JUNE 2007

REPORT TO THE CONGRESS

Promoting Greater Efficiency in Medicare

MEDPAC Medicare Payment Advisory Commission

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The Medicare Payment Advisory Commission (MedPAC) is an independent federal body established by the Balanced Budget Act of 1997 (P.L. 105–33) to advise the U.S. Congress on issues affecting the Medicare program. In addition to advising the Congress on payments to health plans participating in the Medicare Advantage program and providers in Medicare's traditional fee-for-service program, MedPAC is also tasked with analyzing access to care, quality of care, and other issues affecting Medicare.

The Commission's 17 members bring diverse expertise in the financing and delivery of health care services. Commissioners are appointed to three-year terms (subject to renewal) by the Comptroller General and serve part time. Appointments are staggered; the terms of five or six Commissioners expire each year. The Commission is supported by an executive director and a staff of analysts, who typically have backgrounds in economics, health policy, and public health.

MedPAC meets publicly to discuss policy issues and formulate its recommendations to the Congress. In the course of these meetings, Commissioners consider the results of staff research, presentations by policy experts, and comments from interested parties. (Meeting transcripts are available at www.medpac.gov.) Commission members and staff also seek input on Medicare issues through frequent meetings with individuals interested in the program, including staff from congressional committees and the Centers for Medicare & Medicaid Services (CMS), health care researchers, health care providers, and beneficiary advocates.

Two reports—issued in March and June each year—are the primary outlets for Commission recommendations. In addition to annual reports and occasional reports on subjects requested by the Congress, MedPAC advises the Congress through other avenues, including comments on reports and proposed regulations issued by the Secretary of the Department of Health and Human Services, testimony, and briefings for congressional staff.

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Glenn M. Hackbarth, J.D., Chairman
Robert D. Reischauer, Ph.D., Vice Chairman
Mark E. Miller, Ph.D., Executive Director

June 15, 2007

The Honorable Richard B. Cheney
President of the Senate
U.S. Capitol
Washington, DC 20510

Dear Mr. Vice President:

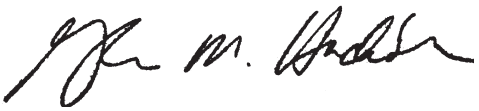
I am pleased to submit the Medicare Payment Advisory Commission's June 2007 *Report to the Congress: Promoting Greater Efficiency in Medicare*. This report fulfills MedPAC's legislative mandate to examine issues affecting the Medicare program and to make specific recommendations to the Congress.

The Commission's goal is to recommend policies that promote efficiency in the Medicare program. In this report, we:

- describe the changing beneficiary profile in Medicare,
- recommend that an entity develop information on the comparative effectiveness of alternative therapies,
- examine how to increase efficiency in the Medicare Advantage program,
- respond to our mandate to report on design features of a pay-for-performance system,
- discuss decreasing the number of avoidable hospital readmissions,
- respond to our mandate to recommend a new wage index system,
- recommend a new approach for prescription drugs that can be paid for under both Part B and Part D,
- examine payment system refinements and adding quality measures for skilled nursing facilities, and
- discuss changes to physicians' practice expense payments.

The report concludes by fulfilling our statutory obligation to analyze the Secretary of HHS's estimate of the update for physician services (Appendix A of this report).

Sincerely,



Glenn Hackbarth, J.D.
Chairman

Enclosure

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June 15, 2007

The Honorable Nancy Pelosi
Speaker of the House
U.S. House of Representatives
U.S. Capitol
Room H-232
Washington, DC 20515

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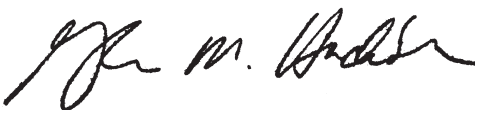

Glenn Hackbarth, J.D.
Chairman

Enclosure

Acknowledgments

This report was prepared with the assistance of many people. Their support was key as the Commission considered policy issues and worked toward consensus on its recommendations.

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Finally, the Commission wishes to thank Cay Butler and John Ulmer for their help in editing and producing this report. ■

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Executive summary

The entrance of the baby-boom generation into the ranks of Medicare beneficiaries brings into even sharper focus the issues of increasing use of services, gaps in quality, and achieving the best value for Medicare spending. The concept of efficiency, using fewer inputs to get the same or better outcomes, becomes ever more important. In this report, after describing the changing beneficiary profile in Medicare and its implications for the program, we examine several approaches to promote greater efficiency in the Medicare program.

The concept of efficiency should include not only getting more for a set amount of inputs, but getting more of the right care. One way we recommend to do so is to develop information on the comparative effectiveness of alternative therapies. Efficiency encompasses quality as well as quantity and cost, and we develop a design for a home health pay-for-performance (P4P) system that illustrates the issues and possible solutions in P4P programs in Medicare. Another aspect of efficiency is getting the right amount of care over an entire episode of care. One possibility we discuss in this report is to decrease the number of avoidable hospital readmissions through higher quality care, better care transition at discharge, and better care coordination.

Traditionally, MedPAC has been concerned with payment accuracy, because if a payment system sends the wrong signals through its prices, providers will be encouraged to provide a less-than-optimal mix of services. This report considers several improvements to payment accuracy. In response to a congressional mandate, the Commission recommends a new approach for computing the hospital wage index that will increase its accuracy. The wage index is used to adjust payments for differences in labor costs across geographic areas; there are issues about the current system's equity and accuracy. Another source of inefficiency in the program is the overlap between the new Part D program for prescription drugs and the previous limited drug coverage in the program under Part B. The report makes recommendations to sort out these overlaps and promote efficiency and convenience for the beneficiaries. The report also examines reforming the payment system for skilled nursing facilities (SNFs) and introducing new quality measures. Finally, the report discusses changes to physicians' practice expense (PE) payments—an important part of the physician fee schedule.

Medicare in the 21st century: Changing beneficiary profile

The profile of Medicare beneficiaries will change as the baby-boom generation enters and ages into the program, and those changes—discussed in Chapter 1—prelude important implications for the Medicare program. Basic demographic changes include changes in beneficiaries' age and ethnic mix as well as disparity in education and income. In addition, there are important trends in the characteristics of Medicare beneficiaries, such as an increasing proportion of beneficiaries being treated for multiple chronic conditions, a decreasing proportion of beneficiaries with disabilities and employer-sponsored health insurance, and changes in family structure that affect the availability of adult children to provide long-term care for their parents.

Changes in the characteristics of Medicare beneficiaries will affect program spending and the types of services beneficiaries will want and need in the future. Possible ways to change Medicare to address the needs of future beneficiaries include:

- facilitate care coordination in traditional Medicare;
- expand the use of health information technology, which may improve efficiency and quality of care to all beneficiaries and facilitate care coordination;
- increase the use of comparative-effectiveness analyses as a source of information and guidance for providers and beneficiaries (which we discuss in Chapter 2);
- implement public health efforts that promote healthy lifestyles; and
- modify the benefits and cost sharing of traditional Medicare.

Producing comparative-effectiveness information

Comparative-effectiveness analysis compares the clinical effectiveness of a service (drugs, devices, diagnostic and surgical procedures, diagnostic tests, and medical services) with its alternatives. In Chapter 2, we find that not enough credible, empirically based information is available for health care providers and patients to make informed decisions about alternative services for diagnosing and treating most common clinical conditions.

Many new services disseminate quickly into routine medical care with little or no basis for knowing whether they outperform existing treatments. Information about the value of alternative health strategies could improve quality and reduce variation in practice styles.

Although several public agencies conduct comparative-effectiveness research, it is not their main focus and their efforts are not conducted on a large enough scale. For private-sector groups, conducting this type of research is costly and, when it is made publicly available, the benefits accrue to all users, not just to those who pay for it. Because the information can benefit all users and is a public good, it is underproduced by the private sector; a federal role is necessary to produce unbiased information and make it publicly available.

Consequently, the Commission recommends that the Congress should charge an independent entity to sponsor credible research on comparative effectiveness of health care services and disseminate this information to patients, providers, and public and private payers. Such an entity would:

- be independent and have a secure and sufficient source of funding (the Commission prefers a public–private option to reflect that all payers and patients will gain from this information);
- produce objective information and operate under a transparent process;
- seek input on agenda items from patients, providers, and payers;
- re-examine the comparative effectiveness of interventions over time;
- disseminate information to providers, patients, and public and private health plans;
- have no role in making or recommending coverage or payment decisions for payers; and
- have an independent board to oversee it.

The entity's primary mission would be to sponsor studies that compare the clinical effectiveness of a service with its alternatives. Payers, including Medicare, could use this information to inform coverage and payment decisions. While cost effectiveness is not a primary mission, the Commission does not rule out the entity producing such analyses. In the simplest case, cost may be an important factor to consider for two services that are equally effective in a given population. But even when clinical effectiveness differs, it may be important for end users to be aware of costs.

Update on the Medicare Advantage program and implementing past recommendations

Private plans have the potential to promote greater efficiency in the delivery of health care and improved outcomes for enrollees; hence, the Commission supports their participation. However, we report in Chapter 3 that for most Medicare Advantage (MA) private plans the current approach to payment does not promote efficiency, primarily because county benchmarks—which are the basis of payment for MA plans—exceed Medicare fee-for-service (FFS) expenditure levels.

Benchmarks averaged 116 percent of expected FFS spending in 2006, and those high benchmarks enabled plans to offer extra benefits to attract enrollees, resulting in significant enrollment growth in MA. Enrollment growth has been greatest in private fee-for-service (PFFS) plans rather than in coordinated care plans. Yet, on average, PFFS plans provide the basic Medicare benefit package at a cost higher than the traditional FFS program, while HMOs do so for less. In other words, PFFS plans are providing extra benefits because of the higher payment rates, not because of greater efficiency.

The continuing growth in enrollment in high-benchmark counties (where PFFS enrollment is concentrated) and the growth in types of plans that are less efficient heighten our concerns about the MA program. Current MA payment policy is inconsistent with MedPAC's principle of payment equity between MA and the traditional FFS program. In the context of MA, equity would be achieved by setting benchmarks at 100 percent of FFS. However, the Commission recognizes that changing MA plan payment rates to achieve financial neutrality too quickly will cause disruptions for beneficiaries in some markets, and thus the Congress may want a transition period. The timing of a transition to a plan payment system that is financially neutral needs to take into account the effect on beneficiaries. We offer several options.

In addition to the variations in efficiency among plans, there are also wide differences in plan performance on quality measures. Such differences highlight the importance of the Commission's recommendation to

institute a P4P system in MA and the importance of having all plans report on quality measures. PFFS plans, for example, are exempt from most quality measurement requirements, which is an example of the unlevel playing field that exists in MA with regard to plan standards and contracting requirements. The Commission is concerned that differing standards provide an advantage to one plan type over another.

With respect to special needs plans (SNPs), we provide an update on plan availability and participation as of early 2007. In 2007, the number of SNPs has again risen, to 476, from 276 in 2006 and 125 in 2005. SNP enrollment as of March 2007 was about 843,000, compared to 532,000 enrollees in July 2006. We intend to continue studying what the proper role should be for SNPs in the MA program and what criteria might be established for these plans.

Value-based purchasing: Pay for performance in home health care

In the Deficit Reduction Act of 2005, the Congress asked the Commission to discuss the design of a P4P system in home health care to improve the value of health care that Medicare purchases. In Chapter 4, we have applied general principles for P4P design specifically to the home health sector; however, the principles could be used in other settings as well. The key aspects of program design are:

- ***Funding the reward pool.*** P4P should be budget neutral; it should not add money to or remove money from the system.
- ***Setting thresholds for performance.*** There are several ways to set thresholds; the most common one is to use a set percentage of providers. An alternative is to use a test of statistical significance: High performance is a score statistically significantly above the average, and poor performance is significantly below the average. Improvement could be regarded as a score significantly greater than the provider's previous score.
- ***Balancing rewards for attainment and improvement.*** If the rewards are exclusive (a provider can receive either an attainment reward or an improvement reward but not both), then less weight could be placed on the improvement rewards since those providers are, by definition, providing lower quality care as measured by the P4P system.
- ***Determining the size of the reward.*** In a budget-neutral system, the size of the reward is constrained by the size of the penalty placed on poorly performing providers; when money is removed from the system to fund the pool, then the entire reward pool should be spent on rewards. The size of the reward should be proportional to the provider's Medicare payments.

As we discuss each of these aspects of program design in Chapter 4, we offer a P4P model built from home health data to illustrate these points. However, the circumstances of home health care may pose particular challenges for P4P in that sector. Our analysis suggests that the current home health payment system overpays providers and pays inaccurately for some patients. Adding a quality incentive to a payment system that does not accurately pay providers for the costs of different patients could result in the quality incentive being overwhelmed by the current payment incentives. The Commission will continue to consider reforms to the payment system. P4P should be put in place at the same time as Medicare improves the payment system to create stronger incentives to improve quality.

Payment policy for inpatient readmissions

Medicare's hospital payment system provides no explicit encouragement or reward for hospitals that reduce readmissions, although readmissions indicate the possibility of poor care or missed opportunities to better coordinate care. Medicare pays for each admission based on the patient's diagnosis regardless of whether it is an initial stay or a readmission for the same or a related condition; almost 18 percent of admissions result in readmissions within 30 days of discharge. Yet research shows that hospital-based initiatives to improve communication with beneficiaries and other caregivers, coordinate care after discharge, and improve the quality of care during the initial admission can avert many readmissions—to the benefit of beneficiaries and the program.

To encourage hospitals to adopt strategies to reduce readmissions, Chapter 5 explores a two-step policy option that starts with public reporting of hospital-specific readmission rates for a subset of conditions. The second step of the policy is an adjustment to the underlying payment method to financially encourage lower readmission rates. For example, one could create a penalty for hospitals with high readmission rates and hold all other hospitals harmless.

We focus on the hospital's role but recognize that other providers can be instrumental in avoiding readmissions, including physicians and post-acute care providers. Similarly, beneficiaries have responsibility in the effort to avoid readmissions and should be encouraged to be engaged in their own care. Aligning incentives across all who can influence the patient's outcome is essential to induce the needed collaboration among FFS providers to reduce readmissions and, more broadly, foster greater "systemness" and integration in the delivery of health care.

An alternative method to compute the wage index

In the Tax Relief and Health Care Act of 2006 (TRHCA), the Congress mandated that the Commission report on a revision of the wage index. The TRHCA also requires the Secretary to consider the Commission's recommendations in the fiscal year 2009 inpatient prospective payment system proposed rule.

In Chapter 6, we explore an alternative method for calculating wage indexes for hospitals and other sectors. The wage index we develop addresses specific issues of concern to the Congress, including eliminating exceptions, minimizing variation in the wage index across county borders, and using the hospital wage index in other settings. It also addresses other issues in the current system, such as distinguishing between the effects of skill mix differences and wage differences. The MedPAC index is based on wage data from the Bureau of Labor Statistics and the Census Bureau, and benefits data are from the provider cost reports submitted to CMS.

The Commission recommends first that the Congress should repeal the existing hospital wage index statute including reclassifications and exceptions, and give the Secretary authority to establish new wage index systems. Second, the Commission recommends that the Secretary should use this new authority to establish a hospital compensation index that:

- uses wage data representing all employers and industry-specific occupational weights,
- is adjusted for geographic differences in the ratio of benefits to wage,
- is adjusted at the county level and smooths large differences between counties, and
- is implemented so that large changes in wage index values are phased in over a transition period.

Because it uses the same underlying data for all settings, the method can easily be tailored to SNFs and home health agencies. However, we find that the SNF, home health agency, and hospital wage indexes under the new approach are highly correlated. Therefore, the Commission also recommends that the Secretary should use that hospital compensation index for the home health and SNF prospective payment systems and evaluate its use in the other Medicare FFS prospective payment systems.

Issues in Medicare coverage of drugs

As Medicare's Part D prescription drug benefit becomes established, two issues have arisen that we address in Chapter 7: instances when there is an overlap in coverage for certain drugs between Part B and Part D, and delivery of Part D benefits to Medicare beneficiaries who reside in long-term care facilities.

We offer recommendations to address three issues with overlap drugs:

- Drugs that can be prescribed for many indications. Currently a drug plan must determine whether a drug should be covered under Part B before it can approve a claim, so plans often require prior authorization before the pharmacist can dispense the drug. The Commission recommends that the Congress change the law to allow CMS to identify selected overlap drugs that are covered under Part D most of the time and are low cost and direct plans always to cover them under Part D.
- For drugs that continue to be covered by Part B and Part D, permitting plans to cover a transitional supply of drugs under Part D. Until a plan determines whether a drug is covered under Part B or Part D, it is not allowed to provide emergency supplies to beneficiaries under Part D. We recommend that the Congress authorize prescription drug plans to approve transition supplies while coverage is being determined.
- New preventive vaccines that are covered under Part D instead of Part B. Because physicians administer the vaccines but cannot directly bill drug plans, patients might have to pay the physician and then seek repayment from their drug plan, which might discourage beneficiaries from getting vaccines. We recommend that the Congress should permit coverage for appropriate preventive vaccines under Part B instead of Part D.

About 5 percent of Medicare beneficiaries reside in long-term nursing facilities (NFs), and their drugs are often dispensed by long-term care pharmacies (LTCPs). Under Part D, LTCPs must negotiate with numerous plan sponsors over payments for services delivered to NF residents. Tensions have grown between some Part D plans and LTCPs over pharmacies' desire for timely dispensing and plans' desire to determine whether prescriptions are covered and appropriate before paying for them. Also, CMS is concerned that the separate rebates LTCPs receive directly from drug manufacturers could undercut the benefit management of the Part D plans and potentially raise program costs.

The Commission intends to monitor this issue and will look at data as they become available. The chapter does not make recommendations on this issue but does examine three potential options for providing Part D benefits in long-term care settings.

Skilled nursing facilities: The need for payment system reform

Chapter 8 discusses issues related to Medicare's payment system for SNFs and the measures used to assess the quality of care provided in them. The current design of the prospective payment system results in impaired access for certain beneficiaries who require expensive nontherapy ancillary (NTA) services and encourages providers to furnish therapy even when the services are of little or no value.

The chapter describes CMS's extensive research to refine the payment system and concludes that options can be designed that better target payments for NTA and therapy services and for stays with unusually high costs. Many of the options will require trade-offs between their predictive abilities and the burdens they impose on CMS and providers. Better data on the use of NTA services during the SNF stay, patient diagnoses, nursing costs, and patient assessment information at admission and discharge would facilitate redesign efforts.

We then consider why some hospitals continue to operate their SNFs, despite the SNFs' apparent poor financial performance, while other hospitals have closed their units. In site visits and interviews, hospital administrators told us their reasons—including nonfinancial factors—for keeping their SNFs open or for closing them. The administrators indicated that they consider how the SNF contributed to the combined financial performance of the hospital and the SNF. Our analyses found that hospital and SNF revenues together covered the combined direct costs (which do not include overhead and capital costs) of the patients. Losses on the SNF side can be offset by improved performance on the hospital inpatient side from shorter lengths of stay and alternative uses for scarce inpatient beds.

In our March 2007 report, we noted that two measures of SNF quality—risk-adjusted rates of discharge to the community and avoidable hospital readmissions—indicated that quality had declined between 2000 and 2004. Yet quality scores improved for the same facilities based on the publicly reported SNF quality measures. This difference in trend, combined with our previous concerns about the publicly reported measures, leads us to urge CMS to report community discharge rates and rehospitalization rates for Medicare patients. CMS should also reconsider our 2006 recommendation to change the timing of the patient assessment so that changes in health status are gathered for all patients.

Analysis of changes to physicians' practice expense payments

In Chapter 9, the Commission examines how CMS determines PE payment rates in the physician fee schedule; PE payments account for close to half of the $58 billion Medicare spent under the fee schedule in 2005. We describe the major changes that CMS has recently made to PE rates and their impacts, examine CMS's method for allocating indirect costs to specific services, and explore how the agency adjusts PE payment rates to account for geographic differences in input prices.

Beginning in 2007, CMS is using new methods to calculate direct and indirect PE relative value units (RVUs), using the same approach to calculate PE RVUs for services that both do and do not involve physician work, and using more current practice cost data to calculate indirect PE RVUs for eight specialty groups. In addition, CMS adopted significant changes to physician work RVUs, which affect both the physician work and the PE components of the fee schedule. Collectively, these changes represent the biggest revision to the methods and data used to calculate PE RVUs since 1999. CMS will phase in these changes over a four-year period.

The new PE methods and data redistribute PE payments across services. When CMS fully implements the changes in 2010, PE RVUs will increase by 7 percent for evaluation and management services and by 3 percent for other

(nonmajor) procedures and tests. By contrast, PE RVUs will decrease by 8 percent for major procedures and by 9 percent for imaging services.

Because indirect costs represent about two-thirds of total practice costs, we examine CMS's new method for calculating indirect PE RVUs and explore other methods to pay indirect practice costs. We also discuss the sensitivity of the PE RVUs to changes in the calculation method.

Finally, we examine how CMS adjusts PE payment rates to account for geographic differences in the price of inputs used in operating a physician practice. Payments would be more accurate if the payment system excluded costs that do not vary geographically, such as equipment and supplies, from the geographic adjustment.

Review of CMS's preliminary estimate of the physician update for 2008

Appendix A fulfills the Commission's requirement to review CMS's estimate of the 2008 update for physician services. CMS's preliminary estimate of the 2008 payment update for physician services is –5.1 percent. However, when combined with the effect of the TRHCA, CMS estimates the net change to the conversion factor from 2007 to 2008 to be –9.9 percent. Due to continued growth in expenditures on physician services and increased spending associated with legislative overrides to avert payment cuts for physician services, the sustainable growth rate (SGR) formula has called for negative updates since 2002.

In reviewing the technical details involved in estimating the update under current law (in accordance with the SGR formula), we find that CMS used estimates in calculating the update that are consistent with recent trends. Moreover, the Commission anticipates that no alteration in the factors of CMS's estimates would be large enough to eliminate the application of the statutory limit the SGR formula imposes. ■

CHAPTER 1

Medicare in the 21st century: Changing beneficiary profile

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Chapter summary

The profile of Medicare beneficiaries is expected to change in ways that could have strong implications for the Medicare program. Some of these profile changes could include:

- A greater proportion of beneficiaries being treated for multiple chronic conditions, which puts upward pressure on Medicare costs (Thorpe and Howard 2006). This increase reflects growth in the prevalence of obese beneficiaries, advances in technology for diagnosing and treating conditions, and changes in disease definitions.
- Fewer beneficiaries with disabilities, who tend to be more costly than those without disabilities. This decrease suggests downward pressure on Medicare costs. However, the costliness of beneficiaries without disabilities has been increasing much faster than the costliness of the disabled (Chernew et al. 2005).

In this chapter

- Fewer beneficiaries with employer-sponsored insurance (ESI) to supplement Medicare (KFF/Hewitt Associates 2005, 2004). ESI is relatively comprehensive supplemental coverage, so a decline in its prevalence could reduce beneficiaries' service use and expose them to greater financial liability.
- Key changes in family structure including people having fewer children, more women having children after age 35, and adult children living greater distances from their parents. These changes may affect the availability of adult children to provide long-term care for their parents. As beneficiaries are less able to rely on their children for unpaid care in the home, they may turn to institutions such as assisted living facilities and nursing homes or to paid custodial care in the home. Medicare generally does not cover the care provided by these sources, so increased reliance on them can substantially increase a beneficiary's financial liabilities.
- Demographic changes based on census data suggest:
  - The race/ethnicity mix of Medicare beneficiaries will change, with a higher percentage of beneficiaries being Hispanic or Asian. This could affect the Medicare program if Hispanic or Asian beneficiaries have different health care profiles than other beneficiaries.
  - The percentage of beneficiaries age 85 or older is likely to first decline as the baby-boom generation enters Medicare, and then increase as that group ages. Older beneficiaries cost the Medicare program 40 percent more than the average beneficiary, are more likely to have a living arrangement that includes formal assistance, and are more likely to have comorbidities, particularly Alzheimer's disease.

- Years of formal education will increase among Medicare beneficiaries. More educated beneficiaries may be more involved in the clinical decisions regarding their health. In addition, higher levels of education have been shown to be correlated with later onset of Alzheimer's disease.
- Per capita income typically grows more slowly than health care costs, especially in recent years. If growth in health care costs continues to outpace growth in per capita income, access to care could be adversely affected. Also, the distribution of income among the elderly may become more uneven, which may increase disparities in access to care between wealthy and poor beneficiaries.

Changes in the characteristics of Medicare beneficiaries will affect program spending and the types of services beneficiaries will want and need in the future. We convened a panel of experts who shared their thoughts on which changes in beneficiary characteristics will be most important and how the Medicare program could be changed to better serve beneficiaries. Combining the panel's thoughts with previous MedPAC work on program changes, we developed the following list of possible ways to change Medicare to address the needs of future beneficiaries:

- Facilitate care coordination in traditional Medicare. This would especially help improve the care of those with chronic conditions.
- Expand the use of health information technology (IT), which may improve efficiency and quality of care for all beneficiaries and facilitate care coordination. Moreover, as beneficiaries' level of formal education rises, their use and understanding of IT may expand as well. Therefore, increased use of health IT may help beneficiaries make more informed decisions about their health care.
- Increase the use of comparative-effectiveness analyses as a source of information and guidance for providers and beneficiaries.

- Implement public health efforts that promote healthy lifestyles, such as programs that help reduce the prevalence of obesity through better diet and exercise. In addition to Medicare beneficiaries, such a program could also target younger populations so that they have already made beneficial lifestyle changes before becoming eligible for Medicare.
- Modify the benefits and cost sharing of traditional Medicare in the following ways:
  - A single deductible for Part A and Part B. Currently, they have separate (and very different) deductibles.
  - No cost sharing beyond the deductible for hospital inpatient care, but cost sharing beyond the deductible for most other services. The structure of this cost sharing should be carefully considered so that beneficiaries do not have incentives to forgo services that are highly beneficial.
  - A stop loss that limits beneficiaries' financial liabilities, which reduces their risk of becoming impoverished from a costly illness. Reducing this risk will have greater importance if ESI becomes less prevalent as a source of supplemental insurance or if beneficiaries' incomes grow more slowly than their financial liabilities from health care.

The analysis presented in this chapter is the first in a two-step process. In the second step, we will develop estimates of the effects of changes in the profile of Medicare beneficiaries and modifications to the Medicare program that address those changes, with a focus on the design of the benefit package. We emphasize that the purpose of this work is not to address the long-run sustainability of the Medicare program. Other changes will be needed to address that issue. ■

The Medicare program is facing important changes in the coming decades. Well-known changes include substantial growth in the beneficiary population—as the baby-boom generation becomes eligible for Medicare—and technological advancements in health care that extend lives. The impact of the baby-boom generation on the size of the beneficiary population will put strong upward pressure on Medicare spending and considerable strain on the federal budget. Advances in technology can take many forms but are frequently associated with upward pressure on health care use and spending because they are often costly and usually add to, rather than replace, existing technology.

A change that has not been as widely studied is the likely change in the profile of beneficiaries' characteristics in the coming decades. We convened a panel of experts and reviewed the literature to identify the changes that are likely to be important to the Medicare program. The list of changing characteristics that we developed includes:

- Greater prevalence of being treated for chronic conditions, especially for multiple chronic conditions, which increases beneficiaries' health care use (Thorpe and Howard 2006);
- Fewer beneficiaries with disabilities, which suggests downward pressure on health care use. But the difference in spending between disabled and nondisabled beneficiaries has declined, which will reduce or could even eliminate the downward pressure from fewer disabled beneficiaries (Chernew et al. 2005);
- Fewer beneficiaries with employer-sponsored insurance (ESI) to supplement Medicare, which may reduce beneficiaries' access to care and increase their risk of catastrophic loss from health care expenses (KFF/Hewitt Associates 2005, 2004);
- People having fewer children, more women having children after age 35, and adult children living greater distances from their parents, which may reduce the availability of adult children of beneficiaries to provide long-term care in the home; and
- Demographic changes suggest:
  - The racial/ethnic mix may change, with an increase in the percentage of beneficiaries of Hispanic origin and, to a lesser extent, Asian origin, who may have different health care needs than other beneficiaries.
  - The proportion of beneficiaries who are age 85 or older may decrease and then increase. These beneficiaries are likely to have different health care needs than younger beneficiaries.
  - Beneficiaries may have more formal education, which may increase their participation in clinical decisions and is correlated with later onset of Alzheimer's disease.
  - Income may grow more slowly than health care costs or may become less evenly distributed. These income issues may lead to access problems for at least some beneficiaries or may exacerbate differences in access to care between high-income and low-income beneficiaries.

In this chapter, we discuss the potential effects of these changing characteristics and how they may affect beneficiaries' health care use and their interaction with the health care system. In addition, our expert panel discussed some of the ways the Medicare program could be changed to better serve future beneficiaries. We synthesized their views with previous MedPAC studies on how to improve Medicare to address the changing characteristics of Medicare beneficiaries.

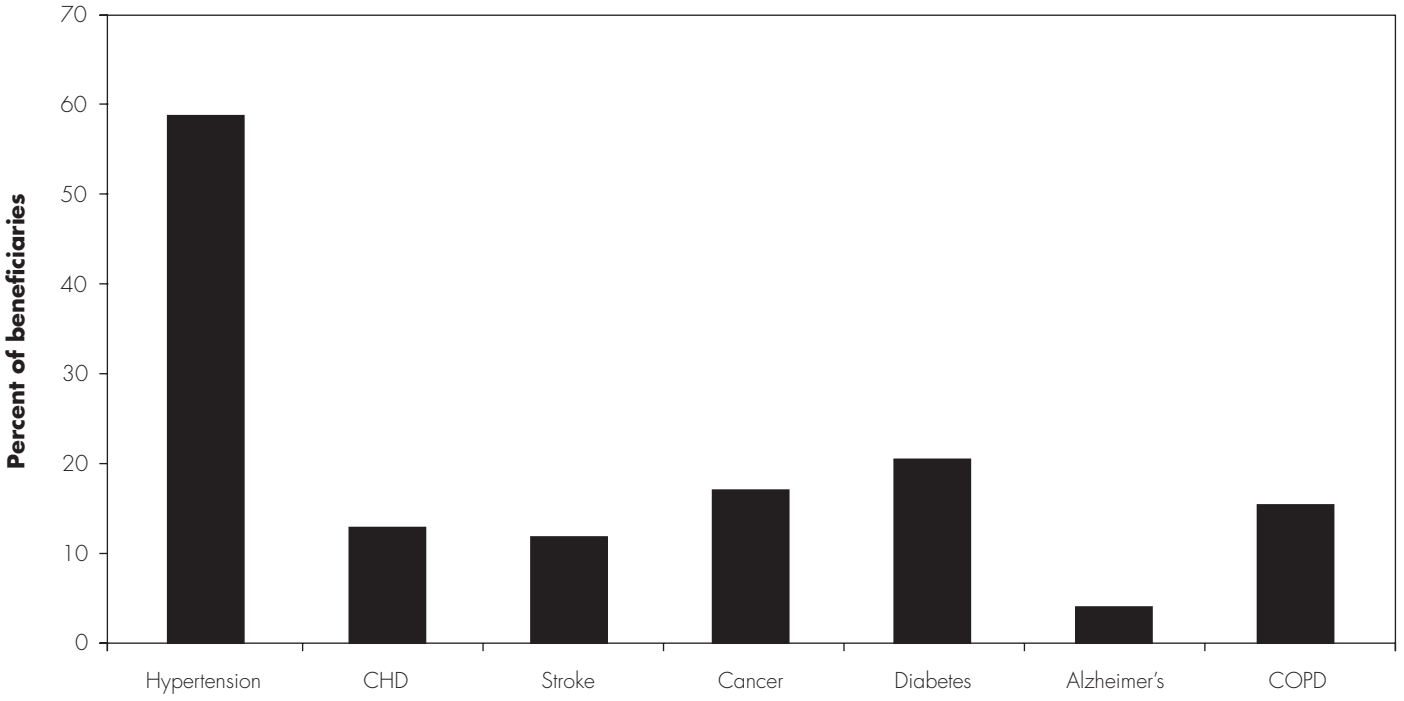
Changes in the characteristics of Medicare beneficiaries

This section discusses the potential qualitative effects of the changes to the profile of beneficiary characteristics, with some supporting empirical results.

Increase in treatment of chronic conditions puts upward pressure on Medicare spending

Chronic conditions are widespread among Medicare beneficiaries (Figure 1-1, p. 8). Research indicates that an increase in the treated prevalence (the percentage of the population receiving treatment) of many chronic conditions has fueled much of the increase in Medicare spending over the last two decades.[1] Also, the proportion of beneficiaries treated for multiple chronic conditions has increased. In 1987, 31 percent of Medicare beneficiaries received treatment for five or more chronic conditions, accounting for about half of total health care spending on Medicare beneficiaries. Fifteen years later, more than half of all Medicare beneficiaries were treated for five or more chronic conditions, accounting for 76 percent of

FIGURE 1–1 **Chronic diseases are prevalent among Medicare beneficiaries, 2003**



Note: CHD (coronary heart disease), COPD (chronic obstructive pulmonary disease). Analytic sample consists of beneficiaries in traditional Medicare.

Source: MedPAC analysis of 2003 Medicare Current Beneficiary Survey Cost and Use file.

health care spending on beneficiaries. Nearly all spending growth for Medicare beneficiaries from 1987 to 2002 can be attributed to those treated for three or more chronic conditions (Thorpe and Howard 2006).

The reasons underlying the increased treated prevalence of chronic conditions include:

- Higher rates of obesity—defined as a body mass index (BMI) of 30 or higher—likely have increased the prevalence of conditions such as diabetes, hyperlipidemia, and hypertension.[2] Recent data suggest that the obesity rate among the elderly is at a historically high level (Figure 1-2). The impact of obesity on the prevalence of chronic conditions may become even stronger in the coming decades because the prevalence of obesity is higher among the population age 40 to 59 than among those age 60 or older (Ogden et al. 2006).
- Technology for identifying the presence of conditions has advanced, such as the dual-energy X-ray absorptiometry (DXA) scan for osteoporosis. These advances have resulted in patients being diagnosed for conditions that could not have been detected several years ago.
- Technology for treating conditions has advanced, such as the development of selective serotonin reuptake inhibitors (SSRIs) for treating depression, discussed on p. 10. Looking forward, personalized medicine, which uses genetic information to tailor treatments to a patient, may become an important technological advance in the coming years.
- Clinical definitions of some diseases have changed. For example, the definition for metabolic syndrome—which increases the risk of cardiovascular disease, stroke, and diabetes—includes abnormal fasting glucose levels.[3] In 2004, the American Diabetes Association lowered the definition of abnormal fasting glucose levels from 110 milligrams per deciliter (mg/dL) to 100 mg/dL. This change increased the prevalence of metabolic syndrome among adults age 20 or older by 20 percent (Ford et al. 2004).

Obesity has increased prevalence of chronic conditions and Medicare spending

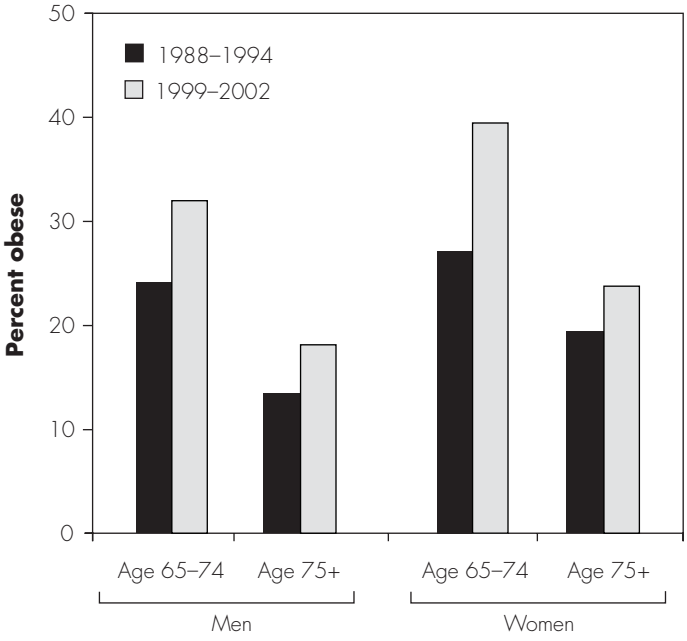
Increased obesity rates among the Medicare population have not only increased the treated prevalence of chronic conditions, they have likely played a role in the spending increase over the last two decades because many obese people have multiple conditions such as hyperlipidemia, diabetes, and hypertension.[4] Data from the Agency for Healthcare Research and Quality (AHRQ) indicate that the share of Medicare spending attributable to obese beneficiaries nearly tripled from 9.4 percent in 1987 to 24.8 percent in 2002.[5]

Obesity is a particularly important risk factor because it has spread across all age groups and segments of society, and research indicates that it tends to reduce life expectancy. Over the last three decades, improvements in risk factors such as smoking, high blood pressure, and drinking have increased life expectancy. However, increased obesity rates have offset part of these gains. Moreover, continued increases in obesity rates would further erode the gains from improvements in other risk factors (Cutler et al. 2007).

However, research also suggests that the effect of obesity on life expectancy may decline with age and even may have no effect once people reach age 70 (Lakdawalla et al. 2005, Olshanky et al. 2005, Fontaine et al. 2003, Stevens et al. 1998). This finding may reflect a complicated relationship in which obesity can have very different effects on longevity depending on an individual's medical circumstances. For example, it is plausible that the age at which an individual becomes obese may affect life expectancy. More research on this issue may help clarify the effect of age on the association between obesity and longevity.

Irrespective of its effect on longevity, obesity increases disability rates. Obese beneficiaries spend a greater amount of their lifetimes with a limitation in one or more activities of daily living (ADLs) than beneficiaries who are the recommended weight (the list of ADLs includes eating, bathing, dressing, transferring from bed to chair, walking, and using a toilet). Obese 70-year-olds can expect to spend 40 percent more of their remaining years with a limitation in one or more ADLs than 70-year-olds of recommended weight (Lakdawalla et al. 2005). Moreover, obesity increases the likelihood of having several chronic conditions including diabetes, gallbladder disease, hypertension, and osteoarthritis; it also increases the likelihood of needing dialysis (Must et al. 1999).

FIGURE 1–2 **Obesity rates have been increasing among older Americans**



Source: Table 73 in *Health, United States, 2005* from the National Center for Health Statistics.

The increased limitations in ADLs, presence of chronic conditions, and need for dialysis among the obese translate to higher annual spending on health care. To the extent that the effect of obesity on life expectancy declines as people age, research suggests that lifetime Medicare spending is much higher (34 percent) among the obese than among those of recommended weight (Lakdawalla et al. 2005).

Technology has increased treatment of chronic conditions

Although obesity likely played a role in the growth of the proportion of beneficiaries treated for chronic conditions, increases in the share of nonobese beneficiaries treated for five or more chronic conditions indicate that other factors also matter. From 1987 to 2002, the share of beneficiaries who had the recommended weight and were treated for five or more chronic conditions increased from 11.5 percent to 16.0 percent, and the percentage of total Medicare spending these beneficiaries accounted for increased from 19.6 percent to 24.1 percent (Thorpe and Howard 2006).[6]

One explanation for the increase in the proportion of beneficiaries of recommended weight being treated for five or more chronic conditions is that physicians are more aggressively diagnosing and treating healthier beneficiaries. In 1987, 33 percent of beneficiaries treated for five or more chronic conditions reported good or excellent health. This proportion increased to 60 percent in 2002.

Another reason for this increase in the proportion of relatively healthy beneficiaries being treated for five or more chronic conditions may be the introduction of technologies for either treating or detecting chronic conditions at earlier or less severe stages. An example of a relatively new technology that treats a chronic condition is SSRIs for depression. Prior to SSRIs, the most common method for treating depression was psychotherapy, which often entailed large costs to patients, in both time and money (Howard et al. 2006). A technology that detects a chronic condition is the DXA scan for osteoporosis.

Reconciliation and summary of literature on chronic conditions

In contrast to the results from the research we have cited thus far, other research suggests that chronic conditions only modestly affect Medicare spending. One team of researchers examined seven chronic conditions and found that cumulative Medicare spending beginning at age 65 is only moderately higher among beneficiaries with a particular condition than among those without it. For example, a beneficiary with diabetes at age 65 has about $17,000 more in cumulative health care spending than a beneficiary without diabetes at age 65 (Joyce et al. 2005).

It appears that two bodies of research found very different effects of chronic conditions on Medicare spending. However, these seemingly inconsistent results can be reconciled. The research by Joyce and colleagues indicates that lifetime costs of beneficiaries who do not have a chronic condition at age 65 are only moderately lower than for those who do have a chronic condition at age 65. However, this research does not account for the fact that many beneficiaries without a chronic condition at age 65 develop one at a later age, so it does not fully reflect the effect of chronic conditions on beneficiaries' lifetime costs. Also, the research by Joyce and colleagues does not reflect the increase in the proportion of beneficiaries treated for chronic conditions. In contrast, Thorpe and Howard show that much of the increase in Medicare spending has been due to an increase in the prevalence of beneficiaries being treated for chronic conditions.

In summary, it appears that an increase in the proportion of beneficiaries being treated for several chronic conditions is increasing Medicare spending. It is plausible that high obesity rates, technological advances, and changing clinical definitions will continue to expand the treated prevalence of chronic conditions, which will raise Medicare spending in the future.

These trends in the prevalence of treatment for chronic conditions and the prevalence of obesity suggest that it could be beneficial for Medicare to encourage systems of care coordination. However, most beneficiaries are in traditional Medicare, which complicates effective use of care coordination. Encouraging systems of care coordination would require changes in traditional Medicare that we discuss later in this chapter.

Disability rates have declined, but cost pressures have not

Research indicates that the rate of disability among Medicare beneficiaries, usually measured by limitations in ADLs, has been decreasing. The average number of ADL limitations per noninstitutionalized beneficiary decreased from 0.68 in 1992 to 0.61 in 2000, and the percentage of beneficiaries with at least one ADL limitation fell from 30.4 percent to 27.8 percent over the same period. In general, a beneficiary's annual cost to the Medicare program tends to increase as the number of ADL limitations increases (Chernew et al. 2005). Therefore, it would be reasonable to expect a decline in the prevalence of disability to result in lower Medicare expenditures.

However, downward pressure on Medicare spending from lower disability rates has been at least partially offset and possibly eliminated by nondisabled beneficiaries becoming more costly in relation to disabled beneficiaries. Spending for the beneficiaries with no ADL limitations increased more than 20 percent in inflation-adjusted terms from 1992 to 2000. In contrast, it increased 10 percent for those with one or two ADLs, increased 0.6 percent for those with three or four ADLs, and decreased 10 percent for the most disabled (five or more ADLs).

Because of the faster rate of cost growth among the least disabled, lower disability rates among beneficiaries may not slow total Medicare spending. This is especially true if the treated prevalence of chronic conditions among healthy beneficiaries continues to increase. Moreover, it is not clear whether the decline in disability rates will continue when the baby-boom generation begins to enter Medicare.

In a recent study, researchers used results from a survey that interviewed a cohort of current Medicare beneficiaries when they were age 51 to 56 and later interviewed a cohort of baby boomers when they were age 51 to 56. The baby boomers reported more difficulty than the Medicare beneficiaries in activities such as walking, climbing stairs, getting up from chairs, and kneeling or crouching (Soldo et al. 2006).

Percentage of beneficiaries with ESI has declined and is likely to decline further

The percentage of Medicare beneficiaries who have ESI—retiree health coverage through a former employer—declined from 28.1 percent in 1997 to 25.5 percent in 2002 (Fronstin 2005). This decline is likely to accelerate in the future. Large employers are much more likely to offer coverage than smaller employers, but the proportion of large employers that offer health benefits to future retirees has been declining.

Among the large firms offering subsidized retiree health benefits, 8 percent decided in 2004 to drop these benefits for future retirees, and 12 percent decided to do so in 2005 (KFF/Hewitt Associates 2005, 2004). Some of the firms that terminated coverage for future retirees will offer affected employees "access only" coverage that requires the employee to pay the full premium. However, it is plausible that many employees will decide paying the full premium is "not worth it" and decline that coverage. Because employers are dropping coverage for future retirees rather than current retirees, these changes may not have a noticeable effect on trends in insurance coverage until at least a few years after the baby-boom generation starts to retire (Fronstin 2005).

Another factor that could reduce the prevalence of ESI is the accounting rules the Governmental Accounting Standards Board (GASB) has recently issued. These rules are similar to those the Financial Accounting Standards Board established in the early 1990s, which observers have credited with leading fewer businesses to provide health benefits to future retirees. The new rules from the GASB require public agencies such as state and local governments to fully disclose the future cost of health insurance benefits, something many had not been doing. When the new accounting rules begin in 2008, the full cost of future health benefits will become clear, and the magnitude of the liability will be large for many state and local governments. For example, the California Legislative Analyst's Office estimates a liability of $40 billion to $70 billion for retiree health care and related liabilities. As the magnitude of the liability becomes clear, state and local governments may reduce the generosity or availability of health benefits for future retirees (Porterfield 2006).

The decline in ESI coverage is likely to increase the use of three alternatives: medigap supplemental insurance, Medicare Advantage (MA) plans, and traditional Medicare without supplemental coverage (Medicare only). Two of these alternatives—medigap and Medicare only—are typically less comprehensive than traditional Medicare with ESI coverage, so they may make beneficiaries more aware of the costs of services. Therefore, the decline in ESI coverage can reduce beneficiaries' service use and, consequently, Medicare spending.

However, all three alternatives have features that make them generally less attractive to beneficiaries than most forms of ESI coverage. Not only is medigap generally less comprehensive than ESI, but beneficiaries with medigap typically pay more in premiums because employers often subsidize their employees' ESI premiums. MA plans often have small or no premiums and often supplement standard Medicare coverage. However, most MA enrollees are in managed care plans that generally are more restrictive regarding provider choice than traditional Medicare combined with an ESI plan.[7] Finally, going without supplemental coverage requires no additional premiums, but it exposes beneficiaries to full Medicare cost sharing, which increases their risk of becoming impoverished because of a costly illness. To the extent that more beneficiaries become impoverished, more will incur enough medical expenses to "spend down" their income so that they qualify for Medicaid.

In the absence of any changes to traditional Medicare and MA, the decline in the prevalence of ESI will likely result in increased medigap and MA enrollment. However, the members of our expert panel believe that the benefits and cost sharing in traditional Medicare could be restructured so that beneficiaries may be more satisfied with Medicare only. Also, employer coverage among the working population is becoming less comprehensive. Therefore, future beneficiaries may be more willing to accept a restructuring of traditional Medicare, because they may view a restructured Medicare program as better coverage than they had during their working years. We discuss potential changes to the benefits and cost sharing in traditional Medicare in more detail later in this chapter.

TABLE 1–1

Hispanic and non-Hispanic beneficiaries have different disease profiles

	Percent of beneficiaries	
Condition	**Hispanic**	**Non-Hispanic**
Hypertension	57.6%	59.1%
CHD	13.1	12.8
Stroke	10.7	12.3
Cancer	10.9	17.4
Diabetes	31.5	19.8
Alzheimer's disease	4.4	3.8
COPD	15.3	15.6
Limitations in three or more ADLs	19.1	12.6

Note: CHD (coronary heart disease), COPD (chronic obstructive pulmonary disease), ADL (activity of daily living). ADLs include bathing, dressing, eating, transferring from bed or chair, walking, and using a toilet. Population includes only beneficiaries in traditional Medicare.

Source: MedPAC analysis of 2003 Medicare Current Beneficiary Survey Cost and Use file.

Adult children may be less available to provide long-term care

The discussion with our expert panel revealed concerns about sources of long-term care provided in the home for Medicare beneficiaries. Historically, family members, primarily women, provided much of this care (CDC/Merck Institute of Aging and Health 2004). However, demographic changes are occurring that could diminish the extent to which adult children will be available to provide long-term care in the future:

- Baby boomers who are nearing Medicare eligibility had fewer children than their parents.
- More adult children live long distances from their parents, making it impractical for them to be sources of care.
- The prevalence of women having children after age 35 has increased. Having children at older ages makes women less available to provide care for their aged parents.
- Increased life expectancy is making it more common for the children of beneficiaries to be Medicare beneficiaries themselves. Providing care to a very old Medicare beneficiary may be physically demanding for someone who is age 65 or older.

It is not clear whether these demographic changes will decrease the availability of adult children to provide long-term care. But, to the extent their availability decreases, more beneficiaries may have to rely on sources outside the home such as assisted living facilities and nursing homes.

Increased use of these other sources to provide long-term care could present both a problem and an opportunity for Medicare. It could be a problem because Medicare does not cover long-term care provided by these other sources, so use of these other sources can be quite costly to beneficiaries to the point they become impoverished. It could present an opportunity because providers could deliver some types of care more efficiently because the typical assisted living facility has many beneficiaries living near each other. For example, house calls and programs that encourage preventive services and care management in the home can be done more efficiently in assisted living facilities. Medicare does not cover those types of services, but the panel suggested that it could change its policies to encourage their use.

Racial/ethnic composition of Medicare beneficiaries will change

The Medicare program will likely see a change in the racial and ethnic composition of its beneficiaries. Current and projected demographics suggest growth in the percentage of beneficiaries of Hispanic origin and, to a lesser extent, the percentage that are of Asian origin. Data from the Census Bureau indicate that in 2005 about 6 percent of the population age 65 or older was Hispanic and 3 percent was Asian. At the same time, 9 percent of the population age 50 to 54 was Hispanic and 4 percent was Asian. In the extended future, the Census Bureau projects that the percentage of the U.S. population that is Hispanic will increase from 14 percent in 2005 to 20 percent in 2030, and the percentage that is Asian will increase from 4.3 percent in 2005 to 6.2 percent in 2030.

Changes in the racial and ethnic profiles of beneficiaries may present issues for Medicare because of differences in language and health profiles. Language barriers can make it difficult for beneficiaries to find providers of care with whom they are comfortable, can make it difficult for beneficiaries to understand the Medicare system (especially the complicated benefits and cost-sharing systems), and can result in medical errors when the patient and provider have a difficult time understanding each other.

Also, Hispanic beneficiaries are a particular minority group that has some important differences from other beneficiaries in terms of their health profiles. Relative to other beneficiaries, Hispanics are more likely to have diabetes, less likely to have cancer, and more likely to have limitations in three or more ADLs (Table 1-1). In addition, data from the National Health and Nutrition Examination Survey indicate that 37 percent of Hispanics age 60 or older are obese, compared with 31 percent of all Americans age 60 or older (Ogden et al. 2006).

Whether we will continue to see these differences in health profiles between Hispanic and other beneficiaries may depend on why the differences exist in the first place. If they are due to underlying physical attributes, the differences are likely to persist. But, if they are due to cultural factors, they may dissipate with assimilation. Also, research indicates that racial and ethnic minorities—especially Hispanics—are more likely to lack health insurance than non-Hispanic whites (NCHS 2006), and lack of health insurance can affect an individual's health profile (Fowler-Brown et al. 2007). Therefore, if differences in health insurance coverage between non-Hispanic whites and minorities continue, differences in health profiles may continue as well.

Proportion of beneficiaries who are age 85 or older will fluctuate

The Census Bureau projects that the percentage of beneficiaries that is age 85 or older will initially increase from current levels, then decrease as the baby-boom generation becomes eligible for Medicare, and then increase at a fast rate as the baby boomers age. In 2005, 13.9 percent of the U.S. population age 65 or older was also age 85 or older. The Census Bureau projects that the proportion will increase to 15.2 percent in 2010, decrease to 13.4 percent in 2030, and then increase to 19.2 percent in 2040.

Changes in the proportion of beneficiaries age 85 or older may be important because these very elderly beneficiaries are relatively costly. In 2003, per capita Medicare expenditures for beneficiaries age 85 or older were 40 percent higher than for those of all beneficiaries (MedPAC 2006a). In addition, these beneficiaries are more likely to have a living arrangement that involves formal assistance such as a nursing home or assisted living facility. Care in these facilities can be quite costly to beneficiaries or their families because it is often not covered by Medicare (Stone 2007).[8] Finally, these beneficiaries have important differences in their health profiles compared with the overall Medicare population, including a higher probability of having Alzheimer's disease, ever having a stroke, or having limitations in three or more ADLs (Table 1-2). As the population age 85 or older makes up a larger share of the Medicare population, the conditions that are relatively prevalent in that population—particularly Alzheimer's disease and dementia—are issues that Medicare may need to address to better serve future beneficiaries.

TABLE 1–2

Beneficiaries age 85 or older are more likely to have Alzheimer's disease, a stroke, or functional limitations, 2003

	Percent of beneficiaries	
Condition	**Age 85 or older**	**All**
Hypertension	61.9%	59.0%
CHD	11.9	12.8
Stroke	17.8	12.2
Cancer	16.6	16.9
Diabetes	16.1	20.6
Alzheimer's disease	12.3	3.9
COPD	10.9	15.6
Limitations in three or more ADLs	30.9	13.1

Note: CHD (coronary heart disease), COPD (chronic obstructive pulmonary disease), ADL (activity of daily living). ADLs include bathing, dressing, eating, transferring from bed or chair, walking, and using a toilet. Population includes only beneficiaries in traditional Medicare.

Source: MedPAC analysis of 2003 Medicare Current Beneficiary Survey Cost and Use file.

Increase in formal education may affect how beneficiaries interact with providers

The amount of formal education among Medicare beneficiaries will increase in the coming decades, and our expert panel indicated this could be an important development. The proportion of beneficiaries who did not complete high school will decrease, and the proportion with an undergraduate degree or higher will increase. Data from the Census Bureau indicate that, in 2004, 27 percent of the U.S. population age 65 or older did not complete high school compared with only 14 percent of the population age 55 to 64. Also, 19 percent of the population age 65 or older has a bachelor's degree or higher compared with 28 percent of the population age 55 to 64.

More educated beneficiaries can affect the Medicare program by taking a more active role in the clinical decisions that affect their health. Some members of our expert panel suggested that more educated beneficiaries come to their encounters with providers more prepared in terms of understanding their medical options. Consequently, they may ask their providers more questions about treatment options and have a better understanding of the alternatives for treating a particular condition.

Also, more educated beneficiaries may be more willing to use—and more adept at using—information technology to improve their health care. This may include using personal health records so that they can easily share their medical history with their providers or using the Internet to become more informed consumers by accessing information on providers and health plans.

Finally, a more educated population may result in a different health care profile among Medicare beneficiaries. For example, research indicates that higher levels of education are correlated with later onset of Alzheimer's disease and with later onset of chronic conditions (Gatz et al. 2006, Smith 2005).

Patterns of income growth could affect access to care

Per capita income usually increases each year among Medicare beneficiaries, as it does among the rest of the U.S. population. Per capita income (adjusted for inflation) increased by an average of 1.3 percent per year from 1993 to 2003 among Americans age 65 or older (Census Bureau 2005). The future rate of income growth and the distribution of income can have important implications for beneficiaries' access to care. This will become an even more pressing issue if ESI continues to decline as a source of supplemental insurance, because more beneficiaries may to turn to medigap—which typically is less comprehensive than ESI and usually requires larger premium contributions from beneficiaries—or to traditional Medicare with no supplemental insurance.

Recent data on growth in beneficiaries' incomes and health care costs suggest beneficiaries may have greater difficulty paying their health care expenses in the future. For example, from 1993 to 2003, the Part B premium increased at an inflation-adjusted rate of 2.5 percent per year, which is nearly twice the annual rate of increase in per capita income among the population age 65 or older, 1.3 percent.[9] Moreover, the monthly Part B premium has increased substantially in recent years, rising from $78.50 in 2005 to $93.50 in 2007.

Another issue regarding beneficiaries' incomes is that changes in income equality could lead to increasing differences in access to care between wealthy and poor beneficiaries. Data from the Census Bureau are ambiguous about the trend in income equality. From 1993 to 1999, there was little change in income equality as indicated by the Gini coefficient, a measure of the difference between perfect income equality and the actual distribution of income. However, income became slightly less evenly distributed in 2000 and 2001 (the most recent years of available data). Among low-income beneficiaries, this has implications for participation in Part B and supplemental insurance plans. For example, research indicates that participation in health plans declines as premiums become larger in proportion to income (Hudman and O'Malley 2003).

A final issue related to beneficiaries' future income is whether members of the baby-boom generation have saved enough to help pay their future health care costs and other retirement expenses. If they are not adequately funding their retirement, there may be a large future increase in the percentage of beneficiaries who qualify for Medicaid. However, there is not consensus in the literature on this issue. Some studies argue that baby boomers are not well positioned to fund their retirement because of low retirement savings (Gist 2006, DeVaney and Chiremba 2005, Goodman and Orszag 2005). In contrast, others argue that these studies do not accurately represent the ability of members of the baby-boom generation to fund their retirements because they exclude important sources of wealth such as capital gains. If one considers total wealth accumulation, it can be argued that the financial behavior of baby boomers is similar to that of previous generations (CBO 2003).

