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The Final Evaluation Report on the National Home Health Prospective Payment Demonstration: Agencies Reduce Visits While Preserving Quality

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I. THE DEMONSTRATION

A. POLICY CONTEXT

The National Home Health Prospective Payment Demonstration was designed to test whether an alternative payment system could reduce public expenditures by promoting efficiency in the delivery of home health care. The first phase of the demonstration, which ran from 1990 to 1993, tested the effects of a predetermined per-visit payment rate for the Medicare program. The results from that demonstration showed that, to achieve substantial cost savings, the payment system for home health had to provide incentives to reduce the volume of services (Phillips et al. 1994). Phase II of the demonstration, which ran from 1995 to 1998, tested the effects of a predetermined per-episode payment rate. This report discusses the findings from Phase II.

The Medicare home health benefit grew at a dramatic rate between 1987 and 1995. Medicare payments for home health care rose from $2.4 billion in 1989 to $16.8 billion in 1997, more than tripling the share of total Medicare spending on home health (*Health Care Financing Review* 1998). Nearly all this growth was due to an increase in the provision of services, which coincided with a dramatic expansion in industry size. Between 1989 and 1997, the number of home health users annually per 1,000 beneficiaries rose from 51 to 109, and the average number of visits per user per year rose from 27 to 73 (*Health Care Financing Review* 1998; and U.S. General Accounting Office 2000).[1] Coinciding with this growth, the number of Medicare-certified home health agencies rose from 5,700 to more than 10,000 (U.S. General Accounting Office 1998).

Congress had been concerned about the growth in home health expenditures before this period. However, the dramatic increase in the Medicare home health benefit, combined with marked

[1]These figures refer only to Medicare beneficiaries in fee-for-service.

regional variations in service use and recent investigations into industry fraud and abuse, prompted Congress to legislate changes to the benefit as part of the Balanced Budget Act of 1997 (BBA97). Changes included reducing the per-visit cost limits, eliminating coverage for patients whose only skilled service was venipuncture, and redefining "part time" and "intermittent" care. The biggest change was that, for the first time, Congress limited the per-beneficiary expenditure on home health services for which Medicare would pay. BBA97 defined the maximum payment for an agency by using a new algorithm, commonly referred to as the Interim Payment System (IPS).[2]

Medicare home health services decreased dramatically in response to the BBA97 changes. As Figure I.1 shows, the average annual number of visits per home health user fell 43 percent from 1997 to 1999. The number of home health agencies fell 25 percent during the same period (Office of Evaluation and Inspections 2000). Thus, Phase II of the demonstration took place during a time of unprecedented decline in the use of Medicare home health services.

B. STRUCTURE OF THE PHASE II DEMONSTRATION

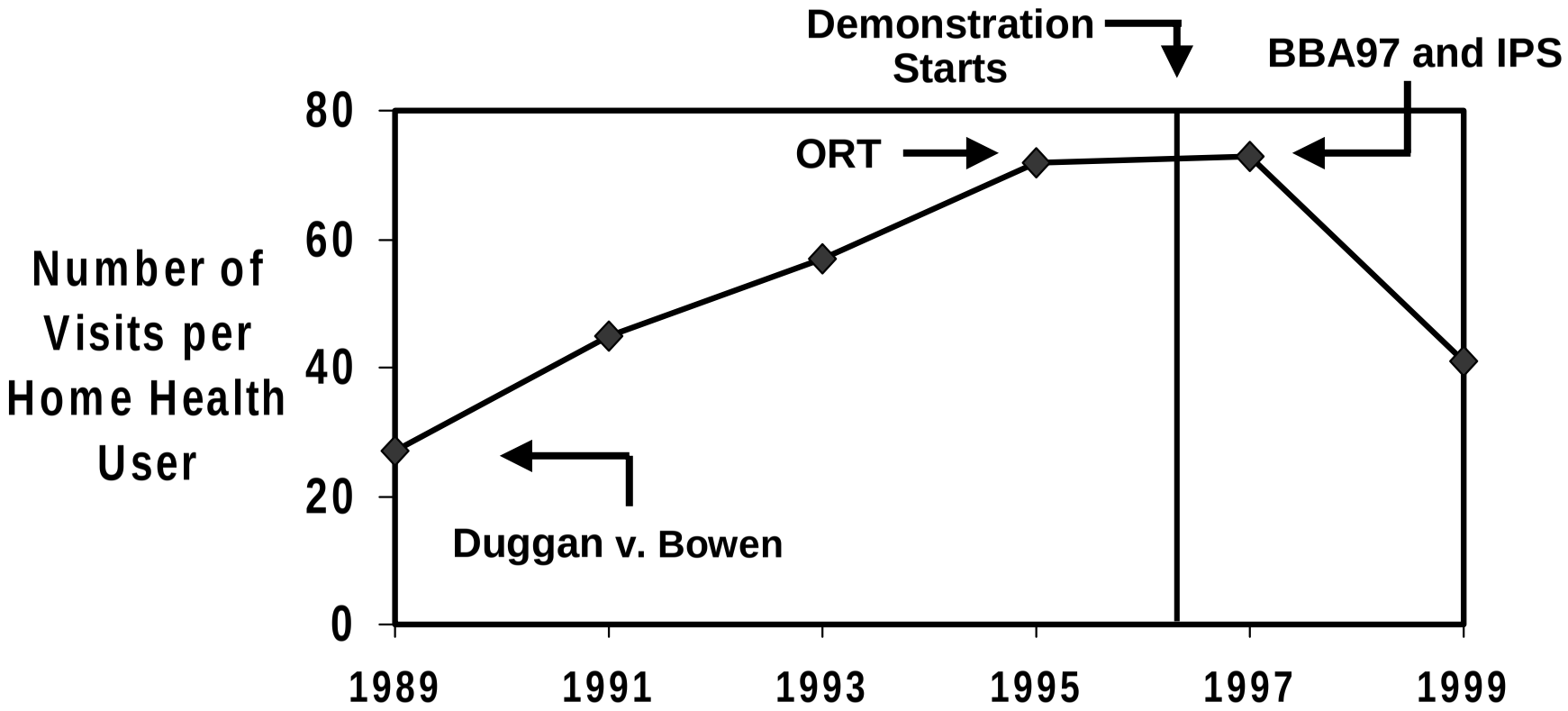
Ninety-one Medicare-certified home health agencies in five states—California, Florida, Illinois, Massachusetts, and Texas—enrolled in the three-year (Phase II) per-episode demonstration. Forty-seven were randomly assigned to the treatment group and received per-episode payment. The remaining 44 were assigned to the control group and continued to operate under cost reimbursement. One control agency subsequently transferred into the treatment group near the start of the demonstration, leading to a revised total of 48 treatment agencies and 43 control agencies.[3] Each

[2]This term refers to the fact that the IPS lasted only until the mandated prospective payment system was implemented, in October 2000.

[3]The switch was made at the request of an agency that had established a network with two other agencies assigned to the treatment group. The three agencies planned to merge fully at the end of the demonstration.

FIGURE I.1

POLICY CONTEXT



Source: Health Care Financing Administration (1999).

ORT = Operation Restore Trust.

agency entered the demonstration and began implementing prospective payment at the start of its fiscal year. The first entrants to the demonstration began implementing prospective payment in June 1995; the latest entrants began in January 1996. Demonstration operations were planned to continue through December 1998. (The demonstration was extended for treatment group agencies until Medicare prospective payment was implemented nationally in October 2000.)

