

Accounting for New
Technology in Hospital
Prospective Payment
Systems

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Statement of
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Chairman Bilirakis, Chairman Greenwood, Members of the Subcommittees. I am Murray Ross, executive director of the Medicare Payment Advisory Commission. I am pleased to be here this morning to discuss Medicare beneficiaries' access to new technology and how Medicare payment policy can help to continue ensuring access. My testimony draws heavily on a chapter from MedPAC's March 2001 report to the Congress.

Medicare needs to take two steps in ensuring beneficiaries' access to new technology. The first step is determining what to cover. The second step is seeing to it that Medicare's payment policies provide both incentives for health care providers to adopt new technologies and sufficient resources for them to do so. This second step is the focus of this testimony.

Most services provided in hospitals are now paid for prospectively. Recently, concerns have arisen regarding the treatment of new technology under prospective payment. Does Medicare recognize the introduction of new technologies quickly enough to ensure access for beneficiaries? Do payment rates adequately reflect the costs of new technologies? The Balanced Budget Refinement Act (BBRA) of 1999 addressed this issue for the outpatient prospective payment system (PPS) by establishing pass-through payments for certain types of new technology. The recently enacted Benefits Improvement and Protection Act (BIPA) of 2000 requires HCFA to develop new mechanisms to pay for technological advances under the inpatient PPS.

We conclude that under both the inpatient and the outpatient prospective payment systems, the Secretary should develop formalized procedures for expeditiously assigning codes, updating

relative weights, and investigating the need for service classification changes to recognize the costs of new and substantially improved technologies. Also, to avoid unnecessary spending and complexity in these payment systems, additional or pass-through payments should be both budget-neutral and limited to technologies that are new or substantially improved and that add significantly to the cost of care.

In support of these conclusions, this testimony considers how new technology should be defined, what payment principles should apply to the treatment of it, and how prospective payment systems for hospital services should account for new technologies.

Defining new technology

In the most basic sense, technology is the practical application of knowledge. In the health sector, this may include: drugs; devices, equipment, and supplies; medical and surgical procedures; support systems; and organizational and managerial systems. Some of these technologies, such as drugs or surgical procedures, affect identifiable services and individual patients. Others, such as new diagnostic equipment, may be used for an array of services and

multiple patients. Still others, such as information systems or improved management techniques, affect all services provided in a hospital.

When defining new technologies, both new types of technology and substantial improvements to older technologies may be considered. Within a payment system, a technological advancement might be application of an existing technology to new clinical situations, such the broadening use of PET scans. Although the overall effect of technology has been to increase costs, specific new technologies may increase or decrease costs.

The mechanisms used to account for the costs of new technology in a payment system depend, in part, on the kind of technology considered. Recognition of the costs of a device used in a particular procedure, such as coronary stents used in angioplasty, may be reflected in the relative weight assigned that procedure or through an additional payment. The costs of broader technologies, such as capital equipment or information systems, however, are more easily treated through updates to the base payment rate. In some cases, such as the inpatient PPS, changes in relative weights are made in a budget-neutral fashion. In that case, the payment system still needs to account for the cost-increasing nature of technology through the update process.

Prospective payment and the treatment of new technology

Prospective payment was adopted by Medicare to promote efficiency in the provision of services and thus protect tax payers and beneficiaries from unnecessary treatments and spending. By

setting payment rates in advance, Medicare gives hospitals a fixed payment that ideally reflects an efficient provider's costs. Hospitals paid prospectively are placed at financial risk for costs above the payment amount and rewarded if they keep their costs below it.

By its nature, prospective payment provides financial incentives to adopt new technologies that lower costs. However, the payment system should also provide mechanisms to account for the costs of new technologies that enhance quality, even if they increase costs.

A PPS should maintain neutrality regarding clinical decisionmaking, including adoption of new technology. The payment system should not favor the use of one procedure or technology over clinically appropriate substitutes, but pay the costs of an efficient provider for all options, leaving medical personnel to choose what is clinically optimal given individual circumstances. Payment rates are set for a given output, but the number and mix of inputs used to create the output is left to the clinical judgment of the provider.

A balancing process is needed to ensure that payments are sufficient to maintain access to needed services without spending more than necessary. The calculation of adequate payment rates must be administratively feasible, using the most reliable data sources available. Limited data and predictable variations in costs across providers also imply that payment adequacy be determined at a broad level, with payment adjustments such as those given to teaching hospitals used to account for predictable variations in costs among types of providers.