Modifying traditional Medicare to better serve future beneficiaries

We drew heavily on ideas discussed by our expert panel and from previous MedPAC work to identify some policy changes that would allow the Medicare program to better serve future beneficiaries. The possible policy changes discussed by our expert panel or previously analyzed by MedPAC include:

- facilitate care coordination in traditional Medicare for beneficiaries who have chronic conditions or who are complex cases;
- improve incentives to use health information technology (IT) such as electronic health records;
- expand use of comparative-effectiveness analyses and make results available to help guide providers' and beneficiaries' decisions about care;
- develop public health initiatives that promote healthy lifestyles; and
- change the structure of benefits and cost sharing in traditional Medicare, such as putting a catastrophic limit on beneficiaries' cost sharing.

In the next several sections, we discuss how these changes can be implemented and how they are related to the changing profile of Medicare beneficiaries. Some of the changes are interconnected—such as facilitating care coordination and increasing use of IT—and we include this interconnectedness in our discussion. These changes are not intended to address the long-run sustainability of the Medicare program. Other changes are needed to address that issue. We discuss them in Chapter 1 of our March 2007 report to the Congress (MedPAC 2007).

Facilitating care coordination

In previous work, the Commission explored ways to expand care coordination by creating incentives for a patient's providers to share clinical information among each other, monitor the patient's status between visits, and fully communicate with the patient about how to care for his or her condition(s) (MedPAC 2006b). Patients who can benefit the most from care coordination have several chronic conditions and other complex needs. Therefore, the increase in the proportion of beneficiaries being treated for several chronic conditions indicates that facilitating care coordination could be quite beneficial to future beneficiaries.

Policymakers have shown an interest in advancing the role of care coordination in traditional Medicare. For example, the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 (MMA) authorized the Medicare Health Support (MHS) program, a pilot program designed to develop and test coordinated care initiatives. In addition, the Medicare, Medicaid, and SCHIP Benefits Improvement and Protection Act of 2000 authorized a physician group practice demonstration intended to encourage care coordination among large physician groups. These programs are still in the early stages, so results on how well they reduce costs and improve quality are not yet available.

Why would care coordination be beneficial?

Earlier in this chapter we discussed the substantial increase over the last two decades in the proportion of beneficiaries that are treated for chronic conditions. This proportion may continue to increase. In response, our expert panel suggested that greater use of care coordination in the Medicare program could improve the quality of care for beneficiaries with chronic conditions and has the potential to lower program costs.

In a previous analysis of care coordination, MedPAC interviewed experts and reviewed the literature. Our research indicated that care coordination can improve beneficiaries' care by reducing hospitalizations—including readmissions—and use of emergency departments by improving adherence to evidence-based guidelines. Moreover, self-management programs for older adults have been found to improve care for hypertension and diabetes, and other interventions have been effective for coronary artery disease, diabetes, heart failure, and asthma (MedPAC 2006b).

Because there is some evidence that care coordination reduces hospitalizations, it is plausible that it could reduce upward pressure on Medicare spending and beneficiaries' financial liability. However, care coordination also has the potential to increase Medicare costs unless the programs target the patients who would benefit the most and avoid those who would benefit little. Technological advancements have made it possible to identify conditions at very early stages of the disease. In some of these cases, the patient may be healthy enough that care coordination may provide little benefit. Using care coordination in those cases would do little more than increase program spending and, potentially, the patient's cost sharing.

Obstacles to care coordination in traditional Medicare

Our expert panel said that the structure of the fee-for-service payment system in traditional Medicare is an obstacle to effective care coordination. Traditional Medicare pays individual providers based on what they do in a visit or during an inpatient stay. Payment does not depend on how well a provider coordinates the care

provided in a visit or inpatient stay with the care the patient receives from other providers or in other settings. Moreover, many of the services required by individuals with chronic conditions or other complex needs, such as ongoing monitoring and education for self-management, are not performed within the typical face-to-face visit.

Early results from the MHS program suggest that successfully implementing care coordination into traditional Medicare may not be easy. Eight organizations contracted to participate in the MHS. After the first year, one dropped out of the program and another announced that it had missed its targets for cost reductions (Enrado 2006).

Keys to facilitating effective coordinated care in traditional Medicare

Fundamental changes to the structure of traditional Medicare are necessary to facilitate care coordination. These changes should include changes to the system of care delivery, the benefit system, and the systems for reimbursing providers.

In MedPAC's previous work on care coordination, we discussed two models of care coordination that are currently being used in pilot or demonstration projects. We called one the provider group and the other the care management organization plus physician office. The two models are quite similar, with one key difference: the entity accountable for coordinating a patient's care. In the provider group model, the accountable entity is a large provider group. In the other model, the accountable entity is a care management organization that works with a beneficiary's providers. Our work on this issue revealed five factors that should be present for either of these models to be effective in traditional Medicare (MedPAC 2006a):

- Care managers, usually nurses who act as the point person and oversee a patient's care, must be available and have incentives to serve Medicare beneficiaries. The care manager develops a plan for tracking the patient's status, helps the patient understand how to manage his or her condition, teaches the patient how to effectively navigate the health care system, and communicates the patient's needs to his or her providers.
- Information systems should be available that allow care coordination programs to identify patients who would benefit most. This would hold down Medicare spending by avoiding care coordination for patients who would receive little benefit. In addition, providers could use information systems to track patients' health status over time.
- The patient's physician should be a part of the care coordination team. To encourage physicians' participation, they should receive fees or a share of cost savings for the time they spend interacting with the care coordination team.
- Beneficiaries should be engaged in their care management, especially in regard to adhering to their care plan and properly monitoring their condition.
- The responsible organizations and the physicians interacting with the programs should be held accountable. The organizations responsible for a patient's care should be accountable for cost savings and quality, which can be promoted through a payment system that ties payment to performance. Quality measures must be developed to indicate whether an organization is using the appropriate treatment methods for specific conditions, such as annual eye and foot exams for diabetics. Quality measures can also be used to hold physicians accountable through pay-for-performance programs.

Improving incentives to use health information technology

IT in the health care sector does not have a precise definition. It is perhaps best identified by how it is used: Providers use electronic mechanisms to collect, store, retrieve, and disseminate information. Health IT can be in many forms, but they can all be grouped into two broad categories, financial and clinical. In this section, we focus on clinical IT, which includes:

- ***electronic health records (EHRs)***, which typically have a record of a patient's medical history that providers can access to help guide clinical decisions;
- ***computerized provider order entry (CPOE)***, which allows physicians and other providers to electronically order medications, lab tests, procedures, radiology studies, discharges, transfers, and referrals; and
- ***picture archiving and communications systems***, which collect and store patients' diagnostic and radiologic images in electronic files and allow for dissemination to health care sites when needed.

Benefits of health information technology

MedPAC has previously reported on IT in the Medicare program, citing the potential to improve quality and efficiency as the primary benefits (MedPAC 2005, 2004). For example, IT could improve quality through reduced medication errors and adverse drug events in hospitals. In addition, IT could be used to efficiently collect quality data on providers. Providers could use these quality data to evaluate their performance, and payers and consumers could use the data to evaluate the quality of the care they receive and purchase. IT could improve efficiency by bringing cohesion to the fragmented delivery system of traditional Medicare. When treating a patient, providers often have to gather and evaluate data from a number of sources. These data are usually obtained via paper documents, telephone conversations, or fax machines. IT, especially EHRs, can streamline this process by putting all of a patient's information in a single electronic file.

The improved efficiency and quality would be important to all beneficiaries, but IT can be especially helpful to those with chronic conditions. These beneficiaries often have several providers and many encounters with the health care system, which can make care coordination difficult. IT could facilitate coordination of their care by collecting their health care history in a single file that all their providers could access.

The Congress has shown interest in expanding the role of IT in the Medicare program. The MMA established the Medicare Care Management Performance Demonstration. The purpose of this three-year demonstration is to promote the adoption and use of health IT to improve the quality of care for chronically ill beneficiaries. Participating physicians who meet or exceed performance standards established by CMS in clinical delivery systems and patient outcomes receive bonus payments.

Although use of IT is usually discussed from the perspective of providers, greater use of IT among beneficiaries also may be advantageous. The amount of formal education among beneficiaries is expected to increase, which may result in future beneficiaries being more comfortable using IT. This could present an opportunity for greater use of personal health records (PHRs) among beneficiaries. As a concept, PHRs are files individuals maintain that contain information about their medical histories such as allergies, adverse drug reactions, illnesses, hospitalizations, surgeries, lab results, and family history.

PHRs allow patients to create a complete list of their medical history that they can easily reference and make it easier for them to share their medical history with their providers. This may reduce errors and eliminate duplicate procedures and processes. Because of these potential benefits of PHRs and because beneficiaries are becoming more comfortable with information technology, it may be advantageous for Medicare to encourage wider use of PHRs.

Obstacles to adopting health information technology

Use of IT by health care providers has been growing but remains low. A recent study estimates that in 2005, 5 percent of hospitals were using CPOEs and 24 percent of physicians were using EHRs (Jha et al. 2006). Many factors appear to contribute to the slow uptake of IT. Providers, particularly physicians, cite the cost of IT and the lack of a clear return on investment. Another barrier may be the difficulty of successful implementation. Many providers may not know enough about IT to effectively navigate the market, implement choices they make, and maintain the system. In addition, introducing IT into the workplace may require changes to workplace procedures that clinicians and office staff could resist.

Also, the structure of health care payment systems may result in the purchasers of IT sometimes not receiving the full financial reward of their investments. For example, use of EHRs may result in fewer medical errors, which may lead to the need for fewer services. Payers would benefit because they would have to reimburse physicians for fewer services, but the physicians who invest in the EHRs may end up with lower revenues.

A final barrier may be the lack of a standard system for transmitting data and describing the content of the data. This limits providers' ability to share and use information across systems. For example, a physician's office may find that information from an outside source, such as a laboratory, may not be compatible with its system. Because a patient can receive care in a number of settings, providers may be hesitant to invest in systems that cannot be linked to other parts of the health care system.

Increasing the presence of health information technology in Medicare

The Commission considered three methods for advancing the use of IT in the Medicare program: providing grants

and loans, requiring use, and establishing quality measures that are linked to IT (MedPAC 2005).

The Commission argued against using grants and loans because:

- Providers may need to commit to changes and be willing to revise work processes to successfully implement IT. Effectively targeting grants and loans to providers who are willing to make the necessary changes could be difficult.
- Grants and loans should be funneled to providers most in need of assistance. But it may be difficult to identify those most in need.

In regard to requiring providers to implement and use IT, the Commission determined that this approach could be overly burdensome to providers.

The Commission determined that the best way to increase use of IT would be to incorporate into pay-for-performance initiatives the use of quality measures that require the use of IT, are facilitated by IT, or are likely to improve if providers use IT. The Commission made this decision for these reasons:

- Under pay-for-performance initiatives, providers would need to collect and report information on performance measures, and IT systems may make this easier.
- Use of IT can be directly measured, and these IT measures could be part of a larger set of quality measures.
- Tying payments to quality could increase the financial benefit of investing in IT and sustaining its use vis-à-vis other investment options.
- Medicare should pay providers for using IT, not just for purchasing it.

Expanding use of comparative-effectiveness analyses

Comparative effectiveness is the process of comparing the relative contribution of services to improvements in the health of patients. It can help providers and patients make well-informed decisions about alternatives for diagnosing and treating a condition. A complete discussion of the benefits of comparative effectiveness and how it can be produced so that public payers, private payers, providers, and patients can use it appears in Chapter 2 of this report.

Promoting healthy lifestyles

Our expert panel discussed the importance of promoting healthy lifestyles. An example of how healthy lifestyles could be promoted is through public health campaigns—not necessarily operated through Medicare—aimed at lowering obesity rates by improving diet and exercise. To the extent that such a campaign is successful, lower obesity rates could reduce the prevalence of costly chronic conditions such as diabetes and hypertension.

Some panelists emphasized that it would be important to reach beyond the Medicare program and promote healthy lifestyles among the population that is nearing Medicare eligibility. Their rationale for including future beneficiaries in lifestyle promotions is that more beneficiaries would have healthy lifestyles when they become eligible for Medicare. However, the beneficial effects of promoting healthy lifestyles may be limited. For example, the success of promotions depends on the willingness of people to make behavioral changes. Moreover, some people may have genetic predispositions to being overweight that lifestyle changes cannot overcome.

Changing benefits and cost sharing

Medicare has long been credited with improving beneficiaries' access to care (MedPAC 2006a). However, traditional Medicare—the choice of more than 80 percent of beneficiaries—is based on a model of health insurance design from the 1960s. Health insurance in the private sector has changed since then, so Medicare has a system of benefits and cost sharing that is somewhat different from most private-sector health plans. The structure of the benefits and cost sharing creates incentives that could dissuade providers and beneficiaries from choosing the most clinically effective options. Moreover, the benefit structure of traditional Medicare does not limit beneficiaries' exposure to financial loss, and, because of its coverage limitations, beneficiaries often rely on other sources to supplement Medicare, which adds inefficiency to the health care system by encouraging excessive and inappropriate use of services.

In this section, we review the current structure of benefits and cost sharing in the Medicare program and then review changes discussed by our expert panel or by MedPAC in a previous report so that Medicare can better serve beneficiaries (MedPAC 2002). In the future, we intend to

estimate the potential effects of changing the benefits and cost sharing on program spending as well as beneficiaries' cost-sharing liabilities and service use.

The benefits and cost sharing in traditional Medicare have limitations

The benefit package in traditional Medicare has three parts:

- Part A primarily covers acute care services provided in hospital inpatient units (including drugs), skilled nursing facilities, and hospices. It also covers some home health services. Most beneficiaries are entitled to Part A and do not pay a premium to participate.
- Part B covers acute care services provided by physicians, hospital outpatient departments, and ambulatory surgical centers. It also covers home health services not covered under Part A, diagnostic laboratory tests, outpatient mental health services, durable medical equipment, and some preventive services. In general, drugs furnished as part of Part B services are covered under Part B. Beneficiaries pay a subsidized premium to participate in Part B, although low-income beneficiaries can have their premium paid through their state's Medicaid program.
- Part D covers outpatient prescription drugs that are not covered under Part B. Beneficiaries pay a subsidized premium to participate in Part D, but low-income beneficiaries can have some or all of the premium subsidized further.

The benefit package in traditional Medicare has been credited with helping elderly Americans access needed care. However, traditional Medicare, which accounts for most Medicare enrollment, has some important limitations including:

- The structure of the cost sharing may add inefficiencies to the health care system.
- The program does not limit beneficiaries' liability for cost sharing on covered services, putting beneficiaries at risk for catastrophic losses.

Traditional Medicare may not promote efficient health care choices The benefits and cost sharing in traditional Medicare are a patchwork system (Table 1-3, p. 20). The cost-sharing design affects the costs beneficiaries face when they use health care services, which may affect their decisions—or those of their providers—about whether to seek care and what mix of services to use. Furthermore, some features of Medicare's cost sharing may lead providers and beneficiaries to make inefficient choices.

For example, hospital inpatient care typically depends on random events that are beyond beneficiaries' control. By contrast, some—but not all—of the ambulatory care covered in Part B is more discretionary. Insurance theory suggests that nondiscretionary care should be covered more fully than care that is within the insured person's control. The logic behind this theory is to avoid financial penalties for events that are beyond beneficiaries' control, and need for inpatient care is typically beyond their control. In other words, individuals have no choice but to receive inpatient care, so do not punish them for getting sick.

In contrast, greater cost sharing in many instances is appropriate for ambulatory care because beneficiaries' use of it is often discretionary. In these cases, cost sharing gives patients an incentive to consider the benefit of the care relative to the cost. When faced with cost sharing, beneficiaries will not use care that has little benefit to them. This implies that inpatient care in most instances should have less cost sharing than ambulatory care. But, in one respect, the opposite is true in traditional Medicare: The inpatient deductible, $992, is much higher than the Part B deductible, $131. However, the structure of cost sharing for ambulatory care must be considered carefully so that it does not give beneficiaries incentive to forgo beneficial services.

Traditional Medicare does not limit financial risk A limitation in the benefit structure of traditional Medicare cited by our expert panel is that it does not limit beneficiaries' financial losses if they experience a costly illness. Private health insurance plans typically become more generous as a beneficiary's costs increase. For example, insurance in the private sector typically has a deductible and coinsurance or copayments at relatively low cost levels and a stop loss that limits beneficiaries' liability if they have high costs. Stop-loss provisions are typically present even in the high-deductible plans associated with health savings accounts.

In contrast to most private-sector plans, traditional Medicare lacks a stop loss. Consequently, beneficiaries who are in traditional Medicare and lack supplemental coverage have no limit on the financial liability they can incur from covered medical expenses. The high total costs that some beneficiaries incur illustrate the potential risk

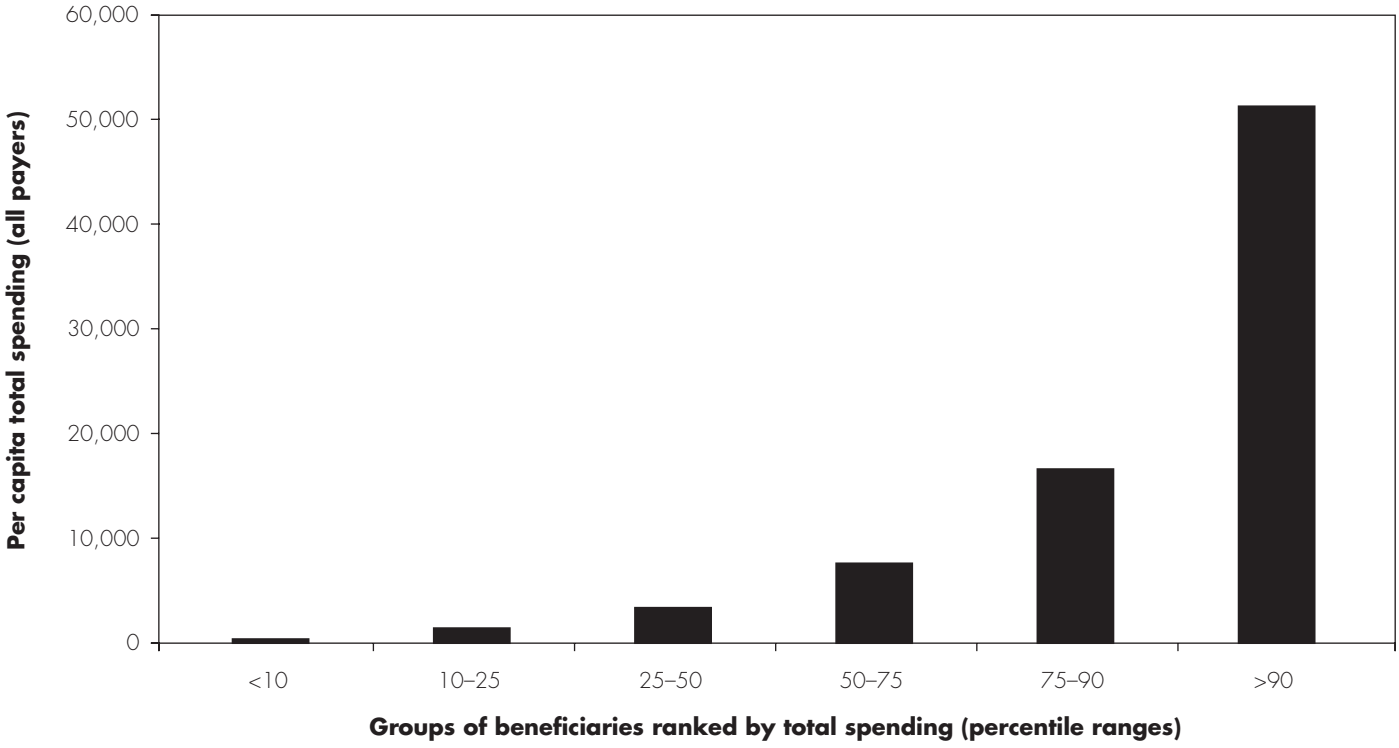
TABLE 1–3

Medicare benefits and cost-sharing requirements, 2007

Services	Beneficiary cost sharing
Part A	
Inpatient hospital (up to 90 days per benefit period plus 60 lifetime reserve days)	$992 for the first stay in a benefit period Days 1–60: Fully covered Days 61–90: $248 per day 60 lifetime reserve days: $496 per day
Skilled nursing facility (up to 100 days per benefit period)	Days 1–20: Fully covered Days 21–100: $124 per day
Hospice care for terminally ill beneficiaries	Nominal coinsurance for drugs and respite care
Part B	
Premium	$93.50–$161.40, per month, depending on income
Deductible	$131 annually
Physician and other medical services (including supplies, durable medical equipment, and physical and speech therapy)	20 percent of Medicare-approved amount
Outpatient hospital care	Greater of 20 percent of Medicare-approved amount or 20 percent of 1996 national median charge updated to 2000
Ambulatory surgical services	20 percent of Medicare-approved amount
Laboratory services	None
Outpatient mental health services	50 percent of Medicare-approved amount
Both Part A and Part B	
Home health care for homebound beneficiaries needing skilled care	None
Part D	
Premium	Depends on plan choice
Deductible	$265*
Coinsurance	20 percent on costs from $265 to $2,400, 100 percent from $2,400 to $3,850, and nominal cost sharing above $3,850*

Note: The Part B premium increases from $93.50 to $161.40 per month based on a sliding scale for individuals with incomes above $80,000 and below $200,000 and for couples with incomes above $160,000 and below $400,000.
*Standard benefit plans may offer actuarially equivalent or enhanced benefits.

FIGURE 1–3 **Ten percent of beneficiaries have more than $50,000 of annual health care spending**



Note: Analysis includes fee-for-service beneficiaries living in the community.

Source: MedPAC analysis of 2003 Medicare Current Beneficiary Survey Cost and Use file.

of catastrophic loss (Figure 1-3). Moreover, MedPAC has shown that the lack of a stop loss can limit beneficiaries' options for where they can receive care. For example, MedPAC found that beneficiaries' cost sharing for cancer drugs has been rising. For those who lack supplemental coverage, the cost-sharing liabilities for these drugs can be large. When beneficiaries cannot pay the cost sharing, providers respond by changing their delivery of care. For example, oncology practices in some areas of the country have stopped treating patients without supplemental insurance in their offices and send them to hospital outpatient departments or safety-net facilities (MedPAC 2006c).

In response partly to the risk of large financial losses in traditional Medicare, nearly 90 percent of beneficiaries in traditional Medicare have supplemental coverage beyond the standard Medicare benefits.[10] Some of the changes in the profile of beneficiaries' characteristics discussed above may increase their vulnerability to being impoverished from health care expenses. This is especially true if the decline in the proportion of beneficiaries with ESI continues or if beneficiaries' incomes continue to increase more slowly than the cost of health care services and premiums. To the extent that beneficiaries' risk of catastrophic loss increases, the lack of a stop loss becomes a more pressing issue.

Possible changes to Medicare benefits and cost sharing

From the discussion with our expert panel and review of previous MedPAC analyses, we have identified some possible changes to the benefits and cost sharing in traditional Medicare so that the program would better serve beneficiaries in the future. These changes include:

- Create a single deductible for Part A and Part B. Beyond the deductible, it may be reasonable to have no additional cost sharing for hospital inpatient care and require some cost sharing for most other services. In addition:
  - Most beneficiaries in traditional Medicare have supplemental coverage, which can largely reduce the effectiveness of cost sharing in deterring excessive spending. Limiting the extent to which supplemental insurance is allowed to cover cost sharing could reduce program spending. However, the limitations should not be so severe that beneficiaries face excessive risk of catastrophic loss.
  - Careful thought should be given to the structure of the cost sharing because even a small amount can have a strong effect on beneficiaries' use of some services and runs the risk of discouraging use of beneficial services. For example, research suggests that use of physician office visits and adherence to drug regimens can be very sensitive to cost sharing (Chandra et al. 2007, Goldman et al. 2006). In addition, cost sharing can have an especially strong effect on low-income beneficiaries, who may forgo beneficial services if they view cost sharing as too great a financial burden (Hudman and O'Malley 2003).
  - Cost sharing in Part B should encourage preventive care and discourage services of marginal value.
- Include a limit (stop loss) on beneficiaries' liability for cost sharing on covered services.
  - A stop loss would reduce beneficiaries' risk of incurring health care liabilities that could impoverish them. This would improve their financial circumstances, especially if their incomes continue to rise slowly relative to health care costs and if ESI continues to wane as a source of supplemental insurance.
  - Also, a stop loss may convince some beneficiaries to discontinue their supplemental coverage because they may begin to view the restructured Medicare benefit design as adequate. Fewer beneficiaries with supplemental coverage would make the health care system more efficient because many supplemental plans cover most or all of a beneficiary's cost sharing, which gives them an incentive to use services that have little or no benefit. In addition, it would reduce the administrative expenses providers and insurers incur in processing claims and managing multiple sources of coverage.

Summary and next steps

The general profile of characteristics among Medicare beneficiaries is likely to change in important ways in the coming decades. These changes include:

- a greater proportion with several chronic conditions,
- a smaller proportion with disabilities,
- fewer with ESI,
- adult children being less available to provide long-term care in the home,
- a different racial and ethnic mix,
- a changing proportion age 85 or older,
- more years of formal education, and
- changes in per capita income and the distribution of income.

To the extent these changes occur, they will affect beneficiaries' needs and preferences for health care as well as costs to the Medicare program.

In this chapter, we discussed details of the changing characteristics and offered some possible changes to Medicare so that the program could better serve future beneficiaries. The changes we presented include:

- Facilitate care coordination, which can be especially beneficial to those who have several chronic conditions.
- Encourage greater use of IT, which can improve quality, efficiency, and care coordination.
- Expand use of comparative-effectiveness analyses, which can help beneficiaries and providers make informed decisions about health care choices.

- Develop and use public health initiatives that promote healthy lifestyles, which could help reduce cost pressures on Medicare.
- Change the structure of benefits and cost sharing in traditional Medicare, which can help improve efficiency in the health care sector and reduce beneficiaries' risk of catastrophic loss.

The analysis we presented in this chapter is intended to be the first part of a longer term analysis. In the coming year, the Commission plans to revisit ideas for restructuring Medicare benefits and what we have learned about the changing characteristics of future Medicare beneficiaries. We also will be looking in greater depth at how Medicare can promote changes to the health care delivery system to provide the care coordination that will address the changing needs of Medicare beneficiaries. ■

Endnotes

1 A chronic condition is a disease that cannot be cured or is infrequently cured. Examples of chronic conditions include diabetes, hypertension, and coronary heart disease.

2 BMI is calculated as weight in kilograms divided by height in meters squared.

3 The complete definition of metabolic syndrome is having three or more of the following conditions: abdominal obesity, defined as waist circumference of more than 102 centimeters (cm) in men and 88 cm in women; high triglyceride levels (more than 150 milligrams per deciliter (mg/dL)); low high-density lipoprotein (below 40 mg/dL in men and below 50 mg/dL in women); high blood pressure (above 130/85 millimeters); and high fasting glucose (above 100 mg/dL) (Ford et al. 2002).

4 Hyperlipidemia is the presence of elevated or abnormal levels of lipids or lipoproteins in the blood.

5 The data sources from AHRQ are the 1987 National Medical Expenditure Survey and the 2002 Medical Expenditure Panel Survey.

6 A person of recommended weight has a BMI of 20 to 24.9.

7 Private fee-for-service plans are a type of MA plan that has little or no restriction on which providers beneficiaries can see. See Chapter 3 of this report for a description of the enrollment trends in the MA program.

8 Beneficiaries can receive coverage for care in facilities through Medicaid. However, they must meet income and asset criteria to be eligible for Medicaid coverage. Often, beneficiaries have to incur enough medical expenses to "spend down" their income and assets to levels that make them eligible for Medicaid.

9 The Part B premium increased from $36.60 in 1993 to $58.70 in 2003 in nominal terms and from $36.60 in 1993 to $46.82 in 2003 in inflation-adjusted terms. Mean household income among Americans age 65 or older increased from $25,965 in 1993 to $36,893 in 2003 in nominal terms and from $25,965 in 1993 to $29,429 in inflation-adjusted terms.

10 Another motivation for obtaining supplemental insurance is a preference for predictable spending.

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CHAPTER 2

Producing comparative-effectiveness information

RECOMMENDATION

The Congress should charge an independent entity to sponsor credible research on comparative effectiveness of health care services and disseminate this information to patients, providers, and public and private payers.

COMMISSIONER VOTES: YES 15 • NO 0 • NOT VOTING 0 • ABSENT 2

CHAPTER 2

Producing comparative-effectiveness information

Chapter summary

For the past several decades, the United States has spent an expanding share of its resources on health care. In 1960, national health expenditures made up about 5 percent of gross domestic product. That share had grown to 16 percent by 2004, and CMS projects that it will make up 20 percent by 2015 (Borger et al. 2006). Even though substantial resources are devoted to health care in the U.S., the value of services furnished to patients is often unknown.

There is not enough credible, empirically based information for health care providers and patients to make informed decisions about alternative services for diagnosing and treating most common clinical conditions. Many new services disseminate quickly into routine medical care with little or no basis for knowing whether they outperform existing treatments, and to what extent.

Comparative-effectiveness analysis compares the relative value of drugs, devices, diagnostic and surgical procedures, diagnostic tests, and medical services. By value, we mean the clinical effectiveness

In this chapter

of a service compared with its alternatives. Comparative-effectiveness information has the potential to promote care of higher value and quality in the public and private sectors.

Comparative information would help patients and providers become better informed and make value-based decisions. Most public payers—including Medicare—and private payers do not encourage patients or providers to consider the value of a service when making health care decisions. Information about the value of alternative health strategies might improve quality and reduce variation in practice styles. Use of comparative-effectiveness research might improve health but will not necessarily reduce spending. Many effective treatments are underused, and effectiveness research might encourage their greater and more appropriate use (McGlynn et al. 2003). On the other hand, comparative-effectiveness research might reduce spending if, among a set of clinically comparable services, less costly services replace more costly services.

Although several public agencies conduct comparative-effectiveness research, it is not their main focus. For private-sector groups, conducting this type of research is costly. Because it is a public good, the benefits of comparative effectiveness—when it is publicly available—accrue to all users, not just to those who pay for it. Researchers have shown that some industry-sponsored studies are biased. In addition, some health plans have expressed reluctance to use comparative-effectiveness information for fear of litigation.

Consequently, the Commission concludes that the Congress should establish an independent entity whose sole mission is to produce and provide information about the comparative effectiveness of health care services.

Recommendation

The Congress should charge an independent entity to sponsor credible research on comparative effectiveness of health care services and disseminate this information to patients, providers, and public and private payers.

COMMISSIONER VOTES:
YES 15 • NO 0 • NOT VOTING 0 • ABSENT 2

Since the information can benefit all users and is a public good, a federal role is necessary to produce the information and make it publicly available.

Such an entity would:

- be independent and have a secure and sufficient source of funding;
- produce objective information and operate under a transparent process;
- seek input on agenda items from patients, providers, and payers;
- re-examine comparative effectiveness of interventions over time;
- disseminate information to providers, patients, and public and private payers; and
- have no role in making or recommending coverage or payment decisions for payers.

There are different ways to carry out a federal role. The Commission prefers a public–private option, to reflect that all payers and patients will gain from comparative-effectiveness information. Funding could come from some public and some private sources or from all public sources. An independent board of experts should oversee the development of a research agenda and ensure that the research is objective and methodologically rigorous.

The entity's primary mission is to sponsor studies that compare the clinical effectiveness of a service with its alternatives. While cost effectiveness is not a primary mission, the Commission does not rule it out. In the simplest case, cost may be an important factor to consider for two services that are equally effective in a given population. But even when clinical effectiveness differs, it may be important for end users to be aware of costs. We emphasize that the entity would not have a role in how public and private payers apply this information—that is, coverage or payment decisions. Instead, it would produce and disseminate comparative-effectiveness information to purchasers, providers, and patients who would then decide how to use it.

The Commission envisions that the entity would contract out most of the research to outside groups, including existing governmental agencies, with

experience conducting comparative-effectiveness studies. Thus, a federal role need not result in a large expansion of the government. To ensure that its research is credible, the entity would collaborate with other researchers to help establish high standards for the methods used to conduct comparative-effectiveness studies.

Widespread use of the information will depend on the credibility of the entity conducting the studies. Operating under a transparent process and providing a public forum for stakeholders to critique ongoing work will enhance the credibility of the research. Because comparative effectiveness is a public good, the entity's agenda should reflect priorities of public and private groups and encompass all patient groups.

Disseminating the research findings to a wide audience will be an important function of the entity; it should not be treated as a minor activity to be undertaken after studies are completed. The entity should communicate its findings to reach audiences with different levels of sophistication. ■

The United States needs more credible comparative information sponsored by an independent entity

Comparative-effectiveness information would help patients and health care providers become informed and make value-based decisions (see text box, p. 34, for more information on comparative-effectiveness analysis). It might also help CMS and other public and private payers formulate better payment policies. The United States does not have an independent entity whose sole mission is to sponsor and disseminate information about services' comparative effectiveness. Although manufacturers do sponsor research on comparative effectiveness, it does not always focus on populations with multiple comorbidities and older and disabled populations. In addition, researchers have shown that some industry-sponsored studies are biased.

More comparative information could help support better decision making by providers and beneficiaries

Changes in technology are a major driver of health care spending, but public and private payers often incur high spending for services whose effectiveness is unknown. Providers and payers frequently do not know the extent to which the increased use of new, costly services improves patients' outcomes. Providers lack enough scientific evidence to determine the likelihood of patients having improved outcomes with a certain course of treatment. In addition, scant scientific evidence is available to help identify which types of patients are most likely to benefit from a service.

Many new services disseminate quickly into routine medical care without providers knowing whether they outperform existing treatments, and to what extent. For example, a recent study showed that inexpensive diuretics may control hypertension as effectively as expensive calcium-channel blockers (ALLHAT 2002). In other cases, providers do not discover side effects of a service until it has diffused into medical practice.[1]

The regulatory process of the Food and Drug Administration (FDA) for approving new technologies does not in general generate evidence that shows a service's effectiveness relative to its alternatives.[2] Most manufacturers conduct studies (referred to as phase III studies) that show the efficacy and safety of their drug or biologic relative to a placebo (inactive) agent. The FDA requires information about a drug's or biologic's effectiveness and safety relative to its alternatives only if the manufacturer wants to claim that its product is superior. For devices, the FDA requires safety and effectiveness information only for high-risk devices, such as stents, that pose a significant risk of illness or injury to patients.[3] Finally, for new diagnostic and surgical procedures, less clinical information is available because the FDA does not review their safety and effectiveness.

Even for products approved by the FDA, little information is available about their long-term safety and effectiveness. Phase III clinical studies do not typically provide this information for drugs or devices because manufacturers usually conduct the studies over a relatively short time with a relatively small number of patients. Thus, long-term side effects may go undetected during phase III studies (Hunter 2006). In addition, the safety and efficacy of products in patients with conditions or comorbidities not included in phase III studies are unknown. Some clinical studies may be limited, excluding older patients and those with multiple illnesses. In addition, after the FDA approves a product, providers can prescribe it off-label—that is, to patients with conditions not evaluated in a clinical trial.

The FDA has limited authority to require that manufacturers conduct postmarketing surveillance studies (GAO 2006). Postmarketing studies can either be required of or agreed to by a manufacturer after the FDA has approved its product for marketing.[4] The FDA may request that a manufacturer conduct postmarketing studies to provide additional information on how a drug works in expanded patient populations or to identify safety issues that occur rarely or in special patient populations. The agency can require that manufacturers conduct postmarketing studies only for drugs that: (1) the FDA approved under the accelerated approval program because they are used to treat life-threatening illnesses, (2) providers prescribe to children, or (3) the FDA approved without information about their efficacy in humans.

Once the FDA approves a drug, few manufacturers initiate further studies that examine its: (1) long-term safety, (2) effectiveness in patients not included in the approval clinical trials, or (3) effectiveness relative to its alternatives. Manufacturers spent 0.3 percent of sales on postmarketing studies in 2003 compared with 15.6 percent of sales on research and development, which includes premarketing studies (Ridley et al. 2006). Between 2002 and 2006, the proportion of postmarketing commitments—studies that manufacturers are required to conduct or have agreed to conduct—that were on

Defining comparative effectiveness

Comparative-effectiveness analysis evaluates the relative effectiveness, safety, and cost of medical services, drugs, devices, therapies, and procedures used to treat the same condition (AcademyHealth 2005). Effectiveness implies the "real-world" performance of clinically relevant alternatives provided to patients with diverse clinical characteristics in a wide variety of practice settings.

The outcomes that researchers assess in comparative-effectiveness studies may include:

- clinical outcomes, including traditional clinical endpoints, such as mortality and major morbidity;
- functional endpoints, such as quality of life, symptom severity, and patient satisfaction; and
- economic outcomes, including the cost of health care services and cost effectiveness.

Some comparative studies only contrast the clinical and functional outcomes of alternative treatments while others also compare cost and assess cost effectiveness. An example of a comparative-effectiveness study is the National Emphysema Treatment Trial in which the National Institutes of Health compared lung-volume-reduction surgery to medical therapy for patients with severe emphysema (National Emphysema Treatment Trial Research Group 2003). This study concluded that surgery increases the chance of improved exercise capacity but does not confer a survival advantage over medical therapy. It also concluded that the cost effectiveness for surgery compared with medical therapy was relatively unfavorable because of the high costs of the surgical procedure and the hospital stays during the first few months after surgery.

Researchers use two basic approaches to conduct comparative-effectiveness studies. In trial-based studies, they conduct a clinical trial and collect information on a wide variety of patient outcomes. Researchers often call these studies "practical clinical trials." Alternatively, in review-based studies, researchers combine evidence from existing trials, studies published in the scientific literature, and other secondary data sources such as administrative claims data to answer the research questions. Practical clinical trials are more costly to conduct than review-based studies.

Researchers can use multiple approaches to assess the comparative effectiveness of a given service. For example, they might first analyze existing published clinical evidence and conduct studies using secondary data sources. Conducting head-to-head trials will be necessary for services that lack sufficient evidence in the literature and with outcomes that secondary data sources do not collect, such as tumor growth in cancer patients. To evaluate the effectiveness of services in different patient populations and to assess changes in the effectiveness of services over time, researchers may need to conduct more than one head-to-head trial.

Cost-effectiveness analysis provides information about a service's value relative to its alternatives. It synthesizes functional, clinical, and economic data to allow users to trace all the consequences of a particular decision. Researchers assess cost effectiveness by quantifying the incremental net health benefits (e.g., reduced mortality) and economic costs of alternative services. They calculate a cost-effectiveness ratio by dividing the incremental costs by the incremental benefits. Researchers refer to services with a smaller cost-effectiveness ratio as being more cost effective than those with a larger ratio. ■

schedule ranged from 15 percent to 21 percent of all commitments for drugs and 24 percent to 46 percent of all commitments for biologics (FDA 2007c, 2006, 2005, 2004, 2003). During this same time period, the proportion of postmarketing commitments that manufacturers had not yet started (pending) ranged from 61 percent to 71 percent of all commitments for drugs and 24 percent to 37 percent of all commitments for biologics (FDA 2007c, 2006, 2005, 2004, 2003).[5] The Government Accountability Office found that the FDA lacked clear and effective processes

for making decisions about, and providing management oversight of, postmarket drug safety issues (GAO 2006).

Patients have some information about differences among health care providers and the prices they charge but often they have little or no information about how well different treatments work. CMS and some private payers post information about the quality of care certain providers furnish but do not disseminate information to consumers on the effectiveness of alternative medical services. Often patients cannot make informed decisions rationally because the information on which to base the decision does not exist or is not understandable. Often, they rely on their health provider to decide for them (Slutsky 2007).

As copayments and deductibles rise, patients may become more value conscious and their demand for comparative information may increase. For example, enrollees in consumer-directed health plans are more likely to identify and consider treatment alternatives and ask providers about cost than traditionally insured patients (McKinsey & Company 2005). Fronstin and Collins reported that patients in either high-deductible or consumer-driven health plans are more likely to use information about quality and cost than patients in comprehensive health plans (Fronstin and Collins 2005). Nonetheless, little information is available to patients about the effectiveness of treatment alternatives. Even when it is available, the lack of standardization in measurement and reporting across treatments and providers poses a challenge to patients trying to use the information (Buntin et al. 2006).

Comparative information could help CMS make better policies

In making national coverage determinations, CMS considers the clinical effectiveness of a service, but the clinical evidence is often for a younger population rather than for the elderly and disabled. As mentioned earlier, phase III clinical trials that manufacturers conduct to obtain FDA approval do not always demonstrate long-term safety and effectiveness in all patient populations who will eventually receive the service. In addition, evidence about the effectiveness of the service compared with its alternatives is infrequently available. CMS rarely uses clinical information to set payments.

Some researchers contend that CMS needs to base its payment decisions on more complete clinical evidence when dealing with costly new services (Redberg 2007). Investment in building a process for conducting comparative-effectiveness studies could lead to future use of this information in Medicare's payment policies. Researchers have suggested several ways for CMS to use comparative-effectiveness information in the payment process including:

- Creating a tiered payment structure that pays providers more for services that show more value to the program;
- Creating a tiered cost-sharing structure that costs patients less for services that show more value to the program;
- Using the cost-effectiveness ratio to inform the payment level;
- Not paying the additional cost of a more expensive service if evidence shows that it is clinically comparable to its alternatives; and
- Requiring manufacturers to enter into a risk-sharing agreement, which links actual beneficiary outcomes to the payment of a service based on its comparative effectiveness. Manufacturers might rebate the Medicare program for services that do not meet expectations for their effectiveness (Chernew et al. 2007, MedPAC 2006).

Medicare might use comparative-effectiveness information to prioritize pay-for-performance measures, target screening programs, or prioritize disease management initiatives. A pay-for-performance program could link providers' bonuses to the provision of services that are clinically effective and of high value. Medicare could consider comparative effectiveness when choosing measures for pay-for-performance programs; there are usually more potential measures than are practical to use.

Finally, Medicare's national coverage process does consider a service's clinical effectiveness but not its cost effectiveness or value. The coverage process may not be the area to begin to use cost-effectiveness information. Stakeholders raised many concerns when CMS tried to use cost-effectiveness information in the national coverage process (MedPAC 2005). Rigid use of cost-effectiveness information in the coverage process may not be consistent with Americans' fear of limits set by public and private organizations and interest in access to new medical technology (Neumann 2004).

Comparative research sponsored by public and private entities

Private entities assessing comparative effectiveness include health plans, pharmacy benefit managers, and manufacturers, but none systematically produces and publicly reports the information. Conducting this type of research is costly and, when it is publicly available, its benefits accrue to all, not just to those who pay for it. In addition, some health plans do not use the information because of concerns about litigation. Some researchers have shown that clinical and review studies sponsored by manufacturers may contain biases that affect the design of the study, methods, transparency, and results. These critics postulate that funding a study influences the outcomes reported in the study (Peppercorn et al. 2007, Heres et al. 2006). These findings color public confidence in the conclusions.

There is no comprehensive federal effort to conduct comparative-effectiveness studies designed to meet the needs of patients, providers, and payers. Conducting comparative-effectiveness studies is not the primary focus of any agency within the Department of Health and Human Services, although the following agencies generate this information:

- CMS reviews and collects information about a service's clinical effectiveness to help guide its national coverage decisions. On occasion, CMS requests help from the Agency for Healthcare Research and Quality (AHRQ) and the National Institutes of Health (NIH) to assess a service's clinical and cost effectiveness.
- AHRQ conducts systematic reviews of the literature to compare the clinical effectiveness of alternative services (see text box). While these reviews do not include cost-effectiveness analysis, the prices of the comparative services are included in some reviews.[6] For other projects, AHRQ has sponsored and conducted research examining patients' outcomes, health care costs, and cost effectiveness.
- NIH is the largest sponsor of clinical trials that compare alternative treatments.

The FDA does not look at the clinical or cost effectiveness of a service relative to its alternatives. As mentioned earlier, the FDA typically reviews a service's efficacy and safety compared with a placebo that manufacturers obtain from planned clinical trials. Table 2-1 (p. 38) summarizes the efforts and uses of clinical- and cost-effectiveness information by selected U.S. and international groups.

CMS's efforts

CMS assesses the clinical effectiveness of services when making national coverage decisions. In the past, the agency based these assessments primarily on reviewing available literature about the service. CMS is beginning to gather information about services' clinical effectiveness through registries and clinical trials for services the agency might not have covered in the past because of insufficient data about the service's clinical value. CMS refers to this approach as coverage with evidence development. In some cases, CMS supplements its research by sponsoring outside groups, such as NIH, to conduct head-to-head trials and AHRQ and the Medicare Evidence Development & Coverage Advisory Committee (MedCAC) to conduct and review technology assessments. A technology assessment studies the medical and economic implications of the development, diffusion, and use of services. MedCAC advises CMS on whether a service is reasonable and necessary under Medicare by reviewing and evaluating medical literature, reviewing technology assessments, and examining data and information on the effectiveness of the service under consideration.[7] CMS then uses these recommendations to determine Medicare's coverage policies for the service.

CMS does not consider clinical information in its payment process, with few exceptions. CMS uses patients' anemia status when paying for erythropoietin for patients with end-stage renal disease on dialysis. In addition, the agency uses clinical information to determine when new technologies qualify for add-on payments under the inpatient hospital prospective payment system and pass-through payments under the outpatient hospital prospective payment system.

CMS does not routinely assess a service's cost effectiveness in its coverage or payment process. The agency twice considered using information on cost effectiveness or value for national coverage decisions. Stakeholders raised a number of concerns about its use including that: (1) it would impair beneficiaries' access to care and lead to rationing, (2) the methods researchers use to conduct the analyses are not sufficiently robust, and (3) it might slow innovation of new health care services. The Commission's June 2005 and June 2006 reports discuss these issues (MedPAC 2006, 2005).

Agency for Healthcare Research and Quality sponsors comparative clinical effectiveness research

The Medicare Prescription Drug, Improvement, and Modernization Act of 2003 (MMA) authorized the Agency for Healthcare Research and Quality (AHRQ) to synthesize, sponsor, and disseminate comparative clinical-effectiveness research. Specifically, Section 1013 of the MMA charges AHRQ with conducting research on the: (1) appropriateness, comparative clinical effectiveness, and outcomes of services; and (2) organization, management, and delivery of care.

To fulfill this mandate, AHRQ established the Effective Health Care Program, a coordinated and transparent program that funds:

- thirteen evidence-based practice centers to perform systematic evidence reviews of the comparative effectiveness of alternative interventions;
- the DEcIDE (Developing Evidence to Inform Decisions about Effectiveness) Network to develop new evidence on effectiveness and comparative effectiveness of health care services using existing data sources, such as registries and electronic health records;
- eleven centers to perform research on the safe and effective use of drugs, biologics, and medical devices; and
- John M. Eisenberg Clinical Decisions and Communications Science Center to communicate comparative-effectiveness findings to diverse audiences, hold symposia on translational issues, and provide models for translational work.

Beginning in 2005, the Congress has appropriated $15 million per year for the agency to fulfill its MMA mandate (the MMA authorized up to $50 million for this research effort). Since initiating this effort, AHRQ has completed studies on:

- the comparative effectiveness of epoetin and darbepoetin for managing anemia in patients undergoing cancer treatment,
- the effectiveness of noninvasive diagnostic tests for breast abnormalities,
- gastroesophageal reflux disease,
- renal artery stenosis,
- the comparative effectiveness of second-generation antidepressants in the pharmacologic treatment of adult depression,
- the efficacy and comparative effectiveness of off-label use of atypical antipsychotics,
- choices for pain medicine for osteoarthritis, and
- Medicare Part D plans' medication therapy management programs.

In addition, 39 studies are ongoing under AHRQ's Effective Health Care Program. The Eisenberg Center has held its first symposium on communicating risk to consumers, and a series of papers on this topic are awaiting publication in a peer-reviewed journal. ■

AHRQ'S efforts

AHRQ compares the clinical effectiveness of alternative treatments under a provision in the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 (MMA) that mandated the agency to conduct and support research with a focus on outcomes, comparative clinical effectiveness, and appropriateness of pharmaceuticals, devices, and health care services. The text box describes AHRQ's comparative-effectiveness research activities. To fulfill the MMA mandate, AHRQ has: (1) put processes in place to select topics for analysis, review and synthesize the scientific literature, and obtain input from the public and private sectors; (2) developed the infrastructure to conduct comparative-effectiveness research and disseminate the information to providers and patients; (3) completed 8 effectiveness studies, with more than 30 studies in progress; and (4) disseminated the research findings to end users.

Outside of the MMA mandate, AHRQ has conducted studies examining both the clinical effectiveness and cost

TABLE 2–1

Roles of selected organizations in conducting and using information about clinical and cost effectiveness

Organization	Type of analysis	Description of analysis
CMS	Requires and collects clinical-effectiveness information for some services Sponsors and uses comparative-effectiveness studies and technology assessments*	Uses clinical information when making national coverage decisions. Limited use in payment decisions (e.g., erythropoietin for dialysis patients). Beginning to gather information about some services' clinical effectiveness in the national coverage process—coverage with evidence development—through registries and practical clinical trials.
AHRQ	Conducts and sponsors comparative-effectiveness reviews, technology assessments, and CEAs	Has developed infrastructure to conduct comparative-effectiveness reviews of health care services from the literature. Contracts with 13 evidence-based centers to conduct reviews and technology assessments. Has conducted CEAs for CMS for selected services (e.g., fecal occult blood tests). Has sponsored CEAs conducted together with clinical trials.
NIH	Conducts comparative-effectiveness studies	Largest federal sponsor of clinical head-to-head trials.
FDA	Requires information about a service's efficacy and safety	Reviews information about the efficacy and safety of drugs, biologics, and devices for marketing in the U.S.; most manufacturers conduct trials comparing a service with a placebo (an inactive treatment). Does not require cost-effectiveness information. May request manufacturers to collect clinical data after a service's approval (i.e., postmarketing surveillance studies).
VA	Conducts and uses clinical and comparative-effectiveness studies and CEAs	Requires CEAs from manufacturers of drugs that have small differences in quality but large differences in cost compared with their alternatives. Uses information in the formulary decision-making process. Cooperative studies program conducts clinical research including comparative-effectiveness trials. Program on health services research and development examines the organization, delivery, and financing of health care. Research on a wide variety of services ranging from assessing the cost effectiveness of ICDs to improving safety culture and outcomes in VA hospitals.
Oregon University's Drug Effectiveness Review Project	Sponsors comparative-effectiveness studies of drugs	Conducts comparative-effectiveness reviews to obtain effectiveness comparisons between drugs. Collaborative effort of 14 organizations. Does not review information about cost effectiveness.
Washington state	Sponsors technology assessments	Recently signed into law a health technology assessment program to consider evidence about the safety, efficacy, and cost effectiveness of services.

Note: AHRQ (Agency for Healthcare Research and Quality), CEA (cost-effectiveness analysis), NIH (National Institutes of Health), FDA (Food and Drug Administration), VA (Department of Veterans Affairs), ICD (implantable cardioverter defibrillator), NICE (National Institute for Health and Clinical Excellence). For more description of the activities of these organizations, see Chapter 10 in the Commission's June 2006 report (MedPAC 2006).
*Technology assessments can include a review of the clinical and economic evidence about one or more services.

TABLE 2–1

Roles of selected organizations in conducting and using information about clinical and cost effectiveness (cont.)

Organization	Type of analysis	Description of analysis
Manufacturers (of drugs and devices)	Sponsor comparative-effectiveness studies and CEA	Sponsor an increasing proportion of CEAs over the years. Use information to show value of service to purchasers, determine pricing strategies, and inform marketing decisions. Also sponsor premarketing studies, comparative-effectiveness studies, and postmarketing surveillance studies.
Commercial payers/plans	Use clinical effectiveness and CEA for drugs	Plans' pharmacy and therapeutics committees use clinical effectiveness and CEA for development of drug formularies, treatment guidelines, prior authorization and step therapy requirements, and tiered copayments.
	Use information about clinical effectiveness and cost for services other than drugs	Less reliance of CEA for services other than drugs. Primarily rely on evidence about clinical effectiveness. Some consider cost by, for example, requiring use of less costly alternatives.
Blue Cross Blue Shield Evaluation Center	Conducts reviews of the clinical effectiveness of services	Examines clinical effectiveness and appropriateness of services to subscribing commercial health plans and provider groups. Does not usually assess costs or cost effectiveness.
NICE in the United Kingdom	Sponsors and uses technology assessments including CEA	An independent group that provides guidance to the National Health Service on health care services. Commissions independent academic groups to conduct technology assessments, which includes CEAs. Uses information to develop coverage policies. Uses a National Horizon Scanning Centre to identify significant new and emerging health technologies.
Canadian Agency for Drugs and Technologies in Health	Sponsors technology assessments including CEA	An independent nonprofit body funded by the federal, provincial, and territorial governments. Provides evidence-based information on services including drugs, devices, procedures, and best practices. Uses a program that alerts decision makers to upcoming services that are likely to have a significant impact on the delivery of health care in Canada. Technology Assessment Program examines clinical and cost effectiveness of drugs, medical technologies, and health systems. For drugs, reviews clinical- and cost-effectiveness information submitted by manufacturers. Recommends reimbursement options (unrestricted use, limited use, prior authorization) to provinces. Periodically conducts CEAs of a whole class of drugs and reconsiders past reimbursement decisions.
Pharmaceutical Benefits Advisory Committee in Australia	Uses CEA for drugs	An independent statutory body that makes recommendations and gives advice to the Department of Health and Ageing about which drugs should be made available as pharmaceutical benefits. Reviews information about clinical and cost effectiveness submitted by manufacturers.

Note: AHRQ (Agency for Healthcare Research and Quality), CEA (cost-effectiveness analysis), NIH (National Institutes of Health), FDA (Food and Drug Administration), VA (Department of Veterans Affairs), ICD (implantable cardioverter defibrillator), NICE (National Institute for Health and Clinical Excellence). For more description of the activities of these organizations, see Chapter 10 in the Commission's June 2006 report (MedPAC 2006).
*Technology assessments can include a review of the clinical and economic evidence about one or more services.

effectiveness of services for CMS and NIH. For example, CMS requested that AHRQ assess the cost effectiveness of drugs used to treat rheumatoid arthritis and multiple sclerosis under a MMA-mandated demonstration (CMS 2007). CMS also requests that AHRQ conduct technology assessments, such as an assessment of the use of neuroimaging techniques in evaluating breast cancer, Alzheimer's disease, and dementia. In other instances, AHRQ completed an assessment for CMS of the cost effectiveness of fecal occult blood tests. AHRQ also collaborates with NIH. On a recurring basis, AHRQ provides systematic reviews using its evidence-based practice centers for numerous groups within NIH, including the Office of Medical Application Research, the Office of Dietary Supplements, the Office of Women's Health Research, the National Cancer Institute, and the National Center for Complementary and Alternative Medicine.

Conducting comparative-effectiveness research is not AHRQ's main mission, although the agency's efforts in this area are significant. Its primary mission is to conduct and sponsor health services research—the multidisciplinary field of scientific investigation that studies how social factors, financing systems, organizational structures and processes, health technologies, and personal behaviors affect access to health care, the quality and cost of health care, and the health and well-being of the U.S. population (AcademyHealth 2005).

NIH's efforts

NIH is the largest sponsor of head-to-head trials. Researchers can structure head-to-head clinical trials comparing alternative services to include a diverse patient population, recruit patients from heterogeneous practice settings, and collect data on a broad range of health outcomes (Tunis et al. 2003). For example, NIH and CMS cosponsored the ongoing head-to-head trial comparing more frequent hemodialysis with thrice weekly (conventional) hemodialysis for patients with end-stage renal disease.

Examples of other public agencies' efforts

The Department of Veterans Affairs (VA) also sponsors head-to-head clinical trials and cost-effectiveness analyses specific to its patient population. Since 1994, the VA has required a formal cost-effectiveness analysis from manufacturers of drugs that have small differences in quality but large differences in cost compared with their alternatives (Aspinall et al. 2005). The VA routinely requests manufacturers to submit clinical and economic data using the Academy of Managed Care Pharmacy format and incorporates this information into the drug reviews used in the formulary decision-making process.

The Drug Effectiveness Review Project (DERP) at Oregon Health & Science University compares the clinical effectiveness of drugs within a given therapeutic class using information from the scientific literature. Now in its fourth year, the DERP is a self-governing collaboration of 14 states that aggregated their resources to review the clinical evidence of about 26 drug classes. The project does not look at the cost effectiveness of alternative drugs because health care costs vary from state to state. However, each state can conduct its own cost-effectiveness analysis by applying its own costs.