1. How the Payment System Works

Agencies selected for the treatment group received a lump-sum payment for the first 120 days of home health care, regardless of the number or cost of visits provided.[4] The agencies were thus "at risk" for the costs of care incurred during this period. Only after the 120-day at-risk period and a subsequent 45-day gap in services had elapsed could an agency receive a new per-episode payment for a given Medicare beneficiary. For each visit beyond 120 days that did not begin a new episode (referred to as the "outlier period"), treatment agencies received a fixed payment rate that varied by the type of visit. A treatment agency also was paid on a per-visit basis for visits to patients admitted before the agency began demonstration operations ("phase-in" visits), and to patients admitted within 120 days of the end of demonstration operations in that agency ("phase-out" visits).

Agencies selected for the control group received payments based on the cost-based system in place at the start of the demonstration. Specifically, control agencies were reimbursed for their actual per-visit costs, up to 112 percent of the mean cost incurred by all agencies (for the agency's mix of visits) in the same geographic area.

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[4]Durable medical equipment, nonroutine medical supplies, and Part B ambulatory home health services continued to be reimbursed at cost throughout the demonstration. In addition, if an agency did not provide one or more of the six Medicare services (skilled nursing; physical, occupational, and speech therapy; home health aides; and medical social worker) during the base year but began to do so during the demonstration, then those visits also were reimbursed at cost during the demonstration, as were the costs of care for which Medicare was a secondary payer.

Prospective (per-episode) rates for the at-risk period were based on a treatment agency's costs and episode profile in the fiscal year preceding its entry into the demonstration (the base year), adjusted for inflation and changes in case mix in each evaluation year.[5] The episode profile was the average number of visits provided by the agency during the 120-day period, calculated for each of the six types of visits covered by Medicare. Payments for outlier, phase-in, and phase-out visits were also based on the agency's base-year per-visit costs (adjusted for inflation).[6] HCFA's market basket was used to adjust both the per-visit rates and per-episode rates for inflation. Both rates were subject to HCFA's statutory home health cost limits.

The case-mix adjuster classified each patient into 1 of 18 groups on the basis of 12 variables that described the patient's preadmission characteristics and hospital stay history. From this information, an aggregate case-mix index was created for each agency. At the end of each year of the demonstration, an agency's case-mix index for that year was compared with its case-mix index for the base quarter (the last quarter of the base year). If the agency's case mix differed from its base-quarter case mix, then its aggregate payment was retrospectively adjusted.

HCFA provided a loss-sharing arrangement to encourage participation in the demonstration. It reimbursed treatment agencies for 99 percent of losses occurring during the first demonstration year, and for 98 percent and 97 percent of losses during the second and third demonstration years, respectively, as long as total payments remained within the demonstration cost limits.

The key incentive under this payment system was that agencies could earn profits, which they could not do under cost reimbursement. Agencies could earn profits in two ways. They could lower their cost per visit, which would reduce their cost per episode. Agencies that took this step could

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[5]For more information on payment rates under the demonstration, see Phillips et al. (1995).

[6]Because complete data for episode profiles and settled cost reports were not available for a given year until some months after that year had ended, the initial lump-sum and per-visit rates used in the demonstration were preliminary and were revised after final base-year data became available.

earn profits from both their episode payments and their outlier payments. In addition, agencies could reduce the amount of services they provided during the 120-day at-risk period by reducing either the frequency of visits or the duration of the episodes. If agencies provided fewer services, and per-unit costs remained the same, then they could earn a profit from their episode payments.

2. Monitoring the Quality of Care

Some policymakers were concerned that agencies operating under this payment system would provide lower-quality care in their pursuit of profits. To counteract the incentive to dramatically reduce services at the expense of quality, HCFA required agencies to share with HCFA any profits above specified levels. HCFA also used an outcomes-based, quality-of-care monitoring system to monitor agency behavior. The quality assurance (QA) approach was based on a continuous quality improvement model, similar to the nationally implemented OASIS system. Under the QA approach, home health nurses and physical therapists from prospectively paid and cost-reimbursed agencies collected patient-specific information (primarily on functional status and medical condition) at admission and at discharge or 120 days after admission, whichever came first. The agencies then submitted this information to the Center for Health Policy Research at the University of Colorado, which developed agency profiles describing the patient outcomes at each agency. These profiles, which were returned to the agencies, indicated the areas in which an agency performed more poorly than other agencies. The agencies then had the opportunity to use the information to improve the quality of care.

3. Demonstration Participants Versus Agencies Nationwide

A range of agencies participated in the demonstration. Thirty-five of the 91 original demonstration agencies were nonprofit ones operating in urban areas, and 33 were for-profit ones located in urban areas. Ten agencies were hospital based, and 13 were rural and freestanding. The

average agency provided 80,000 visits during the year preceding the demonstration. The largest agency provided nearly 1 million visits; the smallest provided only 4,200.

Although the demonstration attracted a range of participants, it did not reflect precisely the range of agencies nationwide in operation at the start of the demonstration (Foster 2001).[7] The typical demonstration agency had more staff and provided higher service volume than did agencies nationwide (see Table I.1). Demonstration participants also underrepresented the national share of hospital-based and nonmetropolitan agencies. The underrepresentation of nonmetropolitan agencies is reflected in the area characteristics of the population served; the demonstration agencies' counties had a slightly lower percentage of residents older than age 65 and a higher per-capita income. The participants and eligible nonparticipants had similar median per-visit costs for five of the six Medicare home health services, as well as similarly distributed cost-to-cost-limit ratios (not shown).

Despite these differences, the demonstration agencies represented other home health agencies well enough to guide expectations about nationwide implementation. Many differences were too small to raise concerns that the results would not be generalizable to the population of agencies. Furthermore, since implementation of IPS, smaller, freestanding, for-profit agencies have left the Medicare program at a faster rate than have other types of agencies, suggesting that some predemonstration differences between the participants and nonparticipants matter less than when the demonstration was implemented. Finally, as presented in Chapter IV, our findings are consistent across agency subgroups, supporting their generalizability.

[7]The comparison was with all agencies nationwide that would have been eligible to participate in the demonstration. Government-owned agencies that had not operated for three years before the demonstration were excluded, as were agencies that had been in the treatment group during Phase I.

TABLE I.1

CHARACTERISTICS OF DEMONSTRATION PARTICIPANTS AND ALL OTHER ELIGIBLE NONPARTICIPANTS NATIONWIDE

	Participant	Eligible Nonparticipants	Difference
Provider Characteristics			
Hospital Based (Percent)	11.6	32.7	−21.1***
Visiting Nurse Association (Percent)	34.9	11.8	23.1***
Other Freestanding (Percent)	53.5	55.5	−2.0
For Profit (Percent)	47.7	46.3	1.4
Average Number of Health Care Staff	61.8	41.0	20.8**
Average Number of Medicare Visits	71,491	45,850	25,641**
Medicare Cost Per Visit			
Home Health Aide Services	37.60	35.71	1.89
Skilled Nursing	81.66	78.25	3.41
Physical Therapy	90.69	88.14	2.55
Occupational Therapy	88.50	90.20	−1.70
Medical Social Services	134.84	112.37	22.47**
Speech Therapy	93.53	91.07	2.46
Service Area Characteristics			
Percent in a Metropolitan Statistical Area	84.1	73.5	10.6**
Percent of County Population Older than 65 Years	12.6	13.4	−0.8**
Annual Per Capita Income (In Dollars)	22,393	21,049	1,344**
Physicians per 1,000 Population	2.4	2.3	0.1

SOURCE: Foster (2001).

*Significantly different from zero at the .10 level, two-tailed test.
**Significantly different from zero at the .05 level, two-tailed test.
***Significantly different from zero at the .01 level, two-tailed test.

C. ANALYTIC METHODS AND DATA

1. Analytic Methods

In our analyses, we compared the experiences of the treatment and control agencies and their patients to estimate the impact of per-episode payment. We compared outcomes (1) at the agency level, and (2) at the individual patient level. Table I.2 summarizes the evaluation and the level of analysis we used to investigate them.

