states, with 1 FTE surveyor for every 102 beds in Alaska, 225 beds in Montana, 2,624 beds in Missouri, and 2,790 beds in Tennessee.

The total number of surveyor staff rose by 3.6% from 1999 to 2000, reflecting the increased resources discussed previously. This increase in staff numbers was less than the overall increase in budgetary resources, but many states (14, 27.5%) reported that they had problems in recruiting and retaining survey staff, with annual vacancy and turnover rates as high as 40%. The major reason reported was that surveyors are not well paid; the mean entry level salary reported by states for a qualified nurse surveyor was \$36,017, and the mean for a non-nurse surveyor was even lower, at \$33,416. These salaries compare poorly with the averages for nursing facility administrators (\$59,849), directors of nursing (\$49,606), and registered nurse supervisors (\$37,627) in nursing facilities (AHCA, 1999), which in turn are often lower than salaries for equivalent staff in other health care organizations. Although salary differentials between government and private sectors are not uncommon, 29 states (57%) cited low salaries as a barrier to recruitment, whereas other states reported that the current shortage of registered nurses is an important barrier. State officials reported other factors that made it difficult to recruit or retain survey staff, including the amount of travel and time away from home that the job demands; the requirement to work weekends, evenings, and nights to do "staggered" surveys; and the stressful and sometimes adversarial nature of the regulatory process, which was said to cause frustration and burnout.

Perhaps as a result, only 7 states (13.7%) said that they had ample or sufficient staff to fulfill their licensing and certification function for nursing facilities, whereas 15 states (29.4%) indicated that current staffing levels were barely adequate. The largest group—20 states (39.2%)—reported that staffing was not adequate, and a further 9 states (17.6%) described current staffing levels as seriously lacking. These staffing problems were related to the resource problems described previously.

### *Indicators of State Survey Agency Performance*

Table 3 sets out seven performance indicators for state survey agencies, and it can be seen that on each one

Table 3. Selected Indicators of State Survey Agency Performance

Performance Indicators	Mean	Minimum	Maximum	SD
Mean number of deficiencies per facility surveyed (1999) <sup>a</sup>	5.41	2.0	11.4	2.16
% of surveyed facilities with no deficiencies (1999) <sup>a</sup>	18.15	1.5	48.5	10.81
% of surveyed facilities with deficiencies G level or above (1999) <sup>a</sup>	25.97	5.8	53.6	11.30
% of surveys taking place more than 18 months after the last survey (1999) <sup>b</sup>	3.88	.0	33.5	6.38
Mean time (in days) between surveys (1999) <sup>b</sup>	287.3	211.1	478.0	54.66
Mean number of complaints investigated per 100 nursing facility beds (1999) <sup>c</sup>	3.10	.09	12.95	2.67
% of complaints investigated (1999) <sup>c</sup>	79.1	37.2	100.0	16.81

Note: CMS = Center for Medicaid and Medicare Services.

Source: CMS's On-Line Survey Certification and Reporting (OSCAR) system.

<sup>a</sup>Harrington, Carrillo, and colleagues, 2000.

<sup>b</sup>USHCFA, 2000a.

<sup>c</sup>CMS OSCAR unpublished complaint statistics for 1999, prepared in 2000.

the results vary widely from state to state. First, some states find relatively few deficiencies at each nursing facility during their surveys, such as New Jersey (2.0), Maryland (2.8), and Colorado (2.8); other states find up to five times as many deficiencies, such as Nevada (11.4), California (11.3), and Michigan (9.9). Similar differentials exist for the percentage of nursing facilities that are found to have no deficiencies at all (which ranges from 1.5% to 48.5%), and the percentage found to have serious deficiencies (grade G or above) that ranges from 5.8% to 53.6%. Although some of these variations between states may be caused by real major differences in the quality of care in nursing facilities, it seems likely that these variations reflect differences in the behavior of the state survey agencies themselves, their resources, agency staffing, systems, and methods.

Although all state survey agencies should be using substantially the same time scales for certification surveys, Table 3 shows wide differences between states. Some surveys are not performed on schedule—on average, 3.9% of surveys took place more than 18 months after the last survey at that facility was conducted. In some states, such as Maryland (33.5%), Arizona (23.9%), and Washington, DC (15.0%), the percentage of late surveys was much higher. Similarly, the mean time between surveys ranged from 211 days in Louisiana to 478 days in Maryland. Five states—Arkansas, Arizona, Washington, DC, Maryland, and New Jersey—had means above 365 days, which is the maximum set by the regulations.

The numbers and percentages of complaints about nursing facilities investigated also varied widely from state to state. There was a mean of 3.05 complaints investigated per 100 beds, but the rate varied from 0.09 to 18.2 across states. The proportion of complaints that were actually investigated when they were received (as opposed to be left to be addressed next time the facility was surveyed) ranged from 37.2% to 100%, with a mean of 79.1%.