The private sector does not systematically produce and disseminate objective comparative-effectiveness information

Manufacturers conduct studies assessing the clinical and cost effectiveness of their products, but some researchers have critiqued these studies and raised concerns that these efforts may not always be objective and available to the public. Researchers have shown that industry-sponsored studies were significantly more likely to reach conclusions favorable to the sponsor than were non-industry-sponsored studies. Jorgensen and colleagues (2006) concluded that industry-supported reviews were less transparent, noted few reservations about methodologic limitations of the included trials, and had more favorable conclusions than reviews conducted by an independent nonprofit group (Cochrane Collaboration). Bias in drug trials is common and often favors the sponsor's product (Peppercorn et al. 2007, Heres et al. 2006, Als-Nielsen et al. 2003). Possible sources of bias in industry-sponsored trials include: (1) the dose of the drug studied, (2) the exclusion of patients from the study population, (3) the statistics and methods used, and (4) the reporting and wording of results.

Bekelman and colleagues have shown that financial relationships among manufacturers, scientific investigators, and academic institutions are widespread (Bekelman et al. 2003). Relationships between members of institutional review boards and manufacturers are common and members sometimes participate in decisions about protocols sponsored by companies with which they have a financial relationship (Campbell et al. 2006). Researchers have also raised concerns that manufacturers

influence the adoption of clinical guidelines that serve their own financial goals (Eichacker et al. 2006).

Pharmacy benefit managers, health plans, and other large providers (e.g., hospitals) consider a service's clinical effectiveness, cost, and cost effectiveness, particularly for their drug formularies, but do not necessarily make their evaluations public. These groups often focus on proprietary internal studies related to their health care practices (Kupersmith et al. 2005). Private-sector efforts do not typically focus on patients who are 65 years or older, disabled populations, or patients with end-stage renal disease—the populations of interest to Medicare. Few private-sector groups systematically produce clinical- and cost-effectiveness information and make it available to the public. One exception is the Technology Evaluation Center (TEC) established by Blue Cross Blue Shield Association, which posts reports on the Internet. The TEC relies on reviewing the existing literature to compare the clinical effectiveness of alternative services.

Concerns about liability might affect some private plans' use of cost-effectiveness information in their decision-making process (Jacobson and Kanna 2001). In one survey of health plan officials, most respondents said they approved equally effective but costlier treatments for fear of litigation (Singer et al. 1999). Some health plans reluctantly agreed to cover high-dose chemotherapy with autologous bone marrow transplant for breast cancer partly in response to the threat of litigation, despite its high cost and the lack of evidence that it was effective (Mello and Brennan 2001).

A public role is necessary in comparative-effectiveness research

Some researchers have noted that comparative effectiveness is a public good (Wilensky 2006, Kupersmith et al. 2005, Reinhardt 2004, Perry and Thamer 1999). An item is a public good if it demonstrates:

- *"Nonexcludability"*: Once comparative-effectiveness information is publicly available, it is difficult to stop other groups from using the research free of charge.
- *"Nonrivalness"*: One group's use of the information does not detract from its use by other groups.

Economic theory argues that the private sector will underproduce goods or services (or in this case information) that meet this definition and that a government role is necessary to ensure that a sufficient supply is available. Conducting this type of research is costly and, when it is publicly available, its benefits accrue to all, not just to those who pay for it (Bloche 2006, Kupersmith et al. 2005, Neumann et al. 2005). Although health plans have some of the clinical data to conduct more of this research, they lack incentives to support it at the needed levels.

Increasing the capacity to produce comparative-effectiveness information

Little objective, credible, and high-quality information is publicly available that compares the effectiveness and costs of health care services furnished to patients. There is no independent entity in the U.S. whose sole mission is to compare the benefits, risks, and costs of alternative services and make this information publicly available. Comparative-effectiveness research is costly to generate and sponsors have difficulty recouping the costs of producing the research because other users will not pay to use the research once it is publicly available. Consequently, the Commission concludes that a federal role is necessary to help increase the capacity to generate comparative-effectiveness information.

RECOMMENDATION

The Congress should charge an independent entity to sponsor credible research on comparative effectiveness of health care services and disseminate this information to patients, providers, and public and private payers.

RATIONALE

More information on the comparative effectiveness of health care services could increase the value of health care spending. Public and private payers could use the information to help inform their payment policies and coverage decisions. Current public and private organizations do not produce enough objective and credible information about which services work best and for which populations. This information has the potential to improve quality of care and reduce variations in health care utilization.

IMPLICATIONS

Spending

- Increasing the capacity to examine the comparative effectiveness of health care services would likely increase federal administrative spending relative to current law.

Beneficiary and provider

- Information on the comparative effectiveness of health care services could improve decision making by patients, providers, and payers.

To improve the evidence base on the effectiveness of health care services, the United States needs an impartial entity whose mission is to independently develop evidence about the comparative effectiveness of alternative treatments, including drugs, medical devices, surgical and diagnostic procedures, and medical services. The entity's functions would include systematically reviewing existing evidence, sponsoring or conducting new studies, and reporting the information to patients, providers, and public and private payers in a user-friendly format. Such an entity would:

- be independent and have a secure and sufficient source of funding;
- produce objective and credible information;
- operate under a transparent process and establish standardized and credible methods;
- seek input on agenda items from patients, providers, and payers;
- re-examine comparative effectiveness of interventions over time;
- disseminate information to providers, patients, decision support vendors, associations, and federal and private health plans; and
- have no role in making or recommending either coverage or payment decisions for public or private payers.

The entity's primary mission is to sponsor studies that compare the clinical effectiveness of a service with its alternatives. While cost effectiveness is not a primary mission, the Commission does not rule it out entirely. In the simplest case, cost may be an important factor to consider for two services that are equally effective in a given population. But even when clinical effectiveness differs, it may be important for end users to be aware of costs. We emphasize that the entity would not have a role in how public and private payers apply this information—that is, coverage or payment decisions. Instead, it would produce and disseminate comparative-effectiveness information to purchasers, providers, and patients who would then decide how to use it.

To carry out its activities effectively, the entity needs to develop a clear rationale for selecting the services to study, use rigorous methods and the best scientific evidence to conduct its research, and provide for an opportunity for comment and participation from different constituent groups, including patients, providers, specialty groups, and manufacturers. Setting up a transparent process that is understandable, clear, and documented to produce objective research will be important; people might not use the research if they consider the process subjective and the results biased. The entity should help develop the "gold standard" of research methods used to conduct comparative-effectiveness studies by collaborating with other researchers with expertise in this field.

Along with considering the functions of the entity, policymakers will also need to consider its characteristics. The remainder of this chapter describes options for configuring and financing an entity that produces comparative-effectiveness information and their advantages and disadvantages. The Commission has not yet reached a conclusion about the best approach; we intend to continue looking at the pros and cons of different options. Policy analysts have proposed different options, including placing such an entity in an existing or new federal agency, a public–private entity, or a private entity. Some policy analysts have also proposed including a board—a panel of experts—as a way to promote the entity's transparency. The entity could receive funding from voluntary or mandatory federal sources, private sources, or some combination of the two.

The independence and stability of the entity will largely depend on its governance and funding. For example, an entity that relies on federal appropriations might be more susceptible to political pressures than an entity with mandatory funding (e.g., from the Medicare trust fund). Each year, the Congress considers the spending for services financed from appropriations; by contrast, the statute guarantees spending for services financed from mandatory sources. Even so, entities with a mandatory funding source face some political pressure because the Congress always has the option to alter their funding. Private groups who voluntarily fund the entity might attempt to control the entity's research agenda. In addition, the entity's governance and funding will affect some constituents' perception of the research it produces. Some

stakeholders want an entity that is close to or within the government while others are concerned about too much government involvement. Finally, the functions of the organization should help steer its structure. The entity's staff will need to be proficient in designing comparative-effectiveness research but can take advantage of experienced public agencies and independent private groups by contracting studies to them.

Functions and activities of a comparative-effectiveness entity

Policymakers should consider numerous process issues when developing the capacity to sponsor and disseminate information about the comparative effectiveness of alternative health care services. The rest of this section, based on reports submitted by Moon and by Neumann and Cohen, discusses some of the process issues to consider (Moon 2007, Neumann and Cohen 2007).

Identifying research priorities

The Commission envisions that the entity's research agenda is broader than Medicare; the agenda would include services important to all patient groups. For the entity's research to be relevant, its users—patients, providers, and public and private payers—should help inform the agenda. To help develop its process for setting research priorities, the entity could review the criteria used by existing organizations that conduct comparative-effectiveness research, including AHRQ and the National Institute for Health and Clinical Excellence in the United Kingdom (NICE).

For its comparative clinical-effectiveness program (Effective Health Care Program), AHRQ's selection criteria include:

- the severity, incidence, and prevalence of the condition;
- the uncertainty about the service and the availability of data to support a systematic review and analysis of the topic;
- the potential impact of the research for reducing clinically significant variations in the prevention, diagnosis, treatment, and management of a condition or in the use of a service; and
- the topic's policy relevance to Medicare, Medicaid, and other federal health care programs.

In addition, AHRQ's website provides an opportunity for stakeholders—patients, providers, policymakers, health care scientists, clinical practice organizations, quality improvement organizations, and health care plans—to suggest topics for future research (AHRQ 2007a).

NICE uses similar criteria in identifying topics for study. Specifically, NICE considers: (1) the burden of the disease (e.g., its prevalence and mortality), (2) cost impact, (3) policy importance, and (4) whether the service's use varies across the country. Like AHRQ, NICE's website allows the public to suggest a topic for future study; NICE also meets with health professionals, patients, and policymakers. Finally, the National Horizon Scanning Centre (NHSC) provides information on new and emerging technologies, including different uses of existing technologies, that might require NICE's evaluation (NHSC 2007). The scope of its activity includes pharmaceuticals, devices, diagnostic tests and procedures, surgical and other interventions, rehabilitation and therapy, public health, and health promotion activities. NHSC produces briefings that outline what the technology is, its likely patient group, the current treatment alternatives, the level and amount of research evidence available, and a prediction of its relevance both clinically and to the U.K.'s National Health Service.

Other researchers have developed methods to set priorities for evaluative research by quantifying the gains from research. Phelps and Parente, for example, developed an index of expected gains from research, which incorporates spending levels for a particular condition and the degree of variation in intervention strategies to establish a first-cut priority list (Phelps and Parente 1990). The researchers use variation to suggest the degree of uncertainty associated with a particular technology and thus the opportunity for research to affect practice patterns. Areas with high spending and large variation receive higher priority.

Designing safeguards to ensure that private funding sources do not affect study results

If private groups with a vested interest in the outcome of the research help fund the research entity, it is important to ensure that they cannot influence the study results. Otherwise, some stakeholders may not consider information the entity produces to be objective. As mentioned earlier, researchers have shown that some private groups that fund clinical- and cost-effectiveness research affect the objectivity of the research and the likelihood of publishing the findings.

No single private group should dominate the process or bias the research. Policymakers might consider limiting the amount any private group can contribute to funding the entity. Requiring all private groups to fund the entity might ensure that no single private group can influence the entity's research. For example, assessing a small fee on all private health-related groups—including manufacturers, payers, and providers—would provide for broad-based funding rather than funding limited to one group (Reinhardt 2004). Another option is for a nonprofit foundation to distribute private contributions to the entity conducting comparative-effectiveness research. We discuss some pros and cons of different funding approaches later in the chapter.

Producing unbiased information

Some clinical- and cost-effectiveness studies show biases of investigators and their sponsors. As mentioned earlier, industry-sponsored analyses tend to report more favorable results than non-industry-sponsored studies (Peppercorn et al. 2007). Ensuring that analysts work independently and objectively will be a critical issue. Ethics rules might help ensure that analysts working on behalf of the entity avoid involvement in any real or apparent conflict of interest. Ethics rules would address issues such as whether analysts can accept compensation from outside sources and requirements for regularly reporting financial interests.

Scope of activities

Whether the entity is new or an existing group, it will need to conduct and sponsor comparative-effectiveness research. This section describes the scope of activities that we envision an entity would carry out.

Comparative-effectiveness research involves synthesizing existing data and research from the scientific literature. Another option is to design studies that use administrative claims data from public and private payers. There may be opportunities to use databases developed by providers and other private-sector groups. In the future, electronic medical records might become a source of important data for comparative-effectiveness research if providers widely adopt information technology. When existing data sources do not provide sufficient information on comparative effectiveness, the entity will need to sponsor head-to-head clinical trials to generate the data needed to assess comparative effectiveness. Researchers could collect information on patients' functional and clinical outcomes as well as measures of value and resource use.

The entity will need in-house staff with experience in designing and conducting comparative-effectiveness research. To avoid duplicating expertise, the entity could contract out research to federal and state agencies and research groups with experience conducting comparative-effectiveness research and communicating the information. AHRQ, for example, supports 13 evidence-based practice centers that review relevant scientific literature to produce evidence reports and technology assessments (Clancy et al. 2004).[8]

The research the entity sponsors will need to examine comparative effectiveness in relevant patient populations and in different patient care settings. Because the health care delivery system might affect the usefulness of some services, it will also be important to consider the effectiveness of services provided under different delivery systems.

The entity will need to establish guidelines for studies that it conducts and that it contracts out to public and private research groups. Work conducted by other U.S. and international organizations can help inform this process. It will not be necessary to reinvent mechanisms that are now working well. Consensus on the entity's methods from the research community is essential to establish the entity's credibility.

As the key U.S. entity focused on comparative-effectiveness research, the entity could have other responsibilities apart from conducting or sponsoring comparative-effectiveness research. For example, the organization could also sponsor conferences or scientific symposia on a host of issues surrounding the use of comparative-effectiveness analysis, including methodologic questions.

The organization should be aware of the comparative-effectiveness research done by other organizations. As mentioned earlier, the research of other groups, such as AHRQ, CMS, NIH, and the VA, may overlap with the entity's comparative-effectiveness research agenda. Coordination with public and private groups would ensure that agencies do not duplicate research.

Transparency and stakeholder input

It will be important for the organization to have a transparent process and to obtain input from stakeholders, including manufacturers. For example:

- AHRQ posts draft reports online and accepts public comments for about four weeks. AHRQ then considers public comments for incorporation into the final report.

- NICE publishes its studies on its website at several stages, including the scope of study, the literature review, and draft guidance. Moreover, NICE meets with all stakeholder groups, including relevant patient organizations, doctors, pharmaceutical companies, and a citizens' council.

Re-examining a service's effectiveness over time

For some services, the entity will need to re-examine their clinical and cost effectiveness as new information becomes available. Reasons for a service's re-evaluation include its use in populations not examined by the original study, new information about the service's clinical effectiveness, and a change in practice patterns that affects the use or cost of the service. Moreover, it will be important to validate models as new clinical evidence emerges. Some researchers have found that predictions from models were more optimistic than results in subsequent clinical trials demonstrated.

Disseminating information to all users

It will also be important to disseminate the findings from the comparative-effectiveness research to multiple audiences of different levels of sophistication, in culturally appropriate and consumer-friendly ways. Disseminating the findings is not a minor activity and should not be isolated from the review process. Rather, the entity needs to view dissemination as a crucial component of developing the capacity to produce comparative-effectiveness research. Otherwise, efforts to circulate the findings may be disorganized and haphazard and the findings may not reach all potential users. Matchar and colleagues concluded that failing to integrate research and dissemination goals could derail efforts to translate research into meaningful action, while actively integrating research and dissemination goals can promote more effective dissemination (Matchar et al. 2005). Thus, the entity should consider the tasks involved in disseminating the results when it initiates a study.

It will be important to tailor the reporting of the study and its results to its audience. Getting the input of consumers and providers early in the process might be valuable in designing materials that will reach all potential users. Information will be useful to patients only if the entity provides the results in a format that is concise and easy to understand. AHRQ has experience in developing information that targets multiple users. For example, the agency developed separate guides for consumers and clinicians that summarize in plain language the effectiveness, risks, and prices of the different drug treatments for osteoarthritis (AHRQ 2007b). AHRQ based both guides on the findings of its comparative-effectiveness review of analgesics for osteoarthritis that it carried out under the MMA mandate to conduct comparative-effectiveness research.

Researchers will need to translate the technical results from comparative clinical- and cost-effectiveness analysis to plain language that patients and providers can understand. Pearson developed a framework for displaying information about a service's comparative clinical effectiveness and value in a user-friendly fashion. For each service, a grid ranks the service's clinical effectiveness as superior, incremental, comparable, promising, or uncertain and ranks its comparative value as superior, reasonable, or poor (Health Industry Forum 2006).

Training potential users—including patients, providers, professional associations, and schools of medicine—is an important function to ensure that the information is used. The entity could help to set up the process by developing standards for training and technical assistance, which can take many forms, including face-to-face, by video and teleconference, or via the Internet. The goal of training and technical assistance is to foster widespread adoption of evidence-based practices. Training and technical assistance may not be a direct responsibility of the entity, but the entity could contribute to this important activity.

Developing human capital

An adequate supply of qualified researchers will be needed to conduct comparative-effectiveness research. The entity could develop programs that train investigators and institutions to do the research. For example, AHRQ provides predoctoral and postdoctoral educational and career development grants in health services research. AHRQ also provides institutional-level grants to support the planning and development of health services research in certain types of institutions. NIH also offers a wide variety of research training opportunities, including programs for postbaccalaureate, postdoctoral, medical, and dental students.

Structuring an entity to examine and report on comparative effectiveness

In this section, the Commission begins to explore the pros and cons of different ways to configure and finance the entity that produces comparative-effectiveness information. At this point, the Commission reaches no

conclusions and plans to evaluate these options in the future.

In evaluating the different governance and funding options, policymakers might consider whether: (1) users will judge the research as being objective, credible, and produced with minimal or no conflict of interest and bias; (2) the entity is independent of various stakeholders and political pressures; and (3) the entity is stable (Wilensky 2006).

Governance options

One option is to establish the entity within an existing federal agency or a new federal agency. An entity within an existing federal agency could build on the existing capacity of the agency, such as AHRQ, NIH, or CMS. Another option is to create a new agency not under an executive branch agency. Establishing an external board composed of independent experts to advise the entity about research priorities and to provide oversight for conducting research might promote transparency and the credibility of the findings.

Some constituents are concerned about creating a new bureaucracy. Others have raised concerns about placing the entity within an existing federal agency. Providers and patients may be more distrustful of the motives of an entity if an existing federal agency that will ultimately use the entity's research findings (e.g., CMS) houses the center. As mentioned earlier, stakeholders in the past had many concerns when CMS considered including cost effectiveness or value in the national coverage process, including that it would lead to rationing of care. Another disadvantage of expanding the scope of an existing federal agency is that stakeholders who do not support conducting comparative-effectiveness research could place funding for all its functions at risk. Placing an entity within the federal government could limit opportunities for private-sector funding, although the FDA does accept private funding in the form of user fees the manufacturers pay.

A public–private entity with an external board is another option to consider. For example, the Federal Reserve System (the central bank of the United States) has a unique public–private structure that enables it to operate independently within government but not independent of government. Although the Federal Reserve is required to report to the Congress on its activities, neither the president nor the Congress approves its decisions. The Federal Reserve consists of a federal agency (the Board of Governors) and private entities (12 federally chartered corporations known as Federal Reserve Banks). The Board of Governors, appointed by the president and confirmed by the Senate, represents the public sector.[9] The Reserve Banks and the local citizens on their boards of directors represent the private sector. This structure provides accountability while avoiding centralized, governmental control of banking and monetary policy (GAO 1996). Unlike most other federal commissions, the Federal Reserve is a self-financing entity; it does not receive congressional appropriations.

Other examples of public–private entities discussed by researchers for situating a comparative-effectiveness entity include federally funded research and development centers (FFRDCs) and congressionally chartered nonprofit organizations. The 37 existing FFRDCs are organizations that an executive branch agency sponsors but an academic or private organization operates and that can perform work for organizations other than the sponsoring agency (AcademyHealth 2005, CRS 2005) (Table 2-2, pp. 48–49). By contrast, congressionally chartered nonprofit organizations do not have a "parent" agency and can receive more funding from the private sector. The text box provides more information about FFRDCs, congressionally chartered organizations, and other types of public–private entities.

A public–private entity might address some stakeholders' concerns about too much federal government involvement but still provide for strong public-sector involvement and oversight. In addition, a public–private entity might provide a better balance of different perspectives than an entity that is either all public or all private. However, voluntary funding of a public–private entity would make it as susceptible to stakeholder pressures as an entity within a federal agency.

Another option is to establish a comparative-effectiveness entity within a private-sector entity—for example, a new or existing independent nonprofit group could take the lead generating comparative-effectiveness information. A private-sector entity would minimize concerns about the government's influence on the research agenda and the entity's findings. On the other hand, it would be difficult for the federal government to fund such an entity without being involved in its governance. Some stakeholders who are already uneasy about the influence of manufacturers on clinical trials and reviews might be concerned about the potential for bias if a private-sector group took the lead to generate comparative-effectiveness information.

Examples of public–private entities

Public–private (quasi-government) entities are organizations that have some legal relation or association with the federal government. The term includes many different types of organizations that share one common characteristic: They are not agencies of the federal government (CRS 2005). Researchers have considered three types of quasi-government entities for housing a comparative-effectiveness center: federally funded research and development center (FFRDC), agency-related nonprofit organization, and congressionally chartered nonprofit organization. We also describe government corporations, another public–private entity, in this text box.

FFRDCs are nonprofit private organizations that federal agencies can sponsor to achieve a long-term research need that cannot be met as effectively by using in-house or contractor resources. The first FFRDC was RAND, created by the Air Force in 1947; currently 37 FFRDCs exist (Table 2-2, pp. 48–49) (NSF 2007). Academic, nonprofit, or corporate organizations operate the centers on behalf of the sponsoring agency. FFRDCs may perform work for organizations other than the sponsoring agency; 30 percent of their funding may come from the private sector (AcademyHealth 2005).

An agency-sponsored nonprofit organization also has a legal relationship with a department or agency of the federal government, but this relationship may differ from one situation and organization to the next. Agency-sponsored nonprofit organizations have boards and can receive funding through private sources. This organization type often performs functions that the agency finds difficult to integrate into its regular policy and financial tasks. For example, the Congress established:

- The Foundation for the National Institutes of Health (NIH) to match the interests of donors—private individuals and organizations—to the needs of NIH, and
- The National Park Foundation to accept and administer gifts given to the National Park Service.

There are some 90 congressionally chartered organizations (also commonly referred to as "Title 36" corporations). The federal chartering process is honorific; these organizations do not receive direct appropriations (CRS 2005). The National Academy of Sciences, which includes the Institute of Medicine (IOM), is one example of such an organization. These organizations can accept private funds; for example, the private sector funded about one-quarter of IOM's grants and contracts in 2005.

Finally, another public–private entity is a government corporation. The Congress established government corporations to carry out business-type programs that need more autonomy and flexibility than what a conventional government agency structure provides. These organizations: (1) are predominantly of a business nature, (2) produce revenue and are potentially self-sustaining, and (3) involve a large number of business-type transactions with the public (GAO 1995). Examples of a government corporation include the Tennessee Valley Authority, the Federal Deposit Insurance Corporation, and the Pension Benefit Guaranty Corporation. ■

Funding options

Whether public or public–private, mandatory federal funding might result in the entity being more stable than if it had voluntary federal funding. One option for funding is for the Congress to appropriate funds, which would require policymakers to annually consider the priority of such research compared with other health programs. However, variations in the level of federal appropriations may reflect factors other than the priority of the research. In addition, voluntary funding could result in an unpopular report affecting the entity's budget.

Voluntary contributions from private groups—such as private plans and payers and manufacturers of drugs, biologics, and medical devices—could also be vulnerable

TABLE 2–2 **Current FFRDCs**

Sponsoring agency	FFRDC	Administrator
Office of the Secretary of Defense	Institute for Defense Analyses Studies and Analyses Federally Funded Research and Development Center	Institute for Defense Analyses
	National Defense Research Institute	RAND Corporation
	C3I Federally Funded Research & Development Center	MITRE Corporation
National Security Agency	Institute for Defense Analyses Communications and Computing Federally Funded Research and Development Center	Institute for Defense Analyses
Department of the Navy	Center for Naval Analyses	The CNA Corporation
Department of the Air Force	Lincoln Laboratory	Massachusetts Institute of Technology
	Aerospace Federally Funded Research and Development Center	The Aerospace Corporation
	Project Air Force	RAND Corporation
Department of the Army	Software Engineering Institute	Carnegie Mellon University
	Arroyo Center	RAND Corporation
Department of Energy	Idaho National Laboratory	Battelle Energy Alliance
	Los Alamos National Laboratory	Los Alamos National Security
	Sandia National Laboratories	Sandia Corporation
	Savannah River Technology Center	Westinghouse Savannah River Co.
	Ames Laboratory	Iowa State University of Science and Technology
	Argonne National Laboratory	University of Chicago
	Ernest Orlando Lawrence Berkeley National Laboratory	University of California
	Fermi National Accelerator Laboratory	Universities Research Association, Inc.
	Lawrence Livermore National Laboratory	University of California Livermore
	Princeton Plasma Physics Laboratory	Princeton University
	Stanford Linear Accelerator Center	Leland Stanford, Jr., University
	Thomas Jefferson National Accelerator Facility	Southeastern Universities Research Association, Inc.
	Brookhaven National Laboratory	Brookhaven Science Associates, Inc.
	National Renewable Energy Laboratory	Midwest Research Institute; Battelle Memorial Institute; Bechtel National, Inc.
	Oak Ridge National Laboratory	UT–Battelle, LLC
	Pacific Northwest National Laboratory	Battelle Memorial Institute

Note: FFRDC (federally funded research and development center), C3I (Command, Control, Communications & Intelligence).

Source: National Science Foundation 2007.

TABLE 2–2 **Current FFRDCs (cont.)**

Sponsoring agency	FFRDC	Administrator
National Institutes of Health	National Cancer Institute at Frederick	Science Applications International Corp.; Charles River Laboratories, Inc.; Data Management Services, Inc.; Wilson Information Services, Inc.
Department of Homeland Security	Homeland Security Institute	Analytic Services, Inc.
National Aeronautics and Space Administration	Jet Propulsion Laboratory	California Institute of Technology
National Science Foundation	National Astronomy and Ionosphere Center	Cornell University
	National Center for Atmospheric Research	University Corporation for Atmospheric Research
	National Optical Astronomy Observatories	Association of Universities for Research in Astronomy, Inc.
	National Radio Astronomy Observatory	Associated Universities, Inc.
	Science and Technology Policy Institute	Institute for Defense Analyses
Nuclear Regulatory Commission	Center for Nuclear Waste Regulatory Analyses	Southwest Research Institute
Department of Transportation	Center for Advanced Aviation System Development	MITRE Corporation
Department of the Treasury	Internal Revenue Service Federally Funded Research and Development Center	Center for Enterprise Modernization, MITRE Corporation

Note: FFRDC (federally funded research and development center), C3I (Command, Control, Communications & Intelligence).

Source: National Science Foundation 2007.

to budget uncertainties. Private sponsors might decide to withhold or withdraw funding for any number of reasons, such as disagreeing with the selection of a service for consideration. The influence of private groups that directly fund the research on a study's design and findings could be a concern.

Not linking the funding to either annual federal appropriations or voluntary funding from private groups is another option. Policy analysts have suggested alternatives including:

- imposing a dedicated tax on products that threaten human health, such as tobacco, products with trans fats, and alcohol; or
- obtaining financial support from users of the evidence, including health plans, payers, and purchasers.

Review of options other researchers have recently discussed

AcademyHealth is the professional society for health services researchers and health policy professionals. This group issued a report that addressed AHRQ's role as the lead agency for health services research and the importance of producing comparative-effectiveness research (AcademyHealth 2005). AcademyHealth recommended that an agency of the Department of Health and Human Services (HHS), currently AHRQ, be the lead agency for health services research and that a comparative-effectiveness research entity be established either within or

outside of AHRQ.[10] AcademyHealth discussed, but did not endorse, the following options:

- AHRQ sponsors and conducts research, with guidance from an external board and panel of experts;
- AHRQ establishes a FFRDC and receives guidance from an external board;
- The Congress creates a quasi-government entity, with AHRQ remaining as currently structured; or
- The Congress reconstructs AHRQ as a quasi-government agency, which would keep most of its existing functions and add comparative-effectiveness research to its research portfolio.

Compared with other quasi-government entities, AcademyHealth preferred the FFRDC model because it would: (1) be more focused on comparative-effectiveness research, (2) provide for a strong public-sector involvement and oversight, and (3) provide for a close link between AHRQ and the entity conducting comparative-effectiveness research. Table 2-2 (pp. 48–49) lists the 37 FFRDCs.

Reinhardt (2004) endorsed the creation of nonprofit, independent institutions to analyze the cost effectiveness of drugs. He proposed that the proceeds from a small surcharge (0.5 percentage point or less) on the annual outlays on prescription drugs could establish permanent endowments for the independent nonprofit organizations. Reinhardt considered housing the infrastructure in a federal agency to which the Congress would appropriate funds but concluded that it would be too vulnerable to political pressures. Reinhardt also noted that the private sector does not produce cost-effectiveness information in "socially efficient quantities" because "the private costs of producing the information can easily exceed the private benefit to its producer, even if the potential social benefits of the information far exceed the cost of its production."

Kupersmith and colleagues (2005) recommended a public–private consortium to include federal agencies, payers, insurers, drug companies, device companies, patient advocacy and interest groups, professional societies, hospitals, academics, and health foundations. Under this proposal, new federal appropriations would fund the consortium, with the expectation that the private sector would also contribute.

Wilensky (2006) considered four options: (1) placing the entity within AHRQ, (2) placing the entity within HHS as a new or existing entity, (3) placing the entity within a quasi-government organization, and (4) placing the entity within the private sector. Wilensky concluded that placing the center within a quasi-government entity is the most attractive alternative and that an FFRDC associated with either AHRQ or a newly established board within HHS are options worth exploring. ■

Endnotes

1 Examples of approved drugs and devices in which important side effects were not well documented until after the technology diffused into medical practice include: drug-coated stents, erythropoietin, telithromycin, and rofecoxib (FDA 2007a, 2007b).

2 For certain conditions, such as cancer and AIDS, clinical trials often compare the most accepted treatment with a new treatment.

3 The FDA approves most devices for marketing in the United States based on their similarity to previously approved devices.

4 The FDA has the authority to require that manufacturers report adverse events to the agency with different reporting schedules based on the seriousness of the event and whether the event has been previously identified and is included in the prescribing label (GAO 2006).

5 According to the FDA, a study that is pending is one that the manufacturer has not yet initiated but is not delayed. The FDA defines a delayed study as one that is behind the original schedule.

6 For example, the summary guide on choosing pain medicine for osteoarthritis includes the prices of the different drugs included in the analysis.

7 MedCAC meets about six times each year. MedCAC functions on a committee basis by reviewing and evaluating medical literature, reviewing technology assessments, and examining data and information on the effectiveness and appropriateness of medical items and services that are covered or are eligible for coverage under Medicare. Each committee includes 13 to 15 members.

8 The evidence-based practice centers include: Blue Cross and Blue Shield Association, Technology Evaluation Center; Duke University; ECRI; Johns Hopkins University; McMaster University; Oregon Health & Science University; RTI International–University of North Carolina; Southern California Evidence-Based Practice Center–RAND; Stanford University–University of California, San Francisco; Tufts University–New England Medical Center; University of Alberta, Edmonton, Alberta, Canada; University of Minnesota, Minneapolis; University of Ottawa, Canada.

9 The top officials of the Board are seven members, who are appointed by the President and confirmed by the Senate.

10 Because of renewed interest in comparative-effectiveness research, the AcademyHealth Board of Directors established a special Committee on the Placement, Coordination, and Funding of Health Services Research within the Federal Government.

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CHAPTER 3

Update on the Medicare Advantage program and implementing past recommendations

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Chapter summary

This chapter provides an update on plan participation and beneficiary enrollment in the Medicare Advantage (MA) program as of early 2007, paying special attention to private fee-for-service (PFFS) plans and special needs plans (SNPs). The Commission supports the participation of private health plans in Medicare. Beneficiaries should be able to choose health plans that seek greater efficiency in the delivery of health care and improved outcomes for enrollees. Private plans have the flexibility to use care management techniques that fee-for-service (FFS) Medicare does not encourage. If paid appropriately, they have greater incentives to undertake innovations in care delivery and management and to negotiate with providers over levels and methods of payment.

MA plans can use the savings they achieve through efficiency to provide enrollees with extra benefits—reduced cost sharing and coverage of items and services not covered by Medicare. In a system in which plan payments are no higher than those in FFS and are appropriately risk adjusted, a richer benefit package would generally signal that one plan is more efficient than a competing plan—and that

In this chapter

a private plan offering extra benefits is more efficient than the traditional Medicare FFS program in the plan's market area. However, for most MA plans the current approach to payment does not promote efficiency, primarily because county benchmarks—the basis of payment for MA plans—exceed Medicare FFS expenditures.

Our analysis of 2006 benchmarks and program payments in MA showed that benchmarks and payments significantly exceeded Medicare FFS expenditures. The benchmarks averaged 116 percent of the expected FFS spending, and Medicare payments on behalf of MA enrollees averaged 112 percent of what payments would have been under the traditional FFS program. High benchmarks have enabled plans to offer generous extra benefits to attract enrollees, resulting in significant enrollment growth in MA.

The original design of the Medicare private health plan program envisioned that extra benefits would be available to enrollees only when plans achieved efficiencies. Some MA plans have payments that are lower than FFS Medicare, and those payments finance the cost of the Medicare benefit as well as extra benefits. However, in many cases (and for PFFS plans in particular), the sole source of financing for extra benefits is Medicare payments that are significantly above FFS expenditure levels.

The continuing growth in enrollment in counties with the highest payments relative to FFS spending and in the least efficient types of plans heightens our concerns about the MA program. Enrollment growth has been greater in PFFS than in coordinated care plans. PFFS enrollment experienced the fastest growth through 2007, with membership expanding 72 percent between July 2006 and February 2007.

The current MA payment policy is inconsistent with MedPAC's principles of payment equity between MA and the traditional FFS program. Moreover, the program applies standards and rules inequitably among different types of MA plans. Equity and efficiency issues are of particular concern with

Medicare facing long-run issues of financial sustainability, discussed in our March 2007 report to the Congress (MedPAC 2007).

Beginning with our March 2001 report to the Congress and in subsequent years, the Commission recommended payment equity between Medicare's private plans and the FFS program (MedPAC 2001a). In the context of MA, Medicare could achieve such equity by setting benchmarks at 100 percent of FFS payment levels. However, the Commission recognizes that changing MA plan payment rates to achieve financial neutrality too quickly will cause disruptions for beneficiaries in some markets, and thus the Congress may want a transition period. We discuss possible approaches for moving toward benchmarks at 100 percent of FFS expenditure levels:

- Freeze benchmarks at current levels to arrive at 100 percent of FFS rates over time, with a possible minimum yearly update.
- Cap the percentage by which benchmarks can exceed FFS expenditures and gradually lower the cap.
- Use a blend of 100 percent of FFS rates and historical benchmarks and gradually increase the portion attributable to 100 percent of FFS in the blend.
- Use plan bids as a factor in determining benchmarks.

We also discuss the large differences among plans in their performance on quality measures, highlighting the importance of the Commission's recommendation to institute a pay-for-performance system in MA and the importance of having all plans report on quality measures (PFFS plans currently are exempt from most quality measurement requirements).

Two issues of concern provide advantages to particular types of MA plans. Medical savings account (MSA) plans consist of a high-deductible health plan combined with a savings account with funds deposited by Medicare that enrollees can use on a tax-advantaged basis to cover health care costs. Unlike other plan types, MSA plans do not have to return 25 percent of

the difference between the plan bid and the benchmark to the trust funds. Instead, the program deposits the full difference between the benchmark and a bid below the benchmark to the enrollee's savings account. Another recently enacted provision allows MA-only plans (i.e., that do not offer Part D drug coverage) to have year-round open enrollment. The provision provides an advantage to PFFS plans because enrollees choosing other types of MA plans must give up their Part D coverage when they enroll in the MA-only plan.

We provide an update on SNP availability and participation. The number of SNPs and enrollment in SNPs increased from 2006 to 2007. We intend to continue studying what the proper role for SNPs in the MA program should be and what criteria to establish for these plans. ■

The Commission has examined enrollment patterns and plan payments for the Medicare Advantage (MA) program for different geographic areas and types of plans. In this chapter, we pay particular attention to the fastest-growing plan type, private fee-for-service (PFFS). We also provide an update on special needs plans (SNPs). Our March 2007 report to the Congress repeated the Commission's past recommendations for the MA program.

The Commission's views on private plans in Medicare

The Commission supports the participation of private health plans in the MA program. Beneficiaries should be able to choose alternatives to traditional fee-for-service (FFS) Medicare in which health plans use practices that promote greater efficiency in the delivery of health care and improved outcomes for enrollees. Private plans have the flexibility to use care management techniques that FFS Medicare does not encourage. Moreover, if paid appropriately, plans have greater incentive to undertake innovations in the delivery and management of care and to negotiate with providers over levels and methods of payment.

The Commission supports financial neutrality between payments in the traditional FFS program and the MA program and, beginning with the March 2001 report to the Congress, has recommended changing the program to achieve neutrality (MedPAC 2001a). Financial neutrality means that the Medicare program pays the same amount, adjusting for the risk status of each beneficiary, regardless of which Medicare option a beneficiary chooses. Financial neutrality would set benchmarks for MA plans in the current bidding system at 100 percent of average Medicare FFS expenditures. The Commission also recommended that the Congress use the 25 percent difference between the benchmark amount and bids below 100 percent of the benchmark (now retained in the Medicare trust funds) for a pay-for-performance program in MA (MedPAC 2005). The Commission has also discussed premium support as an approach to neutrality. Under premium support, competition between health plans and the FFS system would determine the contribution Medicare makes on behalf of the beneficiary. Although MA is a bidding system, plans bid against administratively set benchmarks, which have a strong influence on the payments to plans.

Efficiency in Medicare Advantage and extra benefits

Over many years of experience with private plans in Medicare, the Congress has looked to private plans to provide a source of efficiency in the program. To the extent that MA plans provide Medicare benefits at a lower cost than the traditional program, they are required to return some of the efficiency to the program and to the beneficiary. Recent analysis of efficiency in MA shows that some types of plans are efficient while others are not. High benchmarks used in the bidding formula work against the program's objectives in getting the most for the program dollar. We also see differences in the quality that plans bring to beneficiaries.

Private plans, efficiency, and benefits

From the time that full risk contracting for HMOs became a feature of Medicare through the Tax Equity and Fiscal Responsibility Act of 1982, policymakers have tried to structure the Medicare private plan program so that efficient plans can provide extra benefits to enrollees. To the extent that a private plan can provide care more efficiently than FFS Medicare (or, prior to the current MA program, for less than 95 percent of Medicare FFS costs), the program was designed so that plans could use their efficiency gains to finance extra benefits.[1] Extra benefits include reduced out-of-pocket costs for enrollees and services not covered by Medicare, such as dental, hearing, and vision services; rebates of the Part B premium (as of 2001); and (before the advent of Part D) outpatient prescription drugs.

Extra benefits should attract beneficiaries to enroll in efficient plans. Having plans compete against each other should also promote efficiency. In a system in which plan payments are no higher than those in FFS and are appropriately risk adjusted, a richer benefit package generally signals that one plan is more efficient than a competing plan—and that a private plan offering extra benefits is more efficient than the traditional Medicare FFS program in the plan's market area.[2]

In the program's current design—in which plans bid against a benchmark set in law—for bids below the benchmark, the law requires that 75 percent of the difference (referred to as the rebate) be used to fund extra benefits for enrollees. The program keeps the remaining 25 percent in the Medicare trust funds (for regional plans,

Calculating Medicare's payments to plans

The benchmark is a bidding target under the bidding system for Medicare Advantage (MA) plans that began in 2006. The local MA benchmarks come from the county-level payment rates used to pay MA plans before 2006. Those payment rates were at least as high as per capita fee-for-service (FFS) Medicare spending in each county. Some counties had rates significantly higher than FFS because of specific statutory changes. The Medicare Prescription Drug, Improvement, and Modernization Act of 2003 called for updating county benchmarks from one year to the next in one of three ways, using whichever method results in the greatest increase:

- Generally, local MA benchmarks are updated by the national growth rate in per capita Medicare spending (subject to certain adjustments that could increase or decrease eventual plan payments).

- A second possibility is that, if the national growth rate is less than 2 percent, MA benchmarks are increased by 2 percent (subject to certain adjustments). This minimum increase provision (contained in the Balanced Budget Act of 1997 (BBA)) applies each year, regardless of the economic circumstances and of the expected cost growth for an efficient provider. In 1998, for example, the year when the 2 percent provision went into effect, the provision applied to MA payment rates at the same time that overall Medicare expenditures declined slightly for the year.

- A third possibility is to set the benchmark of a given county equal to the FFS expenditure for the county. That is, 100 percent of FFS becomes the benchmark for a county if it yields the highest benchmark amount.

To implement the 100 percent of FFS provision, CMS determines FFS rates for each county at least every three years, a procedure referred to as "rebasing." Once a county benchmark is set at 100 percent of FFS in a given year, even if FFS payments fall, the benchmark for plans does not. For example, if in the following year CMS finds the FFS rate for the county was far below that of the preceding year, the county capitation rate would be the preceding year's FFS rate increased by either the minimum increase of 2 percent or, if greater, the national growth rate in per capita Medicare spending. This policy creates, in effect, an additional type of "floor."

Another source of higher benchmarks is Medicare's treatment of indirect medical education (IME) payment to hospitals. See our June 2005 report to the Congress for discussion of our recommendation to remove the effect on benchmarks of Medicare's double payment for IME for MA enrollees.

MA benchmarks are higher than Medicare per capita FFS spending in almost all counties (other than for regional plans, which have a different basis for determining benchmarks applicable across an entire region). One source of the difference is statutory provisions that introduced minimum county payment rates, or floors, intended to attract or retain private plans in Medicare. Floor rates are no longer a basis of plan payment, but what were historically floor counties generally continue to have higher payment rates than nonfloor counties in relation to FFS expenditure levels.

The BBA initially established a payment floor for counties with relatively low FFS expenditures. The BBA floor is often called the rural floor because it applies mainly to rural counties and was primarily intended to attract plans to rural areas. The "large urban floor," which applies to counties within large metropolitan statistical areas, was introduced in the Medicare, Medicaid, and SCHIP Benefits Improvement and Protection Act of 2000 (BIPA) and was effective as of March 2001. BIPA also provided an increase in the BBA floor rate. The counties that had been floor counties have very high relative benchmarks compared with other geographic areas; on average, they are 121 percent of FFS for the large urban floor counties and 134 percent of FFS—the highest average benchmark level—for the floor established in the BBA. ■

TABLE 3–1 **Program payments exceed FFS expenditures but vary by plan type, 2006**

	All MA plans with bids	HMO	Local PPO	Regional PPO	PFFS
Percentage relative to FFS expenditures					
Benchmark	116%	115%	120%	112%	122%
Bid (for Medicare Part A and Part B benefits)	99	97	108	103	109
Rebate	13	13	9	7	10
Payment (bid + rebates)	112	110	117	110	119
Enrollment as of July 2006 (in thousands)	6,877	5,195	285	82	774

Note: FFS (fee-for-service), MA (Medicare Advantage), PPO (preferred provider organization), PFFS (private fee-for-service). When a bid is below the benchmark, 75 percent of the difference—referred to as the "rebate" amount—is paid to the plan to provide extra benefits and reduced premiums; 25 percent of the difference is retained by the Medicare trust funds and, in the case of regional PPOs, half of the 25 percent is deposited in the benefit stabilization fund. Enrollment increased rapidly after July 2006.

Source: MedPAC analysis of CMS data on plan bids, benchmarks, and enrollment.

half of the 25 percent is retained in the benefit stabilization fund for possible use in 2012 or thereafter to promote participation by regional plans).

Comparing payments to plans with the amounts spent under the fee-for-service program

As stated in the March 2007 report to the Congress, our analysis of plan benchmarks shows that they are well above FFS levels (116 percent of FFS expenditures as of 2006), with variations by geographic area and type of plan that reflect the enrollment patterns of the different plan types (Table 3-1).[3] The Congressional Budget Office independently arrived at a similar finding for 2007: Benchmarks are at 117 percent of FFS and program payments for MA enrollees are at 112 percent of FFS (CBO 2007).

MedPAC has not estimated the bid-to-benchmark ratio for 2007. One factor that should, all else equal, lead to a decline in plan payments for 2007 is the phasing out of the hold-harmless provision that determines the extent to which MA payments are adjusted to reflect the health status of enrollees. MA plans are enrolling beneficiaries who are healthier than average. A payment system incorporating risk adjustment based on health status would lower payments for healthier enrollees. However, the hold-harmless provision protects plans from the effect of full implementation of payments based on health status. This provision is phasing out over several years, ending in 2011. However, other factors—primarily the trend in enrollment toward areas of the country with high benchmarks in relation to FFS—will increase the benchmark-to-FFS ratio for 2007.

Some have criticized the accuracy of our estimated ratios in connection with three issues: (1) administrative costs in the Medicare program, (2) the use of Department of Veterans Affairs (VA) facilities by Medicare beneficiaries, and (3) the treatment of indirect medical education (IME) payments (AHIP 2007a). At the national level, these issues would not materially change our findings; that is, the ratios would remain unchanged. For example, factoring in certain CMS administrative costs and MA user fees would result in a change of at most 0.5 percentage point.[4] In a few geographic areas, beneficiaries' use of VA facilities to receive Medicare-covered care may understate the average cost of providing Medicare-covered services in the area. That is, CMS estimates of county-level FFS expenditures (and thus the benchmarks) do not account for some Medicare beneficiaries using VA facilities to obtain care that otherwise would be covered and paid for by Medicare.[5] However, if MA enrollees continued to use VA facilities to the same extent as FFS beneficiaries, a benchmark adjustment might not be appropriate. Another issue is whether our calculations account for IME payments. We correctly account for IME dollars by removing them from each sector in calculating the ratio of MA benchmarks and payments to FFS expenditures.

Recent findings on differences in efficiency by type of plan

Our analysis of plan payments and benchmarks showed that, for 2006, program payments to plans averaged 112 percent of FFS expenditures across all plans.Those figures vary by plan type, with HMO benchmarks and program payments at 115 percent and 110 percent of FFS, respectively, on average, and PFFS at 122 percent and 119 percent of FFS, respectively (Table 3-1, p. 63). These differences reflect the areas where these types of plans locate as well as variations in efficiencies in care delivery.

Efficient plans operate in the MA program. They provide the traditional Medicare Part A and Part B benefit at a lower cost than the FFS program, although plans receive additional Medicare payments that are used for extra benefits. On average in 2006, HMO plans provided the traditional Medicare benefit for 97 percent of Medicare FFS expenditure levels (Table 3-1, p. 63). Because HMOs had such a large share of the overall enrollment in 2006, across all plan types the bid for Medicare Part A and Part B services averaged 99 percent of Medicare FFS expenditures. However, some plan types were much less efficient; for example, PFFS plan bids averaged 109 percent of FFS expenditures. That is, on average they cost Medicare 9 percent more than the traditional FFS program to provide Medicare Part A and Part B benefits. For each plan type, the numbers we cite are averages; not all plans of a particular type (HMOs, preferred provider organizations (PPOs), PFFS) operate with the same efficiency in relation to FFS in their market areas.

Plan bids for the Medicare Part A and Part B benefit package include costs for administration, marketing, and profit or retained earnings. Similarly, the extra benefits provided through the additional payments include the administrative and marketing costs and profit or retained earnings associated with extra benefits.[6]

Effects of high benchmarks

The high MA benchmarks allow plans to be less efficient than they would otherwise be if they faced the financial pressure of lower benchmarks closer to Medicare FFS levels. As the Commission has stated in the past, organizations are more likely to be efficient when they face financial pressure. The Medicare program needs to exert consistent financial pressure on both the FFS program (as detailed in our March 2007 report to the Congress) and the MA program, coupled with meaningful quality measurement and pay-for-performance programs, to maximize the value the Medicare program receives for the dollars it spends. MA payment policy is actively shaping the market for Medicare health plans. The current policy conveys the message that Medicare values private plans that cost more than FFS, and Medicare is willing to subsidize beneficiary enrollment in MA.

MA enrollment is growing particularly fast in PFFS plans and in counties where the benchmarks are highest in relation to FFS. PFFS enrollment tends to be concentrated in counties where benchmarks are significantly higher than FFS expenditures. This explains why PFFS plan benchmarks and payments are so high in relation to FFS. Growth in enrollment in less efficient plans heightens our concerns about payment equity for MA. The program is paying more for MA enrollees than for those in the traditional Medicare FFS program, with beneficiaries and taxpayers financing those higher payments. The Commission also has concerns about an uneven playing field among the different types of MA plans. The equity and efficiency issues we discuss here are of particular concern in an era when Medicare faces long-run sustainability challenges.

With MA benchmarks at their current levels, the MA program results in higher average costs than FFS Medicare and added costs for taxpayers and beneficiaries who finance the Medicare program. However, with respect to the cost of the Part D program, because MA–Prescription Drug (MA–PD) plan bids on average are lower than the bids of stand-alone plans, MA–PD bids bring down the national average bid for Part D (see discussion in the March 2007 report to the Congress on relative premium levels in Part D by plan type). For Medicare Part A and Part B, while some of the MA payments above FFS expenditures are used to finance extra benefits for MA enrollees, all beneficiaries, through their Part B premium—and all taxpayers, through general revenues—are paying for those benefits. Most Medicare beneficiaries are not MA enrollees, but all beneficiaries pay for benefits the 18 percent of beneficiaries enrolled in MA plans use.

Low-income and minority beneficiaries are more likely to enroll in MA plans (AHIP 2007b, Atherly and Thorpe 2005), and a reduction in benchmarks may disproportionately affect their benefits. Although we cannot be certain about the impact on different populations (e.g., urban enrollees of MA plans would be more likely than rural enrollees to continue to receive generous extra benefits if benchmarks were brought closer to FFS levels), the benefits do not go exclusively to a subgroup

of enrollees. All MA enrollees receive the same level of benefits. Some are concerned that low-income individuals should receive extra help with their cost sharing and other expenses for medical care. However, other programs target this population more efficiently. Examples are the Medicare savings programs and the low-income subsidy approach used for the Medicare drug benefit.

The PFFS option

The high MA benchmarks have allowed PFFS plans to attract enrollment in areas with limited competition from other plan types. PFFS plans essentially mimic FFS Medicare in their structure and in their payment and contracting arrangements with providers.

Design and history of the PFFS option

The existing PFFS plans are generally not network plans (they do not provide care through a network of contracted providers) and do not use many of the techniques that network plans can use to encourage the provision of better health care at a reduced cost. PFFS plans pay providers the same rates as Medicare FFS.[7] Although PFFS plans may form networks to make payment arrangements with providers, to date PFFS plans have relied mainly on "deemed" participation of providers to provide care to their enrollees. Under this policy, the plan deems a provider to be in the PFFS plan if the beneficiary states that he or she is a PFFS plan enrollee and the provider treats the patient after learning about the plan's terms and conditions of payment. A provider also is deemed if he or she has had reasonable opportunity to obtain information about terms and conditions (e.g., being provided with an Internet source for the terms and conditions).

The program does not require PFFS plans to meet the same quality standards as network plans because, as non-network plans, one might argue that they are not accountable for the quality of care practiced by physicians and other providers that enrollees choose to see.

The Balanced Budget Act of 1997 (BBA) introduced the PFFS option to guarantee access to all Medicare providers without imposing utilization controls. Policymakers developed this option because, in the 1990s, during the period of greatest growth in managed care enrollment, they feared that rationing of care would occur because of a general movement toward managed care, utilization management, and restrictive provider networks. Policymakers wanted an option without limitations on enrollees' ability to obtain care through the providers of their choice.

TABLE 3–2 **Enrollment in PFFS plans grew faster than in other major plan types**

Plan type	Total enrollees (in thousands) July 2006	February 2007	Percentage change
Local CCPs	5,480	6,065	11%
PFFS	774	1,328	72
Regional PPOs	82	121	48

Note: PFFS (private fee-for-service), CCP (coordinated care plan), PPO (preferred provider organization). CCPs include HMOs and local PPOs.

Source: CMS health plan monthly summary reports.

While including the PFFS option in the BBA, the Congress also intended that enrollees bear the added cost of a private health plan offering free access to providers. As noted in the BBA conference report, "the private fee-for-service Medicare+Choice option authorized by this agreement represents the first defined contribution plan in which beneficiaries may enroll in the history of the program" (House of Representatives 1997). PFFS was a defined contribution plan under Medicare+Choice (the predecessor to MA) because, unlike other plans, a PFFS plan could charge a premium for its cost of providing the Medicare Part A and Part B benefit package in excess of the actuarial value of Part A and Part B cost sharing in FFS Medicare.

The current benchmarks are high enough to permit PFFS plans to finance extra benefits through program payments even when such plans are less efficient at providing the Medicare Part A and Part B benefit package. In our June 2001 report to the Congress, we anticipated the possibility that PFFS plans would be providing extra benefits solely because of the higher payment rates and noted that this "would not appear to be paying the cost of an efficient provider—the basic axiom of Medicare payment policy. Paying PFFS plans at … [higher] rate[s] is an expensive way to get extra benefits for Medicare beneficiaries in some counties" (MedPAC 2001b).

Recent growth in PFFS plans

PFFS plans and enrollment continue to grow rapidly (Table 3-2). While local coordinated care plans grew

TABLE 3–3

PFFS enrollment comes primarily from floor counties and rural areas

	July 2006 distribution		February 2007 distribution		
	Enrollees (in thousands)	Percent	Enrollees (in thousands)	Percent	Percent growth in enrollment
By historical county payment status					
BBA floor counties	284	37%	399	31%	40%
MSA floor counties	390	50	630	49	62
Nonfloor counties	99	13	260	20	162
By rural/urban status					
Rural	304	39	451	35	48
Urban	470	61	838	65	78

Note: PFFS (private fee-for-service), BBA (Balanced Budget Act of 1997), MSA (metropolitan statistical area). Sums of figures in each group may not be the same due to rounding. The number of enrollees for July 2006 includes counties with 10 or fewer enrollees; the number of enrollees for February 2007 in this table does not. BBA floor counties are generally rural counties with a payment set by the BBA at a minimum level. The MSA floor, applicable to counties within an MSA with a population of over 250,000, was introduced in the Medicare, Medicaid, and SCHIP Benefits Improvement and Protection Act of 2000 (BIPA) and was effective as of March 2001. BIPA also provided an increase in the BBA floor rate.

Source: MedPAC analysis of CMS data on plan-level enrollment.

about 11 percent between July 2006 and February 2007, enrollment in PFFS plans accounted for nearly half the growth in MA, rising from about 774,000 to 1.3 million—a 72 percent increase.[8] The number of entities with PFFS contracts nearly doubled, from 25 in 2006 to 47 in 2007. In addition, for 2007, a direct-contract employer group plan (an option authorized in the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 (MMA)) started operating as a PFFS plan, with 10,000 enrollees. Under this option, the employer is an MA contractor, assuming risk for providing Medicare services to its retirees.

The more common option is for an employer to offer retiree coverage through an MA organization that designs a plan available only to that employer group or to multiple employer groups. The PFFS option is particularly attractive for employers and unions covering retirees when they retire and move away from their place of work. While plans can cover active workers through network plans in a specific geographic area, an HMO, for example, would need to have a very wide network to provide access to retirees. A PFFS plan, on the other hand, because it does not need to have a network, can make its service area the entire country. This solves the employer's or union's concerns about ensuring access to care, and PFFS plans do not have to form networks in each county where they have enrollment.

Enrollment in PFFS continues to come primarily from counties where benchmarks reflect statutorily set payment floors (Table 3-3). In February 2007, 80 percent of PFFS enrollment comes from such counties (31 percent from BBA floor counties and 49 percent from metropolitan statistical area floor counties (the text box on p. 62 provides an explanation of floor counties)). The percentage of the total PFFS enrollment coming from rural counties has decreased slightly, from 39 percent in 2006 to 35 percent in 2007.[9] However, enrollment grew most rapidly in nonfloor counties between 2006 and 2007.

SNPs (discussed separately at the end of this chapter) and employer-sponsored plans were the only source of growth in local HMO plans between 2006 and 2007. Between July 2006 and February 2007, the number of HMO enrollees who were not in SNP plans and not enrolled through an employer-sponsored plan declined by about 2 percent.

