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For-Profit Medicare Home Health Agencies' Costs Appear Higher And Quality Appears Lower Compared To Nonprofit Agencies

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ABSTRACT For-profit, or proprietary, home health agencies were banned from Medicare until 1980 but now account for a majority of the agencies that provide such services. Medicare home health costs have grown rapidly since the implementation of a risk-based prospective payment system in 2000. We analyzed recent national cost and case-mix-adjusted quality outcomes to assess the performance of for-profit and nonprofit home health agencies. For-profit agencies scored slightly but significantly worse on overall quality indicators compared to nonprofits (77.18 percent and 78.71 percent, respectively). Notably, for-profit agencies scored lower than nonprofits on the clinically important outcome “avoidance of hospitalization” (71.64 percent versus 73.53 percent). Scores on quality measures were lowest in the South, where for-profits predominate. Compared to nonprofits, proprietary agencies also had higher costs per patient (\$4,827 versus \$4,075), were more profitable, and had higher administrative costs. Our findings raise concerns about whether for-profit agencies should continue to be eligible for Medicare payments and about the efficiency of Medicare’s market-oriented, risk-based home care payment system.

Studies of hospitals, health maintenance organizations, nursing homes, hospices, and dialysis providers have found that investor ownership—that is, for-profit status—is associated with lower quality and, for hospitals, higher costs.^{1–10} However, few studies have examined the effects on cost or quality of investor ownership of home health agencies. These agencies, also known as home care agencies, provide a range of services to the elderly, including personal and medical care, that often allow the elderly to remain at home instead of entering a nursing home or other institution.

Medicare home health expenditures rose sharply after the inception of Medicare’s risk-based prospective payment system (PPS), from \$8.5 billion in 2000 to \$19 billion in 2010—an

increase of 123 percent.¹¹ Home health is a major driver of geographical variation in the use of Medicare services.¹² The January 24, 2013, settlement agreement in *Jimmo v. Sebelius*¹³ is likely to expand eligibility for Medicare-paid home health services and may presage further cost increases.¹⁴

Investor ownership of home health agencies has grown rapidly, with for-profits accounting for 62 percent of all agencies in 2010.¹⁵ Medicare home health agencies have garnered significant profits under the PPS, averaging 19.4 percent of revenues in 2010. This is the second-highest profit rate among all Medicare provider types; the highest profits (21.4 percent) are incurred by freestanding inpatient rehabilitation facilities.¹¹ For-profit or proprietary home health agencies’ average annual profit margin, 20.7 percent, is

about 35 percent higher than the average for nonprofits.¹¹

A 2011 investigation by the Senate Finance Committee suggested that some proprietary agencies may have “gamed” the PPS to increase profitability, possibly employing fraudulent means.¹⁶ The Affordable Care Act expanded Medicare’s authority to stop payment for suspect or fraudulent home health services. However, Medicare has not yet used this authority in any broad way.¹⁷

In this article we describe differences in the quality and cost of home care according to agency ownership.

Study Data And Methods

DATA AND ANALYSES We analyzed data from two national Medicare databases: the 2011 Medicare Home Health Compare quality database and the 2010 Medicare home health cost reports.

The 2011 Home Health Compare database included reports filed by Medicare-certified home health agencies for the last quarter of 2010 and the first three quarters of 2011. Data for the major quality indicators were available for 9,128 agencies. Of these, 7,249 were proprietary and 1,291 were nonprofit; the remainder were other ownership types.

The database excludes very small agencies. It reports quarterly indicators from the Outcome and Assessment Information Set (OASIS), a federally mandated, twenty-four-page assessment form that home health agency personnel complete for all patients at admission to home care, recertification (that is, after sixty days for another sixty-day episode), and discharge. The assessment data are compiled by the home health agencies and submitted to Medicare, which uses them to create the Home Health Compare database and reports.

The 2011 Home Health Compare data included twenty-two individual home health quality indicators and five aggregate indicators that the Centers for Medicare and Medicaid Services (CMS) compute from combinations of individual indicators (see online Appendix Exhibit A1).¹⁸ We used CMS’s five aggregate indicators as our principal quality outcomes.

CMS adjusts the quality indicators related to outcomes and use of care for case-mix using prediction models based on patient-level data from the OASIS assessments. Details on the case-mix adjustment procedures are available elsewhere.¹⁹

Proprietary agencies account for a larger share of home care agencies in some regions, such as the South. To examine the interaction of location and ownership, we repeated our quality analyses stratified by region.

For our cost and revenue analyses, we analyzed data from the cost reports that had been filed by Medicare-certified home health agencies as of September 21, 2011, when our study began. CMS’s cost report data exclude both small agencies (those receiving less than \$200,000 in Medicare reimbursement per year) and hospital-based agencies, whose cost report data are included in their hospitals’ cost reports. Cost reports from 7,165 agencies included all of the data that we needed to calculate per patient costs.

