

# Special Report

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## The first 3 years of Medicare prospective payment: An overview

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*This article provides a synopsis of the available evidence on the impact of the Medicare prospective payment system (PPS) for hospitals over the first 3 years of its implementation. The impact of PPS on hospitals, Medicare beneficiaries, post-hospital care, other payers for inpatient hospital services, other health care providers, and Medicare program operations and expenditures is examined.*

### Introduction

#### Issues

The change from cost-based reimbursement to prospective payment represents a fundamental change in the role of the Medicare program within the health care system. Rather than validating cost increases by reimbursing hospitals for the costs that they have incurred, the Medicare prospective payment system (PPS) allows the Federal Government to become a more prudent purchaser of hospital care by paying a fixed price for a known and defined product—the hospital stay. The new payment system is designed to change hospital behavior by directly altering the economic incentives facing hospital decisionmakers.

Hospitals' responses to the incentives facing them under PPS can, in turn, be expected to have a far-reaching effect on the other groups of institutions and individuals that provide, consume, and pay for health care. Medicare beneficiaries are obviously affected by the new payment system, as the quality of the care that they receive, their access to the care that they need, and their out-of-pocket costs for care provided both in the hospital and in other settings are determined by hospitals' responses to PPS incentives.

Other payers for inpatient hospital services may also be affected, as they attempt to avoid a potential shifting of hospital costs from Medicare patients to their own patients and as they respond to the example set by the PPS cost-containment approach. Among other providers of health care, physicians may be affected both as practitioners within the inpatient setting and as providers of potential substitutes for inpatient care, and providers

of post-hospital subacute care may feel the effects of PPS through an increase in the volume and complexity of services demanded from them.

In this article we present a summary of the findings of research on the impact of PPS on these major groups of actors in the health care system. In addition, since the maintenance of the fiscal solvency of the Medicare Hospital Insurance Trust Fund was the primary impetus for the enactment of PPS, the effect of the new payment system on the Medicare program itself is examined.

### Attributing observed effects

One of the major problems in evaluating PPS is that of attribution. It is difficult to draw strong causal inferences about the effects of the new system because of the rapidly changing nature of the health care sector. Many changes are occurring that might plausibly account for effects of the sort anticipated under prospective payment. For instance, PPS is but one of many public and private initiatives to control the cost of health care. Also, the rapidly increasing supply of physicians is likely to be an important influence on the effectiveness of efforts to contain health care costs. Thus, both desirable and undesirable effects that might be consistent with expectations about PPS may actually be caused by other factors or, most likely, the joint product of PPS and several other factors.

These considerations require that a great deal of caution be exercised in attributing positive or negative effects to one or another of the many changes occurring in the health care sector. However, although the attribution of effects is clearly a major concern of efforts to evaluate PPS, the lack of conclusive evidence of causality need not imply that policy conclusions cannot be drawn. PPS has as its objective the accomplishment of certain desirable changes in the health care system. To the extent that those changes are, in fact, observed, the Medicare program and its beneficiaries can be judged to be better off under the new system, regardless of whether this improvement may be conclusively attributed to any one policy. To the extent that undesirable effects are observed, a problem may be indicated, again, irrespective of the ability to attribute these effects to any one policy.

Thus, it may not be necessary to know with certainty that PPS is the cause of the observed changes to be able to conclude that some policy response is necessary. What is necessary, however, is to clearly distinguish between those problems that can and should be dealt with explicitly through PPS and those that, although they may be equally important, must be dealt with through other policy avenues.

### Data sources

The major source of data for this article is the Medicare Statistical System. The Health Care Financing

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Administration (HCFA) collects a rich body of data associated with the utilization and cost of inpatient hospital services and other in-hospital and ambulatory care services covered by Medicare.

Additional sources of data for the PPS evaluation are provided by HCFA-supported contract and grant research activities. These activities have provided many of the analyses of the impact of PPS, as well. Finally, where appropriate, sources of data outside of HCFA are used, including other Government sources, such as the National Center for Health Statistics, and sources in the private sector, such as the American Hospital Association. The source documents used are listed in the Reference section at the end of the article.

In analyzing the impact of PPS during its third year (fiscal year 1986), an attempt has been made to incorporate the most recent data available at the time that the analyses were conducted. For some of these analyses, at least preliminary data on fiscal year 1986 were available. For many of the analyses, however, including many of the hospital-level analyses and most of the beneficiary-level analyses, data were not yet available for fiscal year 1986, therefore, fiscal year 1985 data were used.

## Impact on hospitals

### Overview

The hospital industry has undergone tremendous change in recent years. An unprecedented decline in admissions has been observed for both Medicare and non-Medicare patients. This, combined with the steep decline in average length of stay for Medicare patients as hospitals came under the new system, has resulted in declining inpatient volumes. Despite a decrease in the number of inpatient beds, occupancy rates are at an all-time low, leading to increased competition among hospitals to attract patients. However, the decline in inpatient volume has not been uniformly distributed across hospital types. It has been concentrated among small hospitals, putting those hospitals in a particularly disadvantageous position.

The decline in length of stay under PPS has been achieved through shorter stays across the board, rather than efforts aimed specifically at patients who have the longest stays (and are, presumably, the most severely ill). The correlation between the financial pressure imposed by PPS and steepness of declines in length of stay provides another indication that PPS has been effective in encouraging hospitals to change the way that they provide inpatient care.

