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ANALYSIS & COMMENTARY

The Lessons Of Medicare's Prospective Payment System Show That The Bundled Payment Program Faces Challenges

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ABSTRACT Policy makers have been trying to replace Medicare's fee-for-service payment system for years with approaches that pay one price for an aggregation of services. The intent is to reward providers for offering needed care in the most appropriate and cost-effective manner. Medicare's first payment change designed to accomplish such a change was the hospital prospective payment system, introduced during 1983–84. But because it focused only on hospital care, its impact on total Medicare spending was limited. In 2011 Medicare began a new initiative to expand the “bundled payment” concept to link payments for multiple services that patients receive during an episode of care. The goal of Medicare's current bundled payment initiative is to provide incentives to deliver health care more efficiently while maintaining or improving quality. This article provides a detailed analysis of how Medicare implemented the hospital prospective payment system, how hospitals responded to the new incentives, and lessons learned that are applicable to the bundled payment initiative. The lessons include that any Medicare payment reform needs to continuously respond to the many different components of the health system and that payment reform should be coupled with analogous reforms in private insurance payment, so that providers receive consistent signals to alter their behavior.

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In 2011 the Centers for Medicare and Medicaid Services announced a new “bundled payment” initiative to expand the scope of care paid under the hospital prospective payment system (PPS) to include all of the care in a particular illness episode. Thus, the payment for an illness episode would include the services provided by the hospital (the PPS payment); the care provided by physicians in the hospital; and the care provided thirty, sixty, or ninety days after a patient left the hospital.

Establishing one price for all “bundled” services for a particular illness, such as heart bypass

surgery or a hip replacement, is designed to encourage health professionals to work together to coordinate their care most efficiently. This has the potential to both lower costs and improve quality. Establishing an appropriate price to pay for all of the care in an illness episode, however, is not easy.

To increase understanding of the various issues that must be addressed, this article provides an analysis of how Medicare implemented the prospective payment system approach, how hospitals responded to the then new financial incentives, and lessons learned that could help the current bundled payment initiative succeed.

Medicare's Prospective Payment System And DRGs

The prospective payment system was a major departure from Medicare's previous per diem cost-based system. Under prospective payment, Medicare would pay one amount for each hospital admission. Payment would no longer be based on the number of days a patient stayed in the hospital and the cost of each day of care in each hospital. Instead, payment for each admission would be based on the diagnosis of a patient's illness and the average cost of the resources used by all US hospitals to treat patients with a similar illness. The per admission amount would be set prospectively by the government, or before the year began.

In essence, Medicare would pay one price for the bundle of services provided by the hospital for patients diagnosed with a particular illness. The number of days of care, or how many tests and procedures were used, would not affect the payment. Hospitals would no longer have an incentive to keep patients longer or to provide more services than were medically necessary.

The previous cost-based system disproportionately rewarded hospitals that kept patients in the hospital longer, because the later days of a hospital stay are generally less expensive than the average per diem rate. Thus, the introduction of the hospital prospective payment system helped reduce the average length-of-stay for Medicare patients.¹ For patients with a medical illness, the length-of-stay fell from 9.4 days in 1981 to 7.2 days in 1986. For surgical patients, the decline was from 11.1 days in 1981 to 9.9 days in 1985.²

Somewhat surprisingly, during the early years of the hospital prospective payment system, hospital admissions also declined.³ There had been concern that hospitals would admit more patients for shorter stays because such admissions generated expenses that were less than the PPS payment. This did not appear to happen.

To establish the relationship between the diagnosis of an illness and the resources appropriate for treating that illness, a set of diagnosis-related groups (DRGs) was developed. The DRG categories were structured such that a base weight of 1.0 corresponded to the cost of the services provided to the average Medicare patient throughout the country. Illnesses that used more or more costly resources received higher weights, and illnesses with lower use patterns received lower weights.