Components of prospective payment systems

PPSs have certain common elements, including a patient or service classification system and a unit of payment. They also have a process for updating both the relative payment weights and base payment amounts. The way these elements are treated has implications for the treatment of new technology under a given PPS.

Classification system

The classification system, which groups services for payment, may influence how technology is defined and how new technology is treated. A narrow payment system—such as the outpatient PPS which groups services based on a single service or small bundle of services—may target a specific device or drug by using additional payments or other mechanisms. Basing the classification system on diagnosis—as is done in the inpatient PPS—can make it more difficult to tie a specific technology to a given case.

Unit of payment

The unit of payment determines which services are bundled for payment purposes. The outpatient PPS relies on a limited bundle: payment is for the inputs required for a narrowly defined procedure, such as a diagnostic test, an outpatient surgical procedure, or a clinic visit. In contrast, the inpatient PPS encompasses a broad bundle: all services provided during a hospital

stay. In general, the broader the bundle, the more room for efficiency enhancements at the provider level, but the greater the opportunity for withholding services.

The unit of payment influences how a payment system captures the costs of new technologies. If the unit of payment incorporates a large bundle, increased costs in one area, such as a new-generation medical device, may decrease costs in another area, such as length of stay, causing total payment for the bundle to stay the same or decline. For a narrow bundle, however, there is less scope for offsetting efficiencies, and the costs of new technologies may need to be taken into account more explicitly.

Updating relative payment weights

Updating codes and payment weights (which account for differences in the resources needed to furnish care) provides another way to account for the costs of new technology. Introducing new codes can help account for the cost of innovative procedures. Recalibrating payment weights for services takes into account how new technologies, increased productivity, and other factors change the costs of services in relation to one another. The frequency with which codes and weights are revised affects the length of time before appropriate payments are made for new technologies. However, multiple priorities must be balanced, including the integrity of the coding and payment systems, disruption to providers from revising their billing processes to reflect new codes and new weights, data availability, and administrative requirements.

Payment updates

Finally, updates to base payment rates, which account for changes over time in the efficient costs of providing care, may also reflect the cost impacts of new technology. Some updating approaches—such as the update framework MedPAC developed for updates for the inpatient PPS and other fee-for-service settings—explicitly consider the effect of quality-enhancing but cost-increasing technologies on costs, and increase payments accordingly. Of course, when new technologies increase efficiency and decrease costs, payment updates should also reflect those trends. For the inpatient PPS, the Congress legislates the update annually, with guidance from MedPAC and Secretary of Health and Human Services. For the outpatient PPS, the Congress has set the update to the conversion factor through 2002. The updating process for future years has not been fully developed by the Health Care Financing Administration (HCFA). For the present, no explicit mechanism accounts for the cost impacts of new technology in updating the outpatient conversion factor.

Treatment of new technology in the outpatient payment system

The implementation of the outpatient PPS on August 1, 2000, marked a move away from primarily cost-based payment for services provided in hospital outpatient departments. This section describes the outpatient PPS and MedPAC's recommendations for improving how the system pays for new technology.

Structure of the outpatient payment system

The outpatient PPS classifies services based on their HCFA Common Procedure Coding System (HCPCS) code into ambulatory payment classification (APC) groups. The unit of payment for the outpatient PPS is the individual service. Payment for a service in an APC group includes limited bundling of ancillary services and supplies considered incident to the primary service. The most extensive bundling occurs for outpatient surgery. Payment for outpatient surgery covers the hospital's costs for the operating and recovery rooms, anesthesia, most drugs, and most surgical supplies used during the surgery.

Responding to technology costs

The outpatient PPS pays for new technologies in two ways: by defining new technology APC groups and by making pass-through payments that provide additional reimbursement for specific drugs, biologicals, and medical devices. The new technology APC groups aim to ensure timely payment for technologies that represent new services, distinct from the existing groups. The pass-through payments aim to ensure adequate payment for new technologies that are inputs to an outpatient service, rather than a distinct service. A pass-through payment is a cost-based payment that supplements the standard APC payment when a specific technology is used.

Coding and classification issues Industry has expressed concern that delays in the coding and classification processes hamper the diffusion of new technologies, although there is no clear

evidence of access problems. In the outpatient PPS, the process for handling new technologies includes assigning codes to new services and procedures, updating the classification (APC) weights, and investigating the need for new or restructured service classification groups. MedPAC recommends that the Secretary develop formalized procedures to expedite this process.