The dramatic declines in average length of stay under PPS may be leveling off, however. Among PPS cases only (not including New York and Massachusetts), there has been little change since the first year of prospective payment. This may reflect an unexpectedly strong initial response to the PPS incentive to shorten lengths of stay. It may also be attributed to the fact that, since utilization review has diverted many of the less severely ill patients from inpatient to outpatient and other ambulatory care, there has been an increase in the average severity of

illness among those Medicare patients who are admitted to the hospital.

Hospitals, on average, received Medicare payments that were considerably higher than the corresponding costs in the first 2 years under PPS, although the trend seems to have begun turning downward in the third year. The distribution of these payment margins is uneven, with urban hospitals faring better than rural hospitals, large hospitals better than small hospitals, and teaching hospitals better than nonteaching hospitals. Recent changes in the PPS payment rules may have reduced some of the unevenness in the distribution of payment margins across hospital groups, but this unevenness suggests that distributional issues will become increasingly important as overall margins fall.

Data on hospitals' overall financial performance indicates that they fared well in general during the early years of PPS. However, the gap between those hospitals that are doing well and those that are not appears to be becoming wider, mostly because of the increase in total margins at the high end of the range. A comparison of hospitals at the top of the distribution with those at the bottom indicates that urban and proprietary hospitals, as well as regional referral centers, are disproportionately represented among those with large margins, and sole community hospitals are disproportionately represented among those at the lower end of the range.

In response to the rapidly changing environment facing the hospital industry, hospital administrators report undertaking initiatives in several areas in an attempt to control costs and increase the viability of their institutions. These changes include structural changes (such as eliminating and converting beds to more efficient uses), changes in the use of both labor and nonlabor inputs (such as staffing reductions and skill-mix reconfigurations, and group purchasing), and organizational changes (such as the hiring of more business-oriented managers and the initiation of intra-facility cost-sharing arrangements).

Finally, the overall rate of investment reported in the Medicare cost reports for the first year of PPS indicates a somewhat slower rate of investment in fixed assets. However, these data most likely reflect investment decisions made several years prior to the implementation of prospective payment; it will take more time to see the effect of PPS on this aspect of hospital behavior. Moreover, the intensity of fixed assets per bed has increased, indicating that the decrease in patient volume has outstripped the effective reduction in the growth of capital stock. The diffusion of new technology does not appear to have been affected by PPS; many services that have not yet reached some critical level of availability have continued to grow, both in terms of the number of areas in which they are available and the number of hospitals in each area in which they are available.

### Specific findings

- Medicare short-stay hospital admissions declined for the third consecutive year in fiscal year 1986, by 4.3 percent; in the first 3 years under PPS, admissions fell by a total of 11.3 percent and admissions per Medicare enrollee by 15.9 percent.

- Overall community hospital admissions have also declined in recent years, by 10.3 percent from 1983 to 1986; the number of inpatient days fell by 15.7 percent in the same time period.
- The proportion of all community hospital admissions of people 65 years of age or over increased from 37 percent in 1979 to 47 percent in 1986.
- Although the number of staffed beds in community hospitals fell slightly (4.1 percent), from 1.004 million in 1983 to 963,000 in 1986, occupancy rates decreased sharply, from 72.2 percent to 63.4 percent.
- Although community hospitals overall experienced an 8.4-percent decline in admissions from 1983 to 1985, hospitals with less than 50 beds experienced a 22.3 percent decline and hospitals with 50-99 beds a 17.1-percent decline.
- The average length of stay for all Medicare patients in short-stay hospitals decreased by 3.5 percent in fiscal year 1986, for a total decrease of 17 percent since the implementation of PPS.
- Average length of stay for community hospital patients under age 65 has been relatively constant, decreasing by only 5.1 percent from 1979 to 1986.
- Hospitals that were under PPS for their 1984 fiscal years had a 14.6-percent decrease in average length of stay from 1982 to 1984; moreover, an index of the degree of financial pressure imposed by PPS on each hospital is significantly related to the size of this decrease.
- The distribution of average length of stay across hospitals has not changed much under PPS; hospitals with short stays before PPS have had about the same decrease as have hospitals with long stays, on average.
- Average length of stay for PPS discharges only (in the original PPS States) has not changed much since the first year of prospective payment; data from the Medicare Provider Analysis and Review files used in the PPS evaluation show a decrease in average length of stay averaging only 0.6 percent per year, and other HCFA data sources indicate a slight increase in average length of stay.
- The Medicare Case-Mix Index, which increased sharply with the implementation of PPS in fiscal year 1984, has continued to increase, at an annual rate of 3 percent for fiscal years 1984-86.
- The percentage of hospital days spent in special care units by Medicare patients increased to 7.1 percent in the first year of PPS, from 6.4 percent in the previous year.
- The margin between PPS payments and costs per case increased from \$518 to \$550 in the second year of PPS, although this represented a slight decline in percentage terms, from 13.3 percent to 12.7 percent.
- Costs per case increased by 11.8 percent, and payments per case increased by 11 percent in the second year of PPS.
- Urban hospitals had larger payment margins than did rural hospitals in the second year of PPS (13.6 percent versus 7.8 percent); groups with exceptionally high payment margins were large urban hospitals (17 percent for those with 685 or more beds) and major teaching hospitals (18.3 percent).
- The percentage of hospitals with positive payment margins fell slightly between the first and second years of PPS, from 83.1 percent to 79.2 percent.
- 100 percent of the largest urban hospitals and 98.1 percent of major teaching hospitals had positive payment margins; only 67.8 percent of the smallest rural hospitals had positive payment margins.
- 72.3 percent of all hospitals with cost reports in both of the first 2 years of PPS had positive payment margins in both years; only 10 percent had negative payment margins in both years.
- Of the hospitals that had negative payment margins in the first year of PPS, 40.8 percent had positive payment margins in the second year; of those that had positive payment margins in the first year, only 13 percent had negative payment margins in the second year.
- Overall, U.S. hospitals had their highest recorded profits in the early years of PPS, with a peak average total margin of 6.2 percent in 1984; total margins have decreased somewhat since then, but they are still higher than they were during the 1970's.
- Although the average level of hospital profits rose during the early years of PPS, this increase was not uniformly distributed across hospitals; the gap between the 95th percentile and the 5th percentile of the distribution of total margins increased by 11.5 percentage points from the year prior to PPS (19.8 percent versus -11.4 percent, or a gap of 31.2 percentage points) to the first PPS year (33.1 percent versus -9.6 percent, or a gap of 42.7 percentage points).