For example, an admission for a kidney transplant was assigned a weight of 4.1840, while admission for a relatively simple eye lens procedure was assigned a weight of 0.4958.⁴ To minimize the number of categories, several medi-

cally related illnesses were placed in the same diagnosis-related group if the resources used for the care were similar. Again, the measure of the resources used was based on the experience of similar patients throughout the country, not just the hospital in question.

In addition to the DRG payment, hospitals received higher payments if they were in areas with higher input prices, such as high nurse wages; operated a medical teaching program; or treated disproportionate numbers of low-income patients. In later years, rural hospitals received special rates to preserve access to hospital care for Medicare beneficiaries in those areas.

Psychiatric, children's, and long-term acute care hospitals were excluded from the system because there was insufficient information to classify patients into medical groupings. Interestingly, Medicare's current bundled payment experiments requires that a patient have a hospital admission and receive a DRG code. As a result, institutions that are not paid through the DRG system, such as sole community or critical access hospitals, are not eligible for the new initiative.

Although the diagnosis-related group system was successful in classifying most patients, some patients required many more days of care or needed many more procedures than expected for a particular DRG. Often this resulted from a patient's having a secondary medical condition or a complication that occurred while he or she was in the hospital.

To help compensate for the added expenses of such patients, the hospital would receive an additional payment from an "outlier" fund. But such outlier payments applied only if a patient's costs far exceeded the DRG amount, and even then the outlier payment did not fully compensate the hospital for all of its higher costs. The designers of the hospital prospective payment system were concerned that if outlier payments were too liberal, the system would in effect return to a cost-based approach, and the incentive to provide care in the most efficient way would be lost.

There were many concerns about the hospital prospective payment system as it was being designed. Skeptics believed that it could financially ruin hospitals because they would be paid far less than the costs they incurred for the care provided, or could lead to patients' being discharged from the hospital too soon (known as "quicker and sicker") because hospitals would have such a strong incentive to limit a patient's stay.¹

Although there were examples of some patients' being discharged too soon, their numbers were small.⁴ What may have mitigated the potential early discharge problem for patients was that

their physicians continued to be paid on the old fee-for-service system. Unless the patient's physician agreed, a hospital could not force people to leave the hospital.

Also, some had believed that the hospital prospective payment system would soon be followed by a similar system for physician services. This did not occur, at least not until now. How much extra spending resulted because physicians were not included in the original prospective payment system approach is unclear. But it is hoped that the new bundled payment initiative, which does include the services of physicians once a patient is admitted to the hospital, will better coordinate care and lead to increased efficiencies.

In the remainder of the article, I describe how the hospital prospective payment system was implemented and suggest some possible lessons for Medicare's new payment experiments.

Implementing The Hospital Prospective Payment System

The original prospective payment system legislation, the Social Security Amendments of 1983, authorized the establishment of a new type of government organization that would evaluate the performance of the DRG system. The Prospective Payment Assessment Commission, known as ProPAC, was to be made up of experts from the hospital and health care fields and to be independent of the federal administration. The commission would receive funding from and report directly to Congress.

This level of independence has proved extremely valuable in allowing the commission