### Relationship Between Agency Resourcing and Performance

To explore the relationships between the indicators of performance discussed previously and survey agency

funding, a series of linear regression models were created using each performance indicator listed in Table 3 as the dependent variable. A common set of state agency funding and nursing facility characteristics was used as the independent and control variables. All independent variables used in the linear regressions are shown in Table 4, with their means and standard deviations. Table 5 shows the results of the stepwise backwards elimination regressions. For each dependent variable, backward elimination was used to find the model with the greatest explanatory power (highest value of adjusted  $R^2$ ). The table shows, for each model, which independent variables were included, their unstandardized coefficients, and whether they were significant or not.

It can be seen from Table 5 that the regression models show that a number of significant associations exist between the survey agency performance indicators and the set of independent variables tested, and that up to 30% of the variation in performance indicators may be explained by the models. As hypothesized, we found that the amount spent on licensing

Table 4. Descriptive Statistics for Independent Variables in Linear Regression Analyses

Variable	Mean	SD
Nursing facilities licensing and certification spending per bed in 2000 <sup>a</sup>	223.5	127.9
% of licensing and certification spending from federal sources in 2000 <sup>a</sup>	70.1	18.3
% of facilities in chain ownership in 1999 <sup>b</sup>	53.8	14.1
% of facilities in for-profit ownership in 1999 <sup>b</sup>	60.1	17.0
% of residents funded by Medicaid in 1999 <sup>b</sup>	67.2	7.8
% facility beds not certified for Medicare/Medicaid in 1998 <sup>c</sup>	5.8	6.6
Mean total staff hours per resident day in 1999 <sup>b</sup>	3.6	.33
Mean number of beds per facility in 1998 (size) <sup>c</sup>	99.0	22.6
Mean % facility occupancy rate in 1999 <sup>b</sup>	83.7	7.5

<sup>a</sup>State officials telephone survey, 2000.

<sup>b</sup>Harrington, Carrillo, and colleagues, 2000.

<sup>c</sup>American Health Care Association, 1999.



Table 5. Summary of Backward Ordinary Least Squares Stepwise Regression Models for Indicators of State Agency Performance Indicators

Variable	Mean Number of Deficiencies Recorded Per Facility Surveyed (1999)	% of Facilities Surveyed With No Deficiencies (1999)	% of Facilities Surveyed With Deficiencies G Level or Above (1999)	% of Surveys Over 18 Months Since Previous Survey (1999)	Mean Time (Days) Between Surveys (1999)	Mean Number of Complaints Investigated Per Bed (1999)	% of Complaints Investigated (1999)
Constant	1.05 (1.11)	47.60** (14.09)	6.78 (18.46)	7.293 (10.74)	213.96** (43.59)	6.837 (5.747)	156.37** (35.24)
Licensing and certification spending per bed (2000)	.00413* (.002)	.0147 (.012)	.0287* (.013)				
% of licensing and certification spending from federal sources (2000)			.113 (.096)				
% of facilities in chain ownership (1999)	.0521** (.018)	-.305* (.119)	.278* (.114)	.063 (.050)	-.848 (.481)	.0414 (.020)	-.365* (.142)
% of facilities in for-profit ownership (1999)		.158 (.106)					.414 (.324)
% of residents funded by Medicaid (1999)		-.254 (.196)	-.455* (.209)				
% of facility beds not Medicare/Medicaid certified (1998)	.110** (.039)	-.374 (.219)			1.88 (.999)		-.790 (.411)
Mean total staff hours per resident day (1999)						1.508 (.996)	
Mean number of beds per facility size (1998)			.201* (.080)	.132** (.036)	1.06** (.291)	-.139** (.045)	-.103 (.101)
Mean % of facility occupancy (2000)				-.155 (.112)		6.434**	-.811* (.395)
F statistic	8.06**	2.964*	2.601*	4.879**	8.153**		2.494*
Adjusted R <sup>2</sup>	.298	.164	.138	.189	.300	.246	.130

Note: Unstandardized coefficients (with standard errors in parentheses).

\* $p < .05$ ; \*\* $p < .01$ .

and certification was significantly positively associated with the mean number of deficiencies recorded per survey, and the percentage of facilities found to have a G-level deficiency or above. The licensing and certification expenditures per bed, however, did not predict the percentage of facilities with no deficiencies, the percentage of surveys over 18 months since the previous survey, the mean time between surveys, the mean number of complaints investigated, nor the percentage of total complaints investigated.