## Impact on Medicare beneficiaries

### Overview

The Medicare population experienced declines in the overall use of hospital care in both 1984 and 1985. However, the 2 years differed greatly in the nature of the decline. In 1984, there were sharp decreases in length of stay, evidenced uniformly across beneficiary groups—aged, disabled, and end stage renal disease (ESRD)—and across demographic groups within beneficiary category. In 1985, average lengths of stay fell only slightly, but discharge rates were less consistent. Among the aged, a moderate decline in 1984 was followed by a much larger decline in 1985. Among the disabled, a large decline in 1984 was followed by a more moderate decline in 1985. The ESRD population experienced an increase in their discharge rate in 1984 and a small decline in 1985. As a result, the net decline in total days of care since the beginning of PPS was similar for the aged and disabled populations. The decline among ESRD beneficiaries was much smaller than for the other two groups.

Although there have been declines in discharge rates among the aged across all age groups, the rate of decline has been lowest among those 85 years of age or over. Since the beginning of PPS, persons 85 years of age or over have had a decline in discharges that is considerably less than the decline among persons 65 to 69 years of age. If PPS is reducing access to hospital care, it seems that it has not resulted in a relative deterioration of access to care for this most vulnerable

group. On the other hand, to the extent that older beneficiaries are at greater risk of premature discharges, there is potential cause for concern. Length of stay reductions were greatest for the oldest group. Because the need for subacute post-hospital care is greatest for older persons, length of stay reductions could pose greater problems for this group.

Among the disabled, the youngest age group had a large decline in discharge rate in 1984. In 1985, this group had an increase in discharges, thus equalizing the net change for this age group since the beginning of PPS with that for other age groups. This seems to be indicative of a general instability in discharge rates from 1 year to the next and highlights the caution that should be taken when interpreting results for any single year.

Hospital mortality rates for the Medicare population increased between fiscal year 1984 and fiscal year 1985. The fact that total population-based mortality did not change during this time and that there was a large decline in admission rates is strongly suggestive that hospital-based mortality has been affected by the distribution of cases across diagnoses or diagnosis-related groups (DRG's). Adjusting the fiscal year 1985 mortality rates according to the disease- or DRG-specific risk of mortality in fiscal year 1984 accounts for about one-half of the increase in hospital mortality. An analysis of changes in mortality rates based on a variant of the disease staging methodology developed by Systemetrics, Inc., suggests that most, if not all, of the remaining increase in mortality can be explained by the mix of cases across risk groups.

The impact of PPS on beneficiary liability can be examined here only from the relatively narrow perspective of Medicare covered services, because of the lack of data on other out-of-pocket expenses for Medicare beneficiaries. This is an unfortunate limitation, since much of the potential financial burden resulting from changes in the way health care is delivered is related to these noncovered services. The most apparent impact of PPS is in the dramatic reduction in the liability per beneficiary for inpatient coinsurance days. There has also been a decline in the rate of growth of other components of beneficiary liability for hospital services that was caused by the decrease in both the rate of admissions and the average length of hospital stays for Medicare beneficiaries. Other factors behind this trend include changes in the rules for payment of physicians and a decline in the general rate of inflation.

### Specific findings

- In 1984, the rate of discharges per 1,000 aged Medicare enrollees declined by 3.5 percent in the PPS States, compared with a 1-percent increase in the States with waivers from PPS; in 1985, the discharge rate in the PPS States decreased by 9.6 percent, compared with a 4.6-percent decrease in the waiver States.
- From 1983 to 1985, the number of inpatient lens extractions decreased by 300,000, accounting for more than one-third of the decline in Medicare discharges in that time period.