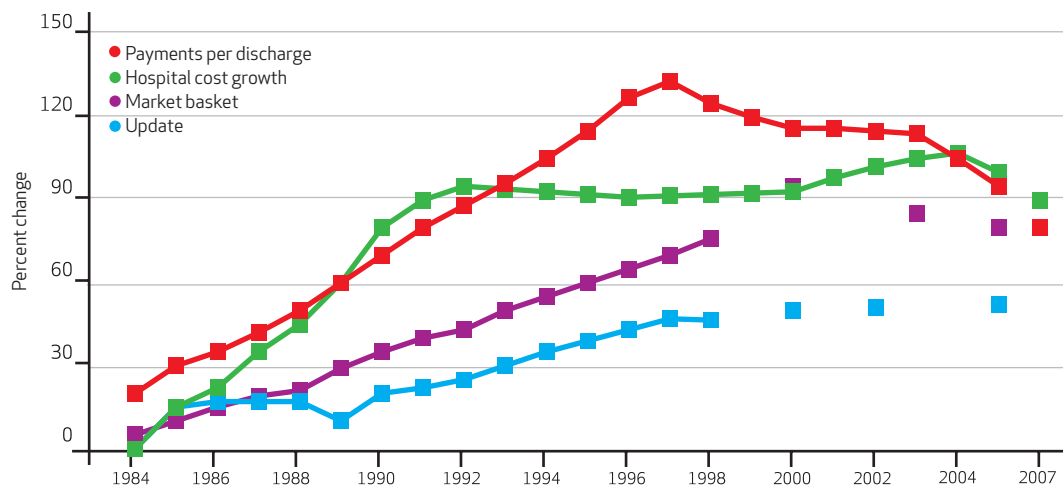
to offer Congress and the administration valuable advice not dictated by political considerations. Each year the commission was required to report to Congress and the administration on changes it thought necessary to keep the system working properly. In later years, the Physician Payment Review Commission, or PPRC, was formed with a similar structure to help design a new physician payment system. In 1997 the two commissions were combined into the Medicare Payment Advisory Commission, or MedPAC.

As the first chair of the Prospective Payment Assessment Commission, I became aware of high profits being earned by hospitals from prospective payment system payments. This outcome was not supposed to occur. Medicare officials had been instructed to set prospective payment system payments such that total Medicare hospital expenditures would be the same as they would have been if the old system had continued. But implementing such a budget-neutral approach was far more difficult than expected.

Medicare payments exceeded hospital costs by substantial amounts in the first four years of the program (Exhibit 1). Prospective payment amounts in the initial years were developed assuming that the DRG distribution of patients was similar to what had existed in the years before the program was implemented. This was not the case. The average diagnosis-related group index was much higher than expected.⁵ For the first time, hospitals were paid based on the coding of the diagnoses of their patients. Hospitals had a strong incentive, therefore, to make sure that the code on a patient's chart generated the highest possible DRG weight. This helped push the

EXHIBIT 1

Cumulative Increases In Prospective Payment System (PPS) Operating Payments And Costs Per Discharge, 1984–2007



SOURCES Prospective Payment Assessment Commission and Medicare Payment Advisory Commission reports, various years. **NOTES** "Market basket" refers to an estimate of medical inflation. "Update" refers to what Congress allowed in terms of increased payments.

diagnosis-related group index to levels that were higher than previous years.

It was anticipated that some higher coding would occur, and a 3 percent factor was added in calculating the PPS payment (standardized amount). The actual index, however, exceeded the expected level by about 9 percent. At that time, a 1 percent higher index for the entire program resulted in increased spending by Medicare of about \$400 million per year.⁶ This difference of 6 percent resulted in Medicare's paying hospitals close to \$2.4 billion per year in higher payments. The term "DRG creep" entered the lexicon of hospital reimbursement. Hospitals argued that these high codes better reflected the severity of patients' illnesses. Further analysis suggested that some of the growth in the index was excessive.⁶

These overpayments, although not beneficial for the Medicare trust fund, allowed hospitals to learn how to operate under the prospective payment system without the budgetary pressure of less revenue. The higher payments could have blunted the incentive for hospitals to use resources more efficiently, but research indicated that hospital costs were reduced in the early years of the prospective payment system.⁴ The higher payments did help reduce the criticisms of the program, and, in later years, Medicare recouped most if not all of these extra payments. By then, hospitals had learned how the prospective payment system worked and were in a better position to generate savings from the new incentives.

Today, the new payment experiments require that the government receive savings immediately from the introduction of any new system, such as accountable care organizations or bundled payments. I believe that is a mistake. New payment systems require major structural changes in how care is delivered. If such changes must be made under serious budget constraints, the likelihood of pushback by providers and patients and pressure to repeal the legislation is more likely. This is what happened during the late 1990s, as providers pushed back against "managed care." What is most important is that the right payment structure be created first; limits on payments can come later.