TABLE I.2

EVALUATION ISSUES AND ANALYSIS LEVEL

Issue	Level of Analysis
Participation	Agency
Profits and Losses	Agency
Costs per Episode	Agency
Revenues	Agency
Use of Home Health	Individual
Quality of Care	Individual
Access to Care	Individual
Use of Other Medicare Services	Individual
Use of Informal Care and Other, Non-Medicare-Reimbursed Services	Individual

Although the building block of the individual-level analysis is an episode of care, we defined our analysis period as a fixed interval of time after admission. We used this fixed-length interval because an agency's treatment status may have affected the number of episodes over which care was distributed. Because treatment agencies had the incentive to extend care over multiple episodes, using an episode to define our analysis period might have led to overstatement of certain impacts (for example, in service use).

Despite using random assignment to assign agencies to the treatment (prospectively paid) or control (cost-reimbursed) groups, we found some differences in agency characteristics and patient characteristics between the groups (Trenholm 2000a). We used regression analysis to control for these differences, and to maximize our ability to statistically identify impacts of the program. In our agency-level analyses, we used a fixed-effects model to control for time-invariant, agency-specific factors.

Our individual-level analyses used regressions with control variables describing the patients, agencies, and market-area service environment. The patient data included detailed information on patient health and functioning (see Trenholm 2000a; and Chen 2000). We primarily used ordinary least squares and logistic regression analysis. Because the demonstration was implemented at the agency level and not the patient-level, we weighted patient-level data so that every agency in the demonstration was given equal weight in our primary analysis. We also conducted unweighted analyses for sensitivity tests. In computing our standard errors for significance testing, we used SUDAAN software to account for this weighting and for the fact that our observations were clustered within agencies. For a more thorough description of the analytic methods, see Trenholm (2000a) or Cheh and Black (2001).

2. Data

The analysis used a number of samples and drew on data from many sources. Most of the agency-level analysis used data from the three years preceding the demonstration and the three years of demonstration operations. The number of agency years varied from 314 to 470, depending on data availability.

Individual-level analyses relied on data on home health patients drawn from Medicare bill records. For these analyses, we used a fixed time period—typically one year after the initial home

health admission. We broke down the patient year into three trimesters—the 120-day at-risk period, and the 2 four-month periods following the at-risk period. The number of patient-level observations ranged from roughly 52,000 to 114,000, depending on the outcome under investigation.

Two other important data sources for the individual-level analyses were the patient survey and the QA database. The patient survey, conducted by telephone, collected information on a sample of patients roughly four months and eight months after the start of the patient episode. The sample was drawn during the second year and early part of the third year of the demonstration. In total, 2,072 four-month patient survey observations and 1,883 eight-month patient survey observations were used in the analyses. (For further details, see Chen 2000 or Phillips 2000.)

The QA data were obtained from the outcome-based quality monitoring and continuous improvement system implemented for the demonstration. These data consisted of at least two assessments of a patient's health by agency nurses during the course of the home health episode. The nurses conducted the first assessment at the initial admission to home care, and the final assessment at discharge or at 120 days, whichever came first. The analysis sample for this analysis ranged from about 49,000 to 70,000 episodes of care. Note that, with these large sample sizes, the statistical power of our tests is strong, making it unlikely that we would fail to detect a true impact.

Qualitative data collected during site visits to 63 of the demonstration participants comprised the final major data source for the demonstration. Each site was visited twice: once in the early part of the demonstration, and the second time in the third demonstration year but before the agency began its phase-out operations. We interviewed agency administration staff and caregiving staff on a variety of topics, including changes in administrative structure, costs, and caregiving behavior.

II. HOW DID PROSPECTIVE PAYMENT AFFECT THE USE OF SERVICES?

The key incentive in the demonstration was the opportunity to earn profits by reducing the cost per episode below the base-year payment rate. Agencies could lower their per episode costs in two ways: (1) by decreasing the number of visits per episode, or (2) by decreasing the cost per visit. As described in this chapter, many agencies focused on reducing visits, dramatically lowering the visits per episode.

Prospective payment significantly reduced the number of visits in the first 120 days of care—the period covered by episode payment. During this period, control agency patients had an average of 45 visits, whereas treatment agency patients averaged 37 visits—a difference of 17 percent (Trenholm 2000a). Skilled nursing services, which were an average of four visits per patient lower, or 19 percent, accounted for about half this difference. Home health aide visits were nearly three visits per patient lower, a 17 percent difference, whereas medical social worker visits were 0.3 visits lower, a 38 percent difference. The average number of physical, occupational, and speech therapy visits during the at-risk period remained the same under prospective payment as under cost reimbursement.

Throughout the demonstration, prospectively paid agencies continued to learn more about ways to effectively reduce services, and they continued to reduce the number of visits per 120 days. In the first year of the demonstration, prospectively paid agencies averaged 38 visits during the first 120 days, but, in the third year, the average fell to 32 visits (Archibald and Cheh 2001). However, the difference between the prospectively paid agencies and the cost-reimbursed control group agencies remained unchanged, as the control agencies reduced their visits at virtually the same pace. Cost-reimbursed agencies instituted service reductions in response to various changes in the environment,

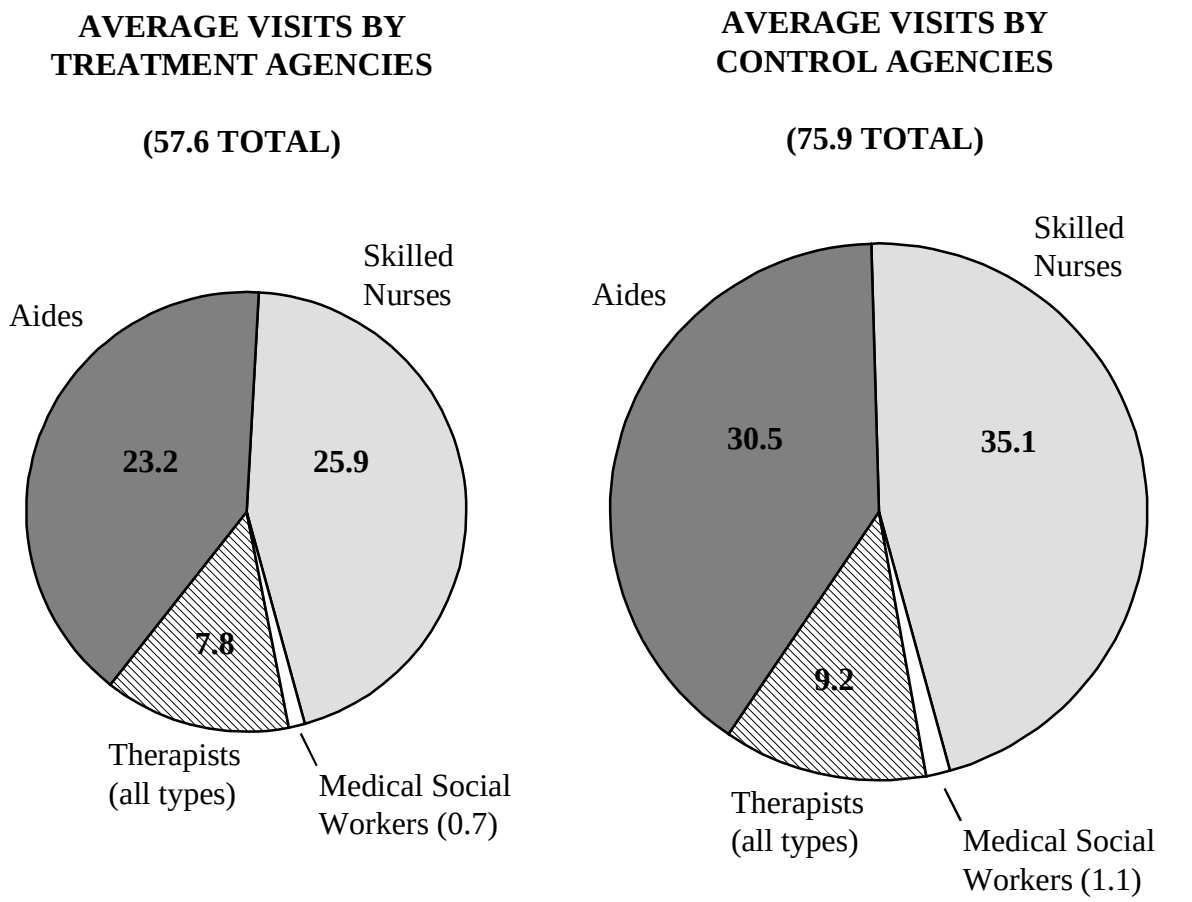
including implementation of Operation Restore Trust (ORT), the growth in managed care, and implementation of BBA97.