- In 1984, there was a 13.2-percent decline in average length of stay among aged beneficiaries in the PPS States, compared with 5.7 percent in the waiver States; in 1985, the decline in average length of stay was about the same in the PPS States (4.0 percent) as in the waiver States (3.3 percent).
- In the PPS States, the rate of total inpatient hospital days of care per 1,000 aged enrollees decreased by 21.8 percent in the first 2 years of PPS, compared with an 11.1-percent decrease in the waiver States.
- By age group, the decline in discharge rate was largest (11.1 percent) among the youngest Medicare aged beneficiaries (65-69 years of age) in 1985, and smallest (8.4 percent) among the oldest group (85 years of age or over); by race, the decline in discharge rate was larger for white people (9.9 percent) than for all others (6.8 percent).
- Average length of stay decreased by 6.5 percent for the oldest group, compared with only 4 percent for the youngest group.
- The total days of care rate declined approximately equally across age, sex, and race categories.
- Among the most commonly occurring DRG's, those with the sharpest declines in average length of stay in the PPS States in 1985 were hip and femur procedures (11.8 percent), major joint procedures (12.8 percent), fracture of the hip and pelvis (12.9 percent), and specific cerebrovascular disorders (11.7 percent); these are DRG's for which post-hospital subacute care is commonly needed.
- Among the Medicare disabled population in PPS States, declines in discharge rates, average lengths of stay, and total days of care rates were approximately equal across age, sex, and race categories from 1983 to 1985.
- Among enrollees in the Medicare ESRD program, the youngest groups (those 0-14 years of age and 15-24 years of age) experienced the largest declines in discharge rate (45.5 percent and 11.2 percent, respectively) from 1983 to 1985; the oldest group (those 65 years of age or over) had an increase of 12.3 percent. The decreases in average length of stay were approximately equal across age groups during this period, so the total days of care rates reflected the changes in discharge rates.
- The population-based mortality rate for aged persons in 1985 was 5,140 per 100,000; this was somewhat, but not significantly, higher than the rate predicted by a time-trend model of mortality rates since 1979.
- Age-adjusted mortality rates for the Medicare disabled population have increased slightly in recent years, from 2.9 percent in 1982 to 3.2 percent in 1985; this trend began prior to PPS, however, and may be caused by an increase in the average level of disability, because of changing criteria for enrollment.
- The survival rate among the ESRD dialysis population has declined somewhat in recent years; however, this trend began prior to PPS, and seems to be attributable to the changing mix of dialysis patients, with increasing numbers of older people receiving dialysis.

- 30-day post-admission mortality rates for Medicare patients rose from 6.6 percent in fiscal year 1984 to 7.2 percent in fiscal year 1985; however, the total number of deaths actually decreased by 3 percent.
- Adjusting for the changing diagnostic mix of patients hospitalized in the 2 years explains about one-half of the increase in 30-day post-admission mortality from fiscal year 1984 to fiscal year 1985.
- Adjusting for condition-related changes in the risk of death among hospitalized patients by constructing disease staging categories according to a modified version of the Systemetrics patient classification technique, fully accounts for the difference between 30-day post-admission mortality rates in fiscal years 1984 and 1985.
- Readmission rates within 30 days of hospital discharge have remained relatively stable in both the PPS States and the waiver States.
- The rate of increase in liability per Medicare beneficiary for deductible and coinsurance amounts has declined sharply under PPS, from 14 percent in 1983 to 5 percent in 1984 and 3 percent in 1985.
- Medicare hospital insurance (HI) liability per beneficiary grew by 5 percent in 1984, down from 16 percent in 1983. Mostly, this resulted from a decrease in coinsurance liability caused by the sharp decline in the lengths of hospital stays under PPS. In 1985, HI liability grew by 4 percent.
- Medicare supplemental medical insurance (SMI) liability per beneficiary grew by 3 percent in 1985, down from 12 percent in 1983. This was largely accounted for by a decrease in liability for unassigned claims.

## Impact on post-hospital care

### Overview

The use of home health agency (HHA) services has increased rapidly among Medicare beneficiaries in recent years. This increase in utilization began before the implementation of PPS and has continued since, although at a slower rate of increase. The percent of beneficiaries using HHA services following hospitalization has increased for all age groups and across States.

The utilization of skilled nursing facility (SNF) services increased following the implementation of PPS, after a period of no increase from 1981 to 1983.

It appears likely that the increase in SNF utilization is related to PPS, but attribution of the increase in HHA utilization is not clear. A time series analysis conducted for Health Care Financing Administration indicated a small effect of PPS on HHA utilization and a larger effect on SNF use.

The findings in this article do not suggest widespread problems with access to post-hospital care under PPS. A few of the studies cited, however, do raise a question as to access to SNF care for the most severely ill and the impaired elderly. SNF utilization by these two groups appears to have declined following PPS, contrary to the overall trend for Medicare beneficiaries. These findings are preliminary, however, and are based on small samples. Further research to analyze this issue is under way.