Protecting Institutions Most Likely To Lose

Two types of institutions stood to lose the most under the incentives of the prospective payment system: rural hospitals and big, high-intensity teaching hospitals. For rural hospitals, the reason was their low occupancy rates. For teaching hospitals, the reason was the extra costs of run-

ning a teaching program.

RURAL HOSPITALS The previous cost-based system paid hospitals in relationship to their actual costs. The prospective payment system does not adjust for the higher costs of low occupancy. Instead, DRG payments are based on the average hospital occupancy rate throughout the country.

Initially, the prospective payment system also paid rural hospitals a lower standardized amount because such hospitals, on average, use less intensive and less expensive resources than urban hospitals. Nevertheless, Congress gradually increased the rural standardized amount and eventually eliminated the differential completely.

Even with a higher standardized rate, though, low occupancy still posed a substantial problem for some rural hospitals. To protect those small, rural facilities viewed as critical institutions in their regions, Congress eliminated the hospital prospective payment system and reintroduced a cost-based payment system under its Critical Access Hospitals program. Without these higher payments, it is likely that many small, rural hospitals would not have survived. There is concern, however, that too many rural hospitals have been placed in the Critical Access Hospitals program, and even President Barack Obama has suggested that the program should be modified.⁷

TEACHING HOSPITALS The issue for teaching hospitals was different. The original Medicare hospital payment system acknowledged that Medicare should include an expense to help pay for the training of future physicians. In contrast, the initial construct of the prospective payment system eliminated any extra medical education payments. After intense lobbying, the designers of PPS agreed to amend the plan and include a medical education adjustment. The "direct costs" of medical education—for example, salaries of teaching physicians and the cost of space for teaching—were added to the prospective payment system payment.

Research studies also demonstrated that teaching hospitals are less productive than other hospitals because their staffs spend extra time educating new physicians while providing patient care. Teaching physicians and graduate medical education students also order more tests and do more procedures in the learning process, compared to typical hospital rates of use. Congress, therefore, added an indirect medical education adjustment to compensate for these higher costs.⁸

In later years, the initial indirect medical education adjustment was shown to be too high, and it has been reduced several times since then. However, many people believe that it is still too high.⁹⁻¹⁵ The issue is made more complicated

by teaching hospitals' claims that they need the extra teaching payment because they provide a disproportionate amount of uncompensated care and treat patients who have more severe conditions than in the average hospital. Nevertheless, the Medicare Payment Advisory Commission and others continue to recommend that the indirect medical education adjustment be reduced further.⁹⁻¹⁵

Balanced Budget Act Of 1997

By 1990 Medicare had reduced the growth rate in PPS payments to approximate the growth in hospital costs (Exhibit 1). Between 1990 and 1993, inpatient margins for Medicare patients—payments minus cost of services divided by patient revenues—were close to zero. Beginning in 1994, however, Medicare margins grew substantially and reached a historic high of 16.9 percent. It was during this period that the Republican-controlled Congress and President Bill Clinton could not agree on the size and structure of the federal budget, and little was done to bring Medicare payments in line with costs.

The Balanced Budget Act of 1997 mandated that prospective payment system payments be lowered by about 7 percent, with the expectation that Medicare margins would fall to about 10 percent by 2002. The ultimate impact of the Balanced Budget Act was more negative than had been anticipated. Inpatient Medicare margins fell to 7.2 percent for urban hospitals and 1.6 percent for rural hospitals in 2002. This negative trend continued, and in 2009, margins were -2.2 percent for urban hospitals and -2.4 percent for rural hospitals.¹⁶

The negative impact of Medicare payment limits also affected teaching hospitals, which had seen a reduction in indirect medical education payments as well. When inpatient and outpatient care revenues and expenses are combined, Medicare margins for major teaching hospitals declined from 14.2 percent in 2000 to 2.3 percent in 2006 and then to -0.6 percent in 2009. For smaller teaching institutions, the decline was equally dramatic: 5.0 percent in 2000 to -5.2 percent in 2009. Overall margins have traditionally been lower than for inpatient care only, reflecting substantially lower Medicare margins for outpatient care.¹⁵ Notwithstanding the low margins from Medicare, most hospitals have been able to stay profitable by receiving higher payments from private insurance companies.