Even after the 120-day at-risk period was over, prospectively paid agencies continued to reduce the number of visits rendered (Trenholm 2000a). Compared with the control group, the average number of visits during the eight months following the at-risk period was about one-third lower (30 visits compared with 20 visits). Reductions in skilled nurses' and home health aides' visits accounted for most of this difference. In contrast to the at-risk period, however, visits by physical therapists and occupational therapists were significantly lower, a combined average of about 1.4 visits compared with 2.2 visits for the control group. Prospectively paid agencies provided medical social worker visits infrequently after the at-risk period had ended; these visits were lower by a small but statistically significant margin of 0.1 visit per patient.

Compared with cost-reimbursed agencies, prospectively paid agencies significantly reduced the average number of visits provided over a patient-year by 18 visits, or 24 percent (see Figure II.1). More than 90 percent of the decrease in treatment agencies' visits was due to reductions in visits by skilled nurses and home health aides. This result is not surprising, as skilled nurse and home health aide services account for the vast majority of the visits that most agencies provide. Even though the majority of the decline was in skilled nursing and home health, the overall composition of a home health visit remained the same, because these services had accounted for almost 87 percent of all the services provided.

The fact that prospectively paid agencies significantly reduced the length of time patients remained in home health care is a key factor explaining the difference in the number of visits. Prospectively paid agencies altered their discharge planning practices in response to the demonstration incentives by focusing on patient discharge from the time a patient entered care (Cheh

FIGURE II.1
AVERAGE VISITS PER PATIENT IN THE YEAR AFTER ADMISSION, BY TREATMENT AND CONTROL STATUS



SOURCE: Medicare claims data.
NOTE: The treatment group mean has been regression-adjusted to account for preexisting differences between treatment and control agencies.

et al. 2001). The average episode length was 131 days for the treatment agencies and 98 days for the control agencies—a difference of more than one month (Trenholm 2000a).[1] About three-quarters of the episodes provided by prospectively paid agencies ended during the 120-day at-risk period, compared with two-thirds of those provided by cost-reimbursed agencies. However, the difference in episode length did not account for the total difference in services. The agencies also provided fewer visits per month (by an average of one to two visits per month) for patients who continued receiving care.

The agencies used a number of different strategies to reduce visits per episode. Among the most successful strategies were to increase supervision of visiting staff, encourage staff to promote patient independence, improve patient education, and change the timing of visits (for example, to visit patients more frequently early in the episode) (Cheh et al. 2001). These strategies seemed to be most successful when they were used together or in combination with other approaches. To reduce service use, however, the agencies had to overcome numerous obstacles, including staff resistance, limits on available capital and managerial resources, and the demands inherent in providing the QA information. Furthermore, successfully lowering visits per episode entailed a financial risk. If the agencies had failed to increase the number of patients they served, the decrease in visits per episode could have caused overall agency volume to fall. If the agencies had not taken steps to reduce overhead costs, this decrease, in turn, would have increased their overhead cost per visit.

The agencies could have reduced service use by limiting patient access. By refusing to accept patients who had potentially high costs, the agencies would have reduced the level of services provided, thereby earning higher profits. We did find that prospectively paid agencies were seeking more information about patients at admission, which they would have been able to use to screen

[1]Based on patients who were observed for a maximum of 480 days.

high-cost patients. However, the agencies explained their actions as a way to obtain additional information to better document patient need (required due to ORT), and to obtain better payment information (to overcome the increase in coverage errors that accompanied the growth of Medicare managed care). Furthermore, agencies that had provided charity care as part of their mission before entering the demonstration reported continuing to do so throughout the demonstration, suggesting that they remained committed to serving all patients regardless of their profitability.

Other evidence also indicates that the agencies continued to accept all patients. Patients with serious medical conditions, limitations in their activities of daily living (ADLs), or other conditions predictive of higher-than-average service use were as likely to receive care at a prospectively paid agency as at a cost-reimbursed agency (Trenholm 2000b).[2] The evidence also shows that patients who might have had higher relative costs per visit, such as those from rural areas or non-English speaking areas, were just as likely to be admitted to a prospectively paid agency as to a cost-reimbursed agency.

In summary, agencies in the prospective payment group implemented large reductions in service without trying to select patients who needed less care. In response to changes in national policy and in local market conditions, agencies that operated under cost reimbursement also reduced the care they provided, but they did not make the same substantial, widespread reductions. Thus, in terms of reducing service use without hampering admissions to care, prospective payment was a success.

[2]Among the roughly 1 in 10 patients with multiple episodes of care in the same agency, those readmitted to treatment agencies were found to have slightly lower predicted service use (using a regression model to make the prediction) than those readmitted to control agencies. Although consistent with the incentives to select a lower-cost patient mix under the demonstration, the difference is more likely due to an underestimate of predicted service use by prospectively paid agencies, rather than the result of an active process to favorably select patients.

III. HOW DID THE DECLINE IN SERVICE USE AFFECT PATIENTS?

The large decline in service use raises the possibility that either the patients' quality of care may have been adversely affected by the prospective payment system or the burden of care was shifted to other sources, such as families or charitable organizations. However, we found little evidence to support these concerns.

A. WHAT HAPPENED TO THE QUALITY OF CARE?

The large decline in visits had the potential to adversely affect patients in a number of ways. First, the decrease could have reduced patients' functional abilities, especially if patients did not receive therapy they needed. Second, the decline could have resulted in exacerbations of medical symptoms and outcomes if patients received insufficient skilled nursing care. Third, it could have resulted in less patient monitoring, leading to increased use of emergency services or even hospital admissions. Finally, the decline in visits could have reduced patients' satisfaction with care.

Prospective payment did not have a large impact on patient functioning. We measured both improvements in ADLs and stabilization in ADLs. Both measures were the same for prospectively paid and cost-reimbursed agencies during most of the demonstration (Chen 2000). However, in the last demonstration year, when the number of visits per episode reached their lowest point, the patients of prospectively paid agencies were slightly less likely to stabilize on three of the five ADL measures (see Table III.1) (Chen 2001). These differences were on the order of a two percentage point difference and ranged from two to three percent of the control group mean. (For example, 84 percent of the control group stabilized in bathing, versus 82 percent of the treatment group.) These three small, negative effects in the final year could be viewed as subtle signs of declines

TABLE III.1

SUMMARY OF QUALITY-OF-CARE MEASURES

Type of Measure	Number of Measures	Number of Significant Differences	
		Favoring Prospectively Paid Agencies	Favoring Cost Reimbursed Agencies
Improvements in Activities of Daily Living[a]	15	2	0
Stabilization in Activities of Daily Living[a]	15	0	3
Improvements in Instrumental Activities of Daily Living[a]	9	1	2
Stabilization in Instrumental Activities of Daily Living[a]	9	0	3
Mortality at 120 Days[a]	3	0	0
Improvements in Clinical Symptoms[a]	21	12	1
Stabilization in Clinical Symptoms[a]	21	1	1
Emergency Care[a]	9	3	0
Hospital Care[a]	6	0	0
Patient Satisfaction	19	0	3

[a]Each year counts as a separate measure.

in patient functioning, reflecting the lowest levels of service use. Alternatively, they could be unrelated to prospective payment, as the few isolated effects were observed only on ADL *stabilization*—there were no effects on ADL *improvement.* We are unable to explain why patients would be as likely to improve their functioning, but would be less likely to maintain functioning, if quality of care were to decline. Regardless of how one interprets this final-year result, we can certainly conclude that prospective payment did not result in substantial declines in patient functioning.