### Specific findings

- Use of SNF services by Medicare enrollees increased steadily from 1981 to 1985, from 9.6 admissions per 1,000 enrollees to 11.8 admissions per 1,000 enrollees, an increase of 23 percent.
- The number of covered days per SNF admission declined from 29.2 days per stay in 1981 to 23.4 days per stay in 1985, a decrease of 20 percent.
- Use of HHA services also increased, from 33 persons served per 1,000 enrollees in 1981 to 51 persons served per 1,000 enrollees in 1985, an increase of 55 percent.
- The number of HHA visits per person served went from 25 in 1982 to 27 in 1985; patients receiving post-hospital care averaged only 14 visits in 1985, but this was up from 11.5 in 1981.
- The percentage of Medicare patients in the PPS States using SNF services within 60 days of a hospital discharge did not change substantially from 1981 to 1983, but increased by 44 percent from 1983 to 1985. In the waiver States, the trend has been erratic, with a 41-percent increase in 1984 followed by a 16-percent decrease in 1985.
- The number of covered days per SNF user in the PPS States decreased by 21 percent from 27.4 days in 1981 to 21.7 days in 1985. In the waiver States, there has been essentially no change, 25.6 days per SNF user in 1981 and 26 days per SNF user in 1985.
- The percentage of Medicare patients in the PPS States using HHA services within 60 days of a hospital discharge increased at a rapid rate immediately prior to PPS, by 55 percent from 1981 to 1983. From 1983 to 1985, the increase was 27 percent, less than the pre-PPS rate of increase, but still rapid.
- In the waiver States, there was only a 27-percent increase in HHA use prior to PPS and a slight decrease in the post-PPS period; however, HHA use rates in the waiver States were still somewhat higher in the waiver States than in the PPS States in 1985.
- The pattern of HHA visits per person served is erratic in both the PPS and the waiver States.
- The use of SNF services varies considerably across States. Out of 47 PPS jurisdictions (46 States and the District of Columbia), 10 had SNF use rates of less than 1.5 percent in 1984-85 and 22 had rates of 3 percent or more; SNF use rates ranged from a low of 0.1 percent in Mississippi to 7.2 percent in Utah.
- Use of HHA services also varies widely, although the rate of HHA use has increased dramatically since 1981; HHA use rates ranged from a low of 3.8 percent in Alaska to 23.8 percent in Connecticut in 1984-85.
- SNF and HHA services are positively correlated at the State level, that is, there does not seem to be substitution of the availability of one for the other across States.
- By age group, the increase in SNF use from 1983 to 1985 varied from 31 percent for the group 85 years of age or over to 71 percent for the group 65 to 74 years of age; the increase in HHA use varied from 4 percent for the group under 65 years of age to 37 percent for the group 75 to 84 years of age.

- Patients discharged from hospitals with large length of stay reductions in 1982-84 increased their use of SNF care from 1981 to 1985 by 83 percent, compared with only 58 percent for patients discharged from hospitals with small length of stay reductions.
- In contrast, patients who were discharged from hospitals with large length of stay reductions increased their use of HHA services by 102 percent, and patients discharged from hospitals with small length of stay reductions increased their use of HHA services by 148 percent.
- Analysis of a sample of Medicare hospital discharges in 1981 and 1984-85 showed that, if a patient was discharged from the hospital in 1981, there was a 0.41 percent chance that the patient would go into a SNF and be covered for 7 or fewer days; in 1984-85, that chance would have been 0.65 percent. The chance that the patient would go into a SNF and be covered for more than 30 days increased only slightly, from 0.86 percent in 1981 to 0.88 percent in 1984-85.
- According to a study of a sample of hospital records using the medical illness severity grouping system (MedisGroups) measure, average severity of illness at both admission and discharge was greater in the post-PPS (1985) sample than in the pre-PPS (1982) sample; the proportion of live discharges with the lowest severity level at admission decreased by 5.6 percentage points, and the proportion with the lowest severity level at discharge decreased by 9.6 percentage points.
- In the MedisGroups sample, the proportion of live discharges with no dependencies in the activities of daily living index decreased from 44.8 percent to 37 percent from 1982 to 1985, and the proportion of discharges with the maximum of 5 dependencies increased from 23.4 percent to 29.2 percent.
- The highest rate of growth in HHA use in the MedisGroups sample was among patients who were less severely ill. The proportion of discharges with the two highest levels of severity, according to the MedisGroups measure, decreased by 5 percentage points from 1982 to 1985, and the proportions of discharges with the two highest levels of disability decreased by 5.1 and 0.5 percentage points, respectively.
- Results of a multivariate analysis of the increase in SNF and HHA use suggest that PPS has increased the percentage of patients receiving HHA visits within 7 days of discharge by 14 percent, and increased SNF admissions as a percentage of hospital discharges by 65 percent; the increase in SNF admissions was also found to result partially from increased severity of illness among beneficiaries at hospital admission.
- A major national study is being developed by the Health Care Financing Administration to examine the appropriateness and effectiveness of post-hospital services for Medicare beneficiaries and to determine the nature and extent of problems encountered by patients in obtaining post-hospital care.
- HCFA is increasing the focus on assuring the quality of post-hospital care by developing measures within the survey and certification process for Medicare providers that concentrate on the residents of nursing homes and the services that they receive, by strengthening procedures for quality assurance in the home health setting, and by directing peer review organization (PRO) activities in the direction of post-hospital, as well as in-hospital care.
- A total of 42,145 reconsiderations hearings and appeals of Part A claim denials were conducted during 1986. Of these, 8,652 (20.5 percent) resulted in full or partial reversal.

## Impact on other payers

### Overview

During the period coincident with the implementation of PPS, many changes have occurred in the markets for health insurance and health care services. Although government expenditures for hospital care grew more slowly in 1985 than did private sector expenditures, overall private health insurance premiums grew more during the 1983-86 period than did private health insurance benefit payments.

PPS appears to have had different effects on each payer. State Medicaid programs have increasingly responded to budget pressures by adopting prospective inpatient hospital payment systems in general and DRG-based systems in particular. Medicaid DRG-based systems are clearly modeled on the Federal Medicare system.