Differences among MA plans on quality measures

In addition to differences in efficiency among MA plans, we see wide differences in plan performance on quality measures (Table 3-4, reflecting results for 2005). For example, on the quality measure for the percentage of enrollees with diabetes who receive eye exams, the currently reported scores among HMO plans range from 14 percent to 87 percent. The rate for providing flu shots

TABLE 3–4 **Quality measures show significant variation across plans**

Quality measure, by plan type	Number of plans with data	Rate			
		Average	Median	Lowest	Highest
Eye exams for members with diabetes					
All plans	175	64%	66%	8%	87%
ALL HMO plans	138	65	66	14	87
PPOs	12	53	57	8	74
PFFS plans	4	37	37	28	45
Flu shots					
All plans	247	68	73	15	89
ALL HMO plans	206	67	71	16	88
PPOs	3	72	73	68	75
PFFS plans	0	N/A	N/A	N/A	N/A
Beta blockers after heart attack					
All plans	127	93	97	28	100
ALL HMO plans	112	94	97	59	100
PPO plans	3	69	80	28	100
PFFS plans	1*	N/A	N/A	N/A	N/A

Note: PPO (preferred provider organization), PFFS (private fee-for-service), N/A (not applicable). All plans include cost plans (plans contracting with Medicare on a cost reimbursement basis) and demonstration plans.
*One plan reported, with a rate of 65 percent.

Source: MedPAC analysis of data from Medicare personal plan finder downloadable database reflecting 2005 results.

to members ranged from 16 percent to 88 percent among HMOs. CMS reported no data on PFFS performance on the flu shot measure; for the three PPOs that reported data, flu shot rates ranged from 68 percent to 75 percent.[10]

The measure on which plans register their best performance is the provision of beta blockers after a heart attack. Among the 127 plans of any type for which there are reported data, the scores range from 28 percent to 100 percent, with the median at 97 percent and with 22 plans having a score of 100 percent. Plans have also shown improvement in measures over the years. For example, the National Committee for Quality Assurance reports that, in Medicare plans, the measure for controlling high blood pressure among those with hypertension increased from 47 percent in 2000 to 66 percent in 2005 (NCQA 2006).

In the past, the Commission has called for two policies on quality (MedPAC 2005). One is for CMS to calculate measures of quality in the FFS program so that we can compare the performance of MA to the traditional program. The other is for a pay-for-performance program within the MA program that would pay more to plans with superior quality and to those that improved their quality over time and would pay less to other plans.

Options for moving to benchmarks at 100 percent of FFS expenditures

Since benchmarks remain high, MA plans are able to offer extra benefits, subsidized by the Medicare program, to attract enrollees. This has resulted in significant growth in MA enrollment. While the Commission supports plans as an option for Medicare beneficiaries, it also supports the concept of setting benchmarks at 100 percent of FFS. The Commission recognizes that changing MA plan payment rates to achieve financial neutrality too quickly will cause disruptions for beneficiaries in some markets. The

history of private plan participation in Medicare provides a precedent for understanding the possible consequences of a change in MA payment policy. Following the payment changes in the BBA and because of other market factors affecting managed care plans, a large number of plans withdrew from Medicare in 1999 and thereafter, and enrollment declined significantly (Hurley et al. 2003, GAO 2000). On the other hand, the more beneficiaries who receive extra benefits subsidized by the Medicare program, and the longer beneficiaries have such benefits, the more difficult it will be to reduce MA benchmarks. In 2006, county benchmarks in counties with any MA enrollment ranged from about 104 percent to about 166 percent of FFS (excluding Puerto Rico).

Possible approaches might be to:

- freeze all county benchmark rates at their current levels until each county's rate is at the FFS level, while possibly providing for a minimum update;
- differentially reduce benchmark rates by setting a cap on the amount by which benchmarks could exceed FFS in a county, thereby having a higher reduction in the highest benchmark counties; or
- use a blend of FFS rates and MA rates that would apply to a particular county, increasing the weight of the FFS portion over time.

Other transition strategies are also possible, such as using local plan bids as a factor in determining benchmarks.

Freeze benchmarks

The Congress could freeze benchmarks until FFS spending catches up to that level. This policy would address all areas with benchmarks above FFS immediately, but it would take many years for FFS levels to catch up in some areas (e.g., in counties with benchmarks at 166 percent of FFS). This approach has the disadvantage of freezing benchmarks in counties where rates are close to FFS, which are likely to be the areas with the highest concentration of MA enrollment (currently and historically) and areas where competitive plans have bids that are low in relation to FFS expenditures or are in fact below FFS. Therefore, a better option might be to allow a minimum yearly update in MA benchmarks (e.g., 2 percent each year, which is the current minimum), but this would lengthen the time it takes benchmarks to reach FFS levels in many counties.

Under this option, with a minimum increase, for the first few years beneficiaries would not be likely to see big changes in their benefits and program savings would be lower. However, this policy has the effect of keeping benchmarks high in areas with the highest benchmarks in relation to FFS. Counties with the highest relative benchmarks would be the last to reach FFS levels.

Cap allowable percentage above FFS for benchmark and gradually lower cap

The cap option would set a maximum for the benchmark equal to some percentage above FFS and gradually reduce the percentage. For example, assume the cap was set at 140 percent and reduced by 10 percentage points each year until all benchmarks were set at local FFS spending. In year 1, all benchmarks higher than 140 percent of FFS would be reduced to 140 percent. In year 2, all benchmarks would be limited to 130 percent of FFS, and so on.

This policy would first address areas with the largest discrepancies between benchmarks and FFS costs. All benchmarks eventually would be brought down to FFS levels. Depending on how quickly the benchmarks come down, many areas with benchmarks above FFS would not see any reductions for several years, and program savings would be gradual for the first few years. While there would not be an extreme reduction in benefits immediately, there would likely be significant reductions annually.

Blend 100 percent of FFS and historical benchmarks and gradually increase the blend

The blend option would blend an area's FFS rate with its historical benchmark (perhaps increased by a national growth percentage), and the historical benchmark would be weighted lower each year until it was eliminated. For example, in the first year the blend could be 80 percent historical and 20 percent FFS. In year 2, the weighting could be changed to 60/40, and so on.

Advantages of this policy include that reductions would begin immediately and would be proportional to the discrepancies between benchmarks and FFS costs. There would be more certainty in the timing because all counties would be at FFS levels by a certain year. For areas where the benchmarks were not relatively high, the annual reductions would not be large. All benchmarks would be reduced toward FFS. Those areas with relatively high benchmarks would see large reductions each

year. As with other transitions, the savings would build gradually, and certain counties would see changes in benefits and plan options.

Competitive bidding to set rates

Medicare could use plan bids to help determine the benchmarks. There could be several versions of this option. We focus on an approach that would operate somewhat like the bidding system used to set the regional benchmarks. Plan bids in an area would be averaged and blended with the area's FFS spending or the MA county benchmarks to calculate a benchmark for a particular market area (e.g., a county or an area larger than one county). Under this type of policy, Medicare would use competition to influence plan payments, which then would be more likely to reflect the costs of efficient providers. Average bids for the Medicare Part A and Part B benefit package are currently well below the benchmarks and are often below FFS costs. Therefore, the resulting benchmarks may approach FFS spending, although it is unlikely that program costs would end up at exactly 100 percent of FFS. This option would also be complicated to design and implement. For example, not all plans in a given market may include every county of a multicounty market area or some counties may have only one plan.

Equity between sectors and among plan types

The Commission supports equity between MA plans and the traditional Medicare program. Supporting the principle of equity between the sectors takes many forms. For example, most private plans participating in Medicare are required to report various types of quality measures. The Commission believes the same approach should apply in the traditional FFS program. That is, CMS should report quality information for FFS Medicare that allows Medicare beneficiaries to compare FFS Medicare with private plans in terms of their performance on quality measures. To that end, the Commission has specifically recommended that the Secretary of Health and Human Services calculate clinical measures for the FFS program that would permit CMS to compare the FFS program with MA plans (MedPAC 2006a).

The Commission also supports the concept of equity in the treatment of different plan types within the private plan sector. For example, the Commission recommended that the Congress eliminate the benefit stabilization fund introduced in the MMA, which provided an unfair advantage to the regional PPOs. (In the Deficit Reduction Act of 2005, the Congress reduced the stabilization fund by $6.5 billion, to $3.5 billion, and restricted the availability of the funds to 2012 or thereafter.)

Table 3-5 (p. 70) shows how different requirements apply to different plan types in MA. In general, the Commission favors a level playing field for all plan types, unless special circumstances dictate otherwise. The Commission believes, for example, that PFFS plans and medical savings account (MSA) plans should be required to report on the quality of care for their enrollees so that beneficiaries can use quality as a factor in judging these plans. The Congress should eliminate payment rules that give one plan an advantage over another—as in the case of regional PPO plans.

In 2008, PFFS plans and MSA plans will have another advantage over other plan types. Other types of organizations with network plans that wish to offer plans tailored for employer-group-sponsored retirees will continue to be required to have plans that are available to individual, non-group-sponsored beneficiaries. However, non-network PFFS plans and MSA plans will not be subject to this requirement (CMS 2006).

In the March 2007 report to the Congress, the Commission noted its concern about how MA MSA plans are paid. The report pointed specifically to the statutory provision which required all funds to be used for the enrollee deposit when the equivalent of an MSA plan bid is below the benchmark. For other MA plans, the trust fund retains 25 percent of the difference. This provides MSA plans with an unfair advantage over other types of MA plans (though currently only three MSA plans are in operation).

In a similar vein, we are concerned about a recent provision that gives an unfair advantage to certain types of plans. The Tax Relief and Health Care Act of 2006 added section 1851(e)(2)(E) of the Social Security Act, effective only for 2007 and 2008, which allows a beneficiary who is not an MA enrollee (i.e., is in FFS Medicare) to enroll in an MA-only (nondrug) plan outside of the open enrollment period. MA-only plans then have an advantage over other plans. These MA-only plans have year-round enrollment, while other plans may accept new enrollees only during the open enrollment period (or if a person is newly entitled to Medicare, for example). In

TABLE 3–5 **Certain requirements and provisions vary by type of MA plan**

	PFFS	MSA	HMO/ Local PPO	Regional PPO	SNP
Requirements					
Build networks of providers[a]			✓	✓	✓
Report quality measures			✓	✓	✓
Have CMS review and negotiate bids			✓	✓	✓
Return to the trust funds 25 percent of the difference between bid and benchmark[b]	✓		✓	✓	✓
Offer Part D coverage[c]			✓	✓	✓
Have an out-of-pocket limit on enrollee expenditures		✓		✓	
Offer individual MA plan if offering employer group plan[d]			✓	✓	✓
Other provisions					
Protected from some risk through risk corridors[e]				✓	
Can limit enrollment to targeted beneficiaries[f]					✓

Note: MA (Medicare Advantage), PFFS (private fee-for-service), MSA (medical savings account), PPO (preferred provider organization), SNP (special needs plan).
[a]PFFS plans are exempted from other MA plans' network adequacy requirements if they pay providers Medicare fee-for-service rates.
[b]This provision applies when bids are under the benchmark. For regional PPO plans, one-half of the 25 percent amount is retained by the trust funds, and the remainder is included in the stabilization fund that, as of 2012, may be used to retain or attract such plans.
[c]MSA plans are prohibited from offering Part D coverage. PFFS plans may offer Part D coverage, but special rules apply to such plans (e.g., it is not required that an enrollee receive drugs at a discounted rate when the deductible applies or the person is in the Part D coverage gap).
[d]As of 2008, only non-network PFFS plans can operate exclusively as plans limited to employer group enrollees.
[e]Risk corridors are available only in 2006 and 2007.
[f]MA plans must allow all Medicare beneficiaries in their service area to enroll with few exceptions (e.g., beneficiaries with end-stage renal disease). Other exceptions apply to MSA plans (e.g., Medicaid beneficiaries may not enroll in an MSA). SNPs are permitted to limit their enrollment to their targeted beneficiary population (i.e., dual eligibles, beneficiaries who reside in an institution, or those with a chronic or disabling condition). SNPs can be local or regional coordinated care plans. They cannot be MSAs or PFFS plans.

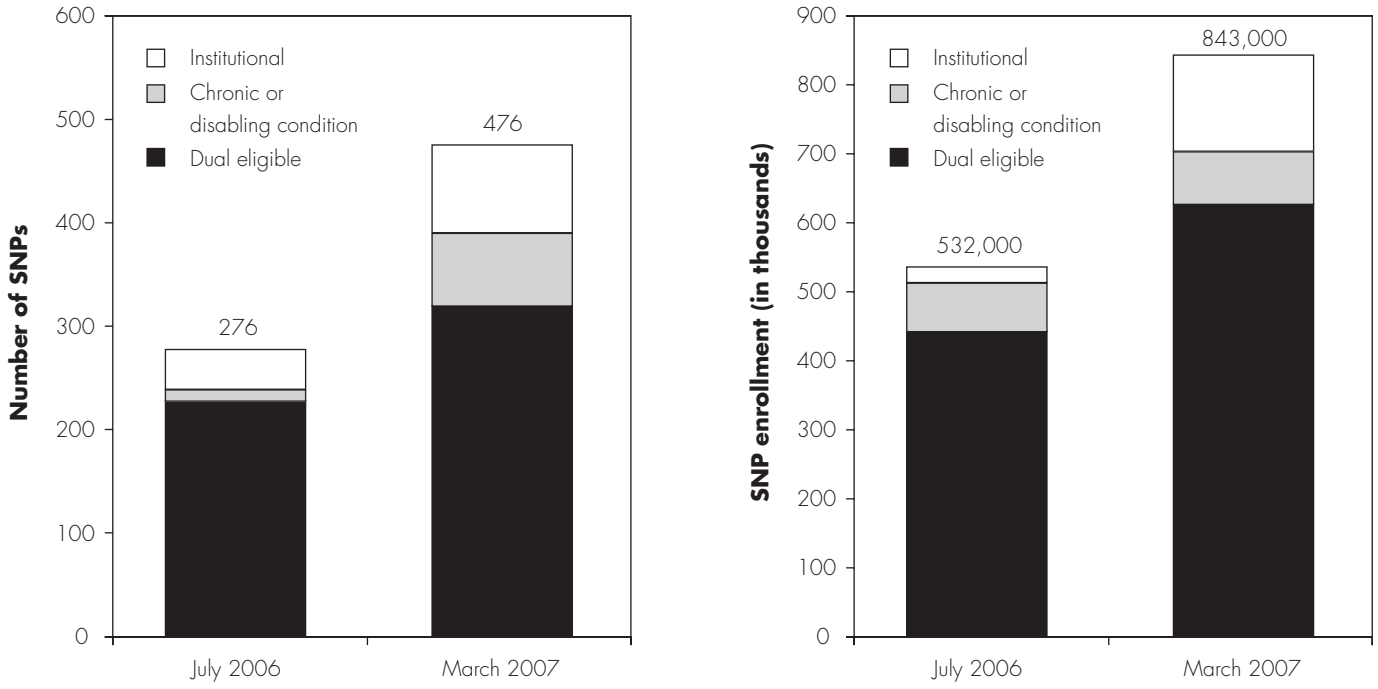
Source: MedPAC analysis of MA statutory and regulatory requirements.

particular, the provision affords an advantage to PFFS plans. The CMS guidance on this provision states that "if an individual in Original Medicare and a stand-alone prescription drug plan elects to enroll in an MA-only coordinated care plan, such as an HMO, PPO, or Regional PPO, his or her enrollment in the PDP [prescription drug plan] will be automatically cancelled as of the effective date of enrollment in the MA-only plan" (CMS 2007a). Beneficiaries without drug coverage may enroll in any MA-only plan, but a beneficiary's Part D coverage continues only if the person enrolls in a PFFS MA-only plan. In addition to giving an advantage to PFFS plans, beneficiaries with Part D coverage can use this provision as a way to discontinue their Part D enrollment outside of the open enrollment period.

Special needs plans

The Congress created a new MA plan type known as a SNP in the MMA to provide a common framework for existing plans for special needs beneficiaries and to expand beneficiaries' access to and choice among MA plans. SNPs function essentially like any other MA plan but must also provide the Part D drug benefit. In exchange, they are allowed to limit their enrollment to their targeted populations—a provision that will lapse at the end of 2008, absent action by the Congress to extend the provision. Targeted populations include dual (Medicare and Medicaid) eligibles, the institutionalized, and beneficiaries with severe or disabling chronic conditions.

FIGURE 3–1 **The number of SNPs and SNP enrollment increased from 2006 to 2007**



Note: SNP (special needs plan).

Source: CMS special needs plans fact sheet and data summary, February 14, 2006; CMS special needs plans comprehensive report, March 21, 2007; and CMS annual report by plan, July 26, 2006.

This year again marked a significant increase in the number of SNPs available to beneficiaries. In 2004, there were just 11 SNPs.[11] By 2005, the number grew to 125. In 2006, the number of SNPs more than doubled to 276 with the entry of 151 new SNPs. In 2007, there are 476 SNPs. Organizations entering the SNP market include those with experience with Medicaid and special needs populations, such as Evercare, but also include MA organizations that chose to add SNPs to their menu of plans.

The Commission has sought creative ways to deliver high-quality health care to special needs beneficiaries. SNPs offer the potential to improve care coordination for dual eligibles and other special needs beneficiaries through unique benefit design and delivery systems.

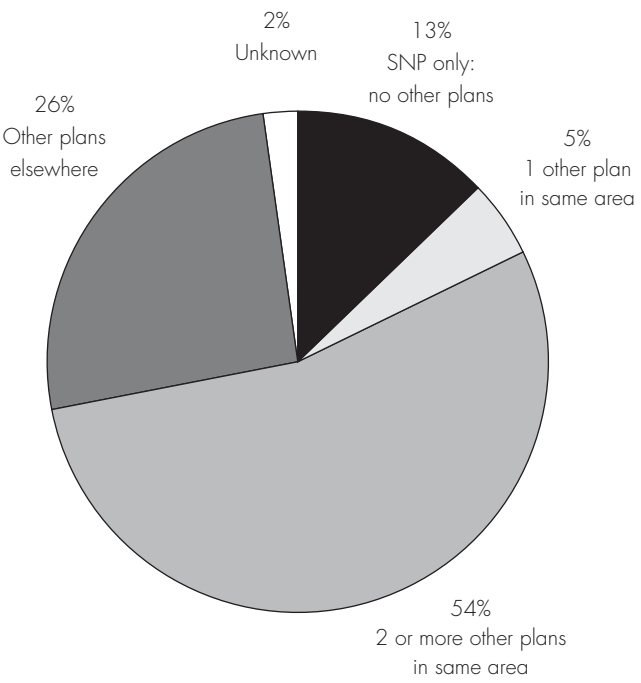
However, as described in the June 2006 report to the Congress, we see that many SNPs are not taking advantage of the opportunity to better coordinate care for special needs beneficiaries. SNPs, even dual-eligible SNPs, are not required to contract with states to provide Medicaid benefits. Based on site visits and additional discussions with experts, we do not see how dual-eligible SNPs that do not integrate Medicaid could fulfill the opportunity to coordinate the two programs. We also are unsure whether SNP designation is necessary to allow plans to furnish the sorts of benefits targeted at beneficiaries in institutions and with chronic conditions. For 2008 applications, CMS instructed SNPs to describe how they plan to meet their enrollees' special needs but has not specified minimum expectations or established an enforcement mechanism.

SNP availability and enrollment: July 2006 and March 2007

Since the June 2006 report to the Congress, we have further analyzed the availability of and enrollment in SNPs. Most SNPs (82 percent) available in 2006 were for dual-eligible beneficiaries (Figure 3-1). In 2007, dual-eligible plans still account for the largest share of

FIGURE 3–2

Most SNPs' parent organizations offered other MA plans in 2006



Note: SNP (special needs plan), MA (Medicare Advantage).

Source: CMS plan benefit packages, 2006.

SNPs (67 percent). However, institutional and chronic SNPs grew at faster rates, 127 percent and 446 percent, respectively (not shown).

In July 2006, most SNP enrollment (83 percent) was in dual-eligible plans (Figure 3-1, p. 71). Enrollment in chronic condition SNPs was almost entirely (98 percent) in a single plan—Medicare y Mucho Más in Puerto Rico. Enrollment in institutional SNPs was mostly (88 percent) in Evercare plans offered by United Healthcare. By 2007, most SNP enrollment was still in dual-eligible plans (74 percent). Enrollment in institutional SNPs grew as a share of total SNP enrollment from 4 percent to 17 percent. However, this growth is largely accounted for by the redefinition of the SCAN demonstration social-HMO as an institutional SNP. SCAN qualified as a SNP under the disproportionate share rule; approximately 26 percent of its enrollees are nursing home certifiable, living in the community. This change added 89,222 institutional SNP enrollees, 76 percent of institutional SNP enrollment growth.

Most SNPs were offered by parent organizations that also offer regular MA plans. Only 13 percent of SNPs were offered by parent organizations that focused exclusively on operating SNPs (Figure 3-2). The other 87 percent were offered by parent organizations that also offered regular MA plans, which suggests that these organizations offer SNPs as one choice in a menu of options. In fact, most SNPs (about 60 percent) existed alongside other MA plans offered by the same parent organization in the same service area.

Future work on Medicare Advantage

The Commission plans to continue monitoring the MA program. In addition to continuing our work in examining SNPs, we intend to look more closely at employer-sponsored plans in MA to learn more about their prevalence and where enrollment is concentrated. We would like to know more about the standards that apply to such plans (particularly in light of the broad waiver authority applicable to these plans), the bidding patterns compared with nongroup plans, and other issues that will permit us to evaluate these plans. Employer-sponsored plans appear to be growing in popularity, and more employers and groups are providing retiree coverage through the PFFS option. We will also be looking more closely at the MSA plans that began enrolling beneficiaries for 2007. MSA plans also appear to be focusing on the employer group market as a source of enrollment. ■

Endnotes

1 Under the Medicare Prescription Drug, Improvement, and Modernization Act of 2003, plans with a bid below the benchmark (with the bid including administration and profit or retained earnings) are required to use 75 percent of the difference between the bid and the benchmark to finance extra benefits, with the remaining 25 percent (or half of that amount, for regional plans) retained by the Medicare trust funds. Previously, plans had the option of returning to the government all or a portion of the amount by which their needed revenue to provide the Medicare benefit package exceeded the Medicare payment—an option rarely chosen. Plans could also deposit any difference in a "stabilization fund" that financed extra benefits provided in a future year.

2 In the early years of the Medicare risk program, plan payments were set at 95 percent of projected FFS expenditures, but payments were not risk adjusted by enrollee health status.

3 For regional plans, within a given county the benchmark that applies to each county in the region may be lower than the local benchmark that applies to that county for local plans.

4 The user fee that is the MA plan contribution to the Medicare education campaign is 0.059 percent of plan payments (see www.cms.hhs.gov/MMAHelp/downloads/endofyearenrolpayletter07_final.pdf (downloaded 3/30/2007)). Benchmark amounts include CMS contractor administrative costs for claims processing. Noncontractor Medicare administrative costs incurred by CMS, after netting out administrative costs for the MA program apportioned by program expenditures, are in the range of 0.4 percent of program expenditures in Medicare (the CMS 2006 Financial Report is available at www.cms.hhs.gov/CFOReport/Downloads/2006_CMS_Financial_Report.pdf).

5 As required by the statute, CMS anticipates incorporating any VA effect in the 2009 MA rates (CMS 2007b).

6 For the range of benefits MA plans provided to enrollees in 2006, see Chart 10-4 of the June 2006 MedPAC data book (MedPAC 2006b).

7 At least one PFFS plan has a hospital network. The plan service area consists of two counties. Beneficiaries pay different levels of cost sharing for in-network versus out-of-network hospital care. We do not know whether the payment arrangements between the plan and the network hospitals call for payment at other than Medicare FFS rates.

8 The February 2007 numbers exclude counties with fewer than 11 enrollees because they are based on data released publicly by CMS, which suppresses such data for privacy reasons. For February 2007, about 39,000 enrollees live in counties with enrollment under 11. About 3 percent of PFFS enrollment comes from such counties. In the July 2006 data, about three-quarters of the under-11 enrollment in PFFS came from rural counties. Assuming a similar pattern in 2007, the rural and BBA floor percentages shown in the table for 2007 would increase by 1 percentage point.

9 Note that the February 2007 enrollment numbers of Table 3-3 are based on data publicly released by CMS and do not include counties with fewer than 11 enrollees. About 3 percent of PFFS enrollment is in counties with 10 or fewer enrollees in 2007. The 2006 numbers in the table include all counties with any PFFS enrollment.

10 The reported data are based on a MedPAC analysis of the 2007 Medicare Personal Plan Finder downloadable database available at the CMS website. Note that PFFS plans will no longer be reporting quality measures through the Health Plan Employer Data and Information Set but will have member satisfaction data reported based on the Consumer Assessment of Healthcare Providers and Systems. Medical savings account plans will have no reported quality or member satisfaction measures.

11 SNP plans, like other MA plans, are benefit packages offered by MA organizations, which sign contracts with CMS.

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CHAPTER 4

Value-based purchasing: Pay for performance in home health care

CHAPTER 4

Value-based purchasing: Pay for performance in home health care

Chapter summary

In the Deficit Reduction Act of 2005, the Congress asked the Commission to discuss the design of a pay-for-performance (P4P) system in home health care as part of a broad set of initiatives to improve the value of health care that Medicare purchases. Providing financial incentives for quality is one tool the Medicare program can use in home health and other settings. P4P should be used in tandem with other payment reforms (e.g., increasing the accuracy of payments) as well as with other quality incentives (e.g., public reporting).

The first key decision in the design of a P4P system is how to fund the reward pool. As a principle, the Commission has stated that P4P should be budget neutral, neither adding nor removing money from the system. Thus, the system could be funded by redistributing payments from poor performers to high-quality performers and to providers who are improving.

Another set of key decisions involves how to set thresholds for performance. One way to set a threshold is to predetermine a

In this chapter

percentage of providers (e.g., rewarding the top 10 percent of providers). Another alternative is to choose a minimum score and use a test of statistical significance: High performance is a score statistically significantly above the average, poor performance is a score statistically significantly below the average, and improvement is a score statistically significantly greater than the provider's previous score.

A system that rewards both attainment of high quality and improvement toward high quality must find a balance between the two rewards. If the rewards are exclusive (a provider can receive either an attainment reward or an improvement reward but not both) then less weight could be placed on the improvement rewards since those providers are, by definition, providing lower quality care as measured by the P4P system.

A final decision in P4P design is to determine the size of the reward. In a budget-neutral system, the size of the reward is constrained by the size of the penalty placed on poorly performing providers. One implication of the Commission's principle that P4P should be budget neutral is that when money is removed from the system to fund the pool, then the entire reward pool should be spent on rewards. The size of the reward for the provider should be a percentage of the provider's Medicare payments.

The circumstances of home health care may pose some challenges for P4P in that sector. The payment system has some inaccuracies, and payments have been more than adequate. The Commission will continue to consider reforms to the payment system. P4P should be put in place at the same time Medicare improves the payment system to create stronger incentives to improve quality. ■

MedPAC recommended that Medicare build financial incentives for quality into payments to hospitals, physicians, home health agencies (HHAs), dialysis providers, and Medicare Advantage plans (MedPAC 2004, 2003). Medicare's current payment systems are neutral or negative toward the quality of services; these systems do not promote the program's goals to provide high-quality services to its beneficiaries and to be a good steward of public resources. The program should link payment to quality through a pay-for-performance (P4P) program to increase the value of health care spending. P4P should be used as one payment policy tool along with reforms that address other weaknesses in the payment system and other incentives for quality.

The Congress asked the Commission to address several key design issues in developing a system that links payment to performance in home health care as part of a broad initiative to encourage value-based purchasing in the Medicare program. The Deficit Reduction Act of 2005 requested this mandated report (see text box, p. 80). The mandate posed four questions: How should P4P be funded? What is the threshold for a reward? How should improvement and attainment be balanced? What is an effective size for the reward?

Pay for performance in Medicare: The Commission's design principles

The Commission has developed principles to guide the design of a P4P program and to select the quality measures that would support it.

Program design features

The Commission calls for P4P programs that:

- Reward providers based on attaining or exceeding certain benchmarks *and* improving at certain benchmarks. This principle seeks to encourage as many providers as possible to improve, thus maximizing the benefit of the program to as many beneficiaries as possible. Providers already performing at high levels will be rewarded for their efforts. Those who score low at baseline will have an incentive to improve. If all providers improve over time, improvement incentives can be phased out of the system.
- Are funded by setting aside a small proportion of the current payment—initially 1 percent to 2 percent. The first dimension of this principle is whether the policy should be funded by withholding dollars or whether new spending is necessary.[1] Through a separate process, the Commission evaluates the adequacy of payment levels every year when it recommends payment updates for providers. The Commission determined that the P4P initiative should be funded within current levels of spending. The primary rationale was to shift the incentives of payment, not the level.

  The second dimension is whether the size of the incentive is enough to encourage provider change or whether it is too disruptive. Evidence about the "right" level for incentives is limited.[2] In a budget-neutral program, smaller incentives may be more powerful as providers perceive the penalty dollars as lost income. The much smaller 0.4 percent incentive for hospitals called for by the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 was designed to encourage data reporting as a condition for receiving a full update; there was a penalty for nonparticipation. It resulted in nearly universal hospital reporting on certain process measures.

  Others have suggested that, if the dollars are withheld, even 1 percent to 2 percent could be significant and potentially harm providers that may be at low levels of quality. This concern was one rationale for suggesting that improvement from low levels should also be rewarded.

  Given the limited evidence on the right level, and to ensure minimal disruption for beneficiaries and providers, the Commission chose to recommend that 1 percent to 2 percent be set aside, at least initially. The Commission expects the percentage to increase as the Medicare program and providers gain more experience with P4P.
- Distribute all payments that are set aside to providers that meet reward criteria.
- Establish a process for evolution of the program, together with private purchasers and other public purchasers. The P4P design should be evaluated and changed over time. This system should be a learning system.

Mandate for report

The Deficit Reduction Act of 2005

MedPAC Report on value based purchasing.

Not later than June 1, 2007, the Medicare Payment Advisory Commission shall submit to Congress a report that includes recommendations on a detailed structure of value based payment adjustments for home health services under the Medicare program under title XVIII of the Social Security Act. Such report shall include recommendations concerning the determination of thresholds, the size of such payments, sources of funds, and the relationship of payments for improvement and attainment of quality. ■

Criteria for quality measures for a pay-for-performance program

Based, in part, on the experiences of private-sector initiatives, the Commission developed criteria for determining whether the measures and measurement activities for each provider setting were sufficient to distinguish between high- and low-quality performance. These criteria are:

- Well-accepted, evidence-based measures must be available. They should be accepted by independent quality experts and should be familiar to providers. While few individual measures are perfectly valid or reliable, they should identify real differences in provider quality.
- Collecting and analyzing data should not be unduly burdensome for either the provider or CMS. To minimize the burden of collection and analysis, CMS should base quality measures on data it currently collects, wherever possible. The need for additional information should be balanced against the value of the information to the provider being measured, patients, and the Medicare program.
- Incentives should not discourage providers from taking riskier or more complex patients. Appropriate risk adjustment is always important when comparing provider quality. To address this concern, the program could use measures that—in general—are not affected by the complexity of the patient, such as process, structure, and patient-reported experience of care measures. Risk adjustment is critical for outcomes-of-care measures.
- Most providers should be able to improve on the available measures. This criterion has several dimensions. For one, the measures should capture aspects of care the providers can affect. Another dimension is that the measures should be related to aspects of quality that most need improvement; there should be room for real gains in quality. Another dimension is scope. The measures should apply to a broad range of care and providers; the greater the proportion of providers whose care is measured, the broader the impact will be on beneficiaries. It is also important to measure a broad range of the types of care delivered in the setting. Measures focused on specific conditions are already available in most settings, but to capture a broad range of care in each setting, measures that apply to all types of patients (e.g., safe practices, use of patient registries, and patient perceptions of care) should be added over time. A starter set of measures could satisfy this criterion and not necessarily encompass all care, all providers, and all patients.
- A P4P measure set should evolve to become more comprehensive. Ideally, measures should also reach across settings to align incentives across providers such as hospitals, skilled nursing facilities, and physicians working together to reduce readmissions to acute care hospitals. After Medicare chooses an initial measure set, CMS will need to alter, add, and drop measures and ensure that research is under way to create or validate other measures. A single entity could help coordinate public and private efforts and, based on the advice of quality experts, make recommendations on measures.

What will make pay for performance work?

Providing incentives for quality can increase value by prompting providers to begin addressing the current shortcomings of health care.[3] Results such as the high level of evidence-based care for cancer in the first year of the United Kingdom's physician pay-for-performance (P4P) program (Doran et al. 2006), the increase in cholesterol screening during California's physician P4P program (Integrated Healthcare Association 2006), and patients receiving aspirin after a heart attack under CMS's hospital P4P demonstration provide evidence that providers respond to incentives to improve their performance, increasing the quality of health care.

The Agency for Healthcare Research and Quality (AHRQ) synthesized economic, psychological, decision, and organizational theories to describe other factors that could lead providers to respond to—or ignore—a P4P program (Dudley et al. 2004). We summarize these factors in this text box.

Providers are more likely to respond to financial incentives if expected revenue is greater than or equal to costs. If the direct costs and opportunity costs of responding to the incentive outweigh the financial return, then the incentive is likely to fail. However, this may be mitigated by some of the nonfinancial incentives, such as a commitment to professionalism, the mission of the organization, and the provider's potential loss of standing among peers or in the community (Town et al. 2004). These "costs," in terms of the provider's reputation, will be greater if the P4P information is widely available.

Providers who think they have greater control over what is measured will have a greater response. For this reason, structural and process measures may generate a greater response than outcome measures.

Providers under fee-for-service payment are more likely to respond to incentives to produce more units of service—more discharges or more episodes of home health care—because improving quality in a way that increases use of services increases revenue. Alternatively, providers in a capitated payment system may be less attracted to incentives that require more services to be provided within the bundle of payment.

Researchers at the University of Minnesota expanded on AHRQ's list with provider characteristics that will affect a provider's response to P4P (Town et al. 2004). For example, providers that are risk averse will respond more strongly to avoid a penalty.

If different payers coordinate their efforts, P4P is more likely to succeed because providers can receive consistent incentives and avoid duplicative or incompatible requests for quality data. Also, the coordination of effort leads to a greater impact by capturing a larger portion of providers' total revenue. ■

Pay for performance for home health

In this section, we apply the Commission's general principles to the specific challenge of developing a Medicare P4P system for HHAs. We use an illustration of a home health P4P system to discuss the decisions to be made at each point. This illustration is only one of many possible designs for a P4P system; factors that influence whether P4P is likely to have an impact on quality should also be considered (see text box). Our use of a single model is for the benefit of clarity and does not imply an endorsement of this particular set of design choices. We chose six real agencies; using their actual quality and financial information from 2005, we present the rewards and penalties that would accrue in a system that pays more for high-quality care and less for low quality.

There are several decision points in the design of home health's P4P system. At each of these points in the model, we discuss the alternatives to the path we chose for the purpose of this illustration. The major decision points are:

- funding the reward pool
- measuring agency quality
- setting thresholds for reward and penalty
- balancing improvement and attainment
- calculating the rewards

For the purposes of illustration, we discuss a model that funds the reward pool by withholding 5 percent of payments from each HHA. While this is not the only design consistent with the Commission's principles, it is provided to illustrate one possible configuration of P4P in home health care. The model uses a quality measure based on improving or stabilizing functional outcomes and avoiding potentially preventable unplanned hospitalizations and trips to the emergency room (ER). To determine whether an agency will be rewarded or penalized, its quality score is compared to a national benchmark level of quality (the threshold) to determine whether it is statistically significantly higher or lower than the benchmark. The model also includes a measure of the agency's improvement in quality. The reward for attaining high quality is twice as large as the reward for improvement in this model. Rewards and penalties are calculated as a percentage of the agency's Medicare payments. We also discuss additional design features, such as addressing agencies with few patients and ways to improve the P4P system and the quality measures over time.

Funding the reward pool

The first decision is how to fund the reward pool. This involves two issues: (1) whether the funding should be budget neutral, new money, or from savings elsewhere in the program; and (2) how much funding should go to payment for performance.

Source of funding

The Commission has stated as a principle that P4P should be budget neutral. In a report on rewarding provider performance, the Institute of Medicine (IOM) also recommended a budget-neutral funding source (IOM 2006). The model applies budget neutrality by withholding 5 percent of Medicare revenue from poor performers to fund the reward pool for high performers. Thus, the reward and the penalty pools redistribute spending within the home health sector and do not add new money to it.

A P4P system that includes potential penalties (which is implicit in a budget-neutral program) may be more powerful than a system with the same percentage of payment without penalties because economic actors assign more value to potential income lost than to rewards won (Kahneman and Tversky 1979). If providers are at risk for losing revenue, then low-quality providers could perceive even 1 percent to 2 percent of payments as significant.

In contrast to the Commission's design principle, CMS uses savings generated by home health quality improvement in other sectors of Medicare to fund rewards for HHAs in its proposal for a demonstration. The demonstration would increase the amount of spending in the home health sector but would not increase Medicare spending as a whole because spending would be reduced in other sectors. Under the demonstration, if the HHAs in the demonstration keep their patients out of the hospital more often than agencies outside of the demonstration, then the amount saved on hospitalizations avoided will be available as rewards to high-quality HHAs that participate in the demonstration. If savings are not achieved, then no money will be available for rewards.

If a program were funded based on savings, IOM observed that it would not be possible to predict the size of the reward pool until the experience for the entire year in multiple sectors is gathered and analyzed, creating a long lag between implementing the program and rewarding providers and resulting in instability from year to year. IOM also noted that it would be difficult in a generated savings funding system to attribute spending decreases in one sector (e.g., hospitals) to quality interventions in a different sector (e.g., HHAs). This challenge would be compounded if and when P4P systems in different sectors are running simultaneously. For example, if both home health and skilled nursing facility P4Ps were running, the program should not "spend" the hospital savings twice, even though improvements in both skilled nursing facilities and home health care might have contributed to reduced hospitalizations. This funding source is likely to be unstable because it might be difficult to generate increasing savings year after year.

Providers may not perceive a funding system based on savings to be fair if improvements in their quality do not generate savings in other sectors. Providers may also perceive the complicated calculation of savings to be inaccurate. Finally, there may be a "free rider" problem if the savings some exemplary providers generate are attributed to all.

TABLE 4–1 **The pay-for-performance model withholds 5 percent of Medicare payments**

	Agency					
	1	2	3	4	5	6
Total Medicare payments	$192,000	$755,000	$4,706,000	$2,106,000	$415,000	$764,000
Payment withheld	$9,600	$37,700	$235,300	$105,300	$20,800	$38,200

Source: Outcome Concept Systems analysis of 2003–2005 cost report and Outcome and Assessment Information Set data.

A positive attribute of funding based on savings is its explicit link between high quality and resource use in achieving greater efficiency. It may appeal to policymakers because it builds an explicit incentive to generate savings for Medicare into the P4P program. If such a system were effective, one might imagine a future phase of the program in which Medicare keeps some of the savings and thus lowers total Medicare spending. Finally, such a system allows the program to fund a reward pool without penalizing (and presumably antagonizing) providers who participate in Medicare voluntarily or seeking new money from outside the program.

Level of funding

The Commission recommended starting P4P with a small portion of payment. Evidence on the right level for incentives is limited (Rosenthal et al. 2005). One survey of private-sector efforts found that purchasers report needing incentives of 5 percent to 20 percent to influence the behavior of physicians and 1 percent to 4 percent to influence hospitals. Applying these findings to a program as large as Medicare is problematic. We do not know what portion of providers' overall payment these percentages represent. Because Medicare payment often represents a higher percentage of a provider's total revenue than does a single private payer, a smaller percentage of Medicare's payment may be enough to encourage change. In CMS's Premier hospital demonstration, preliminary results show improvement in all conditions in the first four quarters in anticipation of financial rewards of either 1 percent or 2 percent for those in the upper rankings (Premier 2006).[4] The Commission expects the percentage to increase as the Medicare program and providers gain more experience with P4P.

As a general guide, the Commission suggested that P4P programs begin with 1 percent or 2 percent of payments. The model withholds 5 percent of payments. One could view the model as a program that started with a smaller withhold and grew over several years to the 5 percent level. In 2005, Medicare payments for home health services totaled $12.5 billion. The 5 percent withhold would generate $625 million in the pool for rewards. Annual Medicare payments to individual agencies ranged from about $125,000 to $6.5 million.[5] At the agency level, a 5 percent withhold would amount to a payment reduction ranging from $6,300 for some of the smallest agencies to $325,000 for some of the largest. The median agency received $1 million in Medicare payments and would have a withhold of $50,000.

Illustration of a home health P4P model

For illustrative purposes, the model (Table 4-1) withholds 5 percent of revenues from six agencies to demonstrate the reward pool.

Measuring agency quality

The core of home health quality measurement is the 31-measure Outcome-Based Quality Improvement (OBQI) set. CMS developed the OBQIs to use in their public reporting of HHA quality and to track changes in quality over time. The OBQI set includes the measures of outcome, stabilization, and improvement shown in Table 4-2 (p. 84).

These measures are based on comparison of patients' level of function at the beginning and end of their home health treatment as measured by the Outcome and Assessment Information Set (OASIS) patient assessment tool. Most patients can be included in most measures.

TABLE 4–2 **OBQI measure set**

Outcome	Stabilization	Improvement
• Acute care hospitalization • Any emergency care provided • Discharge to community	Stabilization in: • Bathing • Grooming • Transferring • Light meal preparation • Laundry • Housekeeping • Shopping • Telephone use	Improvement in: • Bathing • Grooming • Transferring • Light meal preparation • Laundry • Housekeeping • Shopping • Telephone use • Ability to dress lower body • Ability to dress upper body • Ambulation • Bowel incontinence • Confusion frequency • Dyspnea (shortness of breath) • Eating • Frequency of pain • Management of oral medications • Toileting • Urinary incontinence • Urinary tract infection

Note: OBQI (Outcome-Based Quality Improvement).

CMS has used about a dozen of these measures to assess individual HHAs' quality for the past several years on the Home Health Compare website. These measures satisfy most of the Commission's criteria for use in P4P: They are valid, reliable, generally accepted by researchers, and familiar to providers.[6] Providers can improve on these measures. They are derived from data that are routinely collected from HHAs and processed by CMS; they do not pose a new data burden.

A composite quality score

For illustrative purposes, we used a quality score that combines 20 home health outcomes into a score called the Standardized Quality Index (SQI). Additional technical information is provided at the end of this chapter. The SQI includes patients who improve at activities of daily living as well as those whose level of functioning is stable. It includes penalties for potentially avoidable hospitalizations and potentially avoidable use of the ER, both of which indicate lower quality and suboptimal resource use. The SQI groups patients into categories by their primary diagnosis. The measurement is restricted to patients for whom Medicare is the primary payer.

The SQI gives agencies credit for stabilizing patients who do not improve. This allows the system to capture the quality of care provided to patients who use home health care to remain safely at home, stabilize their condition, and avoid institutional care settings such as a nursing home.

The score places greater weight on unplanned hospitalization and ER use because these outcomes also capture the potentially avoidable use of hospitals' and ERs' resources. The Commission has underscored the importance of including both quality and resource use in measures of efficiency. A high rate of potentially avoidable adverse events indicates not only low quality but also inefficient use of hospital resources. By safely and appropriately preventing avoidable hospitalizations and use of the ER, home health care can efficiently reduce the use of hospital resources. The SQI score restricts the definition of adverse events to ER and hospital use for specific diagnoses that could have been prevented.

TABLE 4–3 **Agency level quality scores in the model**

	Agency					
	1	2	3	4	5	6
SQI score:						
Year 1	0.46	0.30	0.66	0.83	0.95	1.09
Year 2	0.60	0.61	0.69	0.86	0.87	1.16
Pooled data	0.50	0.56	0.66	0.85	0.92	1.13

Note: SQI (Standardized Quality Index).

Source: Outcome Concept Systems analysis of 2003–2005 cost report and Outcome and Assessment Information Set data.

Giving more weight to measures that include resource use is consistent with goals established by CMS and IOM. In the proposed demonstration of a P4P system in home health care, CMS has given additional weight to unplanned use of the hospital and use of the ER. In its report, IOM stressed the need for P4P to include measurements of resource use.

We discuss specific and additional issues in the development of composite quality scores at the end of this chapter.

Whether to measure quality for Medicare patients only

In our model, we measure quality only for Medicare patients cared for by Medicare-certified agencies. Choosing to measure only those patients for whom Medicare is the primary payer increases the homogeneity of the patients compared across agencies: Medicare patients tend to share certain characteristics such as age, full insurance coverage, and regular sources of care. Also, within home health care, patients must meet the same conditions of medical necessity and level of need: The rules of Medicare stipulate that home health patients must be homebound, require skilled medical services, and need temporary or intermittent care (rather than 24-hour or long-term care). Patients with non-Medicare sources of payment might not fit these criteria. The heterogeneity of private pay and Medicaid patients might make it more difficult to make fair comparisons of patients across agencies. In terms of the verification of data, patients outside of Medicare pose a special challenge because the Medicare program may not have a regular, auditable source of data for those patients.

Alternatively, a P4P system could include all of a provider's patients and not just those whose primary payer is Medicare. The Medicare program's conditions of participation maintain the same quality standards for all of a provider's patients. Some patients have both Medicare and Medicaid sources of payment; thus, the primary source of payment may change but the patient remains the same. Measures that are more inclusive allow for larger samples, which can result in more accurate quality measurement.

Illustration of a home health P4P model

For the model, we used the SQI score for the six agencies' therapy patients. This score summarizes 22 outcomes for patients who need physical therapy. Using primary diagnosis, which acts as a risk adjuster, we grouped similar patients together. Only Medicare patients are included.

On this scale, higher scores indicate that more patients achieved better outcomes more frequently. The scores ranged from –2 to +2. The average score was 0.84. The measurement periods are year 1 (from the second quarter of 2004 to the first quarter of 2005) and year 2 (from the second quarter of 2005 to the first quarter of 2006). Table 4-3 presents the average quality scores for the six agencies.

The third row in Table 4-3 displays each agency's score when we pooled data from year 1 and year 2. Pooling data across years is an effective tool to address the challenge of small sample sizes. Also, pooled data add stability to the scores because a two-year average changes less from year to year than a single-year average. As we continue to discuss the model in this chapter, we will measure these agencies by their score on the two years of pooled data.

TABLE 4–4 **The share of agencies in the reward group will depend on clinical group and statistical confidence level**

	Confidence level	
Clinical group	**95%**	**90%**
Therapy	32.0%	34.4%
Acute CVD	16.5	20.0
CHF or COPD	27.3	30.5
Diabetes	21.0	24.3
Pneumonia	15.3	18.9
Skin infection	16.7	20.5
Skin ulcer	14.6	18.3

Note: CVD (cerebrovascular disease), CHF (congestive heart failure), COPD (chronic obstructive pulmonary disease).

Source: Outcome Concept Systems analysis of 2003–2005 cost report and Outcome and Assessment Information Set data.

Setting thresholds for reward and penalty

P4P programs measure the quality of each provider and compare providers' quality scores with a threshold to determine whether they qualify for a reward for attaining high quality. Three components of the program can be set in advance: (1) the amount of the payment (necessary for budget-neutral systems), (2) the threshold that will trigger payment or penalty, and (3) the number of agencies that will receive a payment or a penalty.

For illustration, we have set both the funding and the threshold in advance. We call the threshold the national benchmark. Setting the quality target in advance may help some providers develop plans to improve quality, focus their efforts, and set milestones over the course of the measurement period to calibrate their performance. Alternative models that predetermine the proportion of agencies to reward or penalize (e.g., a system that rewards the top 10 percent or penalizes the worst 100 agencies) could penalize or reward average providers because some agencies that are statistically the same as the average could fall into the reward or penalty group. However, predetermining the size of the pool has the advantage of producing a stable, predictable pool of agencies to reward and penalize.

In comparing the agency's average quality score to the national benchmark, we use a statistically significant difference as the threshold: Thus, the threshold for a reward is to be statistically significantly above the national benchmark. The threshold for a penalty is to be statistically significantly below the benchmark and not show any year-to-year improvement. This system minimizes uncertainty by reducing the number of times it rewards a provider that is actually poor or mediocre or penalizes a provider that is actually mediocre or good.

The national average SQI score for therapy patients for the measurement year is 0.84 in the model. Whether a given agency is significantly better than average depends on three things: (1) the agency's score, (2) the size of the agency, and (3) the variation in outcomes among the agency's patients. High scores, larger samples, and more consistency increase the statistical certainty that an agency's score is greater than average; small samples and inconsistent outcomes among an agency's patients could lead to a score that is higher than average due to chance rather than to high quality of care.[7] Two sources of variation, measurement error and random variation in patients' response to care, could cause an agency's score to differ from the true quality of the agency.

The national average SQI score for therapy patients for the year before the measurement year is the benchmark of the system. This system would allow providers to know their quality improvement target; they would know what score they had to beat to gain a reward or how much they would need to improve to avoid a penalty. Thus, setting the benchmark with the previous year's average substantially reduces one of the greatest uncertainties providers in a P4P system face. Also, by using a national average the industry has already obtained, the program can be fairly certain that some providers will exceed the benchmark and some will fail to meet it. Alternatively, the trend in quality improvement that has emerged over the past several years of quality reporting in home health care—namely, about a 2 percent annual gain in functional outcomes—could be applied and the benchmark could be set 2 percent higher than the previous year's national score average so everyone would need to continue to improve at the current rate to maintain their current status; they would need to expend an additional effort to excel.

The reward group

When we apply the model to national data for patients in the therapy group, we find that we would place 34.4 percent of all agencies in the reward group (Table 4-4).

If we had started with a different clinical group, a different proportion of agencies would be eligible for a reward. Fewer agencies excel at care for the other six clinical groups. Also, if we applied a higher standard of certainty—for example, if we had used a 95 percent confidence interval—we would have a smaller proportion of agencies in the reward group.

Alternatively, P4P in home health care could use a model that is similar to the system CMS is considering for its home health P4P demonstration. This system will reward the top 10 percent of eligible agencies. This design has the advantage of ensuring that there will always be a group of agencies to reward. A system that sets a performance-based threshold runs the risk that very few or even no agencies will qualify for a reward. To be eligible, an agency must serve at least 25 patients. CMS's system measures all the patients at each agency. It does not restrict its measurement to patients in a single clinical group. As we noted previously, the CMS design scores each outcome separately; thus, an agency could receive a reward for its ability to improve patients' bathing but not receive a reward for improvement in walking.

A weakness of CMS's method of setting a threshold for reward is the potential to make statistical errors. Some agencies may score in the top 10 percent due to chance. Treating each agency's reported score as given—without accounting for the size of an agency's caseload or the standard deviation of scores within an agency's caseload—makes substantial distinctions among small agencies with widely variable scores and makes very little distinction among larger agencies with more stable scores that remain closer to the mean. The high level of variation in the scores of small agencies relative to the larger agencies indicates that their scores are likely to be the luck of the draw. They depend more on chance than on the underlying quality of the agency because the sample of patients is small. A threshold that ignores statistical significance would reward or penalize fewer large agencies with stable scores close to the mean and would reward or penalize more small agencies because of high variance in outcomes associated with small samples of patients. On the other hand, using a test of statistical significance implies that a large agency with a score close to the threshold may receive a reward while a smaller agency with a score well above the threshold would not receive a reward. One may wish to consider pairing a test of statistical significance with an absolute minimum difference from the threshold to limit the number of times very small but significant differences are rewarded.

The penalty group

For the purpose of the illustration, we set the threshold for penalty at a score statistically significantly lower than the national benchmark. The statistical method for determining this threshold is the same as the method we are using for the illustration to set the threshold for reward. In the illustration, we find that 28.9 percent of agencies fall into the penalty category. As in the case of the reward threshold, if different clinical groups were used, the proportion would be different, and, if we used a higher level of confidence, the penalty pool would be smaller.

Most P4P systems do not use penalties. There may be several reasons not to use them:

- Many P4P programs are voluntary; providers may be unlikely to volunteer for a program that could reduce their revenue.[8]
- P4P systems that are funded with generated savings or new money do not need a penalty pool to fund the rewards.
- Some suggest that the use of penalties will increase the amount of gaming that is likely to occur under a P4P system.

On the other hand, the possibility of a penalty is likely to motivate the providers in the middle and lower-middle portion of the quality spectrum to improve so that they may avoid losing revenue. A system without penalties might not provide enough motivation for some of the poorest performers to improve, because there would be no cost to them for nonparticipation.

The average group

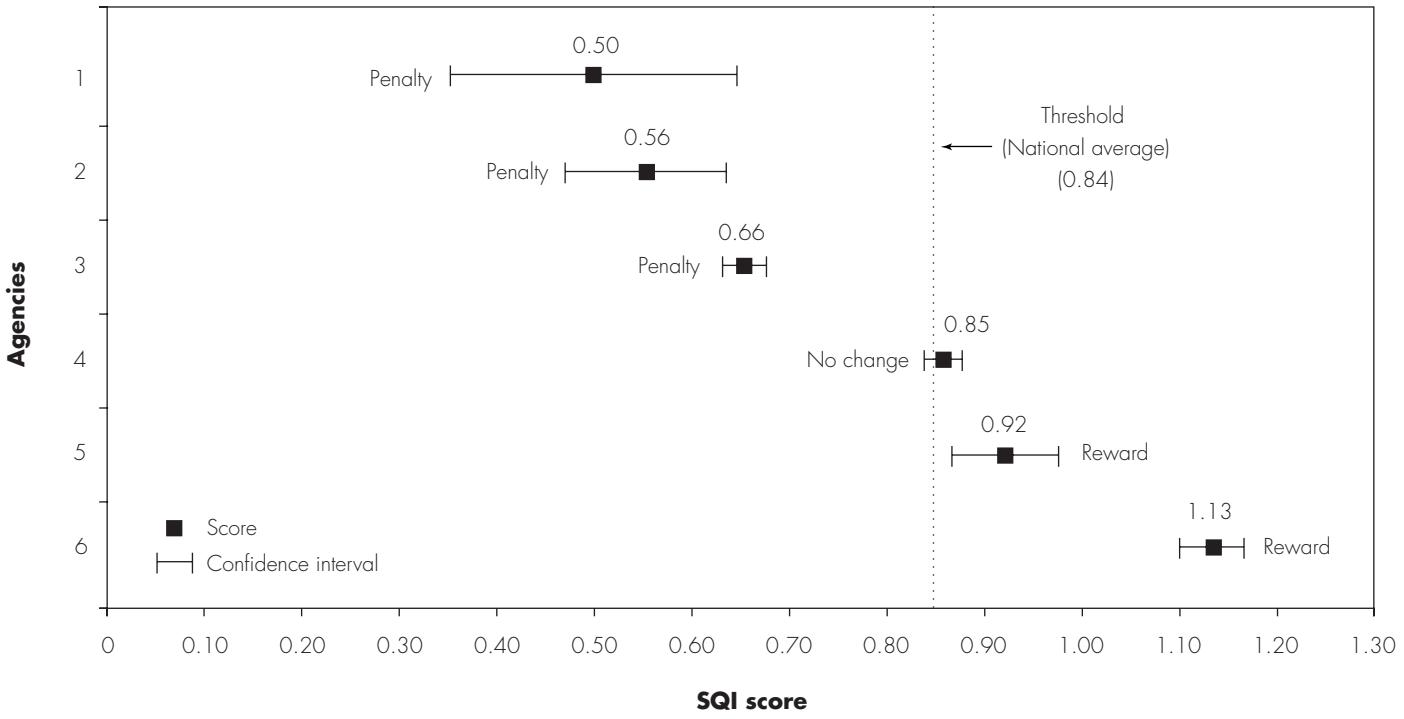
To illustrate how to apply thresholds, the model has a third group: agencies with neither reward nor penalty. They are neither statistically above nor below the benchmark. Not surprisingly, many agencies fit this category. In the model, they would receive a refund equal to the amount of payments withheld. However, these agencies may be eligible for a reward based on improvement, even though they do not attain high quality.

Illustration of a home health P4P model

For purposes of illustration, the threshold for reward is set at a level that is statistically higher than last year's national average; the threshold for penalty is statistically lower than the national average. The national average score was 0.84.

FIGURE 4–1

Comparing agencies to the threshold in the model



Note: SQI (Standardized Quality Index). The figure shows the agencies' pooled data score, which includes two years of data.

Source: Outcome Concept Systems analysis of 2003–2005 cost report and Outcome and Assessment Information Set data.

An agency whose confidence interval falls entirely below 0.84 is in the penalty group. If the confidence interval includes 0.84, the agency is in the no-change group. If the confidence interval is entirely above 0.84, the agency is in the reward group (Figure 4-1).

In the national data set, 34.4 percent of all agencies were eligible for a reward; a penalty was applied to 28.9 percent of agencies. In the proposed model, a third group of agencies (36.7 percent of the total) would be in neither the reward nor the penalty pool. Their scores are essentially the same as the average score; their quality is neither excellent nor poor.