We found a number of other associations between the independent control variables and the dependent variables. For every performance indicator, there were associations with at least one (and sometimes several) control variable, suggesting that some caution should be exercised in interpreting differences between states. For example, the mean number of deficiencies per survey, as well as being positively associated with spending on licensing and certification, was also positively associated with the percentage of facilities with chain ownership or operation and the percentage of nursing facility beds not Medicaid/Medicare certified.

## Discussion

This study, although it relies on survey and other data that have significant limitations, clearly highlights the relatively limited resources that state survey agencies have in relation to the number of nursing facilities that they have to regulate. Data from our survey suggest that many of the state survey agencies responsible for implementing both state and federal nursing facility regulations are underfunded, despite having received some increase in funding in recent years. We would speculate that resource levels may not have been adequate in the past, and the workload associated with regulation has tended to increase more quickly in recent years than the resources available with the implementation of the OBRA 1987 nursing home reform. Existing federal requirements are now being followed more closely by state survey agencies, and new requirements, such as those for more enforcement activities and focused, intensive attention to poor quality providers, are expensive to implement. Because our data are not sufficient to establish a funding benchmark or target, further research to establish such a benchmark is now needed. It seems unlikely that those states at the lower end of the current wide range of spending levels, such as the 15 states who all spend less than \$150 per nursing facility bed per year on regulation, can fulfill their federal and state regulatory responsibilities within those resources. One approach would be for Congress to establish the amount of funds for regulation of nursing facilities as a fixed percentage of the estimated federal trust funds spent on nursing facilities each year. This would remove the political considerations around federal funding and build in greater stability in regulatory funding.

The data we have presented on state survey agency performance, although incomplete and imperfect in

many ways, demonstrate that there are alarmingly wide variations across states, which we believe primarily reflect differences in state agency behavior and commitment to regulation rather than underlying differences in the quality of care.

The regression analyses showed a direct relationship between state agency funding for licensing and certification, and the average number of deficiencies and the percentage of facilities that receive deficiencies rated as severe (at the G level or above, where intermediate sanctions are imposed). This association suggests that agencies with sufficient resources are better able to identify quality problems and are more willing to take actions against such facilities, as would be expected.

Surprisingly, other performance indicators were not directly associated with state agency resources in our regression analyses, but this may reflect the limited power of those analyses given the size of our data set or the nonlinearity of any relationships which exist. However, it is clear that there are many other influences on performance, apart from the level of licensing and certification resources. For example, state survey agencies may fall behind with their annual nursing facility surveys because of survey staff shortages or other workload priorities (such as complaint surveys or enforcement activities). Similarly, differences in complaint investigation performance may reflect differences in state procedures, definitions, and tracking systems (USGAO, 1999c).

It is evident that, in many states, some resistance to expanding nursing facility regulation exists at a state level within the administration and/or legislature. This resistance is reflected in state-hiring moratoriums, funding caps, agency staff limits, and poor remuneration packages for agency staff—all of which may be significant obstacles to improving the performance of state licensing and certification agencies. The USGAO (2000) noted that states reported that a large proportion of the new appropriations for fiscal year 1999 survey initiatives were not fully used in part because of their late distribution, which slowed down the hiring of new staff.

Because the relationship between agency resources and performance is not robust, simply increasing the federal funding available to these state agencies may not solve their performance problems. It is clear that other measures to bring about improvements and efficiencies in agency performance may be needed. CMS has increased its surveyor training initiatives (USGAO, 2000), but many state agencies report the need for additional training. CMS has agreed with the USGAO (1999b, 2000) and the U.S. Senate Special Committee on Aging that there is a need for more federal oversight of state agencies. To this end, CMS developed new nursing home survey protocols in July 1999; identified facilities in each state that need more frequent inspections and monitoring; implemented an abuse intervention campaign; and implemented enhanced regional office oversight, including more comparative surveys of state agency surveys and monitoring (USGAO, 2000).

At present, CMS's arrangements for overseeing the performance of state survey agencies are rather limited, and it has little ability to deal with poor performance or encourage good performance (USGAO, 1999c, 1999d, 2000). We would argue that CMS should do more to develop and promulgate models of good practice among state survey agencies, to improve the CMS central and regional office monitoring of state agency performance on a continuing basis, and to address problems of poor state agency performance. For example, CMS could set standards for survey team size and composition, and the number of days per survey for a range of facility sizes; CMS could build in travel factors as a means of standardizing the survey activities and the funding levels for state agencies. Moreover, CMS could standardize survey protocols that may ensure more efficiency and uniformity. The training of state surveyors is also an important area for CMS. Ultimately, CMS should be able and willing, if need be, to contract with another organization or agency to undertake Medicaid and Medicare certification or to perform the function itself where the state survey agency's performance is unacceptable.

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Received July 11, 2001

Accepted December 21, 2001

Decision Editor: Laurence G. Branch, PhD

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