Blue Cross plans have moved from retrospective to prospective primary methods of hospital payment between 1981 and 1985. Although these changes cannot be conclusively attributed to PPS, there were statistically significant declines in inpatient utilization growth rates, increases in outpatient utilization growth rates, and decreases in payment growth rates for Blue Cross subscribers under 65 years of age between the pre-PPS and post-PPS periods.

Increased cost-containment activity by commercial insurers, shifts to alternatives such as self-insurance, and growth of alternative payment systems such as health maintenance organizations (HMO's) and preferred provider organizations (PPO's) also characterize the PPS period. However, there is no strong evidence to attribute these changes to PPS.

### Specific findings

- Private health insurance premiums increased by \$31 billion from 1983 to 1986, while total benefits incurred increased by \$24.9 billion.

- From 1983 to 1986, Blue Cross/Blue Shield's and commercial insurers' market shares decreased by 2.6 and 3.4 percentage points, respectively; self-insured plans and prepaid health plans increased their market shares, by 4.7 and 1.1 percentage points, respectively.
- Out-of-pocket payments for hospital care grew by 7 percent in 1984 and 5.8 percent in 1985, but this growth rate jumped to 15.9 percent in 1986; the share of hospital payments paid by the patient thus increased to 9.4 percent in 1986, from 8.7 percent in the previous year.
- Federal Government payments for hospital care grew by 6.3 percent in 1986, down from 9.8 percent in the previous year; the growth rates for Medicare alone were 10.1 percent in 1985 and 5.7 percent in 1986.
- By April 1982, 14 States had prospective Medicaid systems; by August 1986, this number had increased to 36; 10 of these States had DRG-based payment systems.
- The share of hospital care expenditures accounted for by Medicaid has been fairly constant over time, at 8.7 percent in 1983 and 8.8 percent in 1986.
- The number of Blue Cross plans with a primarily retrospective method of hospital payment decreased from 31 in 1981 to 19 in 1985, while the number with a primarily prospective method increased from 29 to 41 (among those on whom information was available).
- The annual rate of change in the number of hospital admissions per 1,000 Blue Cross members in the PPS States decreased from -1.9 percent in the pre-PPS period to -6.2 percent in the early post-PPS period (through 1985); in the waiver States, however, there was also a significant change, from 0.7 percent to -3.4 percent.
- The annual rate of change in payments for inpatient services per 1,000 Blue Cross members in the PPS States decreased from 12.1 percent in the pre-PPS period to 0.3 percent in the early post-PPS period; in the waiver States, there was also a significant decrease, but it was much smaller, from 13 percent to 5 percent.
- Outpatient utilization among Blue Cross members has risen rapidly in the PPS States, with visits per 1,000 members increasing at an annual rate of 8.1 percent in the early post-PPS period, compared with 3.3 percent in the pre-PPS period.
- Group policies accounted for a 24.7-percent share of the private health insurance market (as measured by premiums) in 1983, but this share declined to 20 percent by 1986.
- Approximately 20 percent of individuals with commercial insurance were covered by utilization review provisions in 1986, compared with only about 2 percent in 1984.
- The market share of prepaid health plans increased from 6.2 percent in 1983 to 7.3 percent in 1986; this represents an increase of 51.5 percent in annual premiums.
- The number of HMO's doubled from 1980 to 1985, while enrollment increased by 115 percent; more than 80 percent of this growth was accounted for by an increase in individual practice association (IPA) enrollment.
- The number of people covered by PPO's increased from an estimated 1.3 million in 1984 to 16.5 million in 1986; about one-half of all PPO enrollment is concentrated in 3 States—California, Colorado, and Florida—with California alone accounting for 39 percent.
- As of mid-1986, 29 percent of PPO's sponsored by Blue Cross/Blue Shield plans, 21 percent of investor-sponsored PPO's, and 18 percent of insurer-sponsored PPO's used DRG-based payment systems.

## Impact on other providers

### Overview

Ambulatory care continues to be the fastest-growing segment of the health care industry. Outpatient revenue per visit has grown at an accelerated rate since PPS, although the increase in the rate of growth is not statistically significant. With respect to outpatient utilization, both Medicare and non-Medicare outpatient visits declined slightly during the first year of PPS and increased during the second year, but Medicare visits increased by a substantially greater percentage.

Both medical and surgical services provided under Medicare SMI appear to be shifting away from the inpatient setting toward office and outpatient settings. The percent of reasonable charges for surgery in outpatient settings has increased faster than the percent of procedures, indicating that more complex procedures are being performed outside of the hospital.

Since the implementation of PPS, the supply of post-acute care providers has increased. Some of this increase may be attributable to the increased demand for post-acute care brought about by the earlier hospital discharge of Medicare patients. It also, in part, results from demographic factors (including the aging of the population), changes in States' Medicaid eligibility and reimbursement policies and, in the case of home health care, changes in home health coverage under Medicare and efforts to use home and community-based services wherever possible to avoid premature or inappropriate institutionalization.

The number of Medicare certified SNF's increased in the period following PPS. A study of nursing homes in 10 States indicated that, in homes that served a large number of Medicare patients prior to PPS, the subacute care needs of patients increased in the post-PPS period. It appears that these "high-Medicare" homes made room for more subacute care patients by transferring patients with more chronic long-term care conditions and numerous functional limitations to the more traditional nursing homes.