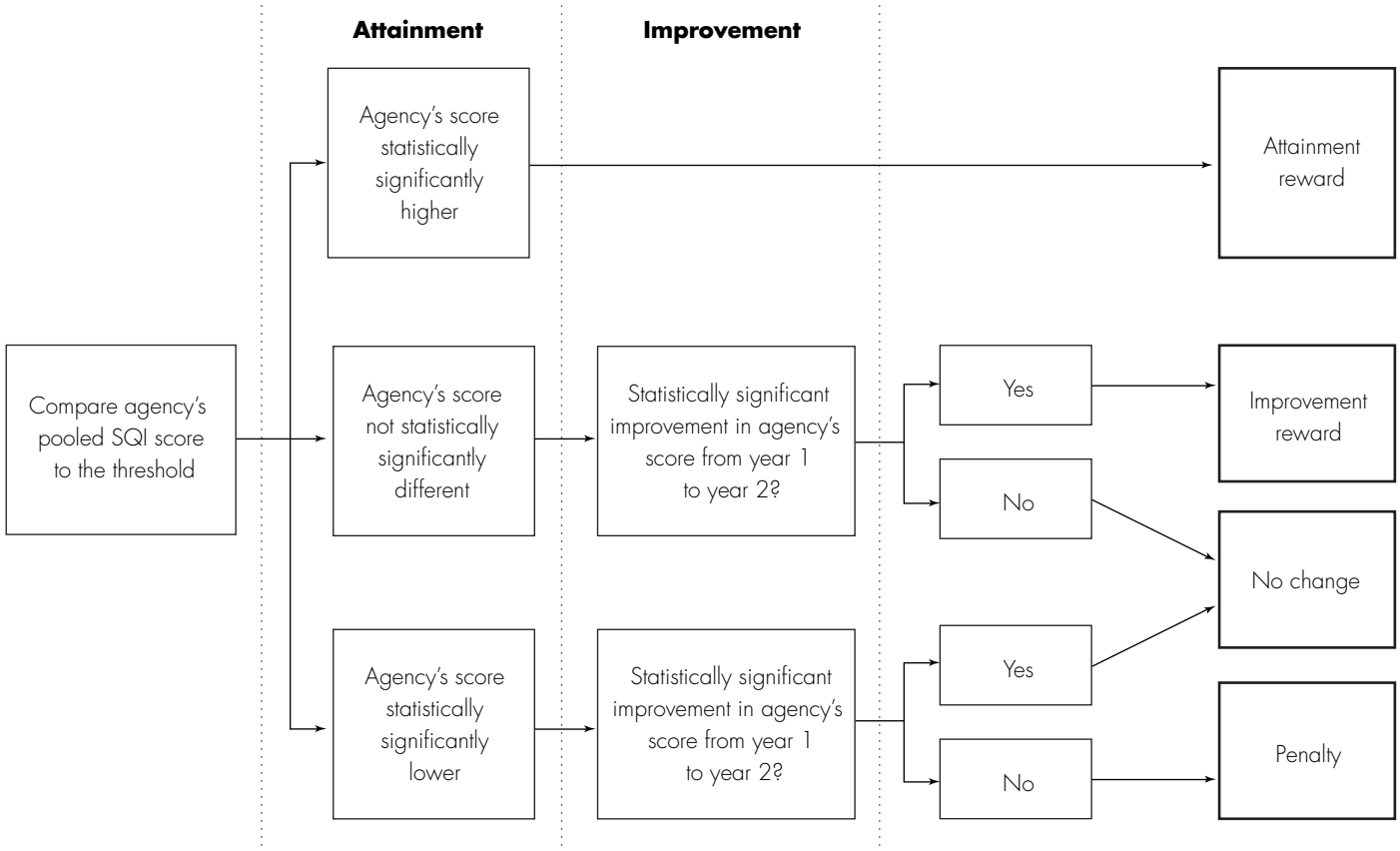
Balancing improvement and attainment

Next, the model considers improvement in agencies' performance over time, consistent with the Commission's principle that P4P should reward both attainment of high performance and improvement. In the model, agencies with average scores in the measurement year but with statistically significantly higher scores than they had in the previous year are eligible for an improvement reward. The award to this "most improved" group is half the size of the reward to the group that attained high scores. In the model, we also look again at the agencies in the penalty group. If they significantly improved over the previous year, they are lifted out of the penalty group and put into a group that receives neither reward nor penalty.

For the illustrative model, the second component of the reward system would acknowledge the improvement among agencies that did not attain a score high enough for an attainment reward (Figure 4-2). The Commission has stated as a principle that P4P should reward both attainment and improvement. If the improvement in an agency's score from the previous year to the current year is statistically significant, then that agency could be eligible for an improvement award. We use exclusive categories for attainment and improvement rewards. If an agency is eligible for an attainment award, it is not also eligible

FIGURE 4–2

Rewarding attainment and improvement in the model



Note: SQI (Standardized Quality Index). Agency's pooled SQI score includes two years of data.

Source: Outcome Concept Systems analysis of 2003–2005 cost report and Outcome and Assessment Information Set data.

for an improvement award. Thus, improvement rewards would go to agencies with average scores but that showed substantial progress toward the goal of excellence. In the model, the rewards for improvement would be one half the size of the rewards for attainment.

The illustrative model would reward agencies with average scores and any amount of statistically significant improvement. Agencies with scores that are statistically significantly below the benchmark would not be eligible for an improvement reward. Measuring the statistical significance of the difference in year 1 and year 2 scores would minimize the number of times we would give an improvement reward to small agencies with very unstable scores—agencies with scores that are likely to be higher or lower due to chance rather than to the influence of real quality improvement. Alternatively, there may be a minimum threshold for improvement such as a 10 percent difference between year 1 and year 2 so that small but statistically significant differences would not be rewarded.

The model also uses a measurement of improvement to soften the penalty for poor performance. If an agency's score were statistically significantly below the national benchmark score, but the agency showed significant improvement over its score the preceding year, then it would not receive a penalty. This system softens the penalty by allowing agencies who are truly getting better to avoid losing revenue. Thus, only the worst actors in the system would be penalized: They are both poor performers relative to the benchmark and are not getting any better relative to their own performance.

Illustration of a home health P4P model

In this step of the illustrative model, agency 3 avoids the penalty because its improvement from year 1 to year 2 was statistically significant. Agency 6 also had significant

improvement but has already qualified for an award based on its attainment, so in the model it cannot also receive the improvement reward. The other four agencies did not show significant improvement.

In national data, about 5 percent of all agencies that would have been in the penalty pool were lifted into the no-change pool because they showed significant improvement. Another group of 5 percent of agencies would be in the improvement group. They showed statistically significant improvement from year 1 to year 2, but in year 2 their score remained statistically similar to the average. These agencies would not qualify for an attainment reward but would qualify for an improvement reward. One could contemplate a further evolution of this scoring system in which agencies that attained a high level of performance with scores statistically significantly above the mean and also improved from year 1 to year 2 might be eligible for some additional bonus recognition as a breakthrough group.

Calculating rewards

The final step in the P4P system is distributing the rewards to providers. The Commission's principle that P4P should be budget neutral guides this step. The agencies in the penalty group will not have their 5 percent withhold returned to them. The 5 percent withhold is returned to the agencies in the no-change group. The agencies in the reward group receive an amount equal to the 5 percent withheld plus the reward amount. Because the model does not force the reward group and the penalty group to be the same size, and the pool was funded by a withhold of a predetermined size, the size of the rewards varies to fit the size and number of reward recipients. The amount returned or rewarded to an agency is proportional to the agency's Medicare payments. The size of the reward will also depend on the number and size of the agencies in the penalty group relative to the number and size of the agencies in the reward group.

Keeping the rewards proportional to Medicare's payments is consistent with our principle of realigning the payment system; that is, Medicare pays agencies in proportion to services rendered and so P4P rewards should distribute money under the same principle. However, the resources required to improve quality might not be proportional to revenue. If a minimum investment is required to achieve higher quality, then smaller agencies might need to commit a greater proportion of their resources than a larger agency. Establishing a minimum award amount may lead smaller agencies to believe the amount of the reward is a reasonable return on investment compared with the effort required to improve quality.

Illustration of a home health P4P model

In the model, we would be ready at this step to assign penalties and rewards to the six agencies (Table 4-5). The penalties against agencies 1 and 2 were withheld throughout the year. In the model, penalized agencies would not be required to pay the program any additional amount at the end of the year. Agencies 3 and 4 would receive a refund equal to the total amount withheld. Recall that agency 3 would have been penalized but it showed significant improvement and thus moved into the group that receives neither penalty nor reward. Agencies 5 and 6 would receive the reward payment calculated in Table 4-5 ($22,825 and $42,020, respectively) as well as a refund of the entire amount withheld ($20,800 and $38,200, respectively) for total year-end payments of $43,625 and $80,220, respectively.

Additional design features

The previous section summarizes the five important design features for a P4P program. In the process of building the illustrative model, we learned that we needed to address two additional features of the program—how to broaden the program to include the most agencies and how to improve the quality measures on which performance is rewarded over time.

Including providers with small numbers of patients

In the home health sector, like the other sectors of the Medicare program, a number of agencies will be too small to earn a reward or pay a penalty. In the illustrative model, because we consider sample size when we calculate statistical significance, many agencies will not be statistically distinguishable from the average. In alternative systems that compare scores with a threshold without considering statistical significance, there is generally a minimum sample size for inclusion and smaller providers are excluded from the system.

In the future, we could consider excluding agencies with a small number of Medicare patients from P4P. However, excluding small agencies introduces some perverse incentives that may run counter to the intent of the P4P system. An incentive that encourages low volume could create an access problem for beneficiaries. It could encourage medium-sized agencies to split or reorganize

TABLE 4–5 **Pay-for-performance reward and penalty amounts in the model**

	Agency					
	1	2	3	4	5	6
Total Medicare payments	$192,000	$755,000	$4,706,000	$2,106,000	$415,000	$764,000
Payment						
Penalty	–$9,600	–$37,700	$0	$0	$0	$0
Refund	$0	$0	$235,000	$105,000	$20,800	$38,200
Reward	$0	$0	$0	$0	$22,825	$42,020
Total	–$9,600	–$37,700	$235,000	$105,000	$43,625	$80,220

Source: Outcome Concept Systems analysis of 2003–2005 cost report and Outcome and Assessment Information Set data.

in ways that wastefully duplicate administration and overhead. It also removes the incentive for the system to develop new measures that could include smaller agencies.

Rather than exclude small agencies, a P4P system could address the issue of small agencies in at least two ways. One approach is to allow multiple small agencies that serve the same areas or contiguous areas to form voluntary quality associations. All the patients in the association would be pooled to count toward a single measurement. The association may generate a reward or a penalty. The agencies within the association could choose how best to distribute the results. This approach may encourage collaboration among agencies as well.

Another approach we found to be useful is to pool data for agencies across two consecutive years rather than use a single year of data for measurement. Pooled data yielded a substantially higher number of agencies with rewards and penalties. To be equitable, this pooling should be applied to all agencies and no one would have the opportunity to opt out of pooling. This approach has the additional advantage of resulting in more stable quality scores from year to year. It reduces the variation over time, the impact of small samples, and the potential impact of one-time events such as a change in management.

In the model, we had only the two most recent years of data, so when we measured improvement over time we used two scores, each based on only one year of data. A better alternative would be to use pooled data for the improvement score as well. The home health sector already has more than two years of data available, so pooling data over time would not necessarily postpone implementation of the program.

Improving the pay-for-performance measure set over time

In March 2005, the Commission suggested that additional measures be developed to complement those that have already been developed, collected, and used for quality measurement in home health care. The current set of measures focuses on the clinical effectiveness of care given to patients whose physical conditions are improving. Adding measures could broaden the patient population covered by the set, capture safety as an aspect of quality, capture a process of care directly under providers' control, reduce variation in practice, and provide incentives to improve information technology.

Apply process and safety measures. Process measures capture an aspect of care that is under providers' control: whether providers take very specific actions in the course of caring for their patients. Both the Commission and CMS have been considering adding process measures for home health care. The Commission convened a panel of researchers, quality measurement experts, and home health providers to identify best practices in fall prevention and wound care. Interest in these areas is high because falls and wounds are prevalent among home health care users. In addition, the practices are a part of the care for patients whose physical condition is not improving and for patients who are improving, and the practices are related

to patient safety (MedPAC 2006). CMS is working on developing other process measures.

The National Quality Forum also identified patient safety as an important dimension of quality—as outlined by IOM in its seminal study—and a priority area for quality measurement in home health care (IOM 2001).

As P4P begins to link reported quality levels with payment, the system should improve its ability to audit and verify the data. CMS has begun to develop these capacities within the Reporting Hospital Quality Data for Annual Payment Update program. Under this program, hospitals' quality data are audited to determine whether they are complete and whether they include a fair and sufficient sample of all their patients. Additional capacity to compare quality reports to other sources of administrative data or to audits of medical charts would further strengthen a P4P program. Adding process measures to the set of outcome measures for home health care would allow home health quality data to be verified through an audit of medical charts or through a comparison to information on the claim for payment.

Expand use of health information technology. The Commission recommended that P4P include measures of the functions supported by information technology (MedPAC 2005). Examples include a registry for patients with chronic conditions; a system that tracks test results; a system that can directly notify patients of laboratory test results; and a system that can aggregate, measure, and monitor patients by disease, medication, or other category. The functions of a telehealth system to remotely monitor patients' vital signs might be particularly relevant to home health care.

Furthermore, financial incentives for measuring and reporting care processes could encourage providers to improve their systems' capabilities to meet the new data requirements. When nurses, therapists, and other home health professionals are encouraged by best practices to assess, record, use, and share more information about patients' health status during an episode, wider use of information technology may result. These technologies include:

- ***Electronic medical records.*** The use of electronic medical records to store and provide information on a patient's past medical history, lab reports, and medications could greatly enhance the ability of health professionals to make informed decisions about care. In addition, electronic medical records allow an organization to measure its quality of care in real time rather than waiting for quarterly or annual measurements.
- ***Management tools.*** Patient registries, clinical reminder systems, and computerized patient assessments help providers manage a specific aspect of care.[9] If nurses used a computer program to help prompt and record patient assessments, it could reduce the burden of recording important clinical information, suggest appropriate tests, and immediately identify patients who need special interventions to address their needs.
- ***Patient communications.*** Devices used in patients' homes to monitor their health can make it easier for patients to monitor their condition, communicate with caregivers, and identify the need for a medical intervention.

Patient experience measures. Many agencies already collect patient satisfaction information. A basic patient experience questionnaire might not be radically different from activities many agencies already conduct. If the program wished to phase in patient experience measurement, it could begin with a pay-for-reporting step in which all agencies would have the incentive to develop or hire the capacity to survey their patients.

A standardized tool that could be audited and administered with some independence from the agency staff being evaluated would be necessary to compare patient experience measures among agencies. Potential patient experience measures include:

- How often did nurses listen carefully to you?
- How often did nurses explain things in a way that you could understand?
- How often was your pain well controlled?
- Did you get information about symptoms to watch for after you were discharged?

As this partial list suggests, patient experience measures can begin to capture concepts such as the adequacy of planning for patients' transitions from professional home health care to living in the community or concepts such as the patient-centeredness of care (whether patients feel adequately informed to actively participate in their care).

Circumstances of the home health sector

Though the P4P framework discussed in this report would realign some funds for incentives to reward quality, most Medicare payments for home health care would still be administered under the provisions of the current prospective payment system (PPS). MedPAC and others have cited issues with the PPS, and some of these issues could diminish the impact of a P4P incentive (MedPAC 2006, GAO 2000). Adding a quality incentive to a payment system that does not accurately pay providers for the costs of different patients could create perverse incentives for providers—or overpower the impact of the quality incentive. Many factors suggest that the current system overpays providers and pays inaccurately for some patients.

Concerns about payment accuracy underscore the need to use P4P in tandem with other efforts to reform the home health payment system. A quality incentive will redirect funds toward a defined outcome that is valuable to beneficiaries and improves the incentives under PPS. However, maintaining incentives for efficiency under the core PPS is critical. Improving quality without maintaining incentives for efficiency could cause a conflict between efforts to improve quality and efforts to address Medicare's long-term sustainability challenge. Continuing efforts to improve the accuracy of payments under the PPS will ensure that providers have appropriate incentives to provide quality care.

The aggregate average financial performance of the home health industry under PPS has been remarkable (MedPAC 2006). Since the advent of the PPS, most agencies have held per episode cost inflation to about 1 percent per year, and margins have exceeded 10 percent despite a one-time reduction in the base rate and numerous reductions to the update. The consistent pattern of high margins suggests that the base payment in the home health PPS may not accurately reflect the costs of efficient providers, potentially dimming the impact of a reward or penalty for quality. For agencies with significant margins, such as the 50 percent of agencies with margins greater than 16.8 percent in 2007, the impact of a 5 percent reward or penalty may be too modest to encourage quality improvement.

Shortcomings in the case-mix measurement may provide incentives for HHAs to favor patients with higher case-mix scores. Prior analysis has found a small but statistically significant relationship between an agency's case mix and its margins (MedPAC 2005). Medicare's system for classifying patient resource needs, the home health resource groups (HHRGs), may also inappropriately group patients within a single case-mix group though they have very different resource needs. MedPAC found a large variation in the minutes of service per episode provided to patients in the same HHRG (MedPAC 2006). The case-mix weights for home health care have never been updated, and as a result it is unlikely the current case mix accurately reflects the resource intensity of different patients.

Differences in financial performance among providers are to be expected in any PPS, as providers vary in their efficiency. However, if some of this variation in margins is due to the issues highlighted above, then the variation reflects shortcomings in the PPS. This variation may affect a quality incentive because providers are likely to assess the value of any incentive relative to their margins. For example, the top quarter of HHAs, which have margins that exceed 27 percent, might not consider a 5 percent incentive compelling. Medicare should not expect the margins of providers to necessarily be concentrated, but failing to address inaccuracies in the payment system that can lead to excessive variation may diminish the impact of a quality incentive.

Additional technical information on home health pay for performance

In this section, we discuss some limitations of the risk adjustment currently available for home health outcome measures, the composite measure we developed to summarize quality at the agency level, and adjusting for socioeconomic status.

Adequacy of risk adjustment for home health measures

CMS developed risk adjustment for the OBQIs to take into account patient health and other characteristics that may affect their outcomes. For example, improving patients' pain from cancer is more difficult than improving pain in patients with congestive heart failure because of the extreme pain associated with many cancers. Early studies found that risk adjustment was accounting for the impact of patients' primary diagnosis on pain and giving "credit" for the difficulty of cancer patients' pain management. In essence, taking these patient characteristics into account should level the playing field among agencies with different patient populations.

However, when we applied the risk-adjustment methodology that was calibrated in 2001 to the most recent data available from 2005, we found that it did not adequately account for differences in patient mix at the agency level (Shaughnessy et al. 2002). Some of the limitations of CMS's risk model might be explained by the fact that it has not been recalibrated since the measures were implemented more than five years ago. In the calibration year, the expected values and the actual values were almost the same. As time passed, the gap between the model's expected values and the actual values widened. For example, by 2005, the predicted rate of success in improvement in ability to dress the upper body was 60 percent, and the actual national rate was 67 percent. If the changes that led to the gaps in the model's performance have not been consistent among patient types, that would explain the model's limitations in predicting current outcomes by patient type.

Our two tests of the risk-adjustment system applied to the most recent available data suggest that the risk adjustment does distinguish between patients with very low likelihood of good outcomes and those with very high likelihood of good outcomes. However, the system is not as capable of making finer distinctions. The risk adjustment correctly identifies the general patterns in outcomes, but it is not very precise.

In one test, we divided the patients into deciles (10 groups of equal size). The groupings were based on CMS's risk-adjustment model's prediction of the relative likelihood of their success at the outcome we were measuring. In each test, the model predicts the broad pattern in the relative rate of success for patients: Those in deciles with the lower predicted rates of success do achieve lower rates of success than those in higher deciles. However, the risk-adjustment model is imprecise; there is often a wide gap between the predicted rate and the actual rate.

In another test, we found that the risk-adjustment model did not precisely account for differences in outcomes that were related to patient characteristics. We considered patient characteristics such as primary diagnosis, comorbidities, informal caregiver availability, and functional limitation. We chose these characteristics because previous research indicated that they are likely to influence outcomes (Shaughnessy et al. 2002).

We found statistically significant differences among the outcomes for different patient types after we applied the risk-adjustment model. In other words, though we had tried to account for the effects of each of the patient characteristics in our expectations, we still found that patients of certain types had much better outcomes than patients of other types. The results of this second test reinforced the evidence from our first test: The CMS risk-adjustment model seems to have some limitations in its ability to level the playing field among different types of patients. Even with risk-adjusted data, many differences will exist between the outcomes of patients of different types. This will reduce the validity of the quality score, will give an advantage to agencies with certain mixes of patients, and could lead to access problems for patients of certain types.

A composite home health quality measure to combine measures of quality and address shortcomings in risk adjustment

A composite can bring several measures together to create a picture of quality that is more complete than a single measure can be. Any single measure of quality excludes some providers, some patients, or some trait of quality. We studied quality composites from scorecards for hospitals from states and private plans and worked with technical experts to develop potential criteria for good composite measures. The composite measure should:

- apply to most providers, most patients, and most quality traits;
- account for differences in patient characteristics;
- reflect the relative importance of each measure in the composite;
- be easy to describe and understand; and
- acknowledge the extent of uncertainty and identify where it exists.

Both the selection of measures to include in the composite and the construction of the composite determine whether the composite meets the criteria.

We contracted with a quality benchmarking organization to help us construct a composite measure for HHAs. They applied expertise in clinical logic, statistics, and measure design to the national data set of all OASIS patient assessments to develop a composite quality measure: the SQI. The SQI is risk adjusted by clinical stratification instead of by CMS's regression-based system. This allows us to identify a relatively homogeneous set of patients at

each agency and compare each agency's score for those patients rather than rely on risk adjustment to account for all the differences among all of each agency's patients.

Clinical stratification groups patients with similar diagnoses and treatment plans. This allows the measurement system to compare the outcomes for similar patients at different agencies. It also establishes a clear link between patient groups and outcome for the agency. If an agency wishes to target a particular outcome, the measurement system has already identified the patients and treatment plans that need to be addressed. However, clinical stratification is generally regarded as incomplete risk adjustment because of the variables it does not address. In the long run, CMS may wish to explore a hybrid model that groups patients into clinical classifications and also applies regression-based risk adjustment within groups to account for additional sources of variation.

The SQI measure relies on the OASIS patient assessments performed by home health nurses and therapists at admission, at some intervening events, and at discharge to determine the outcomes of patients' home health care: whether patients' functional levels improved or stabilized and whether patients experienced any adverse events. The components of the measure are detailed in Table 4-6.

The SQI set incorporates the seven publicly reported functional measures from the Home Health Compare public data report, adds more functional outcome measures, and adds the four potentially avoidable adverse events listed in Table 4-6. These are gross measures not of all hospital and ER use but of that specifically due to four events the agency is thought to be able to manage.

We tested the correlations among the components of each measure. Using the statistical measure Cronbach's alpha, we determined that relationships among the constituent measures of each measure were acceptable. This statistical measure indicates the extent to which a set of test items can be treated as measuring a single construct. In this context, we are measuring whether we should use a set of functional outcomes and adverse events together to measure the quality of an HHA. We compared the SQI with an alternative measure that was limited to the public data report measures. We found an alpha of 0.71 for the measures in the SQI and an alpha of 0.60 for the measures in the simpler alternative. The alpha score for the SQI exceeds the rule-of-thumb standard for reliability of 0.70 (Streiner and Norman 1989). The lower score for the simpler alternative suggests that adding the additional components to the SQI is an improvement.

TABLE 4–6 **Components of MedPAC's quality score for home health pay for performance**

Functional outcome measures	Potentially avoidable event measures
• Getting out of bed • Walking • Bathing • Using the toilet • Urinary incontinence • Bowel incontinence • Upper body dressing • Lower body dressing • Shortness of breath • Caregiver managing medical equipment • Managing oral medications • Managing inhaled medications • Managing injectable medications • Managing medical equipment • Ulcer, stasis • Ulcer, pressure • Surgical wound • Pain • Confusion • Anxiety	Unplanned hospitalizations or uses of the ER caused by: • Diabetes out of control • Injury caused by a fall at home • Wound infection or deterioration • Improper medication administration

Note: ER (emergency room).

The steps to calculate an agency's SQI score are fairly simple. The system starts at the patient level. For each patient, all the functional outcomes are scored 2 points for improvement, 1 point for stabilization, and –1 point for decline. The scores for all the functional outcomes are summed and a point is subtracted for each incidence of a potentially avoidable unplanned hospitalization or ER use. The resulting total is divided by 20 to obtain an average. Finally, the scores for all of the patients in an agency are averaged. In our data, agencies' SQI scores range from –4 to +2.

Some patients who qualify for the home health benefit have limited potential for improvement. In the illustrative measure, points are available for stabilizing patients whose illness or functional level otherwise could have declined. The measure also includes a penalty for potentially avoidable hospitalizations and use of the ER, which has the effect of rewarding agencies who manage patients with

TABLE 4–7

Nearly all home health agencies treat patients in selected clinical groups

Clinical group	Agencies with more than: 2 patients in clinical group	25 patients in clinical group
Acute CVD	6,360	1,040
CHF or COPD	7,710	4,520
Diabetes	7,240	2,610
Pneumonia	5,980	1,070
Skin infection	6,870	1,520
Skin ulcer	6,510	1,450
Therapy	7,530	4,940

Note: CVD (cerebrovascular disease), CHF (congestive heart failure), COPD (chronic obstructive pulmonary disease). Between 2003 and 2005, there were about 8,000 agencies in Medicare.

Source: Outcome Concept Systems analysis of 2003–2005 cost report and Outcome and Assessment Information Set data.

declining health safely in their homes while preventing unnecessary hospitalizations and trips to the ER.

The SQI score incorporates steep penalties for unplanned hospitalization and ER use to reflect the importance of these measures as adverse events—and thus indicative not only of low quality but also of actual harm to beneficiaries—and measures of the efficiency of home care. One of the most important contributions home health care spending can make to the efficient resource use of the Medicare program is to safely and appropriately prevent avoidable hospitalizations and use of the ER. The Commission has underscored the importance of including both quality and resource use in measures of efficiency. For these reasons, the score is designed to give additional weight to adverse events. The SQI score restricts the definition of adverse events to ER or hospital use for four reasons: diabetes out of control, injury caused by fall, wound infection, and improper medication use. These four reasons describe events that were potentially preventable.

We calculate an agency's SQI for patients within a clinical group. Because the evidence reviewed in the previous section demonstrates that CMS's risk-adjustment model does not sufficiently account for differences in patients' outcomes based on their primary diagnosis, we chose to stratify patients into groups based on their primary diagnosis using the clinical classification system. We applied factor analysis to our large database to identify seven categories that included most patients and that put them in clinically related groups (patients who would receive similar treatments during the course of their home health care). The clinical classifications are listed in Table 4-7. Most agencies treat patients in these common clinical groups.

This measure is not as simple as an "off-the-shelf" solution, but it better meets the criteria for good measures that we have developed and discussed. The SQI is applicable to most providers, most patients, and most quality traits. The stratification into clinical groups accounts for differences in patient characteristics. The scoring method reflects the relative importance of improvement, stabilization, and adverse events for each measure in the composite. In our P4P model, we show how the SQI can be used to describe the extent of uncertainty and identify where it exists. Finally, the measure uses data that are part of the currently collected home health data.

Basing patient groups on primary diagnoses makes a clear link between patient groups and outcome for the agency: The measurement system identifies patients with similar treatment plans that need to be addressed. Focusing the P4P program on one group of patients or on several groups of patients provides guidance to agencies on how to focus their quality improvement efforts and might decrease the burden compared with a program that started with all of an agency's patients. However, relying solely on primary diagnosis for risk adjustment is generally regarded as incomplete risk adjustment because of the variables it does not address. In the long run, CMS may wish to explore a hybrid model that groups patients by primary diagnosis and also applies regression-based risk adjustment within groups to account for additional sources of variation.

Accounting for differences in socioeconomic status

In a program as comprehensive as Medicare, there may be wide differences in the socioeconomic status (SES) of patients in addition to differences in the clinical characteristics we have discussed thus far. Some suggest that socioeconomic differences among patients may lead to differences in the quality of care measured at the provider level for reasons beyond agencies' control. Patients in a lower socioeconomic group may lack access to competent informal care, may have fewer tools to make informed decisions, or may have a poorer quality diet than those of higher SES. However, deciding whether and how to adjust for socioeconomic differences is difficult.

Choosing whose socioeconomic traits, which traits, and what scales to use to measure SES can be challenging. In home health care, the characteristics of the patient's family might be as important as, or even more important than, those of the patient. This raises the question: Whose status should be measured—the patient, the immediate family, or the extended family?

There is some room for doubt about the relationship between SES and health outcomes. A recent study on breast cancer mortality found higher rates of mortality among women in higher socioeconomic groups than in lower ones (Strand et al. 2007). Another study found that much of the relationship between SES and health is a function of known health factors, such as obesity and smoking, which are measured directly and accounted for in the clinical risk adjustment (Kuper et al. 2007). SES may relate to different measures in different ways: It may have little impact on a process measure such as giving hospitalized patients an aspirin but it may have a larger impact on whether patients will purchase and consistently use medications to manage blood pressure after they return home.

Finally, adjusting for SES has the effect of setting lower expectations for the providers who are in a position to have the greatest impact on vulnerable populations. For example, if a Medicare P4P program were to use an SES adjustment that incorporated race, it could have the effect of setting a lower expectation for quality of care delivered to blacks than for whites, Hispanics, or other racial groups. Some may view lower standards for the care of vulnerable populations to be one of health care's critical problems; the impacts of disparities in health care have been widely studied. A P4P system that expects good care for all patients regardless of race, income, or education could be one policy tool to address the issue of disparities in health care.

Despite the difficulties associated with measuring SES and establishing its relationship with health outcomes, some contend that P4P should be used to address disparities in health care (Rosenthal and Dudley 2007). One approach for the future is to develop direct measures of health care disparity that can be attributed to providers and patients and reward providers for addressing it. Another approach to consider—using currently available measures—is to offer greater incremental payments to providers who achieve high quality for underserved populations. This would have the effect of increasing the incentive to better serve vulnerable beneficiaries as well as providing some adjustment to acknowledge that achieving high quality for underserved populations could require a greater effort than achieving these goals among other populations.

An alternative to SES-based adjustments to risk scores would allow providers to identify noncompliant patients and exclude them from their data. The United Kingdom uses this system in its nationwide physician quality incentive program (Doran et al. 2006). A comprehensive study of this design option found that most physicians exempted few of their patients. There was some evidence of abuse at the extreme, and they found a moderate correlation between the number of patients exempted and the quality score achieved by the physician. However, the opportunity that exception reporting presents to manipulate quality scores could be counterbalanced by publicly reporting the providers' noncompliance rates, auditing providers with exceptionally high rates, or requiring providers with a noncompliance rate above a certain threshold to develop and implement a plan to increase compliance. ■

Endnotes

1 The Institute of Medicine and CMS have also considered funding P4P through savings generated by quality improvements.

2 One survey of private-sector efforts found that purchasers report needing to provide incentives of 5 percent to 20 percent for physicians and 1 percent to 4 percent for hospitals (MedVantage 2004). Yet, it is difficult to know what portion of overall payment these percentages represent. Because Medicare payment is often a higher percentage of any one provider's total revenue than a single private payer, a smaller percentage of Medicare's payment may encourage change. In CMS's Premier hospital demonstration, preliminary results show improvement in all conditions in the first four quarters in anticipation of financial rewards of 1 percent or 2 percent for those in the upper rankings (Remus 2005).

3 Numerous studies suggest that patients frequently do not receive evidence-based care and often experience illness or injury as a result of contact with the medical system (Jencks et al. 2003, McGlynn et al. 2003, IOM 2001).

4 Both the study by the Premier group and a later study by a group of researchers outside of the system found greater improvement among hospitals within the demonstration than in hospitals outside the demonstration (Lindenauer et al. 2007). The Premier study was very positive about the implications of the results of the demonstration for P4P. The outside researchers concluded that the quality differences were small compared to the costs of operating the quality incentive program and suggested that the demonstration has negative implications about the cost effectiveness of P4P on a larger scale.

5 Based on MedPAC analysis of freestanding agencies' cost reports, in 2005, 5 percent of agencies received less than $125,000 and 5 percent of agencies received more than $6.5 million. The smallest agency in terms of Medicare revenue received $2,500 and the largest received $18.4 million.

6 Research that supports the reliability of OASIS items was conducted on the research and development sample of OASIS data. Later tests on OASIS from the field indicate lower levels of reliability for some items (Kinatukara et al. 2005).

7 Conceptually, we are treating each agency's case load for the measurement year as if it were a sample of patients drawn from the population of all patients at all agencies and measuring the sample mean, sample size, and standard deviation of scores within the sample. We are testing whether it is likely that the sample's average score is higher or lower than the population's average score due to chance or whether the sample is really different from the population; theoretically, it would be different because the quality of the agency is truly good or truly bad. We chose to apply a two-stage, one-tailed test of significance at a 90 percent level of confidence. We determine whether each score that is higher than the benchmark is significantly higher in stage 1, and then we determine whether each score that is lower than the benchmark is significantly lower in stage 2. For each of these two tests, we apply a 95 percent confidence coefficient.

8 In the case of CMS's proposed home health P4P demonstration, for example, the designers thought a penalty was not consistent with voluntary participation. We note, however, that CMS's hospital P4P demonstration was also voluntary and it did incorporate the possibility of a penalty.

9 These management tools are often embedded in an electronic medical record; however, they are also available on their own.

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CHAPTER 5

Payment policy for inpatient readmissions

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Chapter summary

Hospital readmissions are sometimes indicators of poor care or missed opportunities to better coordinate care. Research shows that specific hospital-based initiatives to improve communication with beneficiaries and their other caregivers, coordinate care after discharge, and improve the quality of care during the initial admission can avert many readmissions. Medicare does not reward these efforts.

In addition to adversely affecting beneficiaries' health and peace of mind, the failure to adequately attend to the care transition at discharge from the hospital results in additional Medicare spending; 17.6 percent of admissions result in readmissions within 30 days of discharge, accounting for $15 billion in spending. Not all of these readmissions are avoidable, but some are.

To encourage hospitals to adopt strategies to reduce readmissions, this chapter explores a two-step policy option that starts with public reporting of hospital-specific readmission rates for a subset of conditions and goes on to adjust the underlying payment method to

In this chapter

financially encourage lower readmission rates. We recognize the importance of pay-for-performance (P4P) measures to improve quality, but find that the underlying payment method may undercut the behavior P4P is trying to encourage. When this is true, other policies may be needed to create stronger incentives to reduce readmissions.

We focus on the hospital's role but recognize that other types of providers, including physicians and various post-acute care providers, can be instrumental in avoiding readmissions. MedPAC continues to explore ways to encourage those providers to avoid hospital readmissions (see Chapter 4 on home health P4P and Chapter 8 on skilled nursing facilities). Beneficiaries also have responsibility in the effort to avoid readmissions and should be encouraged to be engaged in their own care. Aligning incentives across all those who can influence the outcome of care would induce needed collaboration among fee-for-service providers and foster greater "systemness" and integration in the delivery of health care. ■

Hospital readmissions sometimes indicate poor care or missed opportunities to better coordinate care. Research shows that specific hospital-based initiatives to improve communication with beneficiaries and their other caregivers, coordinate care after discharge, and improve the quality of care during the initial admission can avert many readmissions. Medicare does not reward these efforts. It pays for all admissions based on the patient's diagnosis regardless of whether it is an initial stay or a readmission for the same or a related condition.[1]

Policy changes could encourage more hospitals to adopt successful strategies and continue to experiment with new ones. This chapter explores a two-step policy option to provide a financial incentive for hospitals to reduce readmissions. The first step is public disclosure of readmission rates followed by payment changes to encourage hospitals to reduce their readmission rates—that is, the number of readmissions to both their own hospital and others. The Commission also plans to explore bundling Part A and Part B payments for inpatient care.

In this chapter, we focus on the hospital's role but recognize that other providers—including physicians, skilled nursing facilities (SNFs), and home health caregivers—can also be instrumental in avoiding readmissions. MedPAC continues to explore ways to encourage these providers to meet their patients' needs over the course of an episode of care (see Chapters 4 and 8). Similarly, beneficiaries have responsibility in the effort to avoid readmissions and should be encouraged to be engaged in their own care. Aligning incentives across all those who can influence the patient's outcome would induce the needed collaboration among providers, which is the foundation for fostering "systemness" in the delivery of health care.

Why focus on readmissions?

Discharge from the hospital is a critical and vulnerable care juncture for Medicare beneficiaries. Patients often experience difficulties during the transition to home or post-acute care. While in the hospital, patients tend to defer to their professional caregivers. Upon discharge, however, they may suddenly be expected to assume a self-management role in recovery with little support and preparation (Coleman and Berenson 2004). Patients and families may not realize how much support patients need, particularly if the patient has not returned to his or her baseline physical or cognitive functional state after discharge. Further, they may not know which provider to call with questions during the interval between discharge and follow-up—if there is a follow-up visit—as it is not always clear which provider is responsible for and informed about the patient's care (HMO Workgroup 2004).

Discharge is also a time when patients are more likely to be receptive to health care recommendations. The chances of long-term adherence to medication regimens are significantly higher when medications are prescribed at hospital discharge, and this increased adherence is associated with decreased mortality rates (Lappe et al. 2004). Experts have noted that hospital-based interventions (e.g., ensuring that appropriate medications are prescribed) can be more easily implemented, can be more effectively managed and measured, and could be more cost effective than other potential outpatient intervention strategies (Lappe et al. 2004).

Despite these needs and opportunities associated with this transition, hospitals and other providers have not broadly invested in their role in managing the transition. Two related factors account for this. First, providers often operate independently of one another (in "silos"). Each is focused on his or her performance rather than on the collective performance across an episode of care. Accordingly, incentives to coordinate or standardize care processes across providers and settings are limited. These problems are exacerbated by the increasing degree of specialization in health care. Patients today are more likely than ever to pass across different settings of care with different physicians supervising their care, particularly given the increasing prevalence of hospitalists.

A second related factor is Medicare's (and other insurers') fee-for-service payment policy. Medicare pays each provider separately, and the payment amount is not affected by providers' ability to coordinate care across settings. Hospitals that invest in reducing readmissions reap none of the reward of their investment (unless they are able to fill the unused beds with more profitable patients). And because Medicare does not explicitly pay for care management services, such as follow-up phone calls or scales and blood pressure cuffs for recently discharged patients to use at home, providers often do not provide these beneficial services. With case-based payments that reward hospitals for shorter lengths of stay, hospitals focus on discharging patients as soon as is medically appropriate. Indeed, in navigating the gray area of "medical appropriateness," hospitals and physicians

Complications and "never events"

Under current policy, Medicare sometimes pays hospitals a higher diagnosis related group (DRG) payment if a complication develops during the hospitalization due to poor care. For example, decubitus ulcers, surgical infections, or pneumonia acquired while on a ventilator could all lead to increased payments to a hospital because a DRG with complications is paid more than a DRG without complications. This payment policy fails to reward hospitals for investing in quality and process improvements to reduce the frequency of these adverse events.

To address this problem, the Congress included a provision in the Deficit Reduction Act of 2005 that requires CMS, by October 2007, to identify at least two preventable hospital-acquired complications that are either high cost or high volume. To determine whether a complication is acquired in the hospital or is present on admission, CMS will require a present-on-admission indicator on claims as of October 2007. This is consistent with MedPAC's recommendation in our March 2005 report and is critical to ascertaining whether the hospital should be held partially or fully responsible for the complication (MedPAC 2005).

By October 2008, CMS must no longer increase payments purely due to patients acquiring one of these preventable hospital-acquired complications. The magnitude of this policy's impact may be less than was intended, however. CMS believes the provision will apply in a small minority of cases because it is rare that one of the selected conditions will be the only complication or comorbidity on the claim. If there is another complication or comorbidity, it will trigger the higher payment amount.

On the related issue of payment for "never events," the Tax Relief and Health Care Act of 2006 included a provision requiring the Department of Health and Human Services Office of Inspector General to conduct a study on the incidence of never events for Medicare beneficiaries and the extent to which Medicare pays for them. Never events are defined as "serious reportable" events as identified by the National Quality Forum and include such things as leaving unintended objects in the patient as well as death or serious disability from falls, medication errors, and administration of incompatible blood during hospitalization. The Leapfrog Group has recommended to the Congress that Medicare adopt policies to require reporting of these events and preclude hospitals from billing for them (Leapfrog Group 2006). ■

may be more likely to discharge patients earlier and accept a higher risk of readmission. Aside from moving the patient out of the hospital, effective management of the discharge and transition is not financially rewarded. The Congress has recently considered financial incentives for hospitals to avoid complications during the stay and "never events" (see text box), but these measures do not create incentives to provide needed care at discharge.

The specific causes of avoidable readmissions are varied. An adverse event, which may be due to a medical error, may have occurred during the initial admission, making recovery more complicated and ultimately necessitating readmission. Another cause might be that the patient was discharged without the proper mix and doses of medications being prescribed. The patient may not have fully understood when to take the medication, may not be fully equipped to arrange for follow-up care without assistance, or may not know what symptoms indicate the need for outpatient medical attention. Family members may not be adequately informed and prepared for how to care for their loved one. Patients and family members also may not know about end-of-life options and resort to rehospitalization as a default. Also, community physicians and post-acute care providers receiving the patient may not be sufficiently informed about the patient's care needs and history to enable effective care.

African American and dually eligible beneficiaries (about one-fifth of whom are African American) appear to be

at higher risk for readmissions, particularly for stroke, diabetes, and asthma (Kind et al. 2007). Dartmouth-Hitchcock Clinic, which is participating in CMS's Physician Group Practice demonstration, also reports that—in its experience—dual eligibles were more likely to be readmitted than others (Trisolini et al. 2006). This finding suggests that lack of coordination during transitions may affect beneficiaries unevenly, contributing to racial disparities in health care delivery.

In addition to the human consequences, the failure to adequately attend to the care transition results in additional Medicare spending. Readmissions are a costly aspect of Medicare-covered services. While not all that spending is avoidable or a sign of poor care, some of it is the result of preventable readmissions.

One study of coronary artery bypass graft (CABG) patients in New York attempted to identify the prevalence of related readmissions—that is, those due to complications directly related to the initial surgery. It found that 85 percent of the patients readmitted within 30 days after surgery were readmitted for complications directly related to the CABG. Examples of complications included infections, heart failure, myocardial ischemia/acute myocardial infarction (AMI), and arrhythmias (Hannen et al. 2003).

To further explore the question of what portion of readmissions is clinically related and potentially preventable (some may be related but not preventable, such as staged surgeries), the Commission applied 3M software that flags some readmissions as potentially preventable to Medicare claims data. Our intent is to illustrate an approach rather than to endorse a specific product.

TABLE 5–1 **Hospital readmission rates**

	Percent of patients readmitted to hospital within:		
	7 days	**15 days**	**30 days**
Total	6.2%	11.3%	17.6%
Non-ESRD	6.0	10.8	16.9
ESRD	11.2	20.4	31.6

Note: ESRD (end-stage renal disease).

Source: MedPAC analysis of 2005 Medicare Provider Analysis and Review file data.

TABLE 5–2 **Potentially preventable hospital readmission rates**

	Patients readmitted to hospital within:		
	7 days	**15 days**	**30 days**
Rate of potentially preventable readmissions	5.2%	8.8%	13.3%
Spending on potentially preventable readmissions (in billions)	$5	$8	$12

Source: 3M analysis of 2005 Medicare discharge claims.

How common are readmissions?

A significant number of Medicare hospitalizations result in readmissions. In 2005, 6.2 percent of hospitalizations among beneficiaries resulted in readmission within 7 days, and 17.6 percent of hospitalizations resulted in readmission within 30 days.[2] The readmission rates for beneficiaries with end-stage renal disease are considerably higher than average, which suggests that certain subgroups of beneficiaries (particularly beneficiaries with comorbidities) are at greater risk of readmission (Table 5-1). This finding highlights the importance of risk adjustment in calculating comparable readmission rates.

The readmission rates in Table 5-1 reflect the total number of readmissions, including those that may have been unrelated to the initial diagnosis, such as a readmission for trauma after a discharge for pneumonia or AMI. Policymakers will need to consider the importance of distinguishing the clinical underpinning of readmissions. For the purposes of this analysis, we explored identifying potentially preventable readmissions with software developed by 3M (see text box, pp. 108–109). Potentially preventable readmissions are those that in many cases may be prevented with proven standards of care; however, not all potentially preventable readmissions can be avoided, even if hospitals follow best practices.

We used the software to identify which of the readmissions were potentially preventable. The 7-day rate for potentially preventable readmissions is 5.2 percent, the 15-day rate is 8.8 percent, and the 30-day rate is 13.3 percent (Table 5-2). Accordingly, 84 percent of 7-day readmissions, 78

How can readmissions be defined?

In measuring readmission rates, policymakers must address whether they want to count all readmissions in the rate or a subset of readmissions that are clinically deemed to be potentially preventable. In addition, policymakers must define a time period within which a subsequent admission is considered a readmission (e.g., within 7 days, 15 days, or 30 days of discharge from the initial admission).

Purchasers, plans, and vendors have pursued a number of ways to define readmissions. Some have defined all readmissions within a certain number of days (e.g., 7 days, 15 days, or 30 days) to count toward the rate, regardless of the clinical link between the two admissions. For example, under its program measuring hospitals' relative efficiency to help employers in their purchasing decisions, the Leapfrog Group counts all readmissions within 14 days of discharge. It specifically acknowledges that some readmissions counted are not related to the earlier discharge.

Others have begun to develop algorithms, or rules, to identify which admissions could have been reasonably prevented. For reporting purposes, UnitedHealthcare counts all readmissions to the same major diagnostic category or for infections in disclosing readmission rates for hospitals in California. Physicians with the Geisinger Health System in Pennsylvania agreed not to be paid for certain readmissions within 90 days of nonemergency coronary artery bypass graft surgery. These types of readmissions include acute myocardial infarction; atrial fibrillation; venous thrombosis; infections due to an internal prosthetic device, implant, or graft; and postoperative infections. Their approach includes all readmissions "not unrelated," reflecting their desire to avoid litigating the difference between "definitely related" and "possibly related." Researchers with 3M have also developed algorithms for a wide range of conditions that identify related readmissions within 7 days to 30 days of the initial admission. Florida is proposing to use this product for reporting purposes.

Different decision rules can inform which readmissions are potentially preventable. The rules could be very narrow, identifying only those readmissions that with near certainty could have been avoided, such as complications resulting from a perforation during surgery. Or they could be broader, identifying types of readmissions that likely could have been prevented, such as readmissions for chronic obstructive pulmonary disease (COPD) after cardiac surgery—some of which may be avoided if COPD medications are appropriately adjusted at discharge.

To illustrate this broader approach to identifying clinically related and potentially avoidable readmissions, MedPAC has begun to explore 3M's software and its implications for defining Medicare readmissions. In so doing, our intent is to explore an approach, not endorse a specific product.

After excluding certain readmissions—including those related to trauma, cancer, and burns—3M combed through all permutations of diagnoses for an initial stay and for a readmission and evaluated the likelihood that a given readmission diagnosis was related to the first admission and, therefore, was potentially preventable. In general, most medical readmissions following an initial medical admission were flagged as potentially preventable. Most medical readmissions following a surgical readmission were also likely to be potentially preventable. In contrast, most surgical readmissions following either a medical or a surgical

percent of 15-day readmissions, and 76 percent of 30-day readmissions were flagged as potentially preventable.

Medicare spending on these potentially preventable readmissions is substantial: $5 billion for cases readmitted within 7 days, $8 billion for cases readmitted within 15 days, and $12 billion for cases readmitted within 30 days. In 2005, the average Medicare payment for a potentially preventable readmission totaled approximately $7,200 (almost $1,400 less than the payment for the original stay).

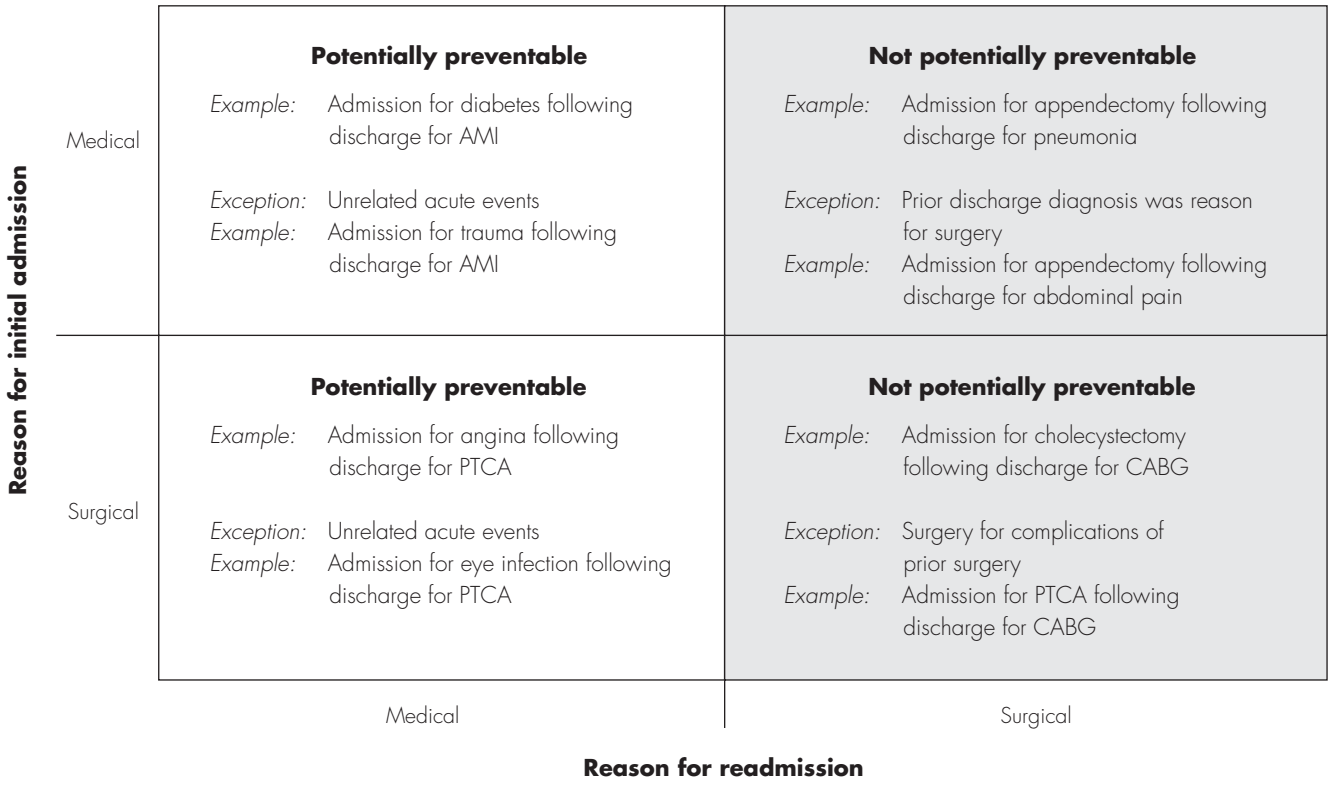
Potentially preventable readmission rates vary substantially across hospitals (Figure 5-2, p. 110). The 15-day readmission rate ranges from 6 percent at the 10th

How can readmissions be defined? (cont.)

admission were not likely to be preventable. The logic in the software allows for exceptions to these general rules (Figure 5-1).

With this approach, many diagnoses qualify to be a potentially preventable readmission. For example, potentially preventable readmissions following an initial admission for congestive heart failure (CHF) could be for CHF again or for other conditions, such as renal failure, pneumonia, COPD, and septicemia and other infections. ■

FIGURE 5–1 **Examples of logic used to define potentially preventable readmissions to hospitals**



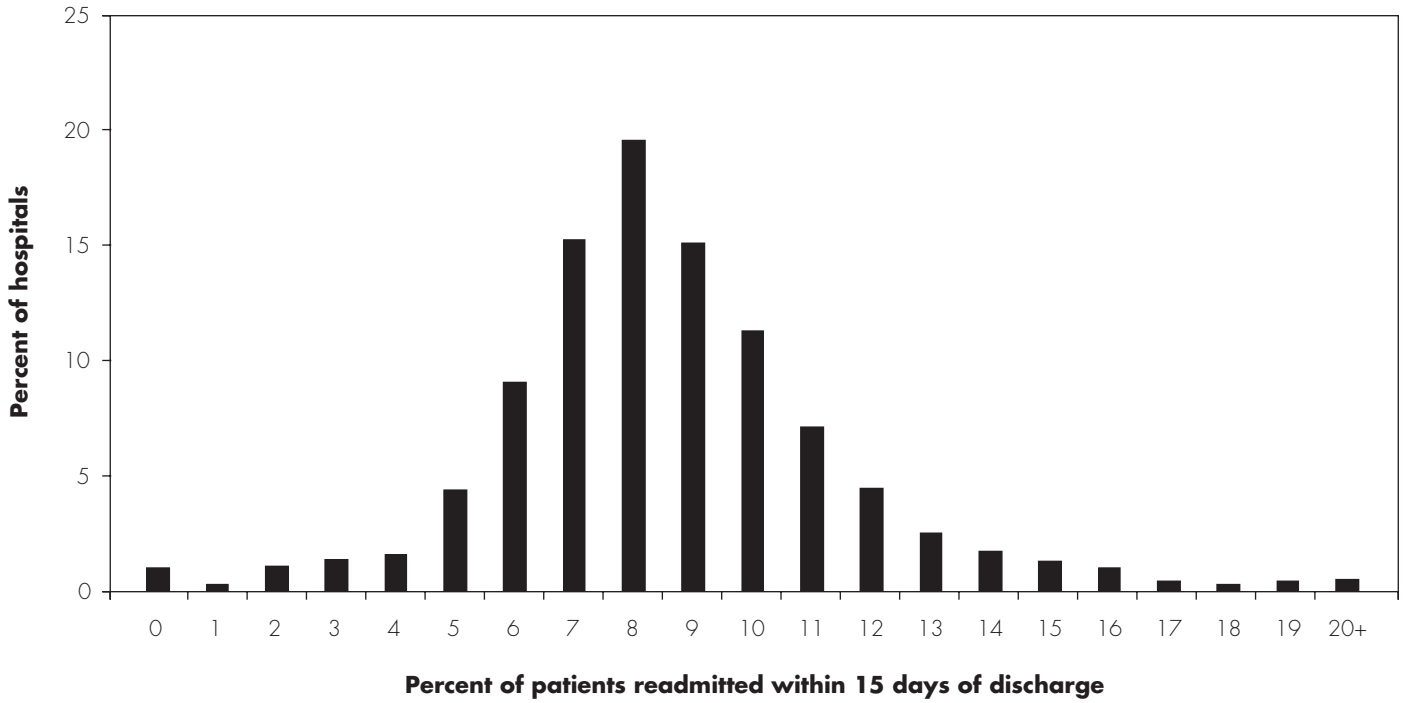
Note: AMI (acute myocardial infarction), PTCA (percutaneous transluminal coronary angioplasty), CABG (coronary artery bypass graft).

Source: 3M.

percentile to 12 percent at the 90th percentile, for example. Some of this variation is due to differences in the mix of cases and severity level of patients treated in different hospitals. Readmission rates also vary substantially by diagnosis; thus, a hospital's mix of cases will affect its overall readmission rate. The 15-day readmission rate for heart failure and shock, for instance, is 12.5 percent; the rate for pneumonia is 8.9 percent; and the rate for major joint replacements (hips and knees) is just 5.1 percent. Thus, hospitals that concentrate on joint replacements are likely to have lower readmission rates than hospitals that concentrate on cardiac care.

FIGURE 5–2

Hospital readmission rates vary widely



Note: Readmissions are across all diagnosis related groups and are not severity adjusted. Readmissions are defined using 3M's software that identifies potentially preventable readmissions.

Source: 3M analysis of 2005 Medicare discharge claims data.

In comparing hospitals, we need to adjust for differences in the types of cases and the severity level of patients.[3] If we control for disease-specific and severity-related differences in the incidence of readmissions, the variation across hospitals in readmissions narrows a little but overall continues to be fairly wide. Figure 5-3 shows how hospitals' actual readmission rates differ from what is expected, given their mix of cases (controlling for all patient refined diagnosis related group (APR–DRG) and the severity of illness level of the patients).[4]

About 30 percent of hospitals have 15-day readmission rates that are more than 1 percentage point above expected and 17 percent have rates that are more than 2 percentage points above expected. These are the hospitals with the greatest potential to reduce their readmission rates. We also see, however, that a substantial portion of hospitals have readmission rates that are lower than expected; 13 percent of hospitals, for instance, achieve readmission rates that are more than 2 percentage points below what is expected given their mix of cases. Thus, not only is there potential for hospitals with above-average readmission rates to lower their rates, but hospitals that have rates close to the expected rate also have the potential to reduce their rates of readmission.