Prospective payment also had no detrimental effects on multiple measures of patients' health status. The patients of prospectively paid agencies and the patients of cost-reimbursed agencies reported the same perceptions of overall health status and number of days confined to bed. In

addition, the two groups' mortality rates during the year after admission were virtually the same. Furthermore, their rates of improvement and of stabilization in eight medical symptoms and outcomes, such as pain, dyspnea, and urinary incontinence, were the same for most of the demonstration. However, the patients of prospectively paid agencies were *more* likely to improve on four of the eight medical symptoms and outcomes during the final year of the demonstration. These differences were on the order of six to eight percentage points and represented 9 to 18 percent of the mean for the cost-reimbursed group. Although these significant differences may not be due to the effects of prospective payment, they clearly show that patients were not made *worse* by the decrease in the number of visits.

With respect to measures of other service use as an indicator of quality, the patients of prospectively paid agencies were no more likely to be readmitted to the hospital for the same body system conditions or any other condition than were patients of cost-reimbursed agencies (Chen 2000; and Schore 2000). Furthermore, they were no more likely to visit a hospital emergency room or to have an emergency visit to a physician's office. During the first year of the demonstration, patients from prospectively paid agencies actually had a lower probability of having an emergency room visit. By the end of the demonstration, however, this difference had narrowed, and patients from treatment and control agencies were equally likely to have had such a visit. These data reinforce the finding that quality was not compromised—or at least, that it was not compromised enough to warrant hospital readmissions or emergency service use.

In addition to health outcomes as a key component of quality, HCFA must be concerned about beneficiary satisfaction. If patients are highly dissatisfied with home health services, they may choose to use a more expensive postacute care option, rather than home health care. It seems

intuitive that reducing service use will result in less patient satisfaction, and indeed, the Channeling Demonstration found that more home care services led to greater patient satisfaction (Kemper 1988).

Prospective payment did have a small impact on patients' satisfaction with interpersonal aspects of care. Large majorities (95 percent) of treatment and control agency patients were satisfied with the overall care their agency provided; virtually everyone would recommend it to a family or a friend (Chen 2000). However, a small fraction of patients were dissatisfied with specific aspects of interpersonal care, and patients of prospectively paid agencies were somewhat more likely to be dissatisfied than were patients of control agencies. Six percent of the prospectively paid agency patients felt that staff rushed through their work, compared with roughly four percent of control agency patients. Eleven percent of prospectively paid agency patients felt that staff did not encourage them to be independent, compared with roughly 8 percent of control agency patients. In addition, eight percent of prospectively paid agency patients felt that staff did not pay attention to them, compared with roughly five percent of control agency patients. Although these differences are proportionally large and statistically significant, they represent relatively few patients and were not accompanied by poorer health outcomes. Thus, policymakers may consider the increase in dissatisfaction an acceptable price to pay for the substantial utilization decrease resulting from prospective payment.

In summary, the empirical evidence demonstrates that the large reductions in home health use had little measurable impact on the quality of home health services. Other factors also lend credence to these results. First, the most successful methods to reduce home health utilization were to (1) supervise visiting staff more carefully; (2) encourage staff to promote patient independence; (3) improve patient education; and (4) change the timing of visits (for example, visit patients more frequently early in the episode to reinforce teaching). Thus, agencies were effectively reducing the

need for care by using strategies that were likely to promote better agency care and patient self-care. Second, when asked directly whether they believed the quality of their patient care had suffered because of their participation in the demonstration, agency management staff uniformly responded that their agency still provided excellent, high-quality care, and that they had merely changed their strategies to achieve this goal (Cheh et al. 2001). Furthermore, most of the agencies' nurses and physical therapists agreed. Finally, considerable geographic variation in the amount of home health care provided has always existed (Schore 1994). Nevertheless, there is no evidence to suggest that patient outcomes suffer in the low-use areas. Thus, it is perhaps unsurprising to find that home health care could be substantially reduced without affecting the quality of care.

B. DID PROSPECTIVE PAYMENT AFFECT THE USE OF OTHER SERVICES?

The prospective payment system reduced home health use significantly, yet the quality of care remained unchanged. One possible explanation is that other services substituted for the Medicare home health services. This issue is an especially important one for HCFA to consider, as potentially more costly services, such as skilled nursing facility stays, are substitutes for home health care.

The reductions in home health services did not appear to lead to an overall increase in the expenditures for and use of other Medicare services (see Table III.2). Expenditures for Medicare Part A services, including inpatient hospital expenditures, skilled nursing facility expenditures, and hospice expenditures (but exclusive of home health expenditures) were the same for both groups of patients. During the year after home health admission, patients admitted to a prospectively paid agency incurred $11,124 in Part A expenditures on average, whereas patients in control agencies incurred $11,292. Patients in both groups entered the hospital an average of one time during the year after home health admission; nearly 20 percent were admitted to a skilled nursing facility, and 6 percent were admitted to a hospice.

TABLE III.2

SELECTED IMPACTS ON THE USE OF MEDICARE SERVICES

Outcome per Patient, During the Year After Home Health Admission, for Patients Admitted During Demonstration Year 1	Control Group Mean	Treatment-Control Difference	*p*-Value
Emergency Room Encounters (Number)	1.27	−0.09***	0.01
Inpatient Hospital Admissions (Number)	1.09	−0.04	0.21
Any Skilled Nursing Facility Admission (Percent)	20.0	−0.1	0.88
Any Nondemonstration Home Health Admission (Percent)	16.9	2.8**	0.02
Medicare Part A Reimbursement, Exclusive of Demonstration Home Health (Dollars)	11,292	−168	0.62
Medicare Part B Reimbursement (Dollars)	4,864	−37	0.79

SOURCE: Schore (2000).

**Statistically different from zero at the .05 level, two-tailed test.
***Statistically different from zero at the .01 level, two-tailed test.

Prospective payment did not increase the use of Part B services. Nearly 80 percent of the patients from both groups of agencies had a hospital outpatient department encounter during the year after home health admission, often for hospital-based laboratory tests or x-rays. Nearly all (96 percent) saw their physician or other practitioners, and more than half purchased durable medical equipment. Most (94 percent) also used other Part B services, frequently for laboratory tests and x-rays from freestanding providers. Both groups of patients used these services at the same rates, however, resulting in total (regression-adjusted) Medicare Part B expenditures of $4,847 for the patients of prospectively paid agencies, and of $4,864 for the patients of the control agencies.

Another alternative to home health care provided under the demonstration was the use of more home health care from agencies that did not participate in the demonstration. Agencies had the incentive to reduce service use by transferring patients, especially high-cost patients, to nondemonstration agencies. However, patient transfer rates (patients admitted to another agency within three days of discharge) remained low and unchanged by prospective payment (Trenholm

2000b).[1] By one year after home health admission, only 3.2 percent of the patients had been transferred from control agencies, compared with 2.9 percent of patients from prospectively paid agencies.