Many believe that hospitals try to compensate for lower government payments and the uncompensated care they provide by charging privately insured patients higher rates, which is known as cost shifting.¹⁷ Some question whether

such cost shifting occurs, because they believe that all hospitals attempt to maximize their revenue at all times. Although this theory may have validity in some situations, a statistical comparison of average private insurance payments versus Medicare and Medicaid payments reveals a strong reverse correlation. That is, when Medicare and Medicaid rates relative to costs have declined, private insurance payments relative to their costs rose. How much these higher private payments limited the financial incentive of the prospective payment system for hospitals to lower costs is not known, but the effect appears to be substantial.

Adjusting For Severity Of Illness

The original diagnosis-related group classification system included 367 groups based primarily on the resource intensity of the care used by the average US hospital for each diagnosis. Because it was to be used by Medicare to pay all hospital claims, the DRG classification system relied on readily available billing information. By necessity, it combined many subcategories of patients into the same diagnosis-related group, provided there was some clinical coherence to the different diagnoses.

From the beginning of the program, there were critics who argued that the prospective payment system failed to adequately reflect the severity of some patient illnesses and therefore underpaid some medical conditions and overpaid others. Several researchers and companies developed methods for adjusting the original system to account for other medical factors, such as the "severity of illness," the "risk of mortality," and "treatment difficulty."¹⁸ Gradually, Medicare added new DRG categories to reflect these other factors and the changing practice of medicine.

By 2006 the number of DRG groupings had grown to 538. Finally, in 2007, a new DRG system was introduced, Medicare Severity-DRGs (MS-DRGs), which now includes almost 1,000 groupings. This new system allows for greater refinement into how patients are classified, depending on the existence and severity of a secondary diagnosis.¹⁹

In the past twenty years, a new type of hospital was created that focused exclusively on treating patients with a limited number of illnesses. These specialty hospitals often are partially owned by admitting physicians in the area. The justification for these types of hospitals was that by specializing in a limited number of conditions, the institution could provide more efficient and higher-quality care.

Evidence in support of these claims is mixed at best.²⁰ What was often left unsaid, however, was

that specialty hospitals mostly focused on less sick patients within each illness, and it was these patients who earned the highest margins from Medicare. For example, for patients who had the least complicated illnesses within DRG 107 (coronary artery bypass grafting) before the introduction of the MS-DRG system, the profit margin was 47 percent; for the second-least complicated patients, the margin was 27 percent; and for the most complicated patients the margin was -21 percent.²⁰

Similar results were documented for patients with congestive heart failure, DRG 127. For the two least complicated types of these patients, the profit margins were 50 percent and 13 percent, whereas the two most complicated had negative margins of -25 percent and -51 percent. The MS-DRG system was designed in part to alleviate these disparities by subdividing DRG 127 into three new diagnosis-related groups: 291, 292, and 293. The new system reduced the payment amount for the least complicated patients and increased the amount for patients with the most severe secondary diagnoses.²⁰

Lessons Learned From The DRG System

In 1983 the Medicare hospital prospective payment system paid hospitals one amount for all of the hospital care in an entire inpatient admission. For the first time, hospitals had to be concerned about how long a patient stayed, the tests and procedures used during the stay, and how much was paid for the resources used in caring for patients. In essence, a hospital received a bundled payment for all of the care it provided during a patient admission.

The prospective payment system did not, however, include the fees paid to physicians while the patient was in the hospital, or the cost of care after the patient left the hospital. How much these limitations reduced the cost savings that could have been generated is unknown. But advocates for Medicare's new bundled payment system are counting on the inclusion of these additional services to help produce many more efficiencies than were generated by the prospective payment system. Estimates now suggest that these excluded components are responsible for more than two-thirds of total Medicare payments for many illness categories.²¹

The current approach, however, adds a new complexity that could prove very troublesome. Because the prospective payment system was for inpatient care only, it allowed the hospital to focus on those services it controlled. Medicare's current bundled payment experiments require several different components of the total care

episode to work together. This forced combination could be quite problematic, as the groups involved have at times been antagonistic toward each other. For example, many physician groups operate independently of the hospital and often view the hospital as hostile to their interests. What gives advocates for the new approach some hope is that more and more physicians are now employed by hospitals. The problem remains, however, for postacute services. Either hospitals and postacute care providers must learn to work together and develop acceptable methods for dividing combined payments, or one group needs to develop a controlling interest in the other.