If we look at specific conditions, such as congestive heart failure (CHF), the distribution in the difference between actual and expected readmission rates is wider (Figure 5-4, p. 112). CHF is one of the conditions with the most readmissions. Some experts believe there is an especially large potential for reductions in readmission rates for CHF if proven clinical practices are followed (Lappe et al. 2004, IHI 2004a, 2004b).

The average 15-day readmission rate for CHF is 12.5 percent, but 20 percent of hospitals that treat CHF have readmission rates that are more than 4 percentage points higher than expected. Another 20 percent have CHF readmission rates that are more than 2 percentage points lower than expected. The practices of the hospitals with

low readmission rates could inform a new expectation of what could be achieved. That is, CHF readmission rates could be lower even for hospitals that currently have rates 1 to 2 percentage points lower than expected. We see wide variation in readmissions for other conditions, such as chronic obstructive pulmonary disease (COPD), pneumonia, and CABG surgery.

How can hospitals reduce readmissions?

Research and the experience of individual hospitals suggest that hospitals can reduce the number of readmissions. We discuss effective initiatives and strategies.

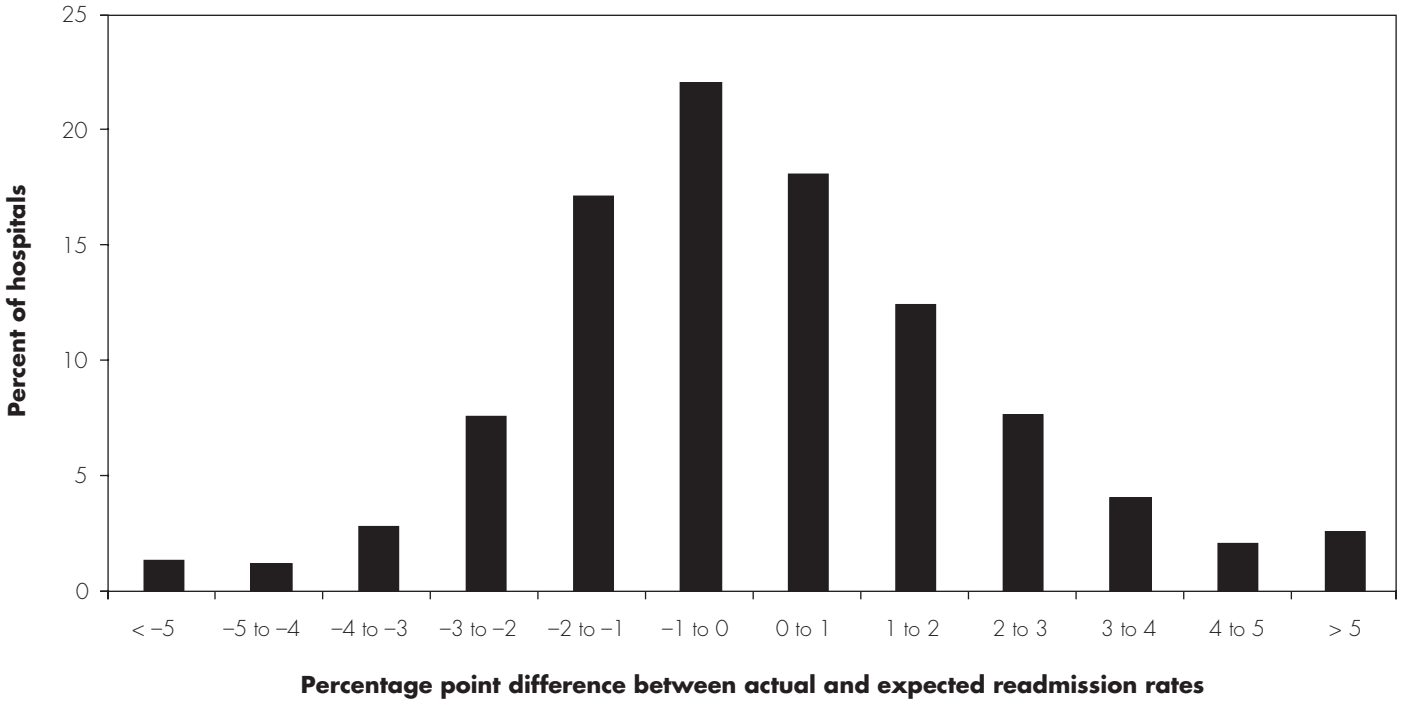
Provide better, safer care during the inpatient stay

The Agency for Healthcare Research and Quality has found that by providing better, safer care in the inpatient setting, hospitals can lower the incidence of adverse patient safety events that occur during hospitalization. These events, such as anesthesia complications, pulmonary embolism, infection due to medical care, hemorrhage, and acute respiratory failure, increase the chance that a patient will need to be readmitted. A study that looked at California non-Medicare data found that the likelihood of readmission doubled (from 14 percent to 28 percent) with an adverse patient safety event during the initial hospitalization (Bernard and Encinosa 2004).

Similarly, the Pennsylvania Health Care Cost Containment Council found that rates of readmission after CABG with hospital-acquired infections are more than double those of uninfected CABG patients; 13.2 percent of beneficiaries with infections were readmitted within 7 days while only 5 percent of those without an infection were readmitted. Over a 30-day window, 27.9 percent of those with complications were readmitted, compared with 12.9 percent without complications (PHC4 2006).

In addition, by incorporating best practice guidelines into clinical care, providers can avoid some complications that

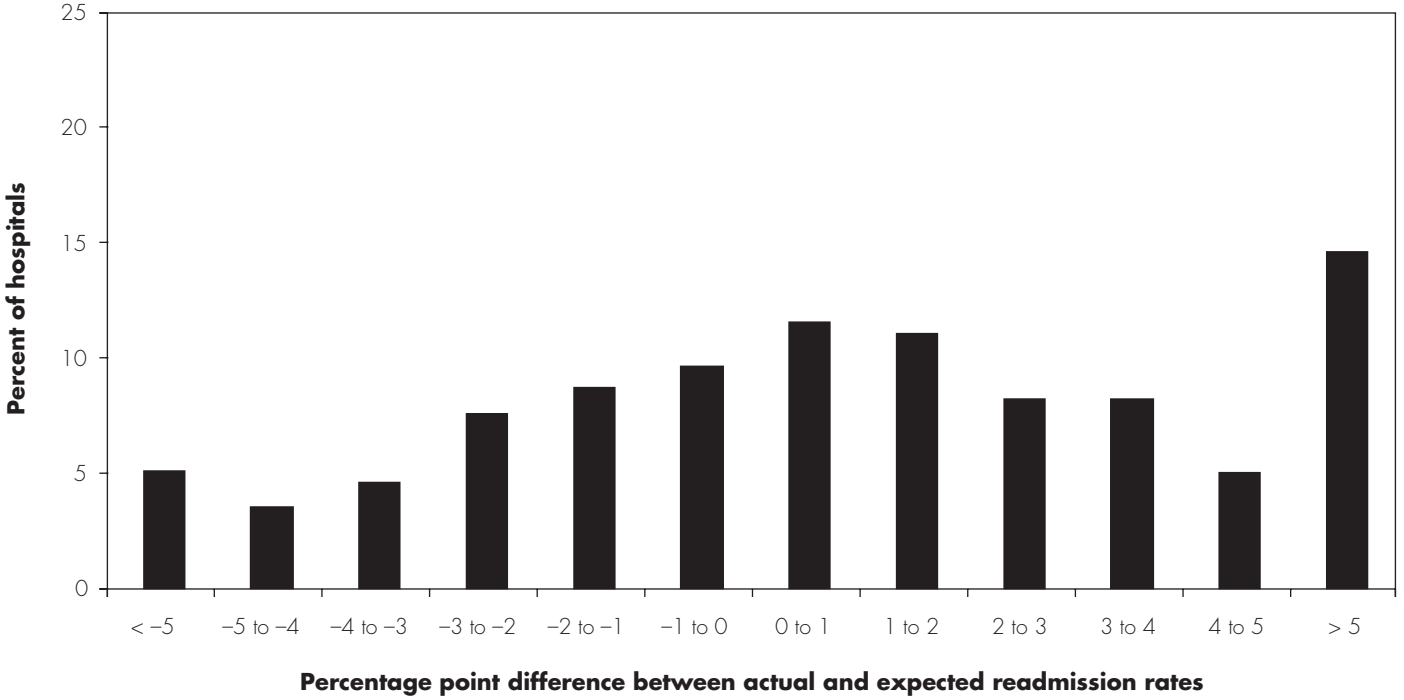
FIGURE 5–3 **Readmissions vary across hospitals even after adjusting for severity**



Note: Expected rates are based on the average rate of readmission across all hospitals, controlling for all patient refined diagnosis related group and severity class of patients. Readmissions are identified using 3M's software that defines potentially preventable readmissions.

Source: 3M analysis of 2005 Medicare discharge claims data.

FIGURE 5–4 **Adjusted readmission rates for congestive heart failure vary substantially**



Note: Expected rates are based on the average rate of readmission across all hospitals, controlling for all patient refined diagnosis related group and severity class of patients. Readmissions are identified using 3M's software that defines potentially preventable readmissions.

Source: 3M analysis of 2005 Medicare discharge claims data.

can occur after discharge. For example, after hip and knee replacement, the use of blood thinning medications, elastic stockings, and exercises to increase blood flow in the leg muscles may help avoid blood clots, which can surface a few weeks after surgery. In Pennsylvania, blood clots are among the top three reasons for readmission, accounting for 889 hospital days in 2002 (PHC4 2005). Similarly, early extubation or use of beta blockers and aspirin on discharge for CABG patients could also contribute to lower readmission rates (Hannen et al. 2003).

Attend to patient's medication needs at discharge

Medication errors pose a significant threat to patients after discharge. One study found that 19 percent of all patients discharged from the hospital experienced an associated adverse event within three weeks; 66 percent of them were adverse drug events (Forster et al. 2003). Another study found that elderly patients who had medication discrepancies at discharge were more than twice as likely to be rehospitalized within 30 days as those who did not experience a discrepancy. Discrepancies, which can be thought of as potential errors, include separate prescriptions for both the brand name and the generic name of the same drug or patients simply being unaware they should be taking a medication one of their doctors prescribed (Coleman et al. 2005).

Hospitals have found effective strategies to reduce such postdischarge complications. For example, one hospital found that if, upon discharge of cardiovascular patients, physicians and nurses referred to a checklist of indications and contraindications for five medications known to prevent complications and save lives, appropriate use of the medications increased dramatically. Prescriptions for beta blockers, which can prevent heart attacks, increased from 57 percent of patients who needed them to 98 percent; prescriptions for warfarin, which can protect certain patients from strokes, increased from 40 percent of patients who needed it to about 90 percent. This discharge medication protocol significantly improved mortality rates after discharge and 30-day readmission rates, particularly

for patients with CHF and for cardiovascular patients without CHF. This initiative did not require additional employees and was integrated into the hospital's existing medical informatics infrastructure (Lappe et al. 2004).

Improve communication with patients before and after discharge

Another way hospitals can reduce readmissions is to improve communication with patients and better coordinate their care transition on discharge. Patients might not be equipped to care for themselves at home, know who to call with questions, or fully understand their new health care needs. Hospitals have demonstrated their ability to address these problems by improving coordination and communication.

One study found that several Philadelphia hospitals were able to better meet patient needs and reduce readmissions by 45 percent over the 24 weeks of the study by having nurses repeatedly meet with patients at high risk for poor outcomes after discharge, both during hospitalization and at home after discharge. During these visits, interventions focused on medications, symptom management, diet, and activity. The nurses also provided written instructions and medication schedules, addressed patients' and caregivers' questions, and worked with community physicians to obtain needed services and adjustments to therapies (Naylor et al. 1999). Another study tested the effect of a "transition coach" to empower elderly patients. The coach reviewed medication, provided a personal health record to aid cross-site information transfer, and encouraged timely follow-up, among other things. This intervention also resulted in lower readmission rates at 30 days, 90 days, and 180 days after discharge (Coleman et al. 2006).

Less comprehensive approaches are also effective, particularly in reducing CHF readmissions. Hackensack University Medical Center implemented an initiative in which nurses telephone CHF patients after discharge to check on specific health indicators, such as weight, swelling, shortness of breath, pain, appetite, and activity level. With this information, they can monitor patients' needs and communicate with their physicians if there is an indication that medications should be adjusted. The hospital reported a 78 percent decrease in readmission rates (IHI 2004a). Baylor University Medical Center also reports reducing CHF readmissions by redesigning the discharge process to emphasize patient education, having a nurse call within 24 hours of discharge, and improving communication among providers in the hospital (IHI 2004b).

Billings Clinic and Park Nicollet Health Services, which are both integrated delivery systems, use a program in which CHF patients, who first receive education about their self-care and postdischarge intervention program during hospitalization, call or log-in each morning to report their weight and symptoms. Each day, nurses identify patients with worsening conditions. Nurses can modify medication and become involved in end-of-life issues. Because they actively manage only those with worsening conditions, each nurse can have a caseload up to 300 patients (Berenson 2006).

Stroke patients may also present an opportunity for preventing readmissions. Beneficiaries readmitted after suffering a stroke were much more likely than other patients to be dehydrated and have electrolyte imbalances (Kind et al. 2007). These findings suggest that if hospitals monitor those symptoms and address them in a timely way, they could avoid readmissions.

Simply providing complete discharge instructions can also help. One study in a Minnesota hospital found that CHF patients who received all instructions about how to care for themselves upon discharge were less likely to be readmitted than those who did not. The types of instructions concerned drug interactions, worsening symptoms, activity, diet, follow-up appointments, and weight monitoring. Only 68 percent of the patients received all appropriate discharge instructions (VanSuch et al. 2006).[5]

Improve communication with other providers

Improved communication with community physicians and post-acute care providers can also lower readmission rates. For context, consider that most readmissions, 64 percent, are for beneficiaries discharged home without any additional post-acute care, 20 percent are for patients discharged to SNFs, 11 percent are for patients discharged home with home health care, and 5 percent of readmissions are for patients initially discharged to rehabilitation hospitals or units, long-term care hospitals, or psychiatric hospitals. Of particular concern is the disproportionate share of readmissions for patients in SNFs—although 16 percent of patients are discharged to SNFs, they account for 20 percent of readmissions—and the recent growth in their readmission rates (see Chapter 8).

While the receiving facility or provider is responsible for providing good care to avert readmissions, the hospital

has an important role in enabling effective follow-up care. Perhaps most importantly, it provides key clinical information, in the form of a discharge summary, to these other providers. Research is beginning to show that discharge summaries are not executed in a timely and complete way, resulting in discontinuity of care and adverse clinical outcomes such as readmissions. Patients treated in follow-up by a physician who did not receive a discharge summary appear to be at greater risk for readmission. Indeed, the discharge summary is often unavailable at follow-up: Only between 12 percent and 34 percent of physicians report having the discharge summary at the first postdischarge visit. The discharge summaries are also not always sufficiently complete. They may lack information on diagnostic test results, discharge medications, and follow-up plans (Kripalani et al. 2007).

The experience of group practices provides some insight on the ability of providers to address these problems. For example, Healthcare Partners, a large group practice in Southern California, has focused on improving the distribution and content of its discharge summaries, establishing a goal that primary care physicians receive discharge summaries within one business day of their patients' discharge. The Lahey Clinic in Massachusetts conducts quarterly meetings with SNF physicians focusing on hospital readmissions from SNFs and whether they can be prevented (HMO Workgroup 2004).

Review practice patterns

Aside from greater adherence to evidence-based guidelines and better communication with patients and other providers, hospitals can review other aspects of practice patterns that influence the likelihood of patients being readmitted. For example, hospitals may consider keeping some patients an extra day to be more certain their condition has stabilized. They may provide comparative information to physicians about their readmission rates and encourage a dialogue between physicians with high readmission rates and those with low rates. For example, some cardiothoracic surgeons prefer to manage postdischarge atrial fibrillation on an outpatient basis for patients who have recently undergone CABG surgery, and others prefer to readmit such patients (Hannen et al. 2003). A hospital may also reevaluate expansion plans. Higher bed supply is associated with higher rates of admission for patients with chronic illnesses such as CHF, COPD, and cancer as well as end-of-life care (Wennberg et al. 2004). The local bed supply, rather than patient preferences, explained the differences in end-of-life care among patients in one study (Pritchard et al. 1998).

Physician Group Practice demonstration participants implement systems to reduce readmissions

Physician groups participating in CMS's Physician Group Practice demonstration have strong incentives to improve quality and lower total spending. They have put in place better systems to reduce readmissions. One clinic reduced readmissions by scheduling all elderly patients for their first follow-up visit within 4 to 10 days of discharge. In addition, all the sites have considered ways to influence or modify physicians' practice patterns, including modifying work processes (e.g., color-coded disease management worksheets to remind physicians and other clinical staff to order certain tests) and providing feedback reports to physicians (Trisolini et al. 2006).

How can Medicare policy encourage hospitals to adopt *strategies* to reduce readmissions?

This section explores a two-step policy option to provide an incentive for hospitals to reduce their readmission rates, particularly if they have high rates compared with their peers. The first step is public disclosure of hospital-specific, risk-adjusted readmission rates. This will ensure that hospitals know their rates and how they compare with those of their peers and will allow beneficiaries and other providers to use this information when they make health care decisions or admit patients. After a year or two, public disclosure could be complemented by a change in payment rates, so that hospitals with high risk-adjusted rates of readmission receive lower average per case payments. Depending on design, the policy not only could encourage hospitals with excessive rates to reduce readmissions but also could encourage top-performing hospitals to consider opportunities for continued improvement.

An important parallel policy would be to encourage other providers, including physicians, SNFs, and home health providers to prevent readmissions. Holding each entity accountable will motivate them to collaborate with one another because their success will partly depend on the success of their care partners.

Medicare should pursue other policies, such as pay-for-performance (P4P) that includes both process and outcome measures and accreditation standards, as well. Currently, to receive the full Medicare payment update, most hospitals report their performance on the frequency with which they

give discharge instructions during an admission for heart failure. Next year, hospitals will report patients' responses on two specific care transition questions: "Did hospital staff talk with you about follow-up care?" and "Did you get information about symptoms to look out for?" But if the underlying payment method creates a stronger counterincentive than a P4P measure or an accreditation standard, the effectiveness of the P4P initiative and the institutional commitment behind improving performance on a process measure may be limited.

A related issue that is beyond the scope of this chapter is the lack of funding for care management services. The Commission discussed two approaches in its June 2006 report to the Congress. Perhaps once experience is gained in how much hospitals can improve and what resources are needed to achieve improvement, policymakers can consider the need for any explicit financing for care management services as a complement to a change in readmission payment policy.

While the rationale for changing hospitals' incentives and aligning them with other providers' incentives to avoid readmissions may be clear, the technical aspects of measuring and comparing readmission rates, which are the foundation of any public disclosure and payment change option, require careful navigation. The following section discusses a two-step policy approach and several of the most pertinent issues.

Start with select conditions

It may be prudent to focus on disclosure and payment changes for a limited number of conditions at the outset. DRGs with high volume and high rates of readmission are good candidates. Ideally, the subset would include conditions for which some hospitals have successfully reduced readmissions.

By focusing on a subset of conditions, Medicare and hospitals can gain needed experience to refine measurement techniques and assess the value of expanding the policy to a broader set of DRGs. Among the key measurement issues and aspects to assess are:

- What is the time period within which readmissions are defined? For example, should it be 7 days, 15 days, or 30 days? (For illustrative purposes, we have provided data analysis on 15-day readmissions throughout the chapter.)
- Should all readmissions be counted in the selected time period or just the subset that are clinically determined to be potentially preventable?
- What is the benchmark against which hospitals are measured? Should it be average readmission rates across all peers? Or should it reflect a higher standard, perhaps the readmission rate of top performers, to raise expectations?
- How does this policy affect discharge destination patterns and overall episode costs? For example, do hospitals respond by discharging more patients to rehabilitation services rather than home? If so, do outcomes improve and how do overall episode costs compare?

Good candidates for this starter set include CHF, COPD, and CABG. In Table 5-3 (p. 116), we list those conditions as well as several others to illustrate a potential starter set. Together, these conditions account for nearly 30 percent of readmissions in the 15-day window after discharge from the initial hospitalization.

Significant variation in readmission rates for these conditions suggests the opportunity for improvement. The wide variation in CHF is illustrated earlier in the chapter.

Value in disclosure

Once the starter set of DRGs has been identified and measurement issues have been addressed, Medicare could begin public disclosure of hospital readmission rates. A few years of experience with disclosure allows for refinement in measurement techniques in preparation for a change in payment policy. It would also ensure that all hospitals know their readmission rates, including readmissions to other hospitals, and have the opportunity to improve their rates before a penalty is imposed.

Disclosing these rates would also allow beneficiaries, physicians, and other providers to act on this information. Beneficiaries may use it to select which hospital to use and physicians and other post-acute care providers may use it in their admitting and affiliation decisions.

Structuring the payment incentive

A first consideration in designing a payment incentive is whether the policy should be a penalty only or whether it should include a positive reward for high-performing hospitals. A penalty-only policy may be sufficient to motivate hospitals to better meet patients' needs during

TABLE 5–3

Hospital readmissions for seven conditions make up almost 30 percent of spending on readmissions

Condition	Type of hospital admission	Number of admissions with readmissions	Readmission rate	Average Medicare payment for readmission	Total spending on readmissions
Heart failure	Medical	90,273	12.5%	$6,531	$590,000,000
COPD	Medical	52,327	10.7	6,587	345,000,000
Pneumonia	Medical	74,419	9.5	7,165	533,000,000
AMI	Medical	20,866	13.4	6,535	136,000,000
CABG	Surgical	18,554	13.5	8,136	151,000,000
PTCA	Surgical	44,293	10.0	8,109	359,000,000
Other vascular	Surgical	18,029	11.7	10,091	182,000,000
Total for seven conditions		318,760			$2,296,000,000
Total DRGs		1,134,483			$7,980,000,000
Percent of total		28.1%			28.8%

Note: COPD (chronic obstructive pulmonary disease), AMI (acute myocardial infarction), CABG (coronary artery bypass graft), PTCA (percutaneous transluminal coronary angioplasty), DRG (diagnosis related group). Analysis is for readmissions within 15 days of discharge from the initial inpatient stay. Readmissions are identified using 3M's software that defines potentially preventable readmissions.

Source: 3M analysis of 2005 Medicare discharge claims data.

the transition from the hospital to home or post-acute care. By not paying more than under current law to high performers, Medicare saves money and encourages all hospitals to be efficient. Also, reducing the frequency of readmissions may pay off financially for hospitals under current payment and be its own reward for incurring additional discharge planning and other such costs. MedPAC analysis shows that for patients who are later readmitted, hospitals have lower margins on both the initial admission and readmissions, compared with patients who are not readmitted. By reducing the frequency of these patients' readmissions, hospitals may be able to fill the beds with other patients who are more profitable.

On the other hand, a policy that pairs a penalty with a reward for good performance could help to offset possible lost revenue associated with lower rates of readmissions (if the hospital does not fill the beds with more profitable patients) and the costs for the actions (e.g., additional nursing and discharge planning staff, longer lengths of stay) hospitals would take to reduce readmissions.

We explore illustrative approaches for each type of incentive below. Then we consider how to adjust payment for readmissions to a hospital other than the one with the initial stay. This issue is pertinent regardless of whether a penalty-only or a combined reward and penalty approach is pursued. Lastly, we discuss risk adjustment issues.

A penalty-only approach

Under an approach that creates a penalty for hospitals with high readmission rates but holds top-performing hospitals harmless, Medicare could identify those hospitals with a higher rate of readmissions and impose the penalty only on them. To do this, Medicare could first calculate each hospital's readmission rate based on the prior year's performance and then select a benchmark rate (e.g., the average risk-adjusted readmission rate across all hospitals). For the next year, Medicare would reduce payment for each related readmission only for those hospitals with readmission rates above the benchmark rate. This approach combines several attractive features. It does not affect hospitals with lower rates of readmissions; the penalty can be applied in real time rather than assessed at the end of the year, which may have greater operational impact; and it can be designed to reduce Medicare's spending.

In this illustration (Table 5-4), hospitals with a readmission rate greater than 10 percent would receive the penalty. Because hospital A has a 5 percent readmission rate, it has no change in its payment. Hospital B, with a 20 percent readmission rate, receives the penalty and would be paid less for each readmission. With no change in the ratio of

TABLE 5–4 **Payment effects on providers from two illustrative readmission payment policies**

	Initial admissions			Readmissions					
	Number	Per case payment	Total payment	Number	Per case payment	Total payment	Readmission rate	Total payment across all stays	Average payment per case
Current policy									
Hospital A	570	$5,000	$2,850,000	30	$5,000	$150,000	5%	$3,000,000	$5,000
Hospital B	500	5,000	2,500,000	100	5,000	500,000	20	3,000,000	5,000
Hospital C	500	5,000	2,500,000	100	5,000	500,000	20	3,000,000	5,000
Penalty only: *Decrease payment for readmissions 24 percent for hospitals with readmission rate >10 percent*									
Hospital A	570	5,000	2,850,000	30	5,000	150,000	5	3,000,000	5,000
Hospital B	500	5,000	2,500,000	100	3,800	380,000	20	2,880,000	4,800
Hospital C	510	5,000	2,550,000	70	3,800	266,000	12	2,816,000	4,855
Reward and penalty: *Increase payment for initial admissions 2 percent; decrease payment for readmissions 24 percent*									
Hospital A	570	5,100	2,907,000	30	3,800	114,000	5	3,021,000	5,035
Hospital B	500	5,100	2,550,000	100	3,800	380,000	20	2,930,000	4,883
Hospital C	510	5,100	2,601,000	70	3,800	266,000	12	2,867,000	4,943

admissions to readmissions, its average payment per case declines by $200. Hospital C has the same readmission rate as hospital B at the outset, but, in the face of the penalty, reduces its readmission rate and slightly increases its admission rate. As a result, it experiences a smaller decrease in its average payment per case than hospital B.

A reward and penalty approach

If policymakers prefer to couple a reward for high-performing hospitals with a penalty for low performers, Medicare could adjust its current payment method for initial admissions and readmissions at the beginning of a year so that, in any given year, hospitals with fewer than expected readmissions would receive higher average case payments than under current law. This illustrative approach would reward hospitals with low rates, but not necessarily those that reduced their readmission rates. Those with a higher than expected rate of readmission would receive lower average case payment. To create this result, Medicare could increase its payment for initial admissions while decreasing its payment for readmissions. The magnitude of the two adjustments and their calibration relative to one another would be critical to the success of the policy. They will determine the degree of the incentive for hospitals to change behavior and the effect on Medicare spending. Because there are many more initial admissions than readmissions, the increase in payment for initial admissions should be smaller than the reduction in readmission payment. Ideally, the payment would be high enough to change behavior but not too high to increase spending. To illustrate the concept, we provide the following hypothetical example in Table 5-4.

In this example, hospital A has 5 percent readmissions for a certain DRG while hospital B and hospital C have a 20 percent readmission rate. Their average per case payment is $5,000. If, under the new policy, Medicare increased payment for initial admissions by 2 percent and decreased payment for readmissions by 24 percent, average per case payment would go up for the hospital with fewer readmissions and down for those with more. If there is no change in the ratio of initial admissions and readmissions, hospital A would have increased its Medicare payment per case ($5,035). With no change in the ratio of initial admissions to readmissions, hospital B would have lower payment per case ($4,883). Hospital C, in this example, responds to the policy by reducing the number of readmissions but uses the extra capacity to increase its initial admissions. Its new average payment per case is higher than that for hospital B (which did not change behavior) at $4,943.

Medicare savings in this illustration come from two sources: reduced payments for readmissions (partially

offset by higher payment for initial admissions) and fewer readmissions (partially offset by an increase in initial admissions that could result given more available beds).

Accounting for readmissions to other hospitals

Another payment design issue to consider is how to adjust a hospital's payment when a patient is readmitted to a hospital other than the one that had the initial admission. This happens about 30 percent of the time. Because the readmitting hospital, in this situation, has a minimal ability to prevent the readmission, it is not reasonable to reduce payment for the readmission. The penalty should apply to the hospital with the initial admission. This can be accomplished in a number of ways. It could be part of "netting," the routine process in which CMS makes retroactive payment adjustments to hospitals. CMS could deduct the penalty for the readmission to the same or a different hospital from future claims payments. This approach requires an added layer to the existing claims reconciliation process.

Alternatively, Medicare could withhold a percentage of payment for the initial stay. If the claims did not reflect a readmission within 15 days (or whatever time period is specified), the withhold could be returned to the hospital with the initial stay. If a related readmission were detected, the withhold would not be returned. Whichever hospital had the readmission would be paid in full. This approach keeps the penalty with the hospital that had the greatest ability to prevent the readmission. To be administratively manageable, the process of detecting preventable readmissions would need to be highly automated and an integrated step in fiscal intermediaries' claims review and payment process.

Another option is to apply the policy only to readmissions to the same hospital, thereby avoiding the administrative challenges associated with accounting for readmissions that occur across hospitals. Under that approach, payment for readmission to the same hospital could be reduced. However, this approach would limit the scope of the policy significantly and create perverse incentives. Hospitals would have an incentive to have patients who needed follow-up inpatient care go to a different hospital, jeopardizing continuity and quality of care.

Importance of risk adjustment and addressing patient nonadherence

It will be necessary to risk adjust hospitals' rates. Readmission is generally more likely the more severely ill a patient is, even within the same DRG. Refined DRGs that better account for severity of illness should help in adjusting for this factor, which is beyond the hospital's control.

Patients' adherence to discharge instructions also affects hospitals' readmission rates. Care provided by family, which can be important in avoiding readmissions, may be declining, as we discuss in Chapter 1. Certain hospitals may have patient populations with language and cultural barriers that might contribute to readmissions. If a hospital has a larger portion of nonadherent patients than other hospitals, its performance may look worse than that of its peers.

One way to address this problem is to allow hospitals to indicate that a patient was nonadherent upon discharge or readmission. Readmissions for those patients would not be counted in the providers' overall rate. Britain has pursued a similar exemption process in measuring adherence to quality-of-care measures as part of its P4P program. It found that relatively few family practices claimed a large portion of patients as exempt or nonadherent—only 1.1 percent excluded more than 15 percent of their patients (Doran et al. 2006).

To temper the incentive to declare a high proportion of patients as nonadherent, Medicare could keep and publicly report a tally of the number of patients who were exempt from the rate for each facility. In addition, perhaps an objective and verifiable standard for nonadherence could be established to limit ambiguity and variation in how hospitals use this exceptions process. CMS might require providers who had excessive numbers of nonadherent patients over time to have plans in place to reduce the incidence of nonadherence.

Even with these sorts of strategies, an exceptions process might be counterproductive. Ideally, a provider facing the challenges associated with nonadherent patients will invest in strategies to encourage patients to adhere to their care plans. Allowing hospitals to exempt these patients from their readmission rates could undercut the incentive to make this investment and fail to address an important part of the problem. ■

Endnotes

1 Quality improvement organizations and other CMS contractors have authority to review readmissions claims for medical necessity and potential unbundling of services. There appears to be wide variation in how aggressively these entities focus on readmissions. Interviews with hospital administrators suggest that, in some regions of the country, the review is or has been so robust that administrators believe Medicare does not pay for readmissions within 30 days of discharge of a prior hospitalization.

2 Readmissions are identified as cases that are readmitted to an acute care hospital (either the same or a different hospital) after an acute care stay within a specified time frame—7 days, 15 days, or 30 days for this analysis. People transferred from one hospital to another hospital are not considered readmissions. In calculating readmission rates, the denominator in the equation excludes people who died in the hospital or were transferred to another acute care hospital.

3 For example, according to 3M's analysis, patients with congestive heart failure (CHF) in severity level 1 have a readmission rate of 9.7 percent, while CHF patients in severity level 4 have a 16.3 percent readmission rate over a 15-day window.

4 Using national data from all hospitals, the percentage of discharges with at least one readmission for each APR–DRG and severity-of-illness (SOI) level is calculated to establish a national readmission rate norm. The expected number of discharges with at least one readmission for each APR–DRG and SOI level in a hospital is calculated by multiplying the readmission rate for the APR–DRG and SOI level from the national readmission norm by the number of patients in the hospital in that APR–DRG and SOI level. The expected number of patients with at least one major readmission in each APR–DRG and SOI level summed across all APR–DRGs and SOI levels is the hospital's expected number of patients with at least one readmission.

5 Lack of good communication at discharge also appears to influence the broader patient experience and recovery, aside from readmission rates. A study focused on patient recovery after knee replacement surgery found that patients reporting coordination problems were more likely to experience joint pain and delayed resumption of functioning than those who did not report coordination problems (Weinberg et al. 2007).

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CHAPTER 6

An alternative method to compute the wage index

RECOMMENDATIONS

6A The Congress should repeal the existing hospital wage index statute, including reclassifications and exceptions, and give the Secretary authority to establish new wage index systems.

COMMISSIONER VOTES: YES 15 • NO 0 • NOT VOTING 0 • ABSENT 2

6B The Secretary should establish a hospital compensation index that:

- uses wage data from all employers and industry-specific occupational weights,
- is adjusted for geographic differences in the ratio of benefits to wages,
- is adjusted at the county level and smooths large differences between counties, and
- is implemented so that large changes in wage index values are phased in over a transition period.

COMMISSIONER VOTES: YES 15 • NO 0 • NOT VOTING 0 • ABSENT 2

6C The Secretary should use the hospital compensation index described in recommendation 6B for the home health and skilled nursing facility prospective payment systems and evaluate its use in the other Medicare fee-for-service prospective payment systems.

COMMISSIONER VOTES: YES 15 • NO 0 • NOT VOTING 0 • ABSENT 2

CHAPTER 6

An alternative method to compute the wage index

Chapter summary

In the Tax Relief and Health Care Act of 2006 (TRHCA), the Congress mandated that MedPAC submit a report on a revision of the wage index by June 30, 2007, including Commission recommendations on alternatives for computing the wage index. The Secretary then has to consider MedPAC's recommendations and include in the fiscal year 2009 inpatient prospective payment system (IPPS) proposed rule one or more proposals to revise the wage index. The TRHCA also requires that CMS consider specific issues of concern to the Congress such as eliminating exceptions, minimizing variation in the wage index across county borders, and using the hospital wage index in other settings.

In this chapter, we explore a new method for calculating wage indexes for hospitals and other sectors that addresses the Congress's concerns. It is based on wage data from the Bureau of Labor Statistics and the Census Bureau and on benefits data from the provider cost reports submitted to CMS. The MedPAC wage index isolates differences in wage rates that are solely due to geography and is not highly influenced

In this chapter

by an individual hospital's choices about the type of employees to hire or the type of services to offer.

The current hospital wage index adjusts Medicare payments for differences in reported hospital wages across geographic areas in the United States. By law, CMS calculates the index using data only from hospitals paid under Medicare's IPPS. It uses self-reported data in hospital cost reports. However, it uses the index to adjust payments for other sectors such as home health and skilled nursing facilities (SNFs), even in counties without IPPS hospitals.

Over the years, the Congress and the Secretary have created exceptions to the calculated wage index that now change the calculated values for about one-third of IPPS hospitals. These exceptions can be overlapping and lead to nonintuitive results. The new method eliminates the need for the many exceptions by limiting the extent of the differences between adjacent areas. It is also less volatile from year to year than the current index and does not require a separate survey to untangle the effect of occupational mix differences from wage differences—which is an inherent problem in the current system.

The Commission recommends first that the Congress should repeal the existing hospital wage index statute, including reclassifications and exceptions, and give the Secretary authority to establish new wage index systems.

Recommendation 6A

COMMISSIONER VOTES:
YES 15 • NO 0 • NOT VOTING 0 • ABSENT 2

The Congress should repeal the existing hospital wage index statute, including reclassifications and exceptions, and give the Secretary authority to establish new wage index systems.

Second, the Commission recommends that the Secretary should use this new authority to establish a hospital compensation index that:

- uses wage data representing all employers and industry-specific occupational weights,

- is adjusted for geographic differences in the ratio of benefits to wages,
- is adjusted at the county level and smooths large differences between counties, and
- is implemented so that large changes in wage index values are phased in over a transition period.

Recommendation 6B

The Secretary should establish a hospital compensation index that:
- *uses wage data from all employers and industry-specific occupational weights,*
- *is adjusted for geographic differences in the ratio of benefits to wages,*
- *is adjusted at the county level and smooths large differences between counties, and*
- *is implemented so that large changes in wage index values are phased in over a transition period.*

COMMISSIONER VOTES:
YES 15 • NO 0 • NOT VOTING 0 • ABSENT 2

Because it uses the same underlying data for all settings, the method can easily be tailored to SNFs and home health agencies. However, we find that the SNF, home health agency, and hospital wage indexes under the new approach are highly correlated. Therefore, the Commission also recommends that the Secretary should use that hospital compensation index for the home health and SNF prospective payment systems and evaluate its use in the other Medicare fee-for-service prospective payment systems. ■

Recommendation 6C

The Secretary should use the hospital compensation index described in recommendation 6B for the home health and skilled nursing facility prospective payment systems and evaluate its use in the other Medicare fee-for-service prospective payment systems.

COMMISSIONER VOTES:
YES 15 • NO 0 • NOT VOTING 0 • ABSENT 2

Introduction

The role of the wage index in Medicare prospective payment systems is to adjust payments for the differences in wage rates across geographic areas. The basic idea is that if it costs more to hire a nurse in New York City than it does in rural Alabama, then payments should reflect that difference because area labor costs are beyond a health care provider's control. The text box shows how CMS uses the wage index to calculate payments for hospitals.

Computing a wage index requires:

- determining geographic labor market areas,
- determining the underlying wage level in those markets for the relevant occupations, and
- comparing those levels with the national average to derive an index value.

The market areas in the current system are metropolitan statistical areas (MSAs), which usually include a city and its surrounding suburbs, and a residual called the statewide rural area, which includes all counties in the state that are not in MSAs.[1] A system that adjusts for geographic differences in labor input costs should isolate differences in wage rates that are solely due to geography. An index should reflect overall market conditions and not be highly influenced by an individual hospital's choices about the types of employees to hire or the types of services to offer.

Calculation of base payment in fiscal year 2007

CMS computes the hospital base payment for inpatient prospective payment system (IPPS) hospitals by splitting the base rate into a labor-related share and a non-labor-related share and then multiplying the labor-related share by the wage index for the geographic area. In fiscal year 2007, the hospital wage index ranged from about 1.56 to 0.74. The base payment for hospitals in these areas is calculated as shown below.

Base payment

= [(base rate) × (labor share) × (wage index)]
+ [(base rate) × (1 – labor share)]

For fiscal year 2007, all hospitals paid under the IPPS have the same base rate, $4,874. The wage indexes for the areas with the highest and lowest wage indexes in the country are as shown in Table 6-1. CMS estimated the labor share to be 0.697 across the nation using Medicare cost report data, and CMS uses that figure for the area with the highest wage index. However, the Congress set the labor share at 0.62 for hospitals with wage indexes less than or equal to 1; therefore, CMS uses that amount for the area with the lowest wage index. Because areas with a wage index less than or equal to 1 have a smaller labor share, the differences in base payments do not fully reflect the differences in wage indexes. CMS calculates the labor-related base payment by multiplying the base rate, the labor share, and the wage index, and it calculates the non-labor-related base payment as (1 minus the labor share) times the base rate; the sum of those two columns is the base payment. That amount ranges from about $4,079 for hospitals with the lowest wage index to about $6,783 for hospitals with the highest wage index. ■

TABLE 6–1 How the wage index affects the base payment for hospitals, 2007

Wage index area	FY07 base rate	Labor share	Wage index	Labor-related portion	Non-labor-related portion	Base payment
Highest	$4,874	0.697	1.5617	$5,306	$1,477	$6,783
Lowest	4,874	0.620	0.7368	2,227	1,852	4,079

Note: FY (fiscal year).

Source: Final FY07 wage indexes and payment factors from *Federal Register* 71, no. 196 (October 11, 2006): 59890.

Exceptions to the current wage index

Lugar counties: Entire counties may be reclassified to an adjacent metropolitan statistical area (MSA) if they are adjacent to more than one MSA and, taken together, the commuting pattern to those MSAs would classify them to a single MSA under Office of Management and Budget (OMB) rules. For example, if 13 percent of the workers in a county commute to MSA 1 and another 13 percent commute to MSA 2, the sum of those commuting would be 26 percent. Under OMB rules, 25 percent of workers must commute to a single MSA for a county to be part of that MSA; thus, the county would qualify as a Lugar county.

Medicare geographic classification review board decisions: Hospitals may request reclassification to an adjacent labor market area if they meet conditions of geographic proximity and comparable wage costs:

- Close geographic proximity is defined as being located within 15 miles (if urban) or 35 miles (if rural) from the border of the area to which they seek to be reassigned. Proximity may also be demonstrated if at least 50 percent of the hospital's employees reside in the reassigned area.

- Comparable wage costs are defined as having an average hourly wage rate at least 108 percent (if urban) or 106 percent (if rural) of the average hourly wage in their actual labor market location, and having an average hourly wage at least 84 percent (if urban) or 82 percent (if rural) of the average wage rate in the area to which they seek to be reassigned. Comparable wage costs are based on weighted three-year average hourly wages.

Sole community hospitals and rural referral centers are not required to meet the proximity criteria. In addition, hospitals that are currently classified or have ever been classified as rural referral centers are not required to meet the 106 percent criterion (they can reclassify even if their wages are not higher than their regional average).

Hospitals that do not meet the geographic reclassification regulations have also been reclassified:

- The Section 508 reclassifications were created in the Medicare Prescription Drug, Improvement, and Modernization Act of 2003; they now expire at the end of fiscal year 2007.

Section 401: Section 401 allows hospitals to be classified for wage index purposes as rural although they are in an urban area.

Special exceptions: Special exceptions are reclassifications allowed at the discretion of the Secretary for certain providers that previously qualified under rules for group (countywide) reclassifications, where statutory changes related to other prospective payment system provisions would otherwise have disqualified these providers from reclassification. These exceptions were implemented in fiscal year 2005 (CMS 2004).

Outcommuting adjustment: The outcommuting adjustment allows wage indexes for counties in lower wage index areas to be blended with higher wage index areas in proportion to the number of county residents who are hospital workers and who commute to those higher wage index areas.

Rural floor:

- The rural floor exception requires that any MSA wage index in a state be equal to or greater than the statewide rural wage index in that state.

- The rural floor exception was extended to states without rural areas and an imputed rural floor was created for those states.

Hold harmless: Under the hold-harmless provision, hospitals now in rural but formerly in metropolitan markets are allowed to retain former metropolitan designation for three years, fiscal years 2005–2007. ■

Therefore, the sample of wages used to construct the index should come from all employers of similar workers in the market.

First, we describe the approach currently used in the hospital wage index, which is part of both hospital inpatient and outpatient prospective payment system (PPS) payment formulas; then we describe an alternative approach for computing a hospital wage index and how to extend that approach to other sectors such as skilled nursing facilities (SNFs) and home health agencies.

Current approach

The current hospital wage index adjusts payments for differences in hospital-reported average wages across geographic areas in the United States. By statute, it should adjust for area differences in hospital wage levels by a factor that reflects the relative hospital wage level in the geographic area of the hospital compared with the national average hospital wage level. It is updated on the basis of a survey conducted by the Secretary of the wages and wage-related costs of inpatient prospective payment system (IPPS) hospitals (see text box, pp. 151–152, for text of 42 U.S.C. 1395ww(d)(3)(E)). In practice, it is based on data hospitals reported four years prior in their Medicare IPPS cost reports. The reports include detailed instructions on which employees, what lines of business, and what elements of compensation—including salaries and wage-related costs—to include. Audits show the results can sometimes be inaccurate (OIG 2007). Areas with only one or two hospitals may also see volatility in the wage index if wages change suddenly—for example, because of a new labor agreement or because of errors in reporting costs and hours (OIG 2007).

Exceptions

The basic wage index system, which uses MSAs and statewide rural areas as its labor markets, can result in large differences between adjoining geographic areas. Because a hospital near a border may consider it inequitable that its wage index value is lower than that of a nearby hospital, over the years numerous exceptions to the basic calculation have been incorporated into the system that permit hospitals to have their payments adjusted by a higher wage index value. Those exceptions now increase the calculated wage index for more than one-third of IPPS hospitals (Table 6-2, p. 130). Each type of exception is explained in the text box (opposite page).

Adjudicating this exception process and maintaining a wage index system with so many exceptions is burdensome to CMS. The text box (p. 131) shows that the numerous exceptions and the interactions among them create a number of troubling anomalies in the current system. Dalton and colleagues have compiled a history of the wage index legislation and exceptions (Dalton et al. 2007).

Occupational mix

A second problem with the Medicare wage index relates to the occupational mix across hospitals. The average wage might be higher in one hospital than another not because of differences in underlying wages but because of differences in the share of higher or lower wage staff employed by one hospital relative to another. Payments to a hospital should not increase because one hospital chooses to use a mix of labor that is higher cost than another. For example, if one hospital chooses to use information technology (IT) specialists and invest in an IT system instead of employing many billing clerks, that choice should not change its wage index. In addition, if a higher skill mix is a result of caring for higher intensity patients, the additional costs should be reflected in the case mix for the hospital, not in the wage index. Medicare's diagnosis related group (DRG) system captures differences in costs—including those associated with the mix of staff. Hospitals with more high-cost DRGs (a higher case mix) receive higher payments.

Historically, the wage index reflected a hospital's average wage without adjusting for the skill level of its employees. In an attempt to correct this problem, the Medicare, Medicaid, and SCHIP Benefits Improvement and Protection Act of 2000 mandated that CMS remove the effect of differences in occupational mix from the index. In fiscal year 2005, CMS introduced an occupational mix adjustment to control for the effect of skill level on the wage index. Because of uncertainties about the data, the method, and the impacts on hospitals, CMS limited the adjustment to 10 percent of the wage index.

CMS introduced a new system to survey hospitals for their occupational mix in 2006 and was planning to adjust for occupational mix using data from the survey beginning in fiscal year 2008. However, a court ruling, *Bellevue Hospital Center v. Leavitt*, 443 F.3d 163 (2nd Cir. 2006), required that the wage index be adjusted 100 percent for the effect of occupational mix in fiscal year 2007 using

TABLE 6–2

Exceptions to the wage index in fiscal year 2007

	Number of hospitals			Percent of total
	Urban	Rural	Total	
Total inpatient prospective payment system hospitals	2,590	1,005	3,595	100%
Labor market reclassifications and special exceptions:				
Lugar counties ("deemed urban," since 1988)	49	N/A	49	1
MGCRB decisions, standard criteria	280	358	638	18
MGCRB decisions (MMA Section 508 special appeals)	81	27	108	3
Urban to rural (BIPA Section 401 providers)	30	N/A*	30	1
"Special exceptions" by the Secretary	13	5	18	1
Subtotal, all reclassified and special exceptions	453	390	843	23
Outcommuting adjustments (MMA Section 505)	133	91	224	6
Rural floor index				
Original: Providers in states with rural markets	216	N/A**	216	6
Imputed: Providers in "all urban" states	40	N/A	40	1
"Hold-harmless" providers from MSA-to-CBSA change	N/A	46	46	1
Total hospitals with exceptions and adjustments	842	481	1,323	37

Note: N/A (not applicable), MGCRB (Medicare Geographic Classification Review Board), MMA (Medicare Prescription Drug, Improvement, and Modernization Act of 2003), BIPA (Medicare, Medicaid, and SCHIP Benefits Improvement and Protection Act of 2000), MSA (metropolitan statistical area), CBSA (core-based statistical area). Total is number of hospitals with at least one exception; hospitals may qualify for more than one. Numbers may not sum to total due to rounding.
*Five providers in this category were identified in the hospital impact file as rural (presumed error; placed in urban column).
**Two providers in this category were identified in the hospital impact file as rural (presumed error; placed in urban column).

Source: Dalton et al. 2007.

data from the new survey. The latest survey collects salaries and hours for hospital employees and contractors but only adjusts for differences in the mix of nursing personnel.

This limited occupational mix adjustment had a small effect on most hospitals in 2007. The occupational mix adjustment differentiates between management RNs, other RNs, licensed practical nurses (LPNs), nurse aides, and medical assistants. It does not account for differences in the mix of other occupations. An occupational-mix-adjusted wage index was published in October 2006 after the final rule. The occupational mix adjustment resulted in the wage index increasing in 47 percent of the 386 urban wage index areas and decreasing in about 52 percent (4 areas had no change). The greatest urban increase was 8.4 percent and the greatest decrease was 6.0 percent. In the 47 rural areas, 70 percent saw increases and 30 percent saw decreases. The greatest rural increase was 3.2 percent and the greatest decrease was 2.7 percent.

Circularity

The current system relies solely on hospital-reported data and hence is prone to the problem of circularity. For example, hospitals that successfully moderate increases in hourly wages relative to the national average increase will see a decrease in their wage index. They will then receive lower payments, which may create pressure to exert even tighter control over costs. (The magnitude of the pressure depends on the overall financial condition of the hospital.) If hospitals succeed at keeping wage increases below the national average again, their wage index could decrease still further. This is particularly a problem in a market area with few hospitals where any idiosyncratic characteristic of the hospital (e.g., labor mix or unusual labor agreements) can

The system of wage index exceptions causes anomalies in wage index values

The current wage index system has become laden with exceptions, distorting area wage indexes. For example, the rural floor exception is built on the faulty assumption that rural wages should always be lower than urban wages. In the 2008 proposed inpatient rule, CMS stated that if two hospitals in a certain state decide to change status from critical access hospital (CAH) to prospective payment system (PPS), a rural floor would be created for all wage index values in the state (CMS 2007). Because of the high wages paid in these two rural communities, the rural floor would cause Medicare payments to urban hospitals in the state to rise by more than $220 million per year. The fact that the movement of one or two CAHs in or out of the PPS system can increase (or decrease) Medicare payments by $220 million suggests there is a flaw in the design of the wage index system.

While some exceptions have odd outcomes, others have reasonable outcomes but lack a firm theoretical foundation. The rural counties of North Dakota have a base wage index more than 10 percent below the rural wage index in all neighboring states. The Section 508 exception temporarily erased this differential (see text box, p. 128). However, the Section 508 exception assumed that all North Dakota hospitals were part of the Fargo labor market even if they were hundreds of miles away. Increasing the North Dakota wage indexes to a level similar to indexes in neighboring states (i.e., removing the cliff) was a good outcome, but other mechanisms could remove the differences between adjacent counties without distorting the concept of labor markets.

A combination of exceptions in Connecticut results in 27 of 32 hospitals reclassifying in some way to a different area's wage index in fiscal year 2007. Twelve hospitals are lifted up by the Connecticut rural floor, 10 are reclassified under the 508 provision, 3 receive special exceptions, and 2 are just reclassified. Only 5 hospitals receive a wage index based on wages paid in their own market.

The current system of multiple exceptions, distorted concepts of labor markets, and rural floors has created enough distortions to the current system to motivate a new approach to the wage index. ■

determine the wage index. About half the market areas have three or fewer reporting hospitals; 58 markets (13 percent) have only one reporting hospital. This characteristic of the current system has concerned many providers. Using data from all employers will reduce (but not eliminate) the circularity problem, with the greatest benefit for occupations—such as clerical, housekeeping, and food service—with many employers other than hospitals.

New approach

In this chapter, we present a pragmatic approach to constructing a wage index that starts from the following principles. It should:

- be theoretically sound;
- address limitations in the current approach (large numbers of exceptions, occupational mix, circularity);
- use readily available data from all employers;
- use boundaries for geographic areas that are commonly used and understood and for which data are available;
- take into account all compensation costs, both wages and benefits;
- not create greater data-reporting burdens on hospitals; and
- be seen as fair by providers in other sectors as well as by hospitals.

A system for adjusting for geographic differences in labor input costs should isolate the labor-related costs of doing business that differ solely because of geography. The goal is an index that is more reflective of overall market conditions and less reflective of individual hospitals' market power and their choices about the type of

employees hired and the types of services offered. Because all employers participate in the labor market, the sample of wages used to construct the index should come from all employers of similar workers. Hospitals must compete with all other potential employers for workers, not just with other hospitals.

One could argue that many separate labor pools may exist for each occupation. For example, if nurses at IPPS hospitals represent one labor pool and nurses in doctors' offices represent a different labor pool, there may be imperfect competition across these pools when employers hire nurses. However, because we are interested in the relative wages across areas, this would be a disadvantage only if a market had a disproportionate share of nurses working for hospitals and if wages for nurses varied substantially by industry. This does not appear to be a significant problem because, at the national level, wages for RNs working in hospitals average $27.80, while wages for those working in physicians' offices average $27.03. (Physicians' offices are the second largest employer of RNs.) For the most part, relative wages between areas are usually well represented by treating each occupation as one labor pool in a market area.

The new approach starts with readily available all-employer wage data and then uses a fixed-weight (Laspeyres) wage index approach to construct the index. A Laspeyres index reflects wage variation and not variation caused by occupational mix (Pope 1989). Because of its advantages, a Laspeyres index was chosen to construct the geographic practice cost index used in the physician payment system (Zuckerman et al. 1990). The Government Accountability Office found that approach to be valid in its design, although the data and methods need some refinement (GAO 2005). RTI found that the fixed-weight Laspeyres form is reasonable for creating a hospital wage index and that it is simple, widely used, accepted, and understood (Dalton et al. 2007).

We start with Bureau of Labor Statistics (BLS) survey data that provide wages for specific occupations by MSA and for the balance of each state across all industries. These data meet our criteria because they are from a sample of all employers, are readily available, are credible, and are aggregated by useful geographic areas.[2] We then create occupational weights for each industry (hospital, nursing facility, home health agency) using BLS-reported industry-specific national average employment and wages by occupation. For example, if RNs represent 37 percent of employee wages in hospitals nationwide, we weight RN wages 37 percent in each labor market area when calculating the area's average hospital wage. This approach (detailed in the section on additional technical information, p. 145) automatically adjusts for occupational mix; thus, CMS would not have to conduct an additional survey, calculate an adjustment, and recalculate the wage indexes as required in the current approach. For each area, the occupation weights are multiplied by the ratio of wages for that occupation compared with the national average wage paid to that occupation and then summed to create a wage index value for the area. (Physicians providing patient care are not included as an occupation because Medicare pays them through the physician fee schedule. Physicians who are managers and classified as such by their employer are included as managers.)

We then use county-level, occupation-specific wage data from the census to further refine the MSA and statewide rural wage indexes. We do this because statewide rural areas may contain distinct labor markets within them, areas within an MSA may have differing wage levels, and there could still be large differences in wage indexes between adjoining areas.[3] This step produces county-level wage indexes. As a last step, we smooth differences between county-level wage indexes to reach a target level of tolerable difference between adjoining counties.

We do not use the county-level wage data from the census directly to create a county-level index for two reasons. First, MSAs are constructed based on commuting patterns and hence roughly represent a labor market. Therefore, we want to preserve the information at that level. Second, census wage data have limitations. They have gaps for some occupations in sparsely populated counties, are self-reported, and are difficult to use alone; also, they are not updated as frequently as the BLS data. The most current census data are from 2000. Because of the limitations of the census data, we limit their impact on the wage index to a 5 percent deviation from the wage index based on BLS data.

In addition to the wage data from BLS and the Census Bureau, we have also developed data on benefits such as health insurance, pensions, and mandatory payroll taxes from hospital, SNF, and home health provider cost reports submitted to CMS. We included an adjustment for benefits because they differ as a percent of wages across geographic regions (Dalton et al. 2007, BLS 2006). We incorporated those data into our wage index algorithm to create a compensation index, which can be compared more directly with the CMS hospital wage index because

the CMS index also includes benefits. We used the same cost report benefit data that CMS used in the current wage index; the only difference is that we used benefit data from hospitals, SNFs, and home health agencies while CMS used only hospital data.

There are no perfect definitions of labor market areas, and wage and benefit data are also imperfect. This new method represents a pragmatic compromise in many respects. Recognizing that current market area definitions (MSA and statewide rural) can be too large and counties can be too small to represent labor market areas, we created a hybrid that allows variation by county within a market area, but within limits. Because too great a difference between adjoining areas can seem arbitrary, we introduced county-level indexes and smoothing to reduce differences. Because data on benefits at the market level are not available from BLS, we introduced data gathered from provider cost reports to adjust for differences in benefits across market areas, knowing those data have limitations. This alternative balances the limitations of some data sources with the strengths of others to create an index with some desirable properties—less year-to-year volatility, smaller differences between adjoining areas, and automatic adjustment for occupation mix. These results are described in detail in the following section.

Results

In this analysis we use data from BLS, including a calculation of each MSA's and rural rest-of-state's MedPAC wage index. We also add benefit data from hospital, SNF, and home health agency cost reports to compute a MedPAC compensation index (described in the section on additional technical information). The MedPAC wage and compensation indexes have a fairly high correlation with the index Medicare currently uses (correlation coefficient (R^2) of about 0.90). Nonetheless, there are some systematic differences. Compared with Medicare's hospital wage index, MedPAC's wage and compensation indexes:

- have smaller differences between adjoining geographic areas,
- are less volatile from year to year,
- have lower wage index values in the (currently) highest wage index areas and higher values in the (currently) lowest wage index areas,
- explain slightly less of the variation in hospital costs (R^2 of 0.823 versus 0.836),
- automatically take into account occupational mix rather than requiring additional adjustments, and
- would lessen the burden on hospitals to collect data.