Timely development of payment codes is especially important in the outpatient sector, where payment bundles are small and most procedures require a code for hospitals to be reimbursed. New outpatient codes are assigned by HCFA and/or the CPT Editorial Panel. In addition, to implement the outpatient technology provisions of the BBRA, HCFA has developed a system for assigning codes for pass-through payments, including setting aside a block of temporary codes to be assigned quickly.

In addition to assigning codes, HCFA must also review the outpatient payment weights on an annual basis and restructure the APCs as needed, although the process for doing so has not been fully detailed beyond establishing an external advisory committee.

New technology ambulatory payment classification groups In developing the outpatient PPS, HCFA created separate APC groups to classify new technology services that do not qualify for pass-through payments. These groups contain services that are similar in cost, but are not necessarily clinically similar. The agency established 15 new technology groups,

with cost ranges from \$0-\$50 to \$5,000-\$6,000. The payment rate for all the services or items within a particular group will be the midpoint of the group's cost range.

To qualify for classification within a new technology APC, a service must be covered by Medicare, be underrepresented in the 1996 data used to set payment rates, have a HCPCS code, and be deemed reasonable and necessary for treating an illness or improving an impaired function. HCFA will group qualifying new technologies or services within new technology APC groups for at least two but no more than three years before assigning the services to an existing or new standard APC group. This mechanism will allow HCFA to pay for new technologies shortly after they become available and qualify for Medicare payments. It also allows the agency to collect clinical and cost data to refine and update the APC classification system.

This approach to accounting for new technology is most applicable to a PPS with a narrow unit of payment and limited bundling, as is the case in the outpatient PPS. One of the difficulties with this approach, however, is that it uses a temporary payment rate—the new technology APC group rate—while data on hospital costs are being collected to set a permanent rate. HCFA uses an application process to gather cost data to place services within the new technology APC groups, but data derived in this way are not easily verified and may not be representative of hospitals' operational costs.

Pass-through payments Pass-through payments for certain drugs, biologicals, and medical devices were authorized under the BBRA to ensure that payments under the outpatient PPS adequately accounted for the costs of new technologies. The policy responded to concerns that

the 1996 data used to calculate base payment rates did not adequately reflect the costs of certain new technologies. However, BIPA removed the criterion that technologies be under-represented in the 1996 data. All medical devices described by a category will now receive pass-through payments, regardless of when they were first used in the outpatient setting. In effect, this provision will result in unbundling payments and providing cost-based pass-through payments for most medical devices.

By paying hospitals' incremental costs for new devices at the claim level, pass-through payments encourage their adoption and diffusion. For drugs and biologicals, additional payments are set at 95 percent of average wholesale price. For medical devices, pass-through payments are based on each hospital's costs (as determined by adjusting charges using a cost-to-charge ratio). For example, when a pacemaker is implanted, a hospital receives a base payment for costs associated with performing the procedure and a pass-through payment based on the costs of the device. In principle, the amount of the pass-through payment will be offset by subtracting the estimated cost of the device it replaces from the base payment rate. However, HCFA has not yet been able to identify the cost of most devices in the underlying payment rates.

Pass-through payments will be paid for two to three years until standard payment rates can be modified to incorporate the costs of new devices. Data collected during the transition will be used to modify the standard payment rates. Total payments under the pass-through provision are limited to 2.5 percent of total program payments through 2003, and 2 percent thereafter. If this limit is exceeded, all pass-through payments are to be reduced. Additionally, total payments must remain budget neutral, meaning that the conversion factor will be reduced to account for

the cost of the pass-through payments. In effect, the provision redistributes payments among services.

In our June 2000 report, MedPAC noted that although transitional pass-through payments may help to ensure access to new and innovative technologies, they may also dilute the ability of the outpatient PPS to provide incentives for efficiency and cost control. Introducing cost-based pass-through payments gives manufacturers and hospitals an incentive to increase prices for these items. Pass-through payments for drugs and biologicals will be based on average wholesale prices, which are also subject to manipulation. Inflationary trends in the pass-through payments will also increase future standard payment rates as the pass-through costs are incorporated into the base.

The cap on total payments—2.5 percent of total program payments through 2003 and 2 percent thereafter—and proportional reductions of all pass-through payments if the cap is exceeded is meant to prevent increases in overall spending due to the pass-through payments. However, the cap will not be applied in 2000 and 2001, and program spending will increase despite the cap. Whether or not the limit will be exceeded in the future depends, in large measure, on the definition of what qualifies for pass-through payments. HCFA has expanded its definition numerous times since releasing the final rule—more than 1,000 items were eligible on January 1, 2001—and BIPA will lead to further expansions.