We calculated three cost-related variables in our main analysis: total cost per patient (total annual cost divided by the number of patients served); administration salary and benefit costs as a percentage of total costs; and profitability (net revenue divided by total cost). Nonprofit institutions do not, strictly speaking, make “profits.” However, we used the term *profitability* to refer to surpluses in revenues over expenses at both nonprofit and proprietary agencies.

In addition, we assessed the relationships between these three cost variables and aggregate quality measures, using the merged cost report and Home Health Compare data. This analysis used data for the 5,808 agencies for which both cost and quality data were available.

We performed subsidiary analyses of two other variables: visits per patient (the number of visits divided by the number of patients) and total cost per visit (total cost divided by the number of visits). The interpretation of these subsidiary analyses is not straightforward because in some cases the number of visits is incorporated into the Medicare PPS payment formula.

In particular, episodes with fewer than five visits are paid per visit, while episodes with five or more visits are paid based on the risk formula. In addition, a number of therapy visits (visits for physical, speech, and occupational therapy combined) above a certain threshold is presumed to indicate higher risk and hence pushes the case into a higher-paying Medicare fee category. Thus, agencies can, in some cases, sharply boost reimbursement (and potentially profits) through a modest increase in the number of visits that push those numbers over specific thresholds.

The Medicare cost reports, as administrative data, are sometimes submitted with typographical, decimal-point, and computational errors. To deal with extreme outliers (many of which probably reflect decimal-point errors), for cost analyses only, we trimmed (that is, excluded) the top and bottom 3 percent of agencies for our main analyses. Sensitivity analyses performed using untrimmed data produced almost identical results; none of the cost differences showed a change in direction or statistical significance.

For analyses comparing proprietary and non-profit agencies, we categorized as nonprofits all agencies that had a religious affiliation. We excluded from our analysis several relatively small ownership categories: agencies owned by a local government (2.0 percent of agencies), those owned by a state or county government (4.3 percent), and those whose ownership was categorized as “other” (5.3 percent) or “mixed” (0.2 percent).

For all analyses of costs, we weighted each agency by the number of patients it served. Because data on the number of patients served was unavailable for 36 percent of the agencies that reported quality data, our main quality analyses were unweighted. We performed sensitivity analyses of quality measures weighted by the number of patients served, using the 64 percent of agencies for which all needed data were available.

We used the statistical software SAS, version 9.1, for all data analyses. We used *t*-tests (for independent sample means) to assess quality scores and costs, chi-square tests to assess differences in proportions, and Pearson correlation coefficients to assess bivariate correlations. Because of concerns about multiple testing, only *p* values of less than 0.01 were considered significant.

LIMITATIONS Several caveats apply to our findings. First, many cost reports undoubtedly contain data entry and other errors. However, willful falsification of data (which are subject to audit) is a criminal offense, and agencies have no incentives to misreport the dollar figures we used in our analysis. Hence, it seems unlikely that systematic data entry errors could account for

our findings. Furthermore, our sensitivity analyses found that including the data outliers that were excluded from our main analysis had virtually no impact. Both CMS and the Medicare Payment Advisory Commission (MedPAC) rely on cost reports as a primary source of data on providers’ financial circumstances.

Second, agencies may misreport quality parameters, which are based on clinicians’ documentation of the condition of and services rendered to individual patients. However, falsification is also illegal here. It is reassuring that CMS views the data as sufficiently robust to guide consumers’ home care choices.

Third, our quality measures were appropriately adjusted for case-mix. However, no comparable case-mix-adjusted data were publicly available for cost measures. A recent study using nonpublic data suggests that case-mix adjustment would reduce (but not eliminate) the cost disparities we observed.²⁰

In any case, the use of case-mix to adjust cost figures is problematic. Medicare’s home health PPS is based on a complex risk-based formula that uses 153 home health resource groups to reimburse agencies for each sixty-day episode of care. Much like the diagnosis-related groups used for Medicare’s hospital payments, the Medicare home health payment system puts providers at risk for per episode costs that are above or below the reimbursement rate, creating the potential for loss or profit. However, unlike the payment formula using diagnosis-related groups, the home health formula explicitly includes visit frequency (as described above), a factor over which the home health agency has substantial control. Thus, particularly in the home care setting, documented case-mix may inaccurately reflect patients’ real care needs.

Finally, as with all cross-sectional data, correlation does not prove causation.