Overall, it appears that the prospective payment system was successful in helping lower Medicare hospital payment increases by reducing Medicare patients' days of care.²² Its impact on overall costs is less clear cut, as hospitals have been able to secure higher payments from most private insurance plans. Although the prospective payment system helped lower lengths-of-stay for Medicare patients initially, not until the early 1990s did days of care decline for all Medicare patients.²³ It was during this period that the prospective payment system incentives were combined with financial pressure from private managed care. Changes in the capacity of outpatient care to provide treatment that used to be done on an inpatient basis also contributed to lowering inpatient days.

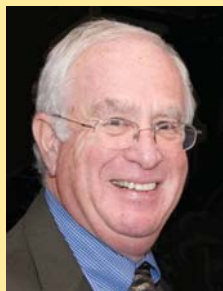
Nevertheless, the prospective payment system did have an effect on reducing lengths-of-stay, as declines were more pronounced for Medicare patients than for non-Medicare patients.²³ A reduction in days of care, however, was not matched by similar declines in costs, suggesting that hospitals adjusted for shorter stays with more intense use and more expensive resources.²⁴ The designers of the current bundled payment experiments are hopeful that the inclusion of physician expenses combined with per admission DRG payments and posthospital care costs will permit a wider focus on spending and allow greater cost reductions.

There is reason to be optimistic. However, the experiences of the prospective payment system suggest that unless payment reform is matched by budget constraints, the likely impact on lowering costs will be limited. There is also the cautionary note that if payment and delivery system changes are combined too quickly with reductions in revenue, the backlash from providers and patients could sabotage the program. Finally, the prospective payment system experience reinforces the view that Medicare payment reform should be combined with private insurance payment reform if we are to witness the full benefit of lowering health care spending. ■

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In this month's *Health Affairs*, Stuart Altman examines the decades-long history of Medicare's prospective payment system for hospitals, the first effort to move Medicare away from fee-for-service payment. He details the challenges inherent in establishing an appropriate price to pay for care in a given episode of illness—and suggests that comparable challenges now await Medicare's bundled payment initiative, which attempts to fold physician services into the episode of care that will be reimbursed.

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Management, Brandeis University. He has been involved in debates over US health reform since the 1970s, when he was deputy assistant secretary for planning and evaluation/health at the Department of Health, Education, and Welfare, which later became the Department of Health and Human Services. There, Altman contributed to the development of the Nixon administration's national health insurance proposal, which was never enacted into law. He went on to serve for twelve years as chair of the congressionally legislated Prospective Payment Assessment Commission, which advised Congress and the administration on the Medicare diagnosis-related group hospital payment system and other system reforms, giving him a bird's-eye view of the system he writes about in his article.

Today, Altman's research interests are primarily in the areas of federal and state health policy. He has twice served as dean of the Heller School and was interim

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In 1997 Altman was appointed by President Bill Clinton to the National Bipartisan Commission on the Future of Medicare. He served as cochair of the Legislative Health Care Task Force for the Commonwealth of Massachusetts from 2000 to 2002.

Altman is a member of the Institute of Medicine; serves on numerous boards; and is chair of the Health Industry Forum, based at the Heller School, which brings together a diverse group of leaders from across the health care field to develop solutions for critical problems facing the health care system. For several years he was named among the 100 Most Powerful People in Healthcare by *Modern Healthcare*. In June 2004 he was awarded the AcademyHealth Distinguished Investigator Award. Altman holds a master's degree and a doctorate in economics from the University of California, Los Angeles.