In considering pass-through payments, two principles should be kept in mind: minimizing interference with in clinical decision-making, and ensuring that mechanisms are in place to limit

the program's exposure to cost-based payment. Balancing these potentially conflicting notions requires consideration of the eligibility criteria for pass-through payments. MedPAC recommends that in the outpatient payment system, pass-through payments for specific technologies should be made only when a technology is new or substantially improved and adds substantially to the cost of care in an ambulatory payment classification group. We also recommend that pass-through payments be made on a budget-neutral basis and the costs of new or substantially improved technologies should be factored into the update to the outpatient conversion factor.

Limiting pass-through payments to new and substantially improved technologies protects the program and beneficiaries against unnecessary exposure to cost-based payments. It also eliminates the potential to pay for technologies twice: once in setting the initial payment rates (which include older technologies) and again through a pass-through payment. For this reason, the definition of "new" should not include items whose costs were reflected in the 1996 data used to set payment rates. Limiting pass-through payments to those new or substantially improved technologies that add substantially to the cost of care limits the program's exposure to the administrative burden of special payment provisions and the introduction of cost-based payment for technologies that compose a small part of overall payment.

Budget neutrality—when implemented—will protect against the inflationary pressures of cost-based pass-through payments. This mechanism will reimburse hospitals for the increased costs of specific technologies when they are used, but will not account for the overall cost-increasing nature of new and substantially improved technologies. Therefore, in a manner similar to the inpatient PPS, the costs of these new technologies should be brought into the system through the update to the conversion factor. However, any increase to the update for new technology should not include the costs of technologies in use prior to 1997 because their costs are already accounted for in the base. Similarly, the update should not factor in the costs of new procedures that are part of the new technology APC groups. The costs of these services are covered directly as each unit is paid for, leading to increases in total spending.

Treatment of new technology in the inpatient payment system

Medicare's PPS for acute inpatient services has been in effect since 1984. The process for annually changing its payment rates already includes a set of largely informal procedures for responding to the costs of new technology. BIPA enacted a method to account directly for the costs of new services and technology, patterned somewhat after the outpatient technology pass-through provision discussed above.

Structure of the inpatient payment system

The unit of payment in the hospital inpatient payment system is the case, or inpatient discharge, as classified by diagnosis related group (DRG). This unit of payment is broader than that of the outpatient APC system, encompassing all routine nursing, support service, and ancillary costs incurred in patients' stays. The payment system comprises:

- operating and capital base payment rates, which reflect the national average costliness of Medicare cases, adjusted for the relative input prices of the hospital's local area;
- case weights, which account for the relative costliness of each DRG compared with the national average Medicare case; and
- special adjustments, such as outlier payments for unusually costly cases.

Responding to technology costs

The BIPA changed Medicare's approach to new technology in the inpatient PPS by formalizing some methods already in use by HCFA and mandating new payment adjustments for inpatient care. We support having HCFA formalize its procedures for responding to new and substantially improved technologies and offer guidelines for implementing the technology pass through mandated by BIPA.

Previous methods Technology has been addressed in Medicare's inpatient PPS in four ways. The first component of HCFA's system is a technical advisory panel that assigns ICD-9-

CM codes to new technologies and deletes codes for outdated procedures.¹ The process of assigning codes has no fixed timetable, but generally takes at least a year.

Second, HCFA staff analyze variation in the costliness of cases within DRGs, primarily in response to suggestions by industry representatives that the costs of certain types of cases are systematically higher than the applicable DRG average. Based on these analyses, HCFA periodically reassigns certain types of cases to a different DRG or splits DRGs into two or more new groupings and modifies the case weights accordingly.

The third way in which HCFA responds to new technology is by recalibrating the DRG case weights. Recalibration is done annually and reflects the relative costliness of cases in the most recent year's claims file. Although annual recalibration plays an important role in maintaining accurate payment relatives, it can only reflect the current degree of dissemination. If only a few hospitals are using a new technology, their charges will have only a small effect on the DRG rate and they may continue to be underpaid pending the next recalibration.