EXHIBIT 1

Quality Indicator Scores For Home Health Agencies, By Ownership Type, 2011

Quality indicator	Proprietary (mean)	Nonprofit (mean)
Overall quality ^a	77.18%	78.71%
Process of care ^b	85.99	87.37
Outcome of care		
Improvement ^c	56.87	60.13
Avoidance of hospitalization ^d	71.64	73.53
Avoidance of more bedsores ^e	99.61	99.51

SOURCE Authors’ analysis of 2011 data from the Medicare Home Health Compare database. **NOTES** “Nonprofit” (*n* = 1,291) includes nonprofit agencies and those with a religious affiliation. There were 7,249 proprietary agencies. The Centers for Medicare and Medicaid Services computes the five aggregate quality indicators shown using various combinations of twenty-two individual quality indicators. Appendix Exhibit A1 shows details of the individual indicators (see Note 16 in text). All differences between proprietary and nonprofit agencies are significant (*p* < 0.0001). ^aMean of twenty-two individual quality indicators. ^bMean of thirteen individual process-of-care indicators. ^cMean of seven individual functional-outcome-of-care indicators. ^dPercent of patients free from hospitalization. ^ePercent of patients whose bed sores had not increased by the end of home health care.

Study Results

OWNERSHIP AND QUALITY Scores on Medicare’s aggregate indicator of overall quality were slightly but significantly lower at proprietary agencies than at nonprofit agencies—77.18 percent versus 78.71 percent (Exhibit 1). Nonprofits scored significantly higher on three of the four quality subcategories. These differences were modest, which indicates that two to three patients per hundred received better care at nonprofit agencies, compared to proprietary ones.

Notably, proprietary agencies scored worse on the clinically important outcome of “avoidance of hospitalization” (71.64 percent versus 73.53 percent). In other words, 28.36 percent of patients at proprietary agencies required hos-

Proprietary home health agencies appear to deliver generally lower-quality care than nonprofit agencies do.

pitalization, compared to 26.47 percent of patients at nonprofit agencies.

Proprietary agencies scored minimally higher than nonprofits on one of the four quality subcategories (avoiding more bedsores). However, the difference was only one new bedsore per thousand patients.

Sensitivity analyses weighted for the number of patients cared for produced similar findings with one exception. After weighting, the finding on avoidance of more bedsores was reversed, with nonprofit agencies scoring minimally higher than proprietary ones (99.73 percent versus 99.59 percent).

Nonprofit agencies differed from proprietary agencies on many of the twenty-two individual quality measures that contribute to the aggregate indicators. Compared to nonprofit agencies, proprietary agencies had minimally but significantly worse scores on nine indicators and better scores on five (see Appendix Exhibit A1).¹⁸

Proprietary agencies accounted for 92 percent of the agencies we analyzed in the South; 84 percent in the West; 81 percent in the Midwest; and 55 percent in the Northeast. For proprietary and nonprofit agencies combined, the South had the worst overall mean quality scores: about one percentage point lower than the Midwest and two percentage points lower than the West and Northeast. The South also scored lowest on two of the four quality subcategories but was best on the prevention of bedsores.

Analyses stratified by census region generally confirmed the main analyses. However, as we expected because of smaller sample sizes, fewer of the findings stratified in this way achieved statistical significance. Proprietary agencies' scores for overall quality and process of care were significantly lower than those of the nonprofits in the two regions with the most proprietary and total agencies, respectively: the South and Midwest. Proprietary agencies' hospitalization rates were significantly higher in three of the four

regions, and these agencies scored lower in "outcome of care—improvement" in one region. Nonprofits scored significantly worse on bed-sore prevention in the West but not in other regions.

OPERATING EXPENSES, PATIENT VISITS, AND COSTS On average, nonprofit agencies were larger than proprietary ones in terms of total patients served. Proprietary agencies had significantly higher profits (15.0 percent versus 6.4 percent) and significantly worse performance than nonprofits on the other two cost measures: higher administration salaries and benefits as a percentage of total cost (26.5 percent versus 19.7 percent) and higher total cost per patient (\$4,827 versus \$4,075).

Our two subsidiary (visit-based) analyses showed that cost per visit did not differ significantly between the two types of agencies. However, there was a trend toward lower per visit costs at proprietary agencies, compared to nonprofits. Proprietary agencies delivered more visits per patient (37.6 versus 23.7) than nonprofits, with therapy visits accounting for a larger share of all visits at proprietary agencies (33.5 percent versus 29.5 percent).

THE RELATIONSHIP BETWEEN COSTS AND QUALITY Surprisingly, among all home care agencies, total cost per patient was negatively correlated with four of the five aggregate quality indicators: overall mean quality, outcome of care—improvement, avoidance of hospitalization, and avoidance of more bedsores. In other words, higher home health agency costs were generally associated with lower quality in the entire cohort.