However, patients of prospectively paid agencies were slightly more likely than patients of control agencies to have had an admission to a nondemonstration agency during the year after home health admission. Twenty percent were admitted to a nondemonstration agency, compared with 17 percent of the control agency patients (Schore 2000). The higher rate of nondemonstration home health admissions seems to have been related to two factors. First, because prospectively paid patients were discharged sooner than were control agency patients, they had a larger window of opportunity for an admission to another agency. That is, patients in control agencies continued to receive home health services during their relatively longer episodes, whereas patients who had been discharged from the prospective payment agencies were at risk for an admission. Second, a few prospectively paid agencies whose patients had unusually high admission rates to agencies outside the demonstration (but *not* unusually short demonstration episodes or low numbers of visits) seem to have driven the treatment-control difference.

Thus, we found no evidence to suggest that patients of prospectively paid agencies used more Medicare-reimbursed services to substitute for the decline in home health services. However, Medicare does not pay for a number of the services that could substitute for Medicare home health. In particular, informal care from family members and friends, formal home- and community-based services (such as home-delivered meals), and formal residential services (such as assisted-living facilities) could substitute for Medicare home health.

[1]Also included are patients who were admitted to another agency prior to discharge from the demonstration agency.

Prospective payment did not result in increases in informal caregiving—either the likelihood of receiving informal care or the amount of informal care received. Furthermore, patients from both groups of agencies were equally likely to use home- and community-based services during the eight months after admission to home health care, and they received the same amount of services from these providers (Phillips 2000). The latter result is somewhat surprising, because slightly more prospectively paid agencies reported that they increased their referrals to home- and community-based programs, an increase they attributed to prospective payment (Cheh et al. 2001). Cost-reimbursed agencies also increased their referrals to these programs, although in reaction to reductions in service use resulting from BBA97 and the growth in managed care. Moreover, some cost-reimbursed agencies reported that the constraint on the supply of community services made it difficult to place patients. Thus, even though prospectively paid agencies might have attempted to move patients into community services earlier and more often, they might not have been able to do so because the services simply were unavailable.

Prospective payment certainly did not increase the use of formal residential services. In fact, it appears to have reduced the use of this service. The likelihood of residing in an assisted-living facility apparently fell by about one-third during the first four months after home health admission and may have been reduced for eight months, suggesting that admission to these facilities may have been delayed (Phillips 2000). Prospective payment also appears to have reduced the average number of days of nursing home care (not reimbursed by Medicare) by almost four days in the first eight months, representing about two-thirds of the control group average of six days. This evidence is weak, however. We found little evidence that prospective payment decreased nursing home days during the first four months of care; the decrease appeared in months 5 through 8, when most patients are finished with care. Furthermore, we hypothesized that the reductions in the use of

medical social worker visits by prospectively paid agencies might have led to the reductions in the use of residential services because medical social workers would be available less often to facilitate residential placement. We found no evidence to support the hypothesis, so we have no supporting evidence about the mechanism that could underlie this apparent reduction. However, we can safely conclude that prospective payment did not lead to an *increase* in formal facility use.

Thus, we found little evidence to concern policymakers that the large reductions in service use had negative ramifications for patients, their families, or Medicare costs. Patients were not harmed by prospective payment, and other service providers did not provide more services to compensate for the reductions in home health. We did find slightly lower levels of patient satisfaction with interpersonal aspects of care, but the differences were not large enough to warrant concern. During the last year of the demonstration, when home health utilization reached its lowest point, we also found some statistical differences in patient outcomes measures. However, these differences suggested that prospective payment produced both better outcomes and worse outcomes—and the results were weak in either case.

IV. WERE THE RESULTS CONSISTENT FOR DIFFERENT TYPES OF AGENCIES AND PATIENTS?

A. AGENCY SUBGROUPS

Individual agencies may have responded in different ways and degrees to the demonstration incentives, depending on their individual characteristics, and certain types of patients may have been affected differently by agency actions. Assessing these issues is important because a finding that impacts were significant across most or all agency subgroups strengthens the validity of the main findings and suggests that they may be more easily applied to agencies outside the demonstration. Furthermore, if we were to find that the impacts on home health service use were larger for certain types of agencies, it would be important to determine whether these larger reductions in use were related to more negative consequences. Patient subgroups should be investigated because the overall results might mask negative consequences of the cutback in services for a small segment of the population.

We investigated five agency subgroups:

1. ***For-Profit Agencies/Nonprofit Agencies.*** Nonprofit treatment group agencies might have resisted the incentive to earn as much profit as possible if their mission focused on the well-being of patients or their informal caregivers. Thus, we expected for-profit treatment group agencies to reduce services more than nonprofit agencies, an action that might have led to more adverse consequences.

2. ***High-Use/Low-Use Agencies.*** Agencies that had provided a high level of services before the demonstration, controlling for their case mix, probably had a greater opportunity than low-use agencies to implement larger-scale reductions in visits before adversely affecting patient outcomes.

3. ***Small Agencies/Large Agencies.*** Small agencies (those providing fewer than 30,000 visits per year) might have responded differently to the demonstration incentives than large agencies. On the one hand, small agencies might have been able to communicate with their staff more easily, and to implement changes in care patterns more quickly. On the other hand, these agencies might have been more hesitant about making large cuts because any losses in volume could have generated sharp increases in per-visit costs

and/or forced termination of staff. Large agencies may have been able to handle staff reductions through attrition.

4. ***Hospital-Based Agencies/Freestanding Agencies.*** Hospital-based agencies have a more general incentive to maximize profits for the entire hospital system, so their response to the demonstration might have differed from that of freestanding agencies. A hospital-based agency that was principally concerned about patient or physician satisfaction with the hospital system might have largely ignored the incentives of the demonstration to reduce the number of visits.

5. ***Agencies Above the Cost Limits/Agencies Below the Cost Limits.*** Prospective payment provided agencies that were above the cost limits in their base year a very different incentive than they faced under cost-based reimbursement. Under cost reimbursement, agencies above the limits had an incentive to increase visits per patient in order to raise their overall volume and thereby lower per-visit costs. Under prospective payment, agencies above the limit (like those below the limit) had the incentive to reduce visits. Therefore, prospective payment could have led to greater treatment-control differences for those above the cost limits in the base year.

Relative to control agencies of the same type, all five types of agencies substantially reduced their provision of home health services under the demonstration (Trenholm 2000a). Agencies of every type reduced their total visits, skilled nursing visits, home health aide visits and physical therapy visits, as well as their length of service. In a few service-specific cases (typically, when there were few observations in a particular subgroup so that we were less likely to detect impacts), the impacts were not significant. For every type of agency, however, the reductions in total visits and length of service relative to the levels in similar control group agencies were substantial and significant.

During the first two years of the demonstration, agencies with high-use service patterns prior to the demonstration reduced service use the most. High-use agencies reduced visits more per patient than did low-use agencies (relative to the control group mean, a reduction of about 24 visits per patient in the year after admission, compared with a reduction of 12 visits per patient for low-use agencies) (Trenholm 2000a). These differences were similar in percentage terms (about 23 and 26 percent, respectively) and were attributable primarily to larger decreases in home health aide visits.

By the third year of the demonstration, however, the difference between high-use and low-use agencies narrowed as the low-use agencies reduced their services more than high use agencies, thereby "catching-up" to the high-use agencies (Archibald and Cheh 2001).

Several other agency subgroups differences present during the first two years of the demonstration appear to have been associated with practice patterns. For-profit agencies made larger cuts in visits than did nonprofit agencies, but the difference can be explained entirely by the higher proportion of for-profit agencies with high-use practice patterns before the demonstration. Relative to their counterparts, small agencies and freestanding agencies also made greater reductions in visits. Again, however, these differences were due mostly to the differences in the proportion of high-use agencies in the groups of small agencies and freestanding agencies. Agencies above the cost limits reduced services about twice as much (proportionately) as did those below the cost limits, but this difference can be explained by the incentive of the cost-reimbursed agencies below the cost limits to increase the number of visits rendered (Trenholm 2000a).