The number of HHA's also increased during this time period. Although part of this increase is believed to be caused by changes in Medicare home health coverage legislated in the Omnibus Reconciliation Act of 1980, the increase may also be attributable to the implementation of PPS and State Medicaid policies.

Home health patients in the post-PPS period had both an increase in subacute care needs and more functional and chronic long-term care needs. Although this trend may have been partly attributable to the implementation of PPS, it also may have resulted from the diversion of patients from nursing homes that occurred because of increased preadmission screening and case-management programs.

In the period immediately following PPS, HHA's increased their average staffing levels. However, the average number of staff has since decreased to below the 1982 level; this is probably because of an increase in the number of small HHA's, rather than a decrease in the size of existing HHA's. At the same time that the average HHA staff size was decreasing, the proportion of HHA's offering various types of services was increasing.

The supply of both swing beds and hospices, both relatively new programs, increased substantially since PPS was implemented. It is not possible to say to what extent this growth was the result of PPS. We do know that both of these programs tend to be concentrated within certain geographical areas.

### Specific findings

- Community hospital outpatient revenue per visit has grown somewhat faster under PPS than would have been predicted by a model based on pre-PPS trends, but this increase is not statistically significant.
- The number of Medicare emergency room visits increased from 6 million in 1983 to 7.8 million in 1986 (30 percent); all community hospital emergency room visits increased from 79.2 million to 85.4 million (7.8 percent) over that same period.
- The number of Medicare outpatient clinic visits was 5.9 million in both 1983 and 1986, while all community hospital outpatient clinic visits increased from 42.9 million to 44.9 million (4.7 percent) over that same period.
- The share of Part B medical services provided to hospital inpatients decreased from 41.3 percent in 1982 to 31.2 percent in 1986, a decrease of 10.1 percentage points; the shares of Part B medical services provided in the outpatient and office settings increased by 1.4 and 8.6 percentage points, respectively.
- The share of Part B surgical services provided to hospital inpatients decreased from 32.7 percent in 1982 to 19.8 percent in 1986, a decrease of 12.9 percentage points; the shares of Part B surgical services provided in the outpatient and office settings increased by 4.5 and 8 percentage points, respectively.
- The share of reasonable charges for Part B surgical services provided in the outpatient and office settings increased by 20.4 and 5.9 percentage points, respectively, from 1980 to 1986.

- The share of Medicare allowed physician charges generated by services provided to hospital inpatients decreased from 60.8 percent in 1982 to 49.7 percent in 1985, the first time that less than one-half of all physician charges were generated in the hospital.
- There is substantial geographic variation in the availability of SNF services, with beds per 1,000 Medicare enrollees varying from 16.2 in Arizona to 95.7 in Minnesota; in 1986, more than 40 percent of all Medicare certified SNF's were located in 5 States—California, Pennsylvania, New York, Ohio, and Florida.
- The number of beds in Medicare and/or Medicaid certified nursing facilities increased by 16.3 percent from May 1984 to November 1986.
- There is also substantial geographic variation in the availability of HHA services, with Medicare enrollees per home health nurse varying from 529 in New England to 917 in the East North Central region.
- The number of Medicare certified HHA's grew by 23.9 percent in 1984 and 12.5 percent in 1985; there was only slight growth in this number in 1986.
- The proportion of HHA's providing such services as physical therapy, occupational therapy, and speech therapy has increased by 6.6 percent, 20.1 percent, and 13 percent, respectively, from January 1982 to December 1986.
- The swing-bed and hospice programs have increased rapidly; the number of hospitals approved for swing-bed care increased by 542 percent from 1983 to 1986, and the number of Medicare certified hospices increased by 367 percent during the same time period.

### Impact on Medicare program operations and expenditures

#### Overview

By fiscal year 1986, 48 States and the District of Columbia were under prospective payment, including some 84 percent of all Medicare participating hospitals. In addition, Puerto Rico was brought under the nationwide system in fiscal year 1988. The number of hospitals and units that have been certified as being excluded from prospective payment is growing, while research is being conducted on how best to include these hospitals under PPS.

In order to monitor the appropriateness, necessity, and quality of care under PPS, 54 PRO's have been established, and these PRO's have been reviewing medical records in an attempt to detect problems in the way that medical care is provided to Medicare beneficiaries and billed to the program. A "SuperPRO" has been established to review the performance of the PRO's.

Data on PRO denial rates indicate, however, that there is wide variation in the stringency of PRO review. SuperPRO data further indicate that there is similarly wide variation in the success of the PRO's in detecting problems that are indicated by the medical records that they review. The fiscal intermediaries (FI's), whose primary responsibility is the processing and paying of

Part A claims, are also responsible for coverage determinations and some medical/utilization review. There is wide variation in FI denial rates, which affects Medicare payments for skilled nursing and home health care as well as hospital care.

These findings may lead to several alternative conclusions: they may reflect differences in local health care practice; they may reflect differences in the stringency of local PRO or FI review; or they may reflect differences in the level of performance of the local review entities. In any case, it does not appear that such local variation is consistent with the objectives of a nationwide system such as PPS.

PPS appears to have slowed the rate of increase in Medicare inpatient hospital benefit payments. Although this increase is still above the general rate of inflation, it represents a downturn in the rapid growth of inpatient hospital payments that was seen as a major threat to the solvency of the Medicare Trust Funds.