Proprietary agencies were largely responsible for this negative correlation, with statistically significant findings for three of the five indicators (the other two showed negative but not significant correlations). In contrast, a significant negative correlation between cost and quality was noted for only one of the five indicators among nonprofit agencies. Of the other four indicators, one showed an insignificant positive correlation and three showed small and insignificant negative correlations.

We found no consistent relationship between profitability and quality indicators. The third cost-related indicator, administration salaries and benefits as a percentage of total cost, was positively correlated with all five quality indicators.

Discussion

Proprietary home health agencies appear to deliver generally lower-quality care than nonprofit agencies do, although the quality differences are

modest. For instance, for every hundred home care patients, those cared for by proprietary agencies experience about two more hospitalizations than patients cared for by nonprofits. Financial differences are more marked, with proprietary agencies generating substantially higher costs and profits (or operating surpluses) compared to their nonprofit counterparts. Moreover, the proprietary agencies' higher hospitalization rate compared to nonprofits may increase Medicare hospital spending.

The current risk-based home care PPS was created because of the failure of the cost-based reimbursement system that was instituted in 1972.²¹ In 1980 Congress allowed for-profit ownership in the historically nonprofit and government-owned home health industry, removing the statutory prohibition against proprietary ownership of Medicare-certified home health agencies.²² The Balanced Budget Act of 1997 severely restricted home health reimbursement under a new interim payment system, which resulted in the closing of 10 percent of home health agencies that were in operation and declines in Medicare home health utilization and spending.²³⁻²⁵ The Balanced Budget Act also mandated the development of the current risk-based PPS reimbursement system, which was implemented in October 2000.

There is little previous research on home care costs and quality. A systematic review covering twenty years concluded that this "is one of the most understudied areas of health care provider services in the U.S. today."²⁶ More recently, a study of the changes in seven of the twenty-two individual Home Health Compare quality indicators from 2003 to 2007 found that although proprietary agencies had higher scores than nonprofits in 2003, nonprofits improved over time and scored higher than proprietary agencies in 2007.²⁷

A separate study of 510 agencies found that for-profit status was associated with a greater risk of hospitalization, which was the only quality indicator examined in that case.²⁸ In contrast, a study that used scores on twelve Home Health Compare measures retrieved in May 2009 for a sample of 505 Michigan home health agencies found that proprietary agencies generally outperformed nonprofits.²⁹

In 2012 MedPAC found that "quality measures appear to be steady for home health care on most measures."¹¹ However, holding steady is not necessarily impressive: Home health agencies' performance on most functional measures has not improved significantly since 2007. Functional measures include walking, medication management, pain management, transferring, and bathing.¹¹ In fact, on the two adverse outcome mea-

Home health agencies' performance on most functional measures has not improved significantly since 2007.

asures (emergency care use and hospitalization), there has been no improvement since 2004.¹¹

Studies of patterns of home care costs are even rarer than those of quality. One recent study concluded that quality was lower and costs were higher (even after case-mix adjustment) at proprietary agencies compared to nonprofits.²⁰

The inverse relationship between cost and quality (particularly at proprietary agencies) is intriguing, although such cross-sectional correlations cannot prove causality. The relationship could arise from unmeasured differences in acuity—in other words, CMS's case-mix adjustment could understate acuity at proprietary agencies or overstate it at nonprofits. Alternatively, the relationship could suggest that better quality might be achievable at lower cost.

What lies behind the positive association between administrative costs and case-mix-adjusted quality that we observed? We think that closer attention to documentation of the severity of patients' conditions and quality metrics in agencies with higher administrative costs, compared to agencies with lower administrative costs, is the most likely explanation. But it is also plausible that more administrative effort boosts real quality.

Our regional analysis raises particular concern about the quality of care in the South, where proprietary agencies provide the overwhelming majority of care.

Conclusion

Medicare's home health payment system aims to harness market-oriented incentives for efficiency. CMS seeks to upgrade care through a quality monitoring program that imposes substantial documentation burdens on clinicians. Our findings suggest that this program may not fully insulate patients from profit-incentivized quality compromises.

Meanwhile, the payment incentives have

nourished the growth of proprietary agencies whose costs (and profits) are far higher than those of their nonprofit counterparts. Overall, it appears that proprietary home care agencies deliver slightly lower-quality care at a substantially higher cost, belying claims that for-profit incentives increase efficiency.

Further analysis of the impact of proprietary

ownership (and other factors associated with poor home health agency performance) is sorely needed. If our findings are confirmed, Medicare should consider returning to the pre-1980 prohibition on investor ownership of home health agencies and simplifying the current complex payment system, which has neither contained costs nor maximized quality. ■

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