Despite differences in the use of services, we found no differences in the effects of prospective payment on the quality of care that different agency types provided (Chen 2000). Moreover, we found no differences in the effects on the use of other services, regardless of whether Medicare or another source paid for those services (Schore 2000; Phillips 2000). Although we did find some statistically significant differences in the quality and service use measures, we were unable to discern any consistent pattern for any type of agency. Therefore, we attributed the individual statistical differences to chance.

B. PATIENT SUBGROUPS

Prospective payment had the potential to affect particular types of patients differently. We had hypothesized that agencies would be more likely to sharply reduce the number of visits to patients

who were better able to manage their own care (as reflected by the ability to manage oral medications), had caregivers who were regularly available, or seemed likely to require more home health visits because of their characteristics. We also had hypothesized that the latter group might have been particularly at risk for any adverse effects of prospective payment, as high-use patients typically are frail, elderly, and potentially at greater risk of developing problems if their services are reduced.

The agencies reduced the number of visits to patients who had characteristics normally associated with a high level of service use by an average of about twice as much as they did for patients with a relatively low level of expected service use (Trenholm 2000). However, the difference in impacts (25 visits versus 13 visits) was only marginally significant. Moreover, the impacts were similar when measured as a proportion of the average number of visits for the corresponding control group patients. Despite the difference in the reduction of use, we found no evidence that prospective payment caused high-cost patients to have poorer functioning, health outcomes, or any other indicator of poor-quality care (Chen 2000). We also found no evidence that the medicare service use of high-cost patients was affected any differently under prospective payment when compared with low-cost patients (Schore 2000).

The estimated impacts on the use of home health services did not differ for patient subgroups defined by ability to manage oral medications or by availability of caregivers. Thus, it is not surprising that we found both quality of care and the use of other services outcomes to be similar across subgroups defined by these patient characteristics.

V. HOW DID PROSPECTIVE PAYMENT AFFECT AGENCY FINANCES?

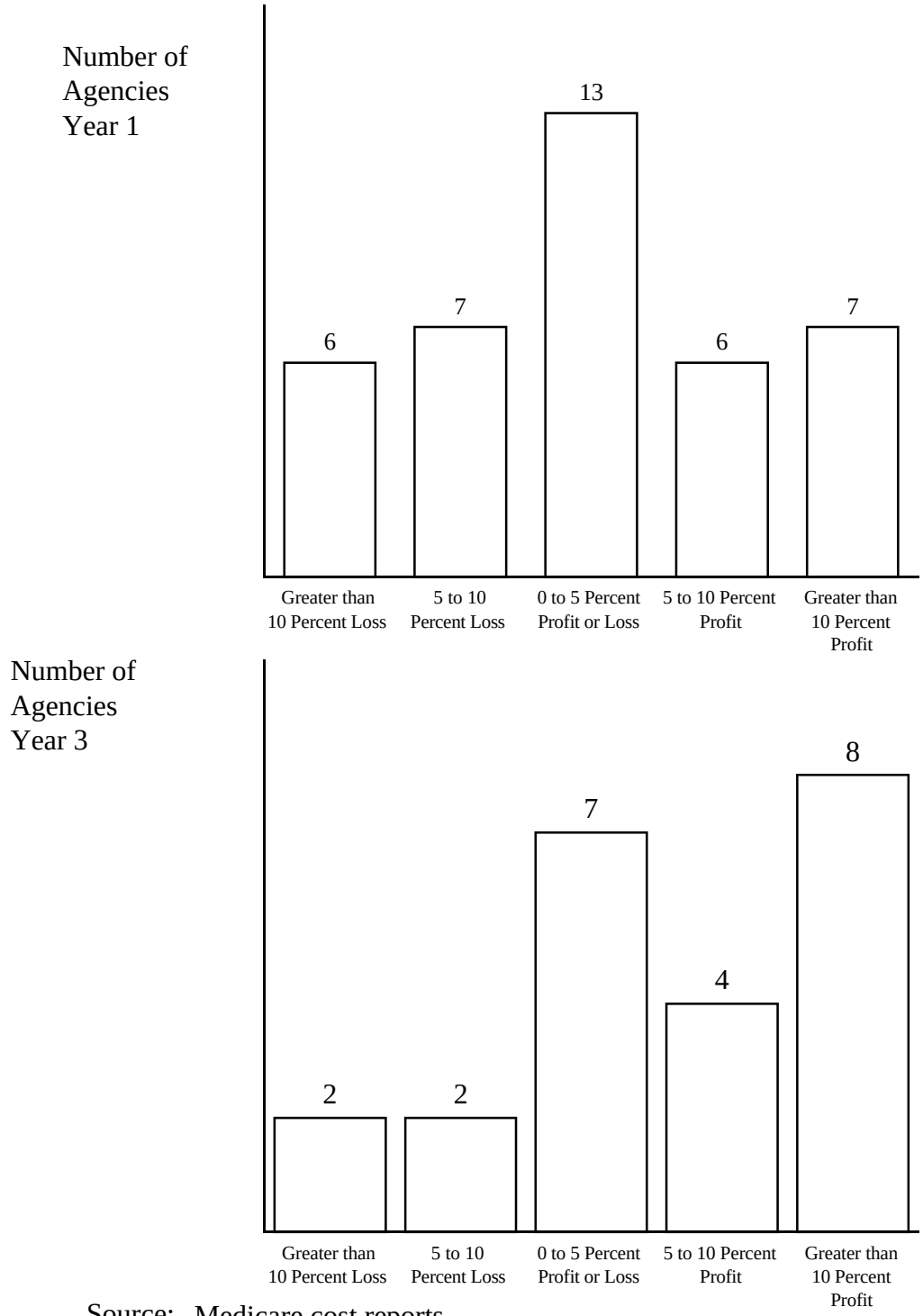
The prospective payment system is a fundamentally new approach to agency payment. Under cost-reimbursement, agencies had the incentive to cover as much of their operating costs as possible by Medicare; they were limited only by the Section 223 cost limits. As they increased the portion of total operating costs covered by Medicare, they also increased the opportunity to earn profits in non-cost-reimbursed areas of their business. Under prospective payment, however, agencies can earn profits on Medicare patients, so they have an incentive to reduce the costs of Medicare patients by any means feasible. The demonstration payment method gave agencies a clear incentive to reduce the costs of care during the first 120 days of care. This fundamental change in incentives was expected to affect agency costs and profitability.

A. AGENCY PROFITS AND COSTS

To serve its beneficiaries, HCFA must have institutions that are financially viable. Access to care could be harmed if a substantial number of agencies are unable to earn profits under the new payment system. We found that the typical agency earned very small profits on its Medicare services during the demonstration (Cheh and Black 2001). In the first year, the typical agency broke even (earned neither a profit nor a loss) on its Medicare business. Although some agencies earned profits during the next two years (see Figure V.1), fewer agencies settled their cost reports, so we cannot tell whether a higher proportion earned profits. It is clear, however, that agencies earned larger profits over time—the median profit rate for those with three years of data rose from 2.57 percent (as a percentage of Medicare revenues) in year 2, to 7.8 percent in year 3.

FIGURE V.1

PROSPECTIVELY PAID AGENCIES' MEDICARE PROFIT RATES AS A PERCENTAGE OF TOTAL MEDICARE VISIT REVENUES, YEAR 1 AND YEAR 3



Source: Medicare cost reports.

Note: Profits rates were calculated without accounting for the demonstration-specific profit- and loss-sharing arrangement.