Table 6-3 (p. 134) summarizes some important points of comparison between the current (fiscal year 2007) CMS hospital wage index and the two alternatives we studied. This analysis of our two alternatives is at the hospital level, using the current CMS post-reclassification wage index values for each hospital as the reference point. (It does not include the Section 508 additions to the wage index because those adjustments use additional money (are not budget neutral) and expire at the end of fiscal year 2007.) We show the MedPAC wage index and the MedPAC compensation index. The latter includes an adjustment for benefits.

Another way of evaluating the results is to consider how each system treats the hospitals that are exceptions under the current system. Table 6-4 (p. 135) uses as its reference point the basic (prefloor pre-reclassification) wage index that CMS calculates and shows the percentage change in the wage index from it to the final CMS system and to the new MedPAC compensation index. Table 6-4 shows that, if the current exceptions were created to meet a need, the new system might meet that need better and do so automatically without resorting to an exception process:

- The 2,096 hospitals with no exceptions experience no change moving to the final CMS wage index and have a small increase of 1.7 percent moving to the MedPAC index. These hospitals see an increase in part because they no longer have to pay for the reclassification of other hospitals through a budget-neutrality adjustment.
- The 224 hospitals in counties receiving an outcommuting exception (often located in counties bordering higher wage index markets) would receive a 5.8 percent increase above the pre-reclassification wage index compared with the 4.8 percent they receive under the current set of CMS exceptions.
- For hospitals with geographic reclassification, which arguably are overrewarded under the current system and can now receive very large increases (some hospitals have a wage index increase of more than 20 percent), there would still be an increase under the

TABLE 6–3 **Comparison of CMS hospital wage index and two alternatives**

	Current CMS wage index (without Section 508)	MedPAC wage index	MedPAC compensation index
Unit of analysis	Each hospital's average hourly wage	Each occupation's average wage in the market	Each occupation's average wage in the market
Occupational mix	Separate survey used in an attempt to correct for occupational mix differences	Fixed weights for each occupation, equal to that occupation's share of national hospital wages	Fixed weights for each occupation, equal to that occupation's share of national hospital wages
Employers surveyed	Hospitals only	All employers of hospital-type workers (e.g., include SNF RNs)	All employers of hospital-type workers (e.g., include SNF RNs)
Source of wage data	Hospital cost report	BLS/Census surveys	BLS/Census surveys
Source of benefits	Reported on hospital cost reports	None	Estimated for all employees from hospital, SNF, and home health cost reports
Market definition	MSA/statewide rural	MSA/statewide rural and county blend	MSA/statewide rural and county blend
Lowest index value	0.7368	0.7659	0.7535
Highest index value	1.5617	1.4734	1.5028
Largest difference in index values between hospitals in neighboring counties	28%	10%*	10%*
Ability to explain hospital costs (R^2 value)**	0.836	0.819	0.823

Note: SNF (skilled nursing facility), BLS (Bureau of Labor Statistics), MSA (metropolitan statistical area). The second column is the 2007 CMS wage index without the Section 508 reclassifications.
*Difference is constrained to be no more than 10 percent by algorithm in MedPAC indexes.
**Percentage of the variation in hospital costs explained in a regression using the specified wage index.

new system, but it would be smaller. The adjustment would be, on average, similar to the adjustment for the previous category. Those 758 hospitals would receive an increase of 4.8 percent, which is less than the 8.3 percent increase under the current system.

- Finally, hospitals with special exceptions, which by definition meet none of the other criteria, would receive a very small increase instead of a 7.9 percent increase under the current system.

Arguably, the new system would remove the need for exceptions by automatically adjusting the market area (MSA and statewide rural) index values to remove large differences between adjoining areas. It does so by calculating county-level index values and then smoothing any remaining large differences. The new system would automatically target those adjustments to where they are most needed. Under the new system, a similar increase would result for other providers in the same counties, such as SNFs and home health agencies. Currently, other providers receive no adjustment when hospitals reclassify to another geographic area.

Wage index cliffs

If there are large differences between the wage indexes of adjoining market areas—for example, between a statewide rural area and an adjoining MSA—hospitals near the border may object if they receive the lower wage index. In reaction to these objections, geographic reclassification was instituted so that hospitals that are near other hospitals with higher wage indexes can seek a higher wage index. (The text box (p. 128) specifies when reclassification is allowed.) We refer to large differences in wage index values between adjoining geographic areas as wage index cliffs.

We compute our alternative wage and compensation indexes in three steps. The first step in the alternative method is to calculate market area wage indexes at the MSA and statewide rural areas using BLS area wage data and BLS industry-specific occupational weights. For the compensation index, benefit data are also incorporated at this step. (The section on additional technical information provides details on constructing the alternative compensation index, p. 145.)

To lower wage index cliffs, in the next step, we vary the wage index within market areas—that is, within MSAs and within the statewide rural areas. We use county-level census data to vary the market area wage index and create a county-level wage index. As discussed in the section on additional technical information, we set limits on the extent to which counties within a market area can vary from the market wage index. In the current model, we restrict each county to be within 5 percent of the MSA or statewide wage index. Given that some counties may have a wage index up to 5 percent below their MSA's mean wage index and some may have a wage index 5 percent above their MSA's mean wage index, the maximum difference in wage indexes between counties in the same MSA would be 10 percent.[4]

The last step further lowers the remaining differences between adjoining counties. We call this step smoothing. It is accomplished by:

- comparing all counties with each of their neighbors;
- finding the greatest difference between each county and its neighbors;
- if that difference is greater than an acceptable threshold, reducing it to the threshold (10 percent in this example) by increasing the lower wage index; and
- revaluing the entire set of wage index values to be budget neutral to the original set of wage index values, which is necessary because the previous steps would have increased some wage index values and not reduced any others.

The algorithm is then repeated until no difference greater than the specified threshold remains. The section on additional technical information discusses the smoothing algorithm and limits in more detail.

For example, in the Atlanta MSA, the calculation using BLS data yields a market level wage index of 0.99. Adjusting for county-level census wage data, we would calculate wage indexes for the 28 counties in that MSA ranging from 0.93 to 1.01.[5] Similarly, within the statewide rural area, we would calculate a wage index of 0.88 from BLS data with the county-level wage index varying from 0.83 to 0.93 when we use census data.

The results of these steps are shown in the maps in Figure 6-1 (p. 136).

TABLE 6–4

MedPAC compensation index is higher than the current pre-reclassification index for many hospitals benefitting from exceptions

Exception status	Number of hospitals	Percent increase from pre-reclassification index value to: Current system with exceptions	Percent increase from pre-reclassification index value to: MedPAC compensation index
No exception	2,096	0.0%	1.7%
Outcommuting only	224	4.8	5.8
Reclassification	758	8.3	4.8
Special exception	18	7.9	0.3
Other hospitals	429	3.9	4.9

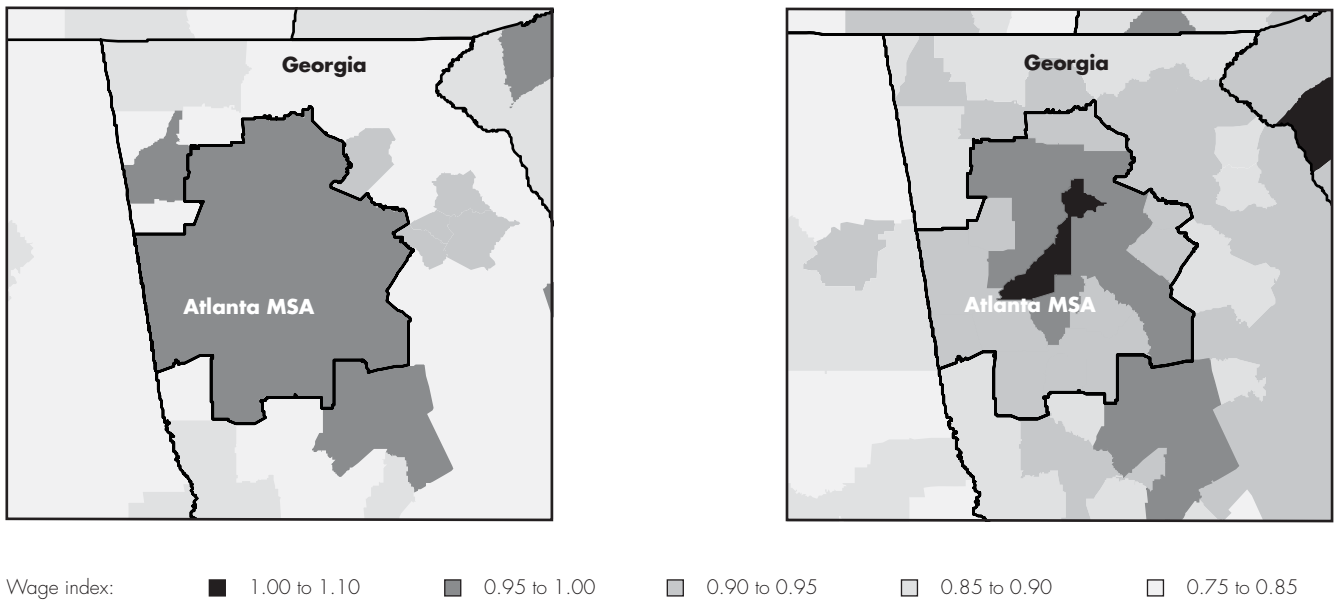
Note: Some hospitals were eliminated from this table because their reported pre-reclassification wage index appeared to be in error; therefore, this table includes only 2,096 rather than 2,135 hospitals without exceptions. Changes are all positive because the budget-neutrality adjustment in the current system is made to the base payment amount, not to the wage index values. However, the MedPAC compensation index is constructed to be budget neutral to the CMS wage index with exceptions, so values in the two columns are comparable. Other hospitals include Lugar counties, Section 401, rural floor, and hold-harmless exceptions. For details, see text box on p. 128.

Source: MedPAC analysis of Bureau of Labor Statistics May 2005 Occupational Employment Statistics Survey, 2000 census data, and fiscal year 2007 CMS impact file.

FIGURE 6–1 **MedPAC compensation index reduces wage index differences between adjacent counties**

6-1A: Current wage index:
Sharp differences between adjoining areas

6-1B: MedPAC county-level compensation index:
No sharp differences remain



Source: MedPAC analysis of the 2005 Bureau of Labor Statistics Occupational Employment Survey and 2000 census data.

For a portion of Georgia, Figure 6-1A shows the CMS pre-reclassification wage indexes for the CMS MSA and statewide rural market areas. The darkest area is the Atlanta MSA, which has the highest CMS wage index value (0.98). It borders directly on the Georgia statewide rural area, which has an index value of 0.78. The difference, or cliff, is 0.20, which a provider in the statewide rural area just across the MSA border may consider inequitable.

Figure 6-1B shows the result of our county-level wage index calculation and smoothing. Differences now appear among counties inside the Atlanta MSA, with those at the center having higher wage indexes than those farther out. Variation also appears in the statewide rural area, with higher values appearing nearer the MSAs. As a result, differences among adjoining counties decrease. Very light areas do not often adjoin very dark areas, and no differences among adjacent counties exceed 10 percent.

Year-to-year volatility

Large changes in an area's wage index from one year to the next cause concerns among providers. Theoretically, it seems unlikely that relative wage rates would change substantially from year to year other than to reflect very unusual circumstances.

Volatility in the wage indexes

Wage index values for hospitals showed some large changes from 2006 to 2007. Comparing Medicare's post-reclassification hospital wage index values, the median absolute change was 1.4 percent, with a 4.0 percent change at the 90th percentile and a 5.4 percent change at the 95th percentile. The top 1 percent of hospitals experienced changes of more than 13 percent. In 100 hospitals wage indexes decreased by more than 5 percent. This is noteworthy because, assuming a labor share of around 70 percent, that amount would have more than offset the hospital update, which was 3.4 percent for 2007.

The MedPAC compensation index reflecting the same time period was slightly less volatile. The median change was 1.0 percent, with a 2.4 percent change at the 90th percentile, and a 3.9 percent change at the 95th percentile. The top 1 percent of hospitals saw changes of more than 6.0 percent. Only 21 hospitals had decreases of more than 5 percent.

We expect the index using BLS data to be less volatile for two reasons. First, the BLS wage data are an average of the last three years of wage surveys for the region and should be less volatile than the CMS data, which are from a single year's cost reports. (For example, to compute the fiscal year 2004 wage index, 2001 BLS data—which incorporate data from 2001, 2000, and 1999—would be used. In contrast, CMS would use data from fiscal year 2000 hospital cost reports.) Second, the BLS surveys a sample of all employers rather than a single industry. Changes in the wages paid by all employers in an area should be less volatile than wages in a single industry. Averaging three years of CMS data would also reduce year-to-year volatility by about the same magnitude as our new approach, so the averaging process alone probably accounts for most of the improvement. However, averaging three years of cost report data would mean using cost report data with as much as a six-year lag.

Volatility in the underlying data

Our contractor, RTI, analyzed changes in the underlying data over six years and found that, in addition to being less volatile over the entire period, the BLS data were less volatile for all but one year-to-year change.

RTI also analyzed the underlying hospital cost report data and found that benefits were more volatile than wages, but total compensation (benefits plus wages) was not. RTI also found that benefits as a percentage of total hourly compensation have been increasing and they differ by region, being lower in the South. Therefore, it is important to include benefits when adjusting for labor costs across geographic areas (Dalton et al. 2007).

Impact analysis

Next we examine the impact of moving from the CMS wage index to the MedPAC compensation index. The MedPAC compensation index is highly correlated with the CMS index (0.92). This analysis is at the hospital level, using the CMS post-reclassification wage index values for each hospital. It excludes the Section 508 additions to the wage index because those adjustments use additional funds (are not budget neutral) and expire at the end of fiscal year 2007.

Table 6-5 compares the MedPAC compensation index and the CMS post-reclassification wage index by hospital group. The wage index for all hospitals as a group would increase by 0.5 percent on the basis of an unweighted average across hospitals under the alternative wage index system. (It is unweighted in the sense that all hospitals count equally regardless of their size or payments.) By definition, there is no change overall on a dollar-weighted basis because the MedPAC compensation index is

TABLE 6–5

Most hospital groups would have a slightly higher wage index under MedPAC's compensation index

Hospital group	Number of hospitals	Mean percent change from current (post-reclassification) index to MedPAC compensation index: Inpatient payments (dollar weighted)	Mean percent change from current (post-reclassification) index to MedPAC compensation index: Wage index value (hospital weighted)
Total	3,586	0.0%	0.5%
Exception status			
No exception	2,135	0.4	1.6
Outcommuting only	227	0.1	1.2
Reclassification	777	–1.3	–2.8
Special exception	18	–4.2	–6.9
Other hospitals	429	0.1	1.1
Rural	1,010	–0.7	0.7
<100 beds	722	0.2	1.6
100+ beds	288	–1.3	–1.6
Urban	2,576	0.1	0.5
<300 beds	1,988	–0.2	0.3
300+ beds	588	0.3	1.0
Teaching status			
Major teaching	298	0.2	0.9
Other teaching	786	0.2	0.6
Nonteaching	2,502	–0.2	0.5
Ownership			
Not for profit	2,114	0.0	0.5
Proprietary	873	0.0	0.1
Government	596	0.1	1.1

Note: Outcommuting only includes Section 505 hospitals. Reclassifications are geographic reclassifications under the Medicare Geographic Classification Review Board standard criteria. Special exceptions are as defined in the text box, p.128. Other hospitals include Lugar counties, Section 401, rural floor, and hold-harmless exceptions. Post-reclassification refers to the 2007 CMS wage index with all adjustments except Section 508 reclassifications.

Source: MedPAC analysis of Bureau of Labor Statistics May 2005 Occupational Employment Statistics Survey, 2000 census data, and fiscal year 2007 CMS impact file.

TABLE 6–6

Contribution of different parts of methodology to total impact of MedPAC compensation index

Hospital group	Number of hospitals	Percent change in wage index: Parts of methodology: BLS data	Adjusting for benefits	County level with smoothing	Total
Total	3,586	0.5%	–0.2%	0.2%	0.5%
Exception status					
No exception	2,135	2.1	–0.4	0.0	1.6
Outcommuting only	227	–0.7	0.5	1.4	1.2
Reclassification	777	–3.6	0.3	0.5	–2.8
Special exception	18	–8.3	1.4	0.0	–6.9
Other hospitals	429	1.0	–0.1	0.2	1.1
Rural	1,010	–0.2	0.3	0.6	0.7
<100 beds	722	0.7	0.2	0.6	1.6
100 + beds	288	–2.6	0.5	0.6	–1.6
Urban	2,576	0.7	–0.4	0.1	0.5
<300 beds	1,988	0.5	–0.4	0.1	0.3
300+ beds	588	1.4	–0.3	0.0	1.0
Census region					
New England	147	–2.0	0.3	0.8	–0.9
Mid-Atlantic	429	–1.5	1.2	0.2	–0.2
South Atlantic	610	2.7	–0.8	0.0	2.0
East North Central	520	–0.3	1.0	–0.1	0.7
West North Central	272	0.3	–0.6	0.3	0.1
East South Central	344	3.1	–0.6	0.2	2.7
West South Central	567	1.9	–1.9	0.0	0.0
Mountain	230	–0.8	–1.2	0.6	–1.4
Pacific	467	–2.0	1.0	0.9	–0.2

Note: BLS (Bureau of Labor Statistics). All changes are calculated relative to the post-reclassification index. Post-reclassification refers to the 2007 CMS wage index with all adjustments except Section 508 reclassifications. All entries are hospital weighted not dollar weighted, so average percent change in wage index does not sum to zero. Outcommuting includes only Section 505 hospitals. Reclassifications are geographic reclassifications under the Medicare Geographic Classification Review Board standard criteria. Special exceptions are as defined in the text box, p. 128. Other hospitals include Lugar counties, Section 401, rural floor, and hold-harmless exceptions.

Source: MedPAC analysis of Bureau of Labor Statistics May 2005 Occupational Employment Statistics Survey, 2000 census data, and fiscal year 2007 CMS impact file.

constructed to be budget neutral to the CMS index. The change in wage index is often greater than the dollar-weighted change because the labor share of the base payment is less than 1 (either 0.62 or 0.69).

As we discussed earlier, the new system would eliminate the need for the current exception process. For the 2,135 hospitals with no exception, both the dollar- and the hospital-weighted average wage index values increase. The 227 hospitals with an outcommuting adjustment to their wage index on average would see more of an increase in their wage index under the new system. Those hospitals now being reclassified would see a decrease of 1.3 percent dollar weighted and 2.8 percent hospital weighted.

Hospitals granted a special exception would see an even larger decrease.

Urban and rural hospitals would gain about the same percentage hospital weighted. However, because some large rural hospitals reclassify under special provisions, rural hospitals have a 0.7 percent decrease dollar weighted. If the MedPAC approach were also used for SNF and home health providers, rural SNF and home health providers on average would see payment increases. Aggregating across all sectors, total rural payments would increase slightly.

Most categories of hospitals would see fairly small percentage changes in their wage index as a group, although some individual hospitals would see large percentage changes. Some hospitals that currently receive large benefits from reclassification could experience a significant decline in their wage index, and some hospitals in counties next to high-wage-index areas—but that have not been able to reclassify—will see significant increases because of county-level data and smoothing.

Table 6-6 shows the effect of each step in the new system relative to the current CMS hospital wage index. For each hospital group, we look first at the change resulting from using BLS wage data, next at the effect of adding benefits to our calculation, and then at the effect of county-level wage indexes and smoothing.

For example, using BLS data increases the average wage index of hospitals with no exception by 2.1 percent, adding benefits reduces that increase by 0.4 percent, and moving to a county-level index with smoothing adds a small amount. Using the BLS data noticeably reduces the wage index for hospitals that reclassify and receive special exceptions. The effect of adding benefits to the calculation is most noticeable regionally. The wage indexes in the Mid-Atlantic, East North Central, and Pacific census regions increase by 1 percent or more, and those in the West South Central and Mountain regions decrease by more than 1 percent. The direction of this effect accords well with differences BLS reported in all-employer benefits across census regions (BLS 2006). The county-level data and smoothing step increase the wage index for hospitals now receiving an outcommuting exception, which makes sense because they are in counties adjacent to a market area with a higher wage index. Otherwise, this step does not have a large systematic effect on these hospital groups.

Even though the change in wage index is budget neutral, slightly more hospitals would see their wage index go up rather than down, because small rural hospitals tend to benefit from the MedPAC index. Figure 6-2 (p. 140) shows the distribution and magnitude of these changes.

For example, almost all hospitals in North Dakota would see their wage index values increase and become similar to the South Dakota values. In the CMS system, there are only seven rural hospitals in North Dakota because wage data from critical access hospitals (CAHs) are not included in the calculation. (Sixteen states have 10 or fewer IPPS hospitals in their statewide rural area.) Our new approach uses data from all employers so CAHs are included as well as all other employers with workers in the occupations considered. This addresses a concern of IPPS hospitals in areas where their competitors are principally CAHs. Those hospitals argue that they are competing with CAHs for employees, yet the CAH wages are not in the wage index for the area. If the CAHs offer higher wages, the IPPS hospitals think they are at a disadvantage.

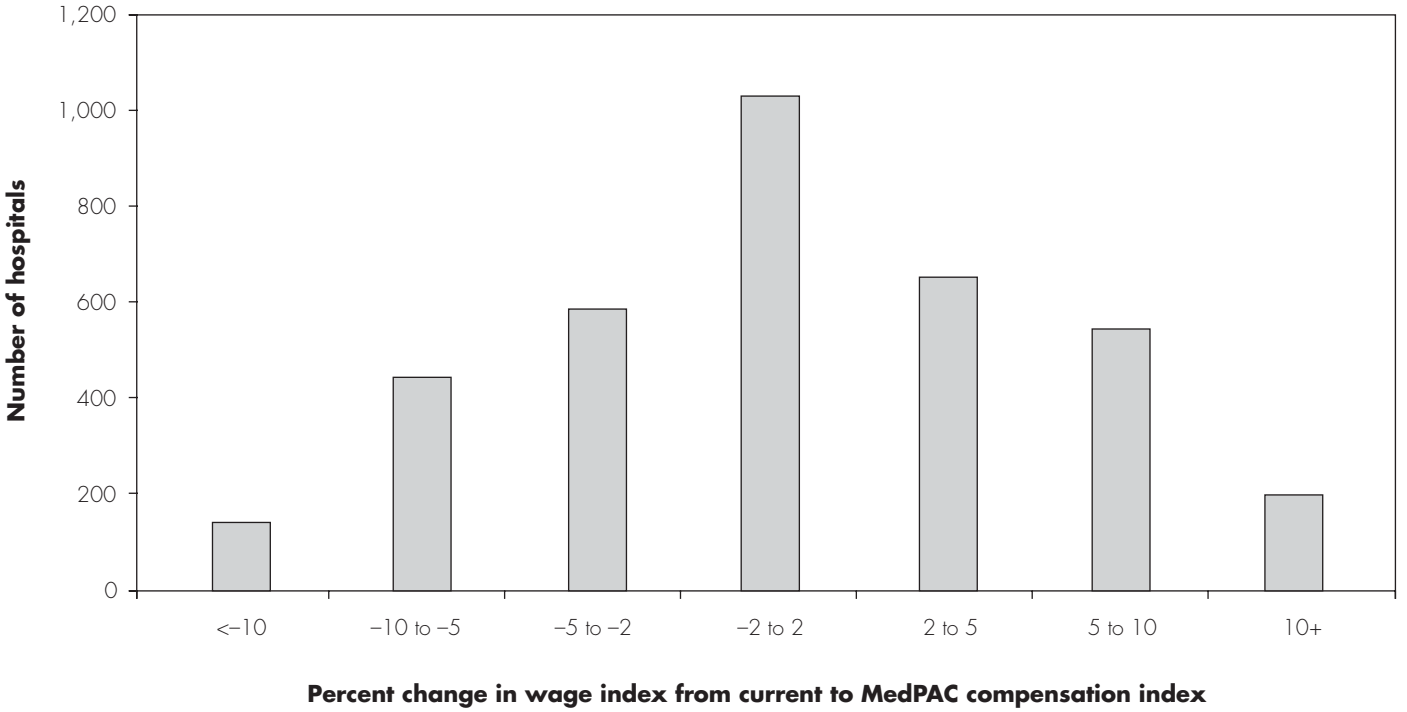
Figure 6-3 (p. 141) shows the changes in inpatient payments moving to the new MedPAC compensation index from the current post-reclassification hospital index. There are fewer large changes in payments because the wage index adjusts less than 70 percent of the total payment. (In other words, the labor share is about 0.7 for areas with wage indexes above 1 and 0.62 for areas with wage indexes below 1.)

One would find a similar result for outpatient payments. However, the result would not be exactly the same because the labor share in the outpatient PPS is lower (0.6) and because of other differences in the payment systems.

Nonetheless, some hospitals would see a large change in their payments. Therefore, a transition period may be warranted; abrupt, large changes could be avoided by phasing in the change for providers with a large change in their wage index value. One option is to scale changes in the wage index to the update in a way that considers the joint effect of the update and the change in the wage index. Other options include phasing in large changes proportionally over three or four years and specifying a maximum permissible change per year. The MedPAC compensation indexes for each county, computed with the data available in January 2008, are available on the MedPAC website at www.medpac.gov.

FIGURE 6–2

Slightly more hospitals would see an increase than a decrease in their wage index value under the MedPAC compensation index



Note: Percent change in wage index value from current post-reclassification hospital wage index (not including Section 508 reclassifications) to MedPAC compensation index.

Source: MedPAC analysis of Bureau of Labor Statistics May 2005 Occupational Employment Statistics Survey, 2000 census data, and fiscal year 2007 CMS impact file.

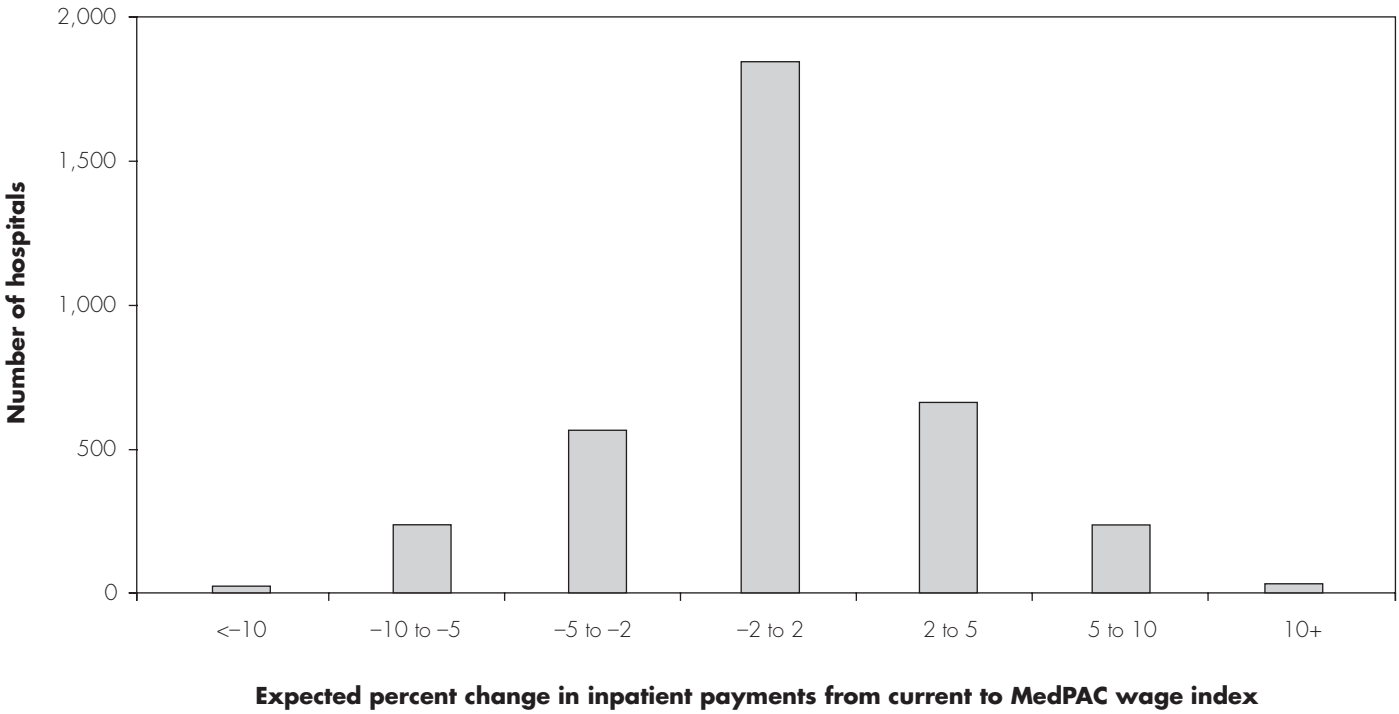
Explaining inpatient hospital costs

We used a regression model to evaluate the degree to which Medicare payment variables—including a wage index—can explain variation in hospital costs per discharge. The question was whether Medicare payments would more closely match hospital costs if we switched from the current Medicare wage index to our alternative index. Our regression results show that the current wage index explains slightly more of the variation in hospital costs than the MedPAC compensation index. The R^2 value is 0.836 using the CMS post-reclassification index in our model and 0.823 for the MedPAC index. The CMS wage index may be more closely related to hospital costs than the alternative because of the circularity of the present system. If hospitals report high labor costs, their wage index increases either directly or because they are allowed to reclassify. In addition, if a hospital is reclassified into a higher wage index area, it may spend the additional income it receives. To the degree that this is true, any existing wage index will be biased toward fitting hospital costs better than new alternative wage indexes.

Wage index differences across sectors

Medicare uses average hospital wages as reported on Medicare cost reports for hospitals to determine the wage indexes used in the PPSs for many of the provider types in Medicare (e.g., long-term care hospitals, inpatient rehabilitation facilities, SNFs, home health agencies, hospices, dialysis facilities). This assumes that relative wages for hospital workers are representative of relative wages for all other types of providers and that labor market areas are the same for all provider types. Using only IPPS hospital data means that almost half of the counties in the country do not have data for the wage index calculation. For example, a home health agency in Martha's Vineyard recently objected because it was assigned last year's rural wage index in Massachusetts, even though there were no rural hospitals to base it on and the old value was for a distant hospital.

FIGURE 6–3 **Changes in hospital payments are smaller than changes in wage index values**



Note: Percent change in Medicare inpatient payments is from current post-reclassification hospital wage index (not including Section 508 reclassifications) to MedPAC wage index.

Source: MedPAC analysis of Bureau of Labor Statistics May 2005 Occupational Employment Statistics Survey, 2000 census data, fiscal year 2007 CMS impact file, and MedPAC payment model simulations.

Constructing sector-specific compensation indexes

With the alternative method, provider sector-specific indexes can be constructed using the same multiprovider data and varying the occupational weights. For example, the proportion of RNs used by home health agencies nationwide would be used to compute the weight for RNs in the home health agency index. Those sector-specific weights would then be multiplied by the occupation-specific wages for each area (used for all sectors) to compute the home health agency average wage for each area. This average would then be compared with the product of the weights and national average wages for these occupations to create a compensation index value.

We have constructed compensation indexes for hospitals, nursing facilities, and home health agencies. We used BLS national-level data to determine the share of occupations represented in each industry. Table 6-7 (p. 142) shows the share of wages the top 10 occupations represent in each sector. RNs account for about 37 percent of wages in hospitals, followed by office workers with 10 percent. Health care support workers account for about 32 percent of wages in nursing homes, followed by LPNs with about 16 percent. RNs account for about 26 percent of wages in home health agencies, followed by health care support workers with about 21 percent.

As an example, we created a nursing facilities index using our technique and the occupational weights for nursing facilities and compared it with the current pre-reclassification hospital wage index, which is used for SNF payment. (SNFs do not receive any exceptions to the wage index, even when hospitals near them do.) We found that SNFs seeing increases over the current wage index tended to be in counties adjacent to MSAs with higher wage indexes. On average, payments for SNFs in

TABLE 6–7 **Top 10 occupation categories by sector, share of wages**

Occupation	Hospitals	Nursing facilities	Home health agencies
Registered nurses	36.8%	13.8%	25.9%
Office and administrative support occupations	10.0	4.5	7.6
Health care support occupations	7.3	32.4	21.1
Management occupations	6.4	6.5	7.8
Licensed practical and licensed vocational nurses	2.8	15.7	8.1
Radiologic technologists and technicians	2.4		
Medical and clinical laboratory technologists	2.2		
Pharmacists	2.1		0.6
Building and grounds cleaning and maintenance occupations	1.8	4.8	
Respiratory therapists	1.6		
Food preparation and serving related occupations		7.8	
Personal care and service occupations		2.2	12.9
Physical therapists		1.4	4.8
Occupational therapists		1.9	1.6
Speech–language pathologists			0.8
Total of top 10 occupations	73.3	90.0	91.1

Source: MedPAC analysis of Bureau of Labor Statistics May 2005 Occupational Employment Statistics Survey.

rural areas increased by 1.6 percent, with 1,961 SNFs gaining and 1,551 SNFs losing. In urban areas, the average decrease was 0.3 percent, with 4,250 SNFs gaining and 4,330 SNFs losing.

Using the same technique to construct compensation indexes for each sector, while accounting for the differences in occupational weights, we find that the compensation indexes for all three sectors are highly correlated. The correlation between the hospital and the home health agency indexes is 0.96, the correlation between the nursing facility and the hospital indexes is 0.94, and the correlation between the nursing facility and the home health agency indexes is 0.97.

One argument for using separate compensation indexes for each sector despite the high correlation is that the administrative burden of developing unique sector indexes would be fairly low. All compensation indexes use the same raw BLS and census data and the same benefit information from provider cost reports.[6] Differences in sector compensation indexes would result only from differing occupational weights, the level of benefits, and the subsequent adjustments to market area values in the county refinements and smoothing. Providers would experience no additional burden.

On the other hand, we cannot be sure that a "nursing facility" or "home health" compensation index would be a better compensation index for Medicare skilled nursing facilities or Medicare home health services than the hospital compensation index. One problem with the nursing facility index is that these facilities have two distinct products. One is long-term care, often for Medicaid recipients. The second is post-acute care of Medicare beneficiaries. We have data on the wages of workers in nursing facilities that provide both services combined. However, the mix of workers serving Medicare patients may be more likely to be therapists, RNs, and LPNs, while the mix of people serving the long-term residents of the nursing facility will be weighted more toward nursing aides and other lower wage workers. The compensation index we calculated for nursing facilities is already highly correlated with the compensation index calculated for hospitals (0.94). Because the mix of workers providing post-acute care to Medicare beneficiaries is often more highly paid than the average nursing facility employee, a true SNF compensation index for Medicare services would probably be even more highly correlated

with the hospital index than the nursing facility index we computed.

A similar argument holds for home health agencies. The compensation index calculated for home health agencies already has a 0.96 correlation with the hospital index. If a Medicare-specific occupation mix for home health agencies were defined, with more therapy and less personal aide services, the correlation would be even higher.

Using one compensation index for all sectors

Given the high correlations between the compensation indexes and the imperfect occupational mix data for Medicare nursing facility services and Medicare home health services, one compensation index may be roughly as accurate as three compensation indexes. One index would not mean that average wages in hospitals, SNFs, and home health agencies are the same in a geographic area. Rather, it would mean that relative wages among geographic areas are similar for the three types of providers. For example, the ratio of SNF wages in county A to SNF wages in county B would be similar to the ratio of hospital wages in the same counties, although hospital wages might be higher than SNF wages in each county.

One index may seem more equitable as well. All providers in the same county would have the same compensation index; no one could reclassify out. The compensation index would also be based on all-employer wage data and all-provider benefit data. Thus, even if the hospital occupational weights were used, it would no longer be a hospital-only compensation index as is the current one. This might make it more acceptable to other providers.

If SNFs and home health agencies were paid based on the MedPAC compensation index, rural SNF payments would increase on average by roughly 2.4 percent and urban SNF payments would decline on average by 0.5 percent. There would be roughly 2,412 rural SNFs with increasing payments, 1,100 rural SNFs with decreasing payments, 4,223 urban SNFs with increasing payments, and 4,353 urban SNFs with decreasing payments if the MedPAC compensation index were used for all providers. Because home health payments are based on the location of the beneficiary, and not the location of the agency, we cannot easily categorize home health agencies as rural or urban. However, we can examine how payments change for the care of rural and urban beneficiaries. Payments to home health agencies for care for rural beneficiaries would increase on average by about 2.6 percent; in urban counties, they would decrease on average by about 0.6 percent. In general, the rural and urban impacts using the MedPAC compensation index for all providers are similar to the impacts we showed earlier using sector-specific compensation indexes for SNFs and home health agencies.

Caveats

We have demonstrated that it is possible to construct compensation indexes for each provider sector from available BLS and census data. The resulting compensation index has several advantages over the current hospital wage index. However, our compensation index requires deciding how to handle missing data, how much variation to allow between counties in a market area, and what limit to choose when smoothing between adjacent geographic areas. Making different decisions on these points would result in different index values. The sensitivity of the compensation index to these decisions could be further investigated by CMS—but our analysis indicates that the results appear fairly robust in the variations we have investigated.

Data limitations should also be recognized. BLS data are gathered in surveys of employers but do not include data on self-employed persons. An occupation with many self-employed people would be underrepresented in the national and local data. However, unless wages for the self-employed differ significantly from wages for employees in the same occupation, and the propensity for self-employment varies significantly by region, the effect on relative wages for that occupation would be minimal. Such a situation might happen if there were shortages of workers who tend to be self-employed in some markets and not others. (However, to noticeably affect the compensation index values, these occupations would also have to have a significant weight within the index.)

The BLS data also refer only to wages, not to wages and benefits. Because the ratio of wages to benefits differs across markets, we introduced an adjustment for benefits to address this limitation. The adjustment uses the benefit data in hospital, SNF, and home health agency cost reports submitted to CMS and shares the limitations of those data. CMS would have to audit worksheet A of the cost reports to ensure that providers report all their benefit expenses on worksheet A on the benefit line of the cost report in accordance with Medicare accounting rules.

The wage data we used for county-specific adjustments are from the 2000 decennial census. However, the age might not be a major limitation because we use the census data only to adjust (within a 10 percent corridor) the underlying BLS data, which are gathered semiannually. In addition, the American Community Survey is replacing the long-form census data and should provide more timely data in the future, particularly for more populous areas. Finally, the census data do not include wages for some occupations in some geographic areas because not enough people are in the sample. We use two techniques to correct for this problem. For the initial computation from BLS data, we compare those occupations for which we have data in an area with the same occupations at the national level, leaving out the local and national values for those occupations for which data are missing.[7] The magnitude of this problem is modest; we have data on occupations representing more than 95 percent of all wages in all markets. In the next step of the computation, we use county-level wage data from the census. If data for certain occupations are missing, we make the county wage equal to the market area (MSA or statewide rural) wage for that occupation. Other methods could be used or less-detailed occupational breakouts could be made to overcome this limitation.

Conclusion

There are no perfect definitions of labor market areas, and wage and benefit data are also imperfect. Our new method represents a pragmatic compromise in many respects. Recognizing that current market area definitions (MSA and statewide rural) can be too large and counties can be too small to represent labor market areas, we created a hybrid that allows variation by county within a market area, but within limits. Because too great a difference between adjoining areas can seem arbitrary, we introduced county-level indexes and smoothing to reduce differences. Because data on benefits at the market level are not available from BLS, we introduced data gathered from provider cost reports to adjust for differences in benefits across market areas, aware that those data have their limitations and that this method would require CMS to make some additional calculations. This alternative balances the limitations of some data sources with the strengths of others to create an index that represents a major improvement over the current wage index system. The MedPAC index approach:

- more fully reflects true labor input costs in the market by using occupational-level data that represent all employers and reduce circularity,
- automatically captures occupational mix without any burden on providers or CMS,
- reduces year-to-year volatility and wage index cliffs, and
- eliminates the need for exceptions.

Some providers in other sectors think the system is inequitable if the wage index they are assigned is less than that assigned to a nearby hospital, because the hospital is able to reclassify and they are not. At the same time, there are providers in parts of the country without any nearby IPPS hospitals. Providing a compensation index based on information from a sample of all employers in every area of the country and creating adjustments within the compensation index that obviate the need for exceptions solve both of these problems.

RECOMMENDATION 6A

The Congress should repeal the existing hospital wage index statute, including reclassifications and exceptions, and give the Secretary authority to establish new wage index systems.

RATIONALE 6A

The current law is prescriptive; CMS must use hospital-specific wage data and updates based on a survey of hospital costs (see text box, pp. 151–152, for the hospital wage index statute). The Secretary cannot make the changes to the wage index we have discussed administratively; the recommended change to the statute will give the Secretary that power. This expanded authority would include the ability to implement the new wage index and to refine it as necessary in the future under the normal notice and comment rule-making process.

IMPLICATIONS 6A

Spending

- The change is budget neutral.

Beneficiary and provider

- Granting this authority has no impact on providers or beneficiaries.

RECOMMENDATION 6B

The Secretary should establish a hospital compensation index that:

- **uses wage data from all employers and industry-specific occupational weights,**
- **is adjusted for geographic differences in the ratio of benefits to wages,**
- **is adjusted at the county level and smooths large differences between counties, and**
- **is implemented so that large changes in wage index values are phased in over a transition period.**

RATIONALE 6B

The current wage index calculation produces large differences between neighboring areas, which are modified through a complex exceptions process, but that process in turn creates new inequities. The new approach results in smaller differences between areas and thus lessens the need for exceptions. To protect providers from abrupt, large changes in their wage index value, we recommend a transition period. One option is to scale changes in the wage index to the update in a way that takes into account the joint effects of the update and the change in the wage index. Other options include phasing in large changes proportionally over three or four years and specifying a maximum permissible change per year.

The compensation index should be used for both hospital inpatient and hospital outpatient PPSs.

IMPLICATIONS 6B

Spending

- The change is budget neutral.

Beneficiary and provider

- Redistributes payments and has no impact on beneficiaries.

A wage index calculated as described will more fully reflect input prices, automatically adjust for occupational mix, reduce circularity, and reduce large differences between adjoining areas compared with the current system. It will also reduce the administrative burden on providers.

RECOMMENDATION 6C

The Secretary should use the hospital compensation index described in recommendation 6B for the home health and skilled nursing facility prospective payment systems and evaluate its use in the other Medicare fee-for-service prospective payment systems.

RATIONALE 6C

All providers in these sectors in the same county will have the same wage index because no reclassification will be allowed; this would be more consistent across providers. Separate indexes would add complexity without necessarily improving accuracy.

IMPLICATIONS 6C

Spending

- The change is budget neutral.

Beneficiary and provider

- Redistributes payments and has no impact on beneficiaries.

We did not evaluate use of the calculated index for long-term care hospitals, inpatient psychiatric facilities, inpatient rehabilitation facilities, facilities that treat patients with end-stage renal disease, ambulatory surgical centers, and hospices, but CMS should do so.

This recommendation would not be used for the physician fee schedule.

Additional technical information on constructing a compensation index from BLS data

We constructed wage indexes and compensation indexes using three sources of data: the BLS Occupational Employment Statistics (OES) survey, the 2000 decennial census data, and data from provider cost reports submitted to CMS.

We start with data from the BLS OES survey, which is published each May. For each MSA, state, and the nation, BLS staff estimate hourly wages by occupation across all employers in the geographic area. At the national level, they also provide for each industry an estimate of the share of employment in that industry for each occupation. They construct the estimates from a sample of 1.2 million

TABLE 6–8 **Top 10 occupation categories by sector, share of employees**

Occupation	Hospitals	Nursing facilities	Home health agencies
Registered nurses	28.1%	7.6%	14.5%
Office and administrative support occupations	15.5	4.5	8.0
Health care support occupations	12.9	42.3	33.0
Building and grounds cleaning and maintenance occupations	3.8	6.9	0.4
Licensed practical and licensed vocational nurses	3.6	11.8	6.5
Management occupations	3.4	2.8	3.1
Food preparation and serving related occupations	2.9	11.2	
Radiologic technologists and technicians	2.3		
Medical and clinical laboratory technologists	2.0		
Respiratory therapists	1.5		
Medical records and health information technicians		0.8	0.5
Physical therapists		0.6	2.0
Occupational therapists			0.7
Personal care and service occupations		2.8	25.0
Total of top 10 occupations	75.7	91.4	93.8

Source: MedPAC analysis of Bureau of Labor Statistics May 2005 Occupational Employment Statistics Survey.

establishments drawn over three years. Hourly wages in the OES survey do not include benefits, and the sample does not include self-employed workers.

At the national level, the share of each of the top 10 occupations employed in hospitals, nursing homes, and home health agencies is shown in Table 6-8. The analysis does not include occupations that typically bill Part B for their services, such as physicians.

The occupation accounting for the greatest share of workers differs by industry. For example, RNs are the most common in hospitals, and health care support occupations are most common in nursing homes and home health agencies. However, there is significant overlap in the occupations all three industries employ, which implies that they compete for those types of workers. Nonmedical workers—for example, office workers—account for a large share of hospital payrolls. Presumably, hospitals compete with many industries to hire those workers.

To construct the occupational weights used in our hospital analysis, we limited our fixed-weight index to the 30 occupations shown in Table 6-9, which differs from Table 6-8 in that the occupations are weighted by the share of wages in the industry rather than by the share of employees. Higher paid occupations will have a wage share higher than their employment share. Further, we express the wage share as the percentage of wages that occupation accounts for relative to the total wage share these 30 occupations represent. For example, RNs have higher than average wages and account for 43.22 percent of the wages in the hospital industry represented by these 30 occupations. However, they represent only 28.1 percent of hospital employees. Conversely, health care support occupations have a wage share of 8.54 percent and an employment share of 12.9 percent because their wages are lower than the average hospital wage.

Computing relative compensation for each MSA and statewide rural wage area

In our first step, we compute compensation index values for each market area—the MSA (or divisions of MSAs) and the balance of state areas, which are the non-MSA counties in the state. We start by finding the relative wage for each occupation in each MSA. The relative wage for an occupation is the ratio of the mean wage for that occupation in the MSA to the mean wage for the same occupation nationally. The wages are for all employers of the occupation (as stated previously, this reduces the circularity of the wage index). In each market, the relative wages are then multiplied by the wage share weights for the set of 30 occupations shown in Table 6-9. The result

is the compensation index for the market (wages only, no benefits).

BLS computed the MSA and balance of state (statewide rural in CMS parlance) wage indexes for us. In some areas, the BLS data do not have a value for every occupation. In those cases, we asked BLS to compare those occupations for which they had data in an area with the same occupations at the national level to compute the wage index. This is equivalent to the assumption that the missing occupations have the same relative wages in that area as the occupations with data. In every market, BLS has wages for occupations representing more than 95 percent of hospital payrolls; hence, these missing data have little effect on the computed wage indexes. BLS does not report some occupation-specific data in markets where one dominant employer could be identified. By computing the index value and thus combining data for all the occupations, BLS was able to include those data and preserve confidentiality.

BLS uses New England city and town areas (NECTAs) rather than MSAs in some New England areas. Some argue that NECTAs better represent labor markets than MSAs or counties in New England. In these cases, we use the NECTA as the market and attempt to map it to a county. In some cases, counties and NECTAs do not match exactly, and we had to assign a county to a particular NECTA or an average of two NECTAs that are both in the county. If our recommendations are implemented, CMS could consider the option of using smoothed NECTAs rather than counties.

Source of benefit data

The hospital, SNF, and home health cost reports provide data on total wages and total benefit costs for each facility. The benefits (wage-related costs) and wages are currently reported in two places on cost reports: on worksheet S-3 (which is used for the wage index) and on worksheet A. Wage-related costs include the employers' share of the Federal Insurance Contributions Act (FICA) tax, Medicare taxes, unemployment insurance, health insurance, employer 401k contributions, pension costs for defined benefit plans, and other smaller categories of wage-related costs. Because benefits include payroll taxes (FICA, Medicare, unemployment), we know hospitals should be reporting benefit costs that are more than 7 percent of wages. Wage-related costs are reported on line 5 column 2 of worksheet A. Total wages are also reported on worksheet A on line 101. We computed benefits as a share of wages using worksheet A, excluding outliers (greater than 35 percent or less than 15 percent). When the worksheet A data were outliers, we used worksheet S-3. To eliminate the need for hospitals to file worksheet S-3 in the future, CMS should require that all hospitals state all their benefits' costs on worksheet A. In most cases, worksheet A data are exactly or approximately equal to worksheet S-3 data. In some cases, they may differ because hospitals use generally

TABLE 6–9 **Share of hospital wages by occupation**

Key hospital occupations	Share of wages
Registered nurses	43.22%
Office and administrative support occupations	11.73
Health care support occupations	8.54
Management occupations	7.45
Licensed practical and licensed vocational nurses	3.27
Radiologic technologists and technicians	2.83
Medical and clinical laboratory technologists	2.54
Pharmacists	2.48
Building and grounds cleaning and maintenance occupations	2.14
Respiratory therapists	1.88
Food preparation and serving related occupations	1.65
Physical therapists	1.55
Medical and clinical laboratory technicians	1.18
Surgical technologists	1.13
Medical records and health information technicians	0.99
Diagnostic medical sonographers	0.76
Occupational therapists	0.74
Pharmacy technicians	0.73
Cardiovascular technologists and technicians	0.72
Health technologists and technicians, all other	0.72
Emergency medical technicians and paramedics	0.61
Protective service occupations	0.58
Dietitians and nutritionists	0.43
Nuclear medicine technologists	0.41
Respiratory therapy technicians	0.41
Radiation therapists	0.35
Speech–language pathologists	0.34
Personal care and service occupations	0.28
Dietetic technicians	0.17
Psychiatric technicians	0.17

Note: Share of wages as percent of share represented by these 30 occupations.

Source: MedPAC analysis of Bureau of Labor Statistics May 2005 Occupational Employment Statistics Survey.

TABLE 6–10 **Applying BLS data to hospital industry at a national and MSA level, 2005**

		Hospital industry national		
Occupation code	Job title	Mean hourly wage	Share of wages	Mean hourly wage for MSA
11–1000	Manager	$39.36	7.45%	$57.12
29–1111	Registered nurse	27.80	43.22	33.72

Note: BLS (Bureau of Labor Statistics), MSA (metropolitan statistical area). Data shown are for MSA code 35644 (NY, NY).

Source: MedPAC analysis of Bureau of Labor Statistics May 2005 Occupational Employment Statistics Survey.

accepted accounting principles for worksheet S-3 and Medicare accounting for worksheet A. However, Office of Inspector General (OIG) auditors informed us that they believe the data should match and that hospitals are required to follow Medicare accounting even on worksheet S-3. OIG reported cases in which this difference of opinion about accounting standards had a material impact on reported benefit expense (OIG 2007). Clarifying the reporting rules should resolve this problem. We did not obtain CAH benefit information for this analysis; however, in the future CMS may want to include it.

Computation of area benefit-to-wage ratios

The 2005 BLS survey data are based on surveys of establishments in 2003, 2004, and 2005. Therefore, to match the data as closely as possible with benefits, we compute the mean level of benefits over the same three years. We first create three-year averages of the benefit-to-wage ratios for hospitals, SNFs, and home health agencies in each market area. Because BLS wage data come from all employers, we create a weighted average of benefits to wages for each occupation in the region based on the national share of employment in that occupation across hospitals, SNFs, and home health agencies. We then create a weighted average benefit-to-wage ratio for the type of workers hospitals employ, the type of workers home health agencies employ, and the type of workers SNFs employ by multiplying the estimated benefit-to-wage ratio for each occupation by the national wage share of that occupation in each industry. The result is that every MSA and statewide rural area has its own benefit share for hospital-type workers, home-health-type workers, and SNF-type workers. On average, across all markets, hospital-type workers have a benefit-to-wage ratio of 24 percent, SNF-type workers have a ratio of 22 percent, and home-health-type employees have a ratio of 23 percent. Benefits tend to be slightly higher in high-wage areas and slightly lower in the South.[8]

Computation of the benefit-adjusted compensation index

The MSA-level compensation index is computed as follows.

We start with the national occupation weights from BLS, national mean hourly wages by occupation for the 30 occupations we examine, and an MSA's hourly wages by occupation. The data for two occupations are shown in Table 6-10.

For simplification, assume that data were available only for these two occupations (in reality BLS provided us with data on occupations representing more than 95 percent of wages in every market). Also assume that the ratio of benefits to wages was 27 percent in the market shown compared with a national average of 24 percent. The MSA-level benefits' adjusted wage index (before budget-neutrality adjustments) would then be equal to:

Wage index without benefits

= [(7.45% × 57.12/39.36) + (43.22% × 33.72/27.80)]/
(7.45% + 43.22%)
= 0.6325/0.5066
= 1.2485

Compensation index with benefits

= (wage index without benefits) × (1 + 0.27)/(1 + 0.24)
= 1.2787

The value of 1.2787 would not be the final value for the MSA-level compensation index. It is adjusted for budget neutrality to make the total payments provided to all hospitals under the current wage index (without the Section 508 adjustment) equal total payments under the new compensation index. Total payments are computed with an inpatient payment model that takes into account hospital-specific factors such as indirect medical

education payments, disproportionate share payments, sole community hospital status, outlier payments, and Medicare-dependent hospital status. Instead of modeling outpatient effects for budget neutrality, we assumed that outpatient shifts would be proportional to inpatient shifts.

Creating county-specific compensation indexes

As a second step, we used data from the 2000 census to adjust the wages within market areas by county. For each county, the Census Bureau provided data on wages by occupation and place of employment. The key occupations were RNs (census occupation 313), LPNs and licensed vocational nurses (census occupation 350), management (census occupations 001 to 043), and office and administrative support (census occupations 500 to 593). All the occupations in Table 6-9 (p. 147) were matched to census categories. We then aggregated county-level employment and wages from census data to create data for MSAs and statewide rural areas.

Next we screened and cleaned the county-level data. For all occupations except RNs, if there were 30 or fewer observations for an occupation in a county we replaced the county data with the census MSA or statewide rural average wage for that occupation. For RNs, we required that 50 respondents reported working in the county in the 2000 census. We set a higher threshold for RNs because of their high weighting in the compensation index. After replacing data in counties where the sample size was small, we screened for outliers. The purpose of the sample size and outlier screens was to acknowledge that the census data are imperfect (as are CMS and BLS data) and we did not want one or two errant responses to distort a county's compensation index. Because of this replacement, the county-level adjustment has a significant effect only for counties with a significant number of health care workers. Counties with few health care workers will be assigned the market-area wage level for most occupations. The county-level wages are then weighted based on the weights in Table 6-9 to create a weighted average wage for each county and for each MSA or statewide rural area.

Next, the ratio of the county-level weighted average wage to the market-level (i.e., MSA, statewide rural area) weighted average wage was computed. For example, if the weighted county wage was 110 percent of the average for the counties in the MSA, the ratio would be 1.1. We then took the compensation index for that market area computed from BLS data and adjusted it by the county wage ratio computed above. This is the county-specific portion of the compensation index. To compute the compensation index for a county, we weighted the county-specific wage by 50 percent and the original market-level compensation index by 50 percent. (If some of the county-level data were replaced with MSA-level data as part of our screening of the county-level data, then the MSA-level data have a weight of more than 50 percent.) For example, if the census indicates that county A has wages 10 percent above the average for the market area (after replacing missing data), we elevated that county's compensation index 5 percent above the compensation index for the market area.

We are implicitly saying that MSA-wide conditions affect the wages a hospital has to pay its workers, but county-specific conditions also affect those wages. We used a weighting of 50 percent at the MSA level and 50 percent at the county level, although other weightings could be used. In computing county-specific compensation indexes, we limited the total adjustment to a maximum of 5 percent above or below the market-area value. An example is that Manhattan wages will affect overall wage patterns in the MSA, but counties on the fringe of the New York MSA may be able to pay a slightly lower wage than Manhattan hospitals because their workers have lower commuting costs. The difference between Manhattan and the county with the lowest compensation index in the MSA could be up to 10 percent, with the lowest wage index county being up to 5 percent below the mean, and the Manhattan compensation index being 5 percent above the mean. One may have to pay workers up to a 10 percent premium ($20 per day for a worker at $25 per hour) to commute from the lower wage counties of an MSA to the core of the city.

The compensation index for a high-wage county in an MSA would be computed as follows:

County-to-MSA ratio

= (census-weighted county wage)/
(census-weighted MSA wage)
= 1.1

County-specific portion of compensation index

= (BLS index) × (county-to-MSA ratio)
= BLS index × 1.1

Blended county/MSA compensation index

= 0.5 (BLS compensation index) +
0.5 (county-specific compensation index)
= (0.5 × BLS index) + (0.55 × BLS index)
= 1.05 times the BLS compensation index for the MSA.