The final mechanism for responding to technology changes is the annual update to the base payment rates. Since the early years of the inpatient PPS, Congress has legislated updates for operating payments, while HCFA has set the updates for capital payments through an annual rulemaking process. Congress rarely indicates the factors it has taken into account in making an update decision, but both MedPAC and HCFA develop recommendations on the basis of an update framework. MedPAC's framework specifically addresses technology costs through a

¹ The ICD-9-CM acronym stands for International Classification of Diseases, 9th Revision, for Clinical Management.

scientific and technological advancement factor, which is intended to account for the impact of quality-enhancing but cost-increasing new technologies and is offset at least partially by a negative productivity adjustment, which captures the effects of cost-decreasing new technologies.

Provisions of the Benefits Improvement and Protection Act of 2000 BIPA

mandated that HCFA develop a process to incorporate new medical services and technologies expeditiously into the clinical coding system for inpatient hospital services; collect data on the costs of new technologies for a period of 2 to 3 years and assign cases using the technologies into new or existing DRGs that have case weights derived from the new data; and provide for additional payment to cover the costs of each new technology during the study period. This payment could be in the form of new technology groups or it could be an add-on or adjustment to the normal DRG payment for cases where the technology is used.

The first two provisions serve to formalize, and perhaps expedite, procedures that HCFA already uses. The third provision, implementing what amounts to an interim payment for specific new technologies, represents a sharp departure from current policy. Like the outpatient technology pass through, the Secretary is expected to implement the provision on a budget-neutral basis. This means the effect of the additional payments for specific new technologies would be entirely distributional; the provision would not affect the need to account for the cost-increasing impact of new technology in annual payment updates.

The additional payments for new technologies are pass-throughs in the sense that HCFA must

establish rates that cover the estimated cost of each technology. However, the inpatient pass-through provision differs from the outpatient one in that it is based the average cost of a technology rather than each hospital's costs. Thus, hospitals will benefit financially if they can negotiate a purchase price that is beneath the national average, and vice versa.

The reason for a technology pass-through for acute inpatient care is ensuring that inadequate payment for specific DRGs or cases within DRGs does not provide a significant disincentive for hospitals to adopt new services and technologies. However, two reasons make this advantage less compelling for inpatient care than for outpatient services. First is the broader construct of DRGs, such that a new drug, device, or service is likely to make up a much smaller portion of overall costs. The second reason is that, unlike in the outpatient PPS, neither patients' DRG classification nor the process for recalibrating the DRG weights is dependent on HCFA assigning codes to new services or procedures. New codes serve only to facilitate analyses that might lead HCFA to restructure DRGs.

Several other problems cited above for the outpatient technology pass through will also likely apply to an inpatient pass through. These include a lack of reliable data on which HCFA can base an appropriate interim payment adjustment for a technology before hospitals have much experience in providing it, the difficulty of predicting how frequently new technology will be used and thus the reduction in base payment rates needed to make pass-through funding budget-neutral, and the administrative complexity of the process for HCFA and hospitals alike.

Our recommendations envision taking the best aspects of the previous system and the provisions

of BIPA to develop a system that accounts for the costs of new technology for inpatient hospital services. First, the Secretary should develop formalized procedures for expeditiously assigning codes, updating relative weights, and investigating the need for patient classification changes to recognize the costs of new and substantially improved technologies. Second, additional payments should be limited to new or substantially improved technologies that add significantly to the cost of care in a diagnosis related group and should be made on a budget-neutral basis.

Although annual recalibration of inpatient payments has an established track record, the other two processes—code assignment and patient classification changes—are somewhat informal and perhaps not completed as quickly as they could be. For example, the ICD-9-CM Coordination and Maintenance Committee only meets twice per year to consider potential code changes. In addition, there are no established procedures for affected parties to request DRG restructuring, and no fixed process or timetable for HCFA staff to respond to such requests.

With these changes to formalize the system for assigning codes to new services and procedures and investigating the need for DRG changes, we believe that the inpatient payment system would have responded adequately to the costs of new technology. In contrast to the procedure-based system for outpatient payment—which makes it difficult to respond to the introduction of new technologies without using pass-through payments—the inpatient PPS makes it easier to ensure an appropriate distribution of payments while accommodating technological advances.

BIPA, however, requires that a payment adjustment be made. The “substantial impact”

provision would provide a temporary boost in payments when the impact of a new technology on its early users is the most severe, while minimizing interference with clinical decisionmaking at the local level. Budget neutrality would limit the pass through to influencing the distribution of payments, leaving decisions regarding changes in the overall level of payments to the annual updating process.