Outpatient hospital payments are increasing at a real rate far greater than their growth rate immediately prior to the implementation of the Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA). This may indicate that some of the savings on inpatient services under PPS are being spent on outpatient services. Physician payments have increased at a somewhat slower real rate under PPS than they were before TEFRA, but this slight decrease may have resulted from the Medicare physician fee freeze that was in effect for much of the early PPS period.

Skilled nursing payments have comprised a steadily decreasing share of total Medicare benefit payments since early in the history of the program. Skilled nursing payments have increased under PPS at a slower rate even than inpatient hospital payments, but, when compared with the decrease in the pre-TEFRA period, this may indicate a relative upturn. The share of home health payments has increased rapidly over the years, however. The real rate of increase in home health payments under PPS is slightly higher than it was in the pre-TEFRA period. That the combined share of skilled nursing and home health payments has increased under PPS may be a response to the expected increase in the demand for post-hospital subacute care, but it is difficult to tell from payment data alone.

The overall level of Medicare benefit payments is increasing at a slower rate under PPS, because of a sharp decline in the growth of HI payments, while SMI payments are increasing at a somewhat faster real rate than before TEFRA. Medicare benefit payments per enrollee have increased at a real rate that is only about three-quarters of its pre-TEFRA growth rate.

### Specific findings

- There were 5,657 hospitals being paid under PPS as of the end of fiscal year 1986, up by 314 over the previous year; this comprised some 84 percent of all Medicare participating hospitals.

- The percentage of all Medicare hospitals that were certified as psychiatric, rehabilitation, alcohol/drug, long-term, or children's hospitals, and thus excluded from PPS, increased from 10.6 percent to 11.4 percent during fiscal year 1986; these hospitals represent only 1.3 percent of all Medicare hospital discharges, however.
- Denials of inpatient hospital claims by FI's vary from 0.81 percent in the East North Central region to 4.62 percent in the West South Central region; denial rates for SNF claims vary from 8.17 percent in the West South Central region to 52.01 percent in the Mid-Atlantic region.
- PRO denials of hospital admissions vary from 0.02 percent in Kentucky to 9.78 percent in West Virginia.
- High denial rates seem to be correlated with high SuperPRO scores, with 8 of the 14 PRO's with the highest denial rates having the highest problem detection rates.
- The increase in Medicare inpatient hospital benefit payments was 4.6 percent in fiscal year 1986; this was the smallest increase in inpatient hospital benefit payments in the history of the Medicare program.
- The share of benefit payments for inpatient hospital services has been steadily decreasing for the past decade, from 69.5 percent in fiscal year 1975 to 61 percent in fiscal year 1986; the shares of outpatient hospital and physician benefit payments have been increasing rapidly, to 7.1 percent and 25.7 percent, respectively, in fiscal year 1986.
- The real annual rate of increase in inpatient benefit payments in the first 3 years of PPS was 3.5 percent, down from 7.1 percent in the 5 years immediately prior to TEFRA.
- The real rates of growth in outpatient hospital, skilled nursing, and home health benefit payments increased in the first 3 years under PPS, at 15.7 percent (compared with 8.8 percent in the 5 years immediately prior to TEFRA), 3.2 percent (compared with -3.5 percent in the pre-TEFRA period), and 12.7 percent (compared with 11.2 percent in the pre-TEFRA period), respectively.
- The real rate of growth in physician benefit payments declined slightly to 8.1 percent in the first 3 years under PPS, from 8.9 percent in the pre-TEFRA period; this, however, is probably because of the physician payment freeze that was in effect for much of the first 2 years.
- Medicare Part A benefit payments increased by 5.1 percent in fiscal year 1986, but Part B benefit payments increased by 18.3 percent; as a result, total Medicare benefit payments increased by 9.3 percent, which was still the third smallest increase in the history of the program.
- The real annual rate of increase in Medicare Part A benefit payments in the first 3 years of PPS was 4 percent, down from 7.3 percent in the 5 years immediately prior to TEFRA.
- The real rate of growth in Part B benefit payments increased from 8.4 percent in the pre-TEFRA period to 10.1 percent in the first 3 years under PPS.

- Total Medicare benefit payments exhibited a slower rate of growth in the first 3 years under PPS, (5.9 percent) than in the pre-TEFRA period (7.6 percent).

## Conclusions

The data presented in this article support several conclusions about PPS in its first 3 years. First, the new system has been implemented fairly smoothly; essentially all of the hospitals that were intended to be covered by prospective payment are included in the system. Moreover, two of the four States that were originally waived from participation had joined the nationwide payment system by the end of fiscal year 1986. Second, the implementation of PPS does appear to be affecting the way that hospitals operate. The length of stay is down (although it appears to be leveling off), the rate of increase in Medicare costs is down, and practice patterns appear to be changing. Third, hospitals in general appear to have reaped the benefits of their cost-cutting behavior in the form of large operating margins, although more recent data show that these margins have decreased somewhat, and some hospitals have not done as well as others.

It also seems clear that the change in hospital behavior is having an effect now, and will probably have an increasing effect on the other actors in the health care system—Medicare beneficiaries, other payers for inpatient hospital services, and other health care providers. As time passes, these effects will become clearer, both because the parties involved will have had a chance to develop their responses to the new health care environment and because health services researchers both within and outside of the Government will have had additional opportunity to develop data sources and analytic methods that enable them to more accurately assess the impact of the system.

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