Smoothing

After blending the BLS and census data, the third step in our calculation is to smooth the county-level blended compensation index values to eliminate large differences between adjoining counties. We created a data set of county pairs. The data set pairs each county with each county that adjoins it. The difference in compensation indexes for each county pair is then computed and the pair with the greatest difference for each county is chosen. If that difference is greater than 10 percent of the larger compensation index, the county with the lower compensation index value is assigned a compensation index equal to 90 percent of its highest neighbor. This process is followed for each county pair, resulting in a new set of compensation indexes. The same algorithm is repeated with the new set of compensation indexes until no difference greater than 10 percent remains. Because compensation indexes are only increased in this process, the entire set of compensation indexes must be revalued to keep it budget neutral with the original set.

If we had selected a smoothing threshold other than 10 percent, results would differ and the number of iterations required to satisfy the condition could differ as well. We chose 10 percent to illustrate the mechanism and because differences of that magnitude between neighbors might be tolerable to providers while still accounting for regional differences. In addition, a 10 percent differential is in the ballpark of what a hospital would have to pay if it were recruiting workers from neighboring counties. For example, a 10 percent difference for a worker making the national mean RN wage of $25.00 an hour would be $2.50 per hour, or $20.00 for an eight-hour day. A lower or a higher bound could be chosen. However a lower bound, such as 5 percent, would cause the smoothing effect to ripple out long distances, especially in California due to the large size of counties. A smoothing bound significantly larger than 10 percent may become large enough to give the hospital in the higher wage county an opportunity to recruit workers from the lower wage county by offering them a wage differential that exceeds the financial and time costs of commuting.

The end result of smoothing and limits on differences within MSAs is that the compensation indexes for any provider will always be at least 90 percent of its neighboring provider's compensation index and 90 percent of the highest compensation index in its MSA.

Adjusting for budget neutrality

After each of the three steps, we adjusted the compensation index for budget neutrality. To do this, we excluded Maryland hospitals because they are not paid under the IPPS system. We estimated inpatient payments with our hospital payment simulation model and altered compensation index values until the estimated payments with the new compensation index differed by less than 0.1 percent from simulated payments using the CMS compensation index (without Section 508 adjustments). The payment model takes into account hospital-specific factors such as indirect medical education payments, disproportionate share payments, sole community hospital status, outlier payments, and Medicare-dependent hospital status. Instead of modeling outpatient effects for budget neutrality, we assumed outpatient shifts would be proportional to inpatient shifts.

Limitations

One limitation is that the BLS survey is voluntary. When data are missing, BLS imputes data for the missing provider. The end result is that BLS provided us with data representing occupations that receive at least 95 percent of hospital payrolls in every MSA, NECTA, and statewide rural area. There is a concern that some providers would not respond to the survey if it were used for payment purposes. However, the incentive to do this will be mitigated by the fact that BLS imputes the wages for nonresponders. The provider would not know if the imputed value would be slightly above or slightly below actual wages. To check for accuracy of survey responses, BLS uses data screens and can cross-check the OES data with other sources of employment and payroll data. ■

Mandate from the Tax Relief and Health Care Act of 2006 and wage index statute

SEC. 106. HOSPITAL MEDICARE REPORTS AND CLARIFICATIONS.

(b) REVISION OF THE MEDICARE WAGE INDEX

CLASSIFICATION SYSTEM.—

(1) MEDPAC REPORT.—

IN GENERAL.—The Medicare Payment Advisory Commission shall submit to Congress, by not later than June 30, 2007, a report on its study of the wage index classification system applied under Medicare prospective payment systems, including under section 1886(d)(3)(E)10 of the Social Security Act (42 U.S.C.1395ww(d)(3)(E)). Such report shall include any alternatives the Commission recommends to the method to compute the wage index under such section.

(2) PROPOSAL TO REVISE THE HOSPITAL WAGE INDEX CLASSIFICATION SYSTEM.—The Secretary of Health and Human Services, taking into account the recommendations described in the report under paragraph (1), shall include in the proposed rule published under section 1886(e)(5)(A) of the Social Security Act (42 U.S.C. 1395ww(e)(5)(A)) for fiscal year 2009 one or more proposals to revise the wage index adjustment applied under section 1886(d)(3)(E) of such Act (42 U.S.C. 1395ww(d)(3)(E)) for purposes of the Medicare prospective payment system for inpatient hospital services. Such proposal (or proposals) shall consider each of the following:

(A) Problems associated with the definition of labor markets for purposes of such wage index adjustment.

(B) The modification or elimination of geographic reclassifications and other adjustments.

(C) The use of Bureau of Labor Statistics data, or other data or methodologies, to calculate relative wages for each geographic area involved.

(D) Minimizing variations in wage index adjustments between and within Metropolitan Statistical Areas and Statewide rural areas.

(E) The feasibility of applying all components of the proposal to other settings, including home health agencies and skilled nursing facilities.

(F) Methods to minimize the volatility of wage index adjustments, while maintaining the principle of budget neutrality in applying such adjustments.

(G) The effect that the implementation of the proposal would have on health care providers and on each region of the country.

(H) Methods for implementing the proposal, including methods to phase-in such implementation.

(I) Issues relating to occupational mix, such as staffing practices and any evidence on the effect on quality of care and patient safety and any recommendations for alternative calculations.

(continued next page)

Mandate from the Tax Relief and Health Care Act of 2006 and wage index statute (cont.)

42 U.S.C. § 1395ww. Payments to hospitals for inpatient hospital services ww(d)(3)(E)

(E) Adjusting for different area wage levels.—

(i) IN GENERAL.— Except as provided in clause (ii), the Secretary shall adjust the proportion (as estimated by the Secretary from time to time) of hospitals' costs which are attributable to wages and wage-related costs, of the DRG prospective payment rates computed under subparagraph (D) for area differences in hospital wage levels by a factor (established by the Secretary) reflecting the relative hospital wage level in the geographic area of the hospital compared to the national average hospital wage level. Not later than October 1, 1990, and October 1, 1993 (and at least every 12 months thereafter), the Secretary shall update the factor under the preceding sentence on the basis of a survey conducted by the Secretary (and updated as appropriate) of the wages and wage-related costs of subsection (d) hospitals in the United States. Not less often than once every 3 years the Secretary (through such survey or otherwise) shall measure the earnings and paid hours of employment by occupational category and shall exclude data with respect to the wages and wage-related costs incurred in furnishing skilled nursing facility services. Any adjustments or updates made under this subparagraph for a fiscal year (beginning with fiscal year 1991) shall be made in a manner that assures that the aggregate payments under this subsection in the fiscal year are not greater or less than those that would have been made in the year without such adjustment. The Secretary shall apply the previous sentence for any period as if the amendments made by section 403(a)(1) of the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 had not been enacted.

(ii) Alternative proportion to be adjusted beginning in fiscal year 2005.— For discharges occurring on or after October 1, 2004, the Secretary shall substitute "62 percent" for the proportion described in the first sentence of clause (i), unless the application of this clause would result in lower payments to a hospital than would otherwise be made. ■

Endnotes

1 To be specific, CMS defines as market areas MSAs and metropolitan divisions within those MSAs. The Office of Management and Budget defines 370 MSAs and 29 metropolitan divisions within 11 of those MSAs (OMB 2003). CMS also defines 47 statewide rural areas. Three states have no counties defined as rural. In some cases where MSAs contain parts of several states, CMS defines separate wage indexes for each state, which yields 397 urban market areas. Altogether CMS has 444 pre-reclassification market areas. In this analysis we do not include Puerto Rico and its eight MSAs, but the same methodology could be used for Puerto Rico. We use the 362 MSAs in the United States and the 47 statewide rural areas. There are 3,142 counties in the United States; 1,090 of them in the 362 MSAs, leaving 2,052 in the statewide rural areas (OMB 2003).

2 The wage data are from the BLS Occupational Employment Statistics (OES) survey, which is published each May. For each MSA, state, and the nation they provide an estimate of hourly wages by occupation across all employers in the geographic area. At the national level, they also provide for each industry an estimate of the share of employment in that industry for each occupation. The estimates are constructed from a sample of 1.2 million establishments drawn over three years. The data are carefully collected, edited, and verified. Employment benchmarks for the survey are derived from employment data tabulated from the reports of the unemployment insurance program, and the sample is designed to yield reliable occupation employment estimates by industry. Nonsampling errors are addressed through quality control tools. BLS reduces errors through reviewing and editing and, if necessary, through contact with respondents whose data are internally inconsistent or appear to involve errors (BLS 1997). States supply data on the number of employees and total wages of each employer, which BLS can use to verify the reasonableness of provider responses. Hourly wages on the OES survey do not include benefits and the sample does not include self-employed workers.

3 In some states, such as California, the counties may be so large that they contain distinct labor markets. It might be possible to aggregate census data at a subcounty level but we did not ask the Census Bureau to do so. The large county size also means that smoothing across county boundaries can extend the effects of a high wage index area many miles. This limitation informs the choice of a tolerance level for smoothing; if the allowed difference is too small, many areas' wage indexes could be increased by the existence of one high wage index MSA.

4 Limiting a county's wage index to within 5 percent of the MSA's (or statewide rural area's) wage index generally results in a maximum difference of 10 percent among hospitals in the same market area. In the case of an MSA with a wage index of 1.0 and the national mean hospital RN wage of $27.80 per hour, the highest wage index for a county in the MSA would be 1.05 and the lowest would be 0.95. The implied RN wage in the county with the highest wage in the MSA would be $29.19 (1.05 × $27.80), and implied RN wage in the county with the lowest wage would be $26.41. The maximum differential would be $2.78 an hour or $22.24 a day. This can be thought of as the cost, in terms of time and transportation cost, of commuting from the far reaches of an MSA to the central core. Because this is less than one hour's wage, it seems to be a fairly conservative assumption and does not allow for exaggerated differences to arise between counties in an MSA or statewide rural area. While we believe the 10 percent differential is reasonable, an 8 percent or 12 percent maximum differential among counties in the same MSA may also be reasonable.

5 The county-level wages average slightly less than the MSA-level wage due to the cost of smoothing. Smoothing, which raises some hospitals' wage indexes, is paid for with a slight budget-neutrality adjustment (less than 0.5 percent) applied to all hospitals.

6 The benefit adjustment varies by occupation to reflect the proportion of workers in that occupation employed in each sector. Thus, using the same data, in each market area, the benefit adjustment will automatically differ from sector to sector, reflecting the differing mix of workers employed in each sector. See the section on additional technical information for details (p. 145).

7 This technique is mathematically equivalent to estimating the area wages for the missing occupations to be the national wage for that occupation times the estimated wage index for that area.

8 Our estimates of hospital benefits relative to hospital wages had a national mean almost exactly equal to the national ratio of hospital benefits to hospital wages that BLS reported. We had to use cost report benefit data because the industry-level BLS benefit data are available only on a national basis and not on a market-by-market basis.

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CHAPTER 7

Issues in Medicare coverage of drugs

RECOMMENDATIONS

7A The Congress should direct CMS to identify selected overlap drugs and direct plans to always cover them under Part D. Identified drugs should be:

- low cost
- covered under Part D most of the time.

COMMISSIONER VOTES: YES 15 • NO 0 • NOT VOTING 0 • ABSENT 2

7B The Congress should allow plans to cover a transitional supply of overlap drugs under Part D under the same conditions as the general transition policy applied by CMS.

COMMISSIONER VOTES: YES 15 • NO 0 • NOT VOTING 0 • ABSENT 2

7C The Congress should permit coverage for appropriate preventive vaccines under Medicare Part B instead of Part D.

COMMISSIONER VOTES: YES 15 • NO 0 • NOT VOTING 0 • ABSENT 2

CHAPTER 7

Issues in Medicare coverage of drugs

Chapter summary

Medicare's Part D prescription drug benefit is built on the delivery system used by the commercial market. Pharmacy benefit managers process claims and design formulary systems. Most outpatient drugs are provided through retail or mail-order pharmacies. Claims are adjudicated in real time. When drugs are provided in settings or under conditions that do not fit this model, patients, physicians, plans, and pharmacies can experience difficulties navigating the system. In this chapter, we explore two such situations: overlapping coverage of drugs under Part B and Part D, and delivery of Part D benefits to Medicare beneficiaries who reside in long-term care facilities.

Overlapping coverage between Part B and Part D drugs

In most cases, stakeholders know whether Part B or Part D covers specific drugs. In some cases, however, they need additional information. For example, an immunosuppressive drug is covered under Part B only if it follows a Medicare-covered organ transplant; otherwise, it comes under Part D. Since a drug plan must determine whether a drug should be covered under Part B before it can approve a claim, plans

In this chapter

often require prior authorization before the pharmacist can dispense the drug. In other words, the plan will not approve the claim until it has collected additional information.

We offer recommendations to address three issues with overlap drugs. First, plans and pharmacists agree that drugs that can be prescribed for many indications pose a problem. To mitigate this problem, the Commission recommends that the Congress change the law to allow CMS to identify low-cost drugs that are sometimes covered under Part B but are covered under Part D more than 90 percent of the time and direct plans always to cover them under Part D.

Recommendation 7A

COMMISSIONER VOTES:
YES 15 • NO 0 • NOT VOTING 0 • ABSENT 2

The Congress should direct CMS to identify selected overlap drugs and direct plans to always cover them under Part D. Identified drugs should be:

- *low cost*
- *covered under Part D most of the time.*

A second issue we identified in our research is permitting plans to cover a transitional supply of drugs under Part D. Interviewees report that, until a plan determines whether a drug is covered under Part B or Part D, it is not allowed to provide emergency supplies to beneficiaries under Part D. Some pharmacists do provide emergency supplies but must absorb the cost if coverage is denied and the beneficiary cannot pay out of pocket. We recommend that the Congress authorize prescription drug plans (PDPs) to approve transition supplies while coverage is being determined.

Recommendation 7B

COMMISSIONER VOTES:
YES 15 • NO 0 • NOT VOTING 0 • ABSENT 2

The Congress should allow plans to cover a transitional supply of overlap drugs under Part D under the same conditions as the general transition policy applied by CMS.

A third issue concerns vaccines administered by physicians. Physicians and public health agencies are concerned that new preventive vaccines are covered under Part D instead of Part B. Since physicians have no direct billing relationship with drug plans, patients might have to pay directly for vaccines and seek repayment from their drug plan. Interviewees reported that the high out-of-pocket cost of new vaccines under an indemnity model might discourage beneficiaries from seeking recommended preventive care.

The Congress should permit coverage for appropriate preventive vaccines under Medicare Part B instead of Part D.

Recommendation 7C

COMMISSIONER VOTES:
YES 15 • NO 0 • NOT VOTING 0 • ABSENT 2

Delivering Part D benefits to residents of long-term care facilities

When policymakers created Part D, they gave most attention to how competing private plans would work for beneficiaries who fill prescriptions at retail pharmacies. However, about 5 percent of Medicare beneficiaries reside in long-term care facilities, and more than half of them are dually eligible for Medicare and Medicaid. Residents in nursing facilities (NFs) are typically sicker and frailer than Medicare beneficiaries in the community: They take, on average, 6 to 10 prescription drugs per day compared with 2 to 4 among the noninstitutionalized. They do not fill prescriptions at retail pharmacies.

A different system is used to dispense drugs to residents of NFs, and Part D has affected that system. Previously, long-term care pharmacies (LTCPs) interacted most frequently with one payer—a state Medicaid program. Under Part D, LTCPs must negotiate with numerous plan sponsors over payments for services delivered to NF residents. LTCPs consider some Part D plans "friendlier" than others—for example, covering drugs that NF residents currently use and requiring prior authorization less frequently. Yet tensions have grown between some Part D plans and LTCPs over pharmacies' desire for timely dispensing and plans' desire to determine whether prescriptions are covered and appropriate before paying for them. Also, CMS is concerned

that the separate rebates LTCPs receive directly from drug manufacturers could interfere with the formularies Part D plans use and could raise program costs.

No empirical analyses based on drug and medical claims evaluate the effects of Part D on NF residents. The Commission intends to monitor this issue and will look at data as they become available. Policymakers may want to evaluate various approaches for providing Part D benefits in long-term care settings. Although the Commission does not make recommendations on these issues, this chapter looks at three alternatives as an initial step in exploring potential options:

- continuing with multiple Part D plans, but adding requirements to report data on the quality and appropriateness of drugs dispensed to residents of NFs;
- holding periodic competitions to select a single PDP for all residents of NFs within the same geographic region; and
- reimbursing LTCPs directly for delivering Part D benefits to residents.

Under all three approaches, Medicare could require the entity delivering Part D benefits to bear insurance risk for the drug spending of its enrollees in the same way that it does today. ■

Since 2006, Medicare beneficiaries have had the option of receiving outpatient drug benefits through stand-alone prescription drug plans (PDPs) or Medicare Advantage–Prescription Drug (MA–PD) plans that offer drug benefits under Medicare Part D. Before the program started, policymakers were concerned that few private organizations would be willing to offer stand-alone drug coverage. Another uncertainty was whether Medicare beneficiaries would enroll in the voluntary program. However, many drug plans and beneficiaries now participate in the program. In 2007, plan sponsors offered 1,866 PDPs, about 30 percent more than the previous year. According to the most recent figures from CMS, about 24 million beneficiaries are enrolled in PDPs or MA–PDs, or about 56 percent of all Medicare beneficiaries. Our March 2007 report provides an update on enrollment, plan participation, and benefit design.

In this chapter, we explore two particular issues we identified in the Part D program. Medicare's Part D prescription drug benefit is built on the delivery system used by the commercial market. Pharmacy benefit managers process claims and design formulary systems. Most outpatient drugs are provided through retail or mail-order pharmacies. Claims are adjudicated in real time. When drugs are provided in settings or under conditions that do not fit this model, patients, physicians, plans, and pharmacies can experience difficulties navigating the system. Two such situations include:

- overlapping coverage of drugs under Part B and Part D, and
- delivery of Part D benefits to beneficiaries who reside in long-term care facilities.

Overlapping coverage between Part B and Part D drugs

Before 2006, Medicare covered few outpatient drugs. Those that were covered under Part B include drugs administered by physicians, drugs used with durable medical equipment (DME), and drugs specifically named in statute. Since 2006, Medicare beneficiaries have been able to obtain coverage for most other types of outpatient drugs through Part D stand-alone PDPs or MA–PDs. Some drugs are covered under both Part B and Part D. For example, immunosuppressive drugs are covered under Part B for beneficiaries who received Medicare-covered organ transplants, and they are covered under Part D if Medicare did not cover the transplant.

In the course of research for our mandated report to the Congress on the effect of Medicare payment changes for Part B drugs (MedPAC 2007a), interviewees reported instances when the overlap in drug coverage under Part B and Part D increased the administrative burden for physicians, pharmacists, and health plans and delayed beneficiary access to needed medications. To further examine the issue of overlap drugs, a research team from NORC and Georgetown University conducted structured interviews with drug plans, pharmacists, beneficiary advocates, and trade associations. Staff also met with representatives from CMS and other government agencies. We further discussed Part B/Part D overlap issues with physicians, beneficiary advocates, and other stakeholders.

In most cases, stakeholders know whether drugs are covered under Part B or Part D. In general, Medicare covers drugs that must be administered by physicians under Part B and drugs that are purchased at pharmacies through Part D. In some cases, however, pharmacists and PDPs are unable to determine which program covers a particular drug without additional information. Stakeholders estimate that about 6,000 products (unique national drug code (NDC) numbers) potentially could be covered under either Part B or Part D (PCMA/NACDS 2006). Interviewees told us that coverage overlaps can result in delays for patients and increased costs. Since PDPs must determine whether a drug should be covered under Part B before they can approve a claim, plans often require prior authorization, meaning that physicians must provide additional information before the pharmacist can dispense the drug. Interviewees report that this process takes time and can delay beneficiaries getting their drugs.

In addition, some interviewees are concerned about coordination of coverage when drugs are covered under Part D but necessary supplies or clinical support are covered under Part B, Medicaid, or not at all. For example, home infusion specialists note that Part D does not cover the pharmacy and nursing services, supplies, and equipment needed to administer home infusion therapies. Beneficiaries may be unable to receive their medication because of lack of coordination among coverage sources.

Interviewees described how they manage these situations. In some cases, they also discussed possible solutions. Many interviewees believed that particular products were best suited to one type of coverage.

Overlapping drug coverage

The Congress gradually has expanded the type of drugs eligible for Part B coverage. For example, as some older chemotherapy drugs became available in oral form, the Congress decided to cover oral chemotherapy and antiemetic drugs that are exact replacements for covered infusible drugs under Part B. When beneficiaries take these medicines orally, Medicare does not have to pay for drug administration services and beneficiaries spend less time undergoing infusion sessions. The Congress also extended coverage to some vaccines, immunosuppressive drugs used after a Medicare-covered organ transplant, blood products, and drugs used with DME. Retail and mail-order pharmacies dispense some of these drugs (e.g., immunosuppressive drugs), although physicians continue to provide most Part B drugs.

With the addition of Part D, Medicare beneficiaries now have access to coverage for most outpatient drugs pharmacies dispense. As in the private sector, plans adjudicate claims in real time. Pharmacists know instantly whether a drug is covered, requires prior authorization, or is off the plan's formulary.

Most drugs are clearly covered under one or the other program, but in some instances pharmacists need additional information to determine which program covers a particular drug. In this section, we explore how drug coverage depends on:

- patient diagnosis
- timing of treatment
- use of DME
- where the drug is dispensed

Coverage depends on patient diagnosis

The Food and Drug Administration (FDA) approves many drugs for multiple indications and patients may find that their drug coverage depends on the condition for which they are being treated. In 2005, CMS advised plans to use prior authorization processes to determine whether an overlap drug should be covered under Part B or Part D. Although prior authorization processes differ among plans, prescribing physicians generally have to contact the plan to explain why a drug is prescribed. With that information, plans determine whether the drug meets the criteria for coverage.[1] Examples include:

- Physicians use immunosuppressive drugs to treat many conditions. If physicians prescribe them after a Medicare-covered organ transplant, the drugs are covered under Part B. The same drugs are covered under Part D for all other indications.
- When physicians prescribe oral antiemetics in conjunction with chemotherapy, they are covered under Part B; for all other indications, they are covered under Part D.
- Parenteral nutrition is covered under Part B only for beneficiaries with permanent dysfunction of the digestive tract.
- Erythropoietin, if dispensed at a pharmacy, is covered under Part B only for patients undergoing dialysis.

Coverage depends on timing

Patients may also find that drug coverage depends on when they had a particular medical procedure or treatment that requires additional medication. This issue is similar to the one described above but applies to drugs covered for the same indication.

For example:

- Immunosuppressive drugs prescribed after a Medicare-covered transplant are covered under Part B; for individuals who had a transplant before they were covered by Medicare, the drugs are covered under Part D.
- Most oral antiemetics dispensed within 48 hours of chemotherapy are covered under Part B; after that time, they are covered under Part D even if they still are being used to treat nausea caused by chemotherapy.

To determine coverage in these cases, plans must know both the patient's diagnosis and the timing of treatment.

Coverage depends on use of durable medical equipment

Drugs may be covered under Part B if they are administered to beneficiaries in their homes through covered DME. PDPs cover the same drugs if beneficiaries take the medication using other devices that are not included in the DME benefit. For example, pharmacies would process an inhalation drug administered through a nebulizer or an intravenous drug administered with an

infusion pump under Part B. PDPs would cover the same drugs administered in an alternative fashion under Part D.

Coverage depends on setting

Interviewees report that drug coverage can depend on where beneficiaries live or where their drugs are dispensed. In written guidance, CMS noted that Part B coverage for drugs administered through DME is limited to beneficiaries living in their homes (CMS 2005). They explain that most long-term care facilities do not meet the statutory definition of "home," so these drugs must be covered through Part D.[2]

Medicare covers most physician-administered drugs such as those used for chemotherapy under Part B. Physicians purchase these drugs and bill the carriers.[3] However, long-term care pharmacies (LTCPs) (discussed in greater depth in the second part of this chapter) typically provide injectable and infusible drugs to patients in long-term care facilities. Facility personnel then administer these drugs under medical direction. CMS determined that by definition a pharmacy cannot provide a drug "incident to" a physician's service. Thus, Part D covers these drugs in long-term care settings.

In further guidance, CMS determined that any drug dispensed at a retail pharmacy cannot be considered incident to a physician service and should be eligible for coverage by PDPs (CMS 2006a). As a result, some physicians have begun requiring patients to purchase drugs at a pharmacy (in such cases their PDP pays for them under Part D) and bring them to the office for administration in a process called "brown-bagging." Some physicians say this allows them to provide drugs to their patients without assuming the financial risk of buying them or the administrative burden of acquiring them through the competitive acquisition program.

Interviewees did not describe the practice as widespread. A number of pharmacists reported that they knew about the practice and asked physicians to order the drugs in advance because they did not routinely stock these medications. They also tried to arrange for patients to pick up their medication on the way to their physician's office so that the drug would not be improperly stored. No plan representative reported brown-bagging as a problem, although plans may not have any way of knowing whether patients are going to self-administer a drug or take it to their doctor's office.

While some physicians were experimenting with the practice, others raised concerns about the use of brown-bagging. Doctors did not want to put patients in charge of maintaining the proper storage environment for drugs. In addition, many pharmacies do not regularly stock these drugs, and waiting for them to acquire the drug could create problems with a patient's treatment schedule.

With Part D claims data, analysts will be able to measure how widespread the practice of brown-bagging is. The Commission will monitor this issue to determine whether brown-bagging affects spending and quality of care.

Managing overlap drugs

Interviewees told us that sorting out who to bill for drugs that could be covered under either program took considerable time and resources at the beginning of 2006. Since plans are legally prohibited from covering drugs under Part D that are eligible for Part B coverage, many plans require prior authorization to determine coverage for all overlap drugs. Plan procedures vary but, in general, they require physicians to provide information on why the drug is being prescribed. Then the plan determines whether the drug meets the criteria for coverage. Interviewees reported that this practice resulted in significant delays and many patients had to make more than one trip to the pharmacy before they could receive their medications. In addition to the added burden placed on pharmacists, plans also had to devote considerable resources to staffing prior authorization requests. If plans pay for a drug under Part D that should be covered by Part B, they could be in legal jeopardy. For example, they would be counting their payments for drugs that should be covered under Part B as part of beneficiary out-of-pocket spending for purposes of calculating risk corridors and reinsurance. Auditors could interpret this as a false claim. Physicians also had to spend time and resources responding to requests for information.

Stakeholders told us that the process of determining whether a drug is covered under Part B or Part D has improved. CMS made some decisions early in 2006 that allowed plans to determine program coverage more quickly. The agency determined that plans could accept physician diagnosis codes on prescriptions as sufficient information to determine which program should cover a drug. As noted above, CMS also decided that no drug dispensed at a pharmacy could be classified as a physician-administered drug. Thus, plans could assume that such drugs were covered under Part D. In addition, plans have developed various strategies to streamline some decisions on overlap drugs, including the use of

information systems that track what patients are being treated for and whether they live in long-term care facilities.

These administrative changes and plan program edits eased many of the problems, but significant issues remain. Interviewees reported that the most common continuing problem is determining correct coverage for drugs prescribed for many medical conditions. When they are unsure which program covers a drug, pharmacists have difficulty coordinating with Part B and Part D. A PDP may produce an online denial of a claim, while some medical carriers require a paper denial from a plan to process the claim under Part B.

In addition, drug claims are processed quite differently under Part B and Part D. Pharmacists told us that claim adjudication under Part D is simpler for them. Determination is generally made instantly. Under Part B, they dispense a drug, submit a claim, and wait to see if it will be covered. Carriers may take several weeks to make a determination. If the claim is denied, the pharmacist must then submit the claim to the beneficiary's PDP. During this period, the beneficiary may not be receiving the drug.

Prior authorization

When a drug is placed on a prior authorization list, pharmacists cannot dispense it until the PDP receives information that shows the drug meets the criteria for Part D coverage. Many plans use information collected from an initial prescription for a drug on prior authorization to automate the process for refills. If a PDP learns that a patient is taking immunosuppressive drugs because of a Medicare-covered transplant, the plan knows that future immunosuppressive prescriptions are covered under Part B. Plans include codes in their information systems to track whether a beneficiary is living in a long-term care facility. If that is the case, plans know that physician-administered drugs for that patient are covered under Part D. However, stakeholders told us that the use and accuracy of codes denoting that a patient lives in a long-term care facility vary considerably among plans.

In general, pharmacists report that plans have different prior authorization requirements for Part B overlap drugs. Plans are most likely to ask physicians for diagnosis information. Some plans also request information on the indications for the drugs, a faxed statement from the physician, or proof of denial from Part B. Some plans allow pharmacists to ask physicians about their patient's diagnosis, while others require that physicians complete written authorization forms.

If a physician writes the needed information on the prescription, plans can provide immediate authorization.[4] However, few physicians do this. Physicians who prescribe a large volume of drugs covered by both Part B and Part D (e.g., rheumatologists) are most likely to include diagnosis on the prescription, but other doctors are less likely to do so. In addition, many physicians are reluctant to include diagnosis on prescriptions because of concern about patient privacy.

Some researchers believe that including diagnosis codes on all prescriptions would provide valuable information in examining treatment outcomes. In the future, plans might develop information systems that include medication, dosage, and diagnosis for each claim. Researchers could use the resulting database to inform studies of evidence-based medicine.

Trade groups representing pharmacy benefit managers and chain drugstores issued a white paper recommending that CMS eliminate the need for prior authorization of low-cost overlap drugs (PCMA/NACDS 2006). They suggest that CMS identify low-cost drugs that are covered under Part D more than 90 percent of the time but could be covered under Part B and allow plans always to cover them under Part D. Interviewees most often mentioned prednisone and methotrexate, two inexpensive generic drugs that are frequently prescribed for many indications. Part B covers these drugs when physicians prescribe them after a Medicare-covered transplant. PDPs cover them for all other indications. IMS Health estimates that PDPs cover the drugs 98 percent of the time.

Both pharmacists and plan representatives repeatedly told us that placing very inexpensive drugs on prior authorization delayed beneficiary access and increased costs for them. They noted that the cost of determining whether the drug should be covered by Part D may be higher than the cost of covering the drug. In interviews, some plan representatives said that they had already instructed pharmacists to cover these drugs without prior authorization but are concerned about future audits. If an audit determined that a plan had paid for a drug under Part D that should have been covered by Part B, Medicare could consider the payment a false claim and the plan could be in legal jeopardy. If the Congress gave CMS the authority, the agency could draft a regulation that lists drugs that should always be covered under Part D.

RECOMMENDATION 7A

The Congress should direct CMS to identify selected overlap drugs and direct plans to always cover them under Part D. Identified drugs should be:

- **low cost**
- **covered under Part D most of the time.**

RATIONALE 7A

Prior authorizations placed on inexpensive drugs that are nearly always covered by Part D may delay beneficiary access, increase costs for plans and pharmacists, and increase the administrative burden on physicians.

IMPLICATIONS 7A

Spending

- None

Beneficiary and provider

- This recommendation would improve beneficiary access and reduce provider costs and administrative burden.

Transition supplies

According to law, plans may not provide emergency supplies to beneficiaries while the plan decides whether coverage should be under Part D or Part B. If a patient's drug requires prior authorization, beneficiaries may not receive their medication until coverage is resolved. Some pharmacists do provide emergency supplies but they sometimes must absorb the cost if coverage is denied and the beneficiary cannot pay out of pocket. The Commission recommends that the Congress authorize PDPs to approve transition supplies to beneficiaries under Part D while the plan determines coverage.

When a physician submits a request for a drug that requires prior authorization and supplies accompanying information, the plan must complete a coverage determination or an expedited coverage determination within a set time frame. For example, plans must decide on an expedited request for coverage within 24 hours. However, this time frame does not begin until a physician or the enrollee has attempted to fulfill the prior authorization requirement. When a beneficiary brings a prescription to a pharmacy and the claim is denied because the plan does not know whether the drug should be covered under Part B or Part D, the plan is not making a coverage determination because the plan has not received a request for coverage with accompanying information and no time frame applies (CMS 2007a). Since it is unlikely that a pharmacist can contact the beneficiary's physician and the physician can complete a prior authorization form while the beneficiary is waiting at the pharmacy, the beneficiary may have to pay for the drug out of pocket or leave without needed medication.

Part D plans currently must maintain a transition policy to provide temporary supplies of medications for new plan enrollees who are stabilized on drugs that are not on their plan's formulary or are subject to utilization management requirements. This policy requires plan sponsors to provide a temporary supply of the requested medicine and to send the enrollee written notice explaining when the supply will end and the procedures for requesting a coverage determination or exception. The transition supply is limited to a 30-day fill and is subject to the plan's general cost-sharing requirements.[5] However, the transition policy does not apply to overlap drugs that may be covered under Part B or Part D (CMS 2007a).

RECOMMENDATION 7B

The Congress should allow plans to cover a transitional supply of overlap drugs under Part D under the same conditions as the general transition policy applied by CMS.

RATIONALE 7B

If PDPs were able to apply the transition policy to overlap drugs while coverage is being determined, beneficiaries would not risk disruptions in their medical regimens. Physicians would have more time to meet prior authorization requirements to determine the coverage status of the prescribed drugs. Both pharmacy and pharmacy benefit management trade associations support this policy (PCMA/NACD 2006).

IMPLICATIONS 7B

Spending

- Negligible

Beneficiary and provider

- This recommendation would improve beneficiary access and reduce risk for pharmacists.

Vaccines and Part D

Physicians report that coverage of preventive vaccines under Part D is problematic for them. By statute, under Part B Medicare covers preventive vaccines for influenza, pneumonia, and hepatitis B for patients at high or intermediate risk. Medicare covers other vaccines under Part B if they are administered to treat an injury or direct exposure to a disease. For example, Part B covers rabies vaccine for beneficiaries bitten by animals. However, Medicare covers any other preventive vaccines under Part D. Currently, PDPs are paying for few preventive vaccines. Interviewees mentioned that the most likely new vaccine to be covered under Part D is a vaccine for shingles licensed by the FDA in 2006. However, if more vaccines become eligible for Part D, physicians are likely to have a problem billing plans. Like most Part B drugs, physicians purchase vaccines and provide them in their offices, but most have no direct way of billing PDPs.

Currently, CMS is seeking to clarify how plans intend to pay for vaccines under Part D. Plans would also have to develop a method to pay providers to administer the vaccines. To date, plans have suggested a variety of methods to pay for Part D-covered vaccines including:

- delivering vaccines directly to the physician's office,
- providing vaccines to network pharmacies,
- reimbursing patients after administration of the vaccine, and
- developing a web-based tool that allows physicians to submit claims electronically (Banner 2007).

These methods are largely untested. Recognizing this concern, the Academy of Managed Care Pharmacy notes that physicians do not have the appropriate information systems to bill under Part D (AMCP 2007). They endorse moving all vaccines to Part B.

If beneficiaries have to pay the full payment rate for vaccines and then seek reimbursement from their plans, physicians are concerned that the out-of-pocket cost will discourage beneficiaries from seeking preventive care when appropriate vaccines are available. Public health agencies—for example, the Centers for Disease Control and Prevention (CDC) and the National Vaccine Program Office in the Department of Health and Human Services (HHS)—share this concern. Beneficiaries without Part D coverage might also be unable to receive recommended vaccines unless they are able to pay the full payment rate.

Before implementation of Part D, Medicare covered preventive vaccines only if they were listed in statute. The Congress could simplify the process for coverage. For example, Medicare carriers could decide on coverage for preventive vaccines based on medical evidence as they do with other Part B services. Medicare payment for vaccines, like other Part B drugs, would be based on the average sales price methodology.

One source of information about Part B coverage for vaccines could be the recommendations of the Advisory Committee on Immunization Practices (ACIP), which consists of 15 experts in fields associated with immunization who have been selected by the Secretary of HHS to provide advice and guidance to the Secretary, the Assistant Secretary for Health, and the CDC on the most effective means to prevent vaccine-preventable diseases. The Committee develops recommendations for the administration of preventive vaccines to the pediatric and adult populations, along with schedules regarding the appropriate time frame, dosage, and contraindications applicable to the vaccines. ACIP recommendations are currently used to determine vaccines covered under the Vaccines for Children program. ACIP could develop similar recommendations for the Medicare population. Medicare could use this source of information for help making coverage decisions.

Although this section relates only to preventive vaccines, beneficiaries might have better access to some other drug products under Part B than under Part D.[6] CMS is studying whether some drugs should be moved from one part of the program to the other. The Commission also will study potential cases in future work. Any significant shift of drugs from one part of the program to the other should consider the time needed for drug plans to take the changes into account before submitting their bids to CMS for the following year.

RECOMMENDATION 7C

The Congress should permit coverage for appropriate preventive vaccines under Medicare Part B instead of Part D.

RATIONALE 7C

Since physicians have no direct way to bill Part D plans, they face administrative barriers to providing appropriate preventive care to beneficiaries. Under Part B, physicians

would be able to administer new vaccines in their offices as they do current covered vaccines and beneficiaries would have more access to preventive care.

IMPLICATIONS 7C

Spending

- This recommendation would increase spending by less than $50 million for 1 year and by less than $1 billion over 5 years.

Beneficiary and provider

- This recommendation would improve beneficiary access to preventive care and reduce the administrative burden for physicians.

Delivering Part D benefits to residents of long-term care facilities

The overall fit between Part D and the nursing home pharmacy sector is a matter of debate. Some stakeholders characterize the Part D benefit as a better fit for community-based beneficiaries who fill prescriptions in retail pharmacies than for institutionalized beneficiaries because the latter often have cognitive as well as physical impairments. However, current law states that Medicare beneficiaries in nursing facilities (NFs) should have the same freedom as community-based beneficiaries to choose among Part D plans. Here we examine how the introduction of Part D is affecting pharmacy services for residents of NFs and other stakeholders. We also describe several approaches policymakers can consider for delivering Part D benefits in this care setting but do not offer recommendations.

Medicare beneficiaries in NFs

According to data from the Medicare Current Beneficiary Survey (MCBS), in 2003, about 5 percent of all beneficiaries lived in long-term care facilities.[7] This group is made up disproportionately of individuals age 85 or older (43 percent vs. 12 percent of the entire Medicare population), and they are much more likely to be widows or to have never married (only 14 percent remain married vs. 52 percent overall) (CMS 2006b). More than half of beneficiaries in long-term care facilities did not complete high school compared with 30 percent overall, and about half have incomes of $10,000 or less compared with 22 percent overall. Individuals who reside in NFs often are there because they are in a weak physical state with difficulty performing activities of daily living. About two-thirds of the institutionalized are also mentally or cognitively impaired (Table 7-1).

TABLE 7–1 **About two-thirds of institutionalized Medicare beneficiaries are mentally or cognitively impaired**

	Dual eligibles	Nondual eligibles	All
All institutionalized beneficiaries	56%	44%	100%
Percent who are mentally or cognitively impaired			
Aged	32	26	58
Disabled	8	1	10
Total	40	28	68

Note: Dual eligibles are individuals who receive both Medicare and Medicaid benefits. Mentally or cognitively impaired includes beneficiaries who have dementia, mental illness, or mental retardation. Sums may not add to totals due to rounding.

Source: MedPAC analysis of Cost and Use files, 1999–2001 Medicare Current Beneficiary Surveys.

The population of beneficiaries in long-term care facilities is made up disproportionately of individuals who are dually eligible for Medicare and Medicaid.[8] In 2003, 19 percent of duals lived in long-term care facilities compared with about 2 percent of nondual Medicare beneficiaries. More than half of all institutionalized Medicare beneficiaries are duals (Table 7-1). Definitions of institutionalization can vary, but this result corresponds roughly with other data. As of April 2007, data from CMS's On-line Survey, Certification, and Reporting system suggest that nearly 14 percent of residents at certified NFs were on a Medicare Part A stay, 65 percent were on a Medicaid stay, and the remaining 21 percent either had another source of coverage or paid out of pocket (CMS 2007b).

Providing prescription drugs to NF residents before and after Part D

The distribution system for drugs dispensed to residents of NFs is quite different from that for beneficiaries living in the community, and Part D has affected how providers operate. NFs and the LTCPs with which they contract have always had to interact with multiple insurers because residents with individual or employer-sponsored supplemental drug policies had coverage through different

companies. Nevertheless, overall LTCPs interacted more frequently with just one payer because so many NF residents had their drugs paid by a single state Medicaid agency. Previously, most state Medicaid programs paid NFs a daily rate to cover the room, board, and nursing care services of dually eligible residents and made separate fee-for-service payments to LTCPs for pharmacy services (Figure 7-1).[9] LTCPs were reimbursed directly by residents with third-party coverage and those who paid out of pocket.

Regulatory requirements and current market practices make it advantageous for many NFs to rely on a single LTCP for all pharmacy-related services (Lewin 2004). Nearly one-third of all states require NFs to let residents use a pharmacy of their own choosing, and some NF residents with retiree drug coverage or coverage through the Veterans Administration receive medications through mail-order pharmacies or other providers. Nevertheless, many NF providers cite efficiency, predictability, and standardization of dispensing practices as advantages of contracting with one vendor.

Federal and state laws and regulations have led to certain standards of practice for delivering pharmacy services in NFs. For example, the Omnibus Budget Reconciliation Act (OBRA) of 1987 and OBRA 1990 require each state's Survey and Certification Agency to verify that NFs accepting Medicaid funding meet conditions of participation, including reviewing drug regimens monthly, documenting and maintaining low medication error rates, and reducing unnecessary drug use (Leavitt 2005). States also regulate and license NFs and pharmacies (including institutional pharmacies such as LTCPs) and the professionals they employ.

NFs must obtain the services of a licensed pharmacist to provide mandated standards of pharmacy practice. While NFs do not necessarily need to use LTCPs for these services, most do. In addition to the services that retail pharmacies provide, LTCPs often:

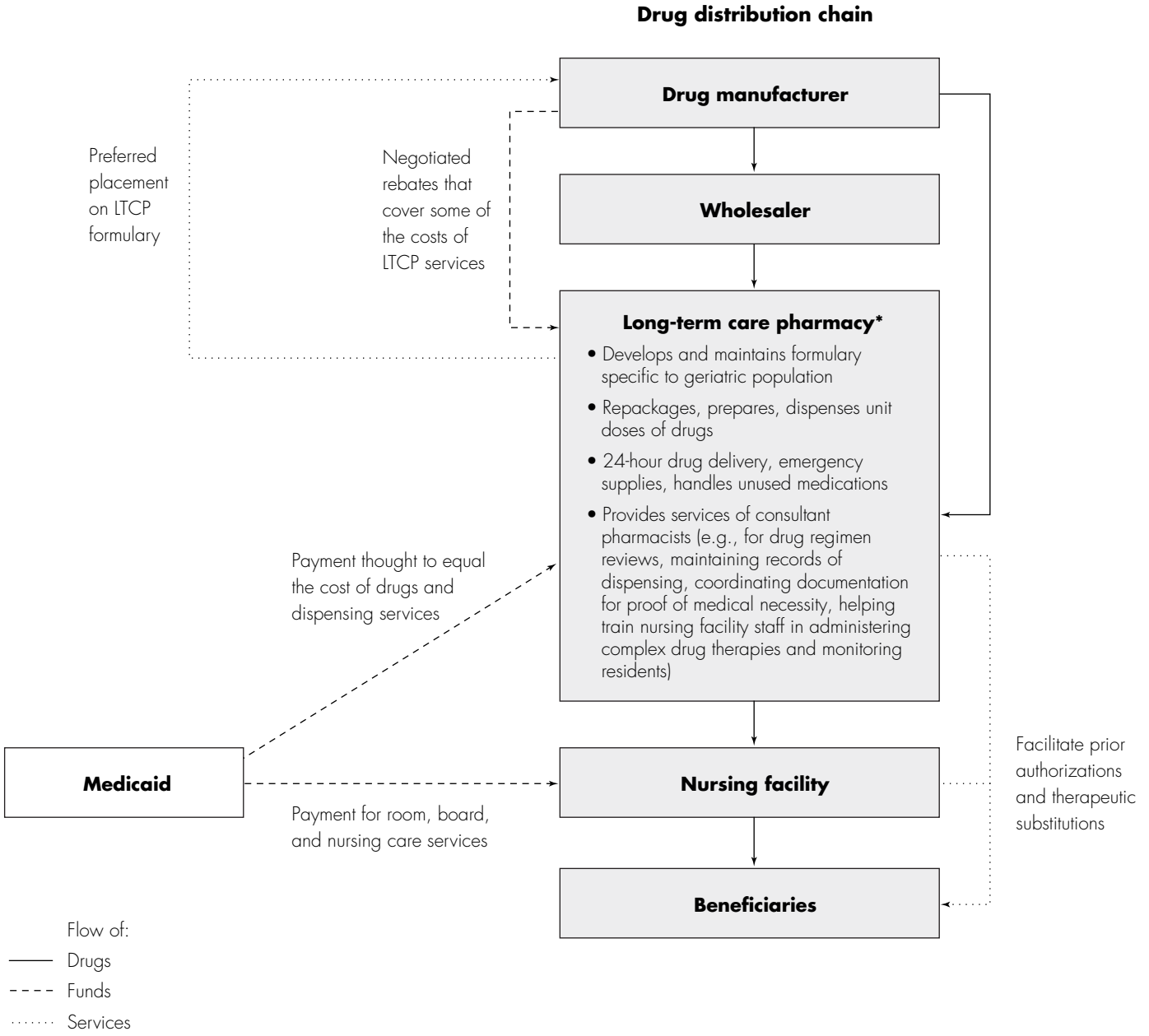
- develop and maintain an advisory formulary specific to the geriatric population;
- prepare and dispense unit doses of prescribed medicines, typically in blister packs, and provide medication carts with locked, nonremovable drawers for each resident's drugs;
- provide 24-hour drug delivery, provide emergency drug supplies, and handle unused medications;
- provide the services of consultant pharmacists who review residents' prescriptions prospectively, maintain records of drugs dispensed, coordinate documentation for prior authorization or proof of medical necessity, review drug regimens retrospectively, and help train facility nursing staff on how to administer certain complex therapies and monitor residents.

Prior to Part D, LTCPs provided many of these services for charges that were thought to approximate the cost of drug ingredients and dispensing. National chain LTCPs maintain their own formularies and are able to obtain rebates from pharmaceutical manufacturers in return for filling a certain volume of drug sales and for moving market share toward specific drugs. In turn, some analysts believe those rebates finance much of the cost of additional LTCP services such as drug regimen reviews. However, others believe that rebate revenues have led primarily to higher profits for some LTCPs than providers experience in other health sectors.

The nature of LTCP formularies differs somewhat from formularies that pharmacy benefit managers (PBMs) use. PBMs' formularies are continually updated lists of medications that a plan or payer will cover. A PBM covers all drugs listed on its formulary in some way; however, most formularies do not list all drugs and enrollees must pay out of pocket for drugs that are not listed. In addition, PBMs' formularies typically set different levels (tiers) of cost sharing or require that a particular condition is met before certain drugs or groups of drugs will be covered (MedPAC 2004). By comparison, LTCPs' formularies are more advisory in the sense that the pharmacy generally does not decline to cover prescriptions, except for limited circumstances. Under OBRA 1987, NFs must provide their residents with all needed care, including prescription drugs, whether or not the facility has identified a source of payment. Nursing home regulations also tend to focus on making sure that NFs provide the prescription to the correct resident in a timely manner. As a result, NFs pay close attention to the timeliness with which LTCPs deliver prescribed medicines rather than focusing on whether a drug should be covered. Nevertheless, LTCP formularies divide drugs into categories—for example, preferred, acceptable, or unacceptable. In the case of both LTCPs and PBMs, the designation of certain drugs as preferred or nonpreferred may reflect both clinical and economic factors.

One important issue to consider is whether the role of pharmacists in long-term care settings differs from that in community retail pharmacies. Some states require

FIGURE 7–1 **Before Part D: How prescription drugs were typically provided to dually eligible residents**



Note: LTCP (long-term care pharmacy). Dual eligibles are individuals who receive both Medicare and Medicaid benefits. Other nondual residents of long-term care facilities either paid out of pocket or used third-party drug coverage to reimburse the LTCP on a fee-for-service basis.
*Many of the services listed are required of nursing facilities under federal and state laws and regulations.

all types of pharmacies to substitute generic medicines automatically for brand-name drugs that have a generic available unless the physician explicitly asks for the brand-name drug. However, before making therapeutic substitutions—an alternative drug within the same therapeutic class but with a different molecular structure—pharmacists must first contact the prescribing physician for approval. Beneficiaries who live in the community and their pharmacists must get such approval from prescribing physicians to obtain coverage or pay lower copays under a PBM's formulary.

By contrast, in long-term care settings, consultant pharmacists review drug regimens monthly and can use that information to suggest therapeutic substitutions to the prescribing physician. Such suggestions may reflect clinical and safety concerns of the consultant pharmacist and may also reflect a drug's preferred status on the LTCP's formulary. In some states and under specific circumstances, consultant pharmacists can change a prescription without seeking the physician's approval.[10] Under current law, if a consultant pharmacist recommends changing a resident's prescription, the prescribing physician must consider that recommendation and respond to it (Lewin 2004). Some analysts believe that because most consultant pharmacists are employed directly by LTCPs, they may have the financial interests of the LTCP in mind when recommending therapeutic switches.[11] It is worth noting that a number of providers share responsibility for the quality and safety of drug use among NF residents, including prescribing physicians, LTCPs, and NFs.

LTCPs serve more than 80 percent of all nursing home beds nationwide (Stevenson et al. 2007). The LTCP market is highly concentrated, with the top three firms accounting for two-thirds of nursing home beds: Omnicare covers about 850,000 of the nation's 1.7 million beds (50 percent), PharMerica covers 220,000 (13 percent), and Kindred Pharmacy Services (KPS) covers 100,000 (6 percent). AmerisourceBergen and Kindred Healthcare, which own PharMerica and KPS, respectively, are in the process of spinning off those units to create a single firm. Smaller local or regional pharmacies (both retail and long-term care) serve the remaining one-third of nursing home beds. In the past, larger LTCPs had some important competitive advantages because they could negotiate large rebates from drug manufacturers. More recently, smaller LTCPs have turned to group purchasing organizations (GPOs), which give them greater bargaining power in negotiations. (GPOs bargain on behalf of member organizations that are smaller, thereby pooling their purchasing power.)

The introduction of Part D brought about a major shift in the financing of LTCP services. Previously, sources of nonrebate revenue for LTCPs mirrored the distribution of residents in NFs: 60 percent to 65 percent came from Medicaid, 10 percent to 15 percent came from Medicare Part A (for stays in skilled nursing facilities), and the remaining 20 percent to 24 percent was divided between private-pay residents and those with supplemental drug coverage (Lewin 2004). Most frequently, LTCPs were reimbursed on a fee-for-service basis. Now Medicare makes monthly payments to competing private plans that administer prescription drug benefits on behalf of the program, including for enrollees who reside in NFs (Figure 7-2). As of January 1, 2006, Medicare Part D replaced Medicaid as the primary source of drug coverage for full-benefit duals. Other residents may enroll in Part D plans if they choose. This means that LTCPs must now negotiate with numerous organizations that sponsor Part D plans to become part of each plan's pharmacy network. Part D plans are required to offer a contract to any pharmacy willing to participate in its LTCP network so long as the pharmacy is capable of meeting certain performance criteria, relevant state laws, and other contract terms. Many NFs continue to contract with a single LTCP, and the larger LTCPs have effectively negotiated contracts with all PDPs to join their pharmacy networks.

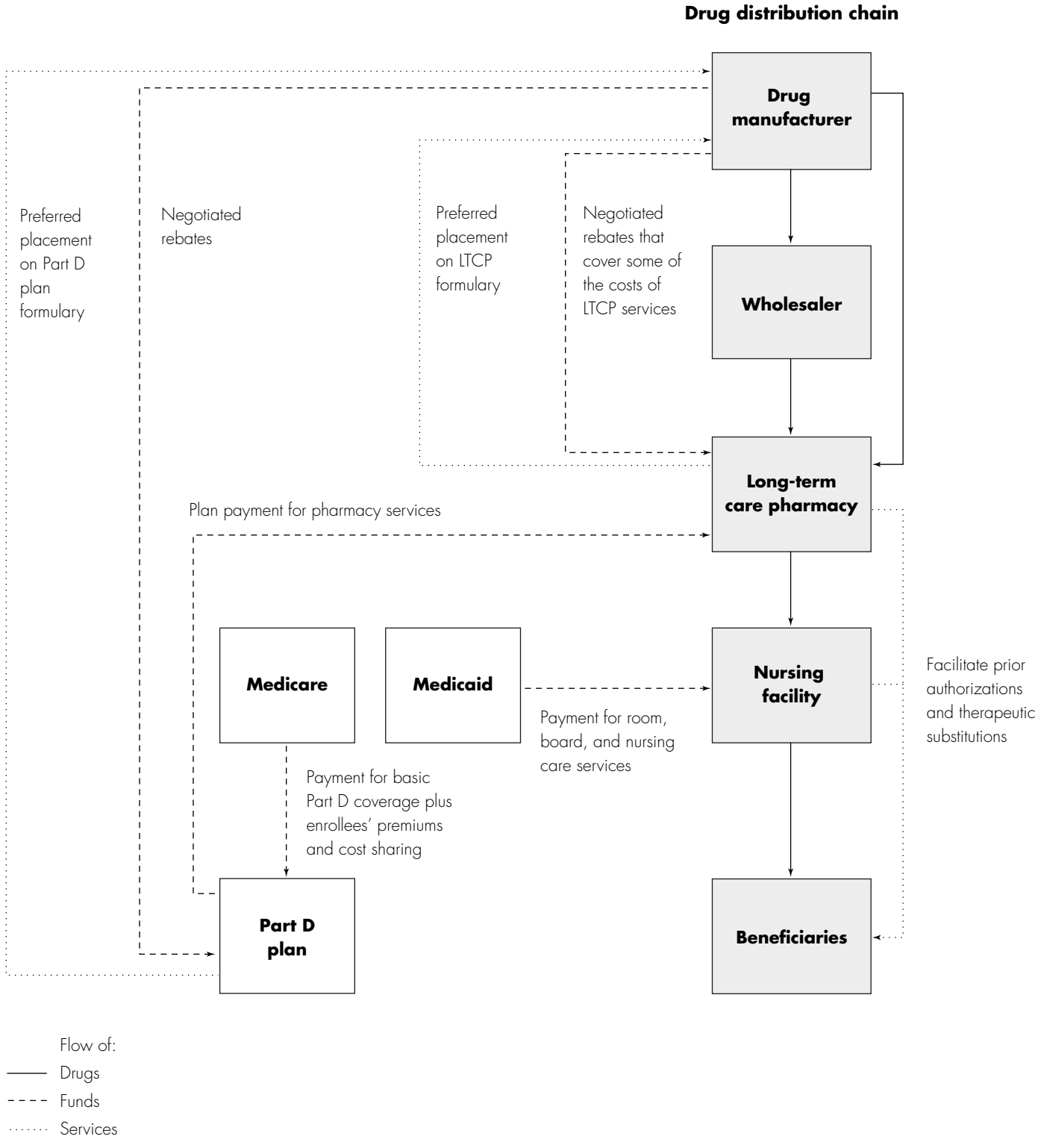
Now that Part D is in place, each facility's residents are enrolled among several different Part D plans with corresponding differences in formularies. Although the number will likely decline for 2008, during 2006, representatives of NFs and chains reported that residents were often enrolled in 6 to 10 or more plans (Stevenson et al. 2007).[12] CMS automatically assigned NF residents who are duals randomly among qualifying Part D plans prior to January 1, 2006 (the date their entitlement to drug coverage through Medicaid ended). Typically, duals are enrolled in a qualifying stand-alone PDP rather than an MA–PD because most duals are in fee-for-service Medicare.[13] NF residents who are not duals had until May 15, 2006, to select and enroll in a PDP. All Medicare beneficiaries who reside in NFs may switch to a different plan up to once per month. NF residents who are duals automatically qualify for Part D's low-income subsidy (LIS) program, which covers their monthly premiums if they are enrolled in a qualifying plan. Full-benefit dual eligibles who reside in NFs face no cost-sharing requirements. Otherwise, residents must pay premiums and cost sharing.

Throughout 2006, LTCPs maintained their own formularies, and stakeholder interviews suggest that LTCPs still receive rebates from drug manufacturers. These formularies and rebates are separate from those developed and negotiated by Part D plans with which LTCPs have contracts.

Findings from stakeholder interviews

MedPAC contracted with researchers at Harvard Medical School's Department of Health Care Policy to interview key stakeholders about how Part D is changing

FIGURE 7–2 **After Part D: How prescription drugs are typically provided to dually eligible residents**



Note: LTCP (long-term care pharmacy). Dual eligibles are individuals