Agencies earned their profits by reducing their cost per episode by $457, or 14 percent (see Table V.1). They achieved this reduction by reducing the number of visits provided during an episode. Indeed, throughout the demonstration, prospectively paid agencies continued to reduce their visits per episode, thereby lowering their cost per episode (Cheh and Black 2001). However, this reduction in the cost per episode did not translate into greater savings estimates over time. Cost-reimbursed agencies also reduced their visits per episode and cost per episode, but in response to factors external to the demonstration, such as ORT, the growth of managed care, and the restrictions imposed by BBA97.

TABLE V.1

SELECTED IMPACTS ON AGENCY FINANCIAL MEASURES

	Average Annual Impact	Predicted Mean Without Intervention	*p*-Value
Cost per Episode (in Dollars)	−457	3,233	.00
Cost per Skilled Nursing Visit (in Dollars)	12.78	93.91	.00
Cost per Home Health Aide Visit (in Dollars)	4.02	41.24	.00
Total Medicare Home Health Revenues (in Thousands of Dollars)	−874	4,360	.00

SOURCE: Cheh and Black (2001).

The profits earned by reducing the episode costs were offset by an increase in per-visit costs. Prospectively paid agencies' per-visit costs for skilled nursing visits rose by 14 percent more than did control group agencies' cost for these visits. Prospectively paid agencies' costs for home health aide visits increased by 10 percent more. (Skilled nursing and home health aide services account for approximately 87 percent of all home health visits rendered.)

Why did the cost per visit rise more for the prospectively paid agencies? These agencies certainly tried hard to hold down their costs. They reduced administrative staff, consolidated office

space, invested in new technology, increased productivity standards, and reduced employee benefits. Despite their actions, however, two factors thwarted their efforts. First, their volume of services fell relatively more during the demonstration than did that of cost-reimbursed agencies, increasing the cost per visit (because of the fixed-cost component of home health services). Second, strategies that reduced visits (such as increasing supervision) sometimes increased the cost per visit; some strategies that reduced the cost per visit (such as paying staff on a per-visit basis) made it difficult to reduce visits per episode. Thus, prospectively paid agencies, which were trying to achieve both goals, implemented strategies that worked at cross-purposes. Because they reduced their visits per episode more than did cost-reimbursed agencies, their cost per visit increased relatively more.

Surprisingly, few prospectively paid agencies realized that their strategies were inconsistent with each other. Many demonstration agencies lacked the financial savvy to understand that the more they reduced their visits per episode, the more their cost per visit would rise (because the falling volume would increase overhead cost per visit). Furthermore, many agencies failed to understand that many techniques they used to reduce visits increased their per-visit costs.

The increase in per-visit costs made it difficult for the agencies to earn profits. They lost money on their outlier visits, because they were paid at a predetermined rate based on their predemonstration costs. These losses offset somewhat the profits earned from the per-episode payments.

B. MEDICARE REVENUES

HCFA is concerned about its costs for home health services. Under cost reimbursement, agency costs and agency revenues were nearly the same; they differed only if agencies lost money because their per-visit costs exceeded the limits. Costs and reimbursement ceased to be linked under prospective payment, however. Thus, because prospective payment would be a poor policy choice if it were to result in higher levels of expenditures for the Medicare program, it is important to understand what happens to revenues under this payment system.

Prospectively paid agencies' Medicare revenues fell substantially during the demonstration, primarily because the agencies reduced visits during outlier periods. The average prospectively paid agency's Medicare revenue was 20 percent lower than that of the average cost-reimbursed agency. Revenues fell because agencies reduced revenue-generating visits that would have occurred after 120 days as they reduced their episode lengths. This action resulted in greater savings for the Medicare program.

Thus, although the agencies survived the prospective payment system, some of them did not benefit financially. Many agencies were unaware that their cost per visit was increasing, nor did they understand why, and this dampened profits. However, a few agencies had started to understand the situation by year 3, so their financial performance should improve over a longer period of time. They should be able to more fully adjust their administrative staff and costs to their reduced volume of services; some may even merge with another agency to achieve these economies. Thus, we might expect that, under a national system, agencies would be able to do a better job of controlling their costs better than we observed here.

VI. DISCUSSION

A. LIMITATIONS

Despite the significance and robustness of our findings, this study does have some important limitations. However, none of these limitations casts any doubt on the validity of the finding that, in response to prospective payment, agencies substantially and broadly reduced services without creating discernable negative consequences for patients.

Perhaps the most important limitation is the extent to which we can generalize our finding to home health agencies nationwide. As might occur with any study design based on voluntary participation, the agencies that participated in this demonstration might reflect the group best able (or most willing) to respond to the incentives of the intervention. Indeed, we did observe some differences between the demonstration agencies and those eligible nationwide. Thus, it is possible that unobserved differences between demonstration participants and nonparticipants led us to develop estimates that understate (or overstate) the impacts that would occur under a national prospective payment system. However, we should note that, although demonstration agencies might have been more responsive to prospective payment initiatives than agencies nationwide, control agencies might have been more responsive to the environmental factors that were reducing services; thus, it is as likely that our estimated impacts on service use are understated as overstated.

A key factor suggesting our results can be widely generalized is that agencies of all types significantly reduced their visits per episodes without any apparent negative consequences. Furthermore, most types of agencies reduced their cost per episode, had higher per visit costs, and had substantial reductions in the amount of Medicare revenues they received. (Hospital-based agencies, which enrolled in the demonstration in very limited numbers, were the notable exception.)

Thus, even though the mix of agencies may differ from agencies nationwide, we are confident that our results accurately reflect the expected effects of prospective payment.

A second limitation, related to the issue of generalizability, is that the national prospective payment system (begun in October 2000) differs from the one implemented for the demonstration. For example, the new payment system will pay for a series of 60-day episodes, thereby eliminating the need for per-visit outlier payment. Thus, the new payment system has different incentives from those of the demonstration. For example, under the demonstration payment system, an agency was not rewarded for reducing episode costs after the 120th day; under the present payment system, they will be rewarded for these reductions. The differing incentives mean that agencies may respond differently under the national system, especially during the outlier period.

The final limitation is that the time-limited nature of the demonstration may cause effects to vary from those that would result from a permanent policy change. For example, agencies operating under the temporary payment system may have hesitated to invest in software to help them analyze agency costs more carefully because the software may not be useful under the permanent payment system. In general, agencies were less likely to make substantial, costly changes in return for a limited opportunity to earn profits, but we are likely to observe these types of changes more often under the permanent system.

B. POLICY IMPLICATIONS

Prospective payment for Medicare home health can be implemented in a way that reduces agency costs and Medicare expenditures without having negative consequences for beneficiaries. The demonstration showed that, given a strong financial incentive, agencies were able to find ways to safely and effectively reduce service use. Furthermore, they were able to earn small profits while providing care, suggesting that they also will be able to benefit from a prospective payment system.

However, members of the Medicare home health population are much frailer than are typical Medicare enrollees. Even though agencies did not reduce services to the point of harming their patients, we cannot guarantee that they will not do so in the future. Thus, HCFA's efforts to monitor patient outcomes are warranted and will have to become an ongoing effort to ensure that the agencies' actions to improve efficiency do not harm this vulnerable population.

Finally, two factors contribute to the fact that prospective payment will likely continue the consolidation of the home health industry that began under the IPS (U.S. General Accounting Office 1998). First, under prospective payment, agencies are at risk that the cost of serving their patients will exceed their payment from Medicare. The more patients an agency has, the lower this risk. Second, to keep overhead cost per episode low, very small agencies will likely find it beneficial to merge with other agencies. With this step, the agencies will be able to increase the volume of services to a level that will enable them to operate at the lowest average cost. This consolidation may lead to even greater cost savings, and, at some point, HCFA may want to share in these savings. However, HCFA will have to carefully consider how lowering prospective payment rates may affect agencies operating in sparsely populated areas. These agencies may not be able to achieve the levels of service use necessary to capture the economies of scale that agencies in more populated areas may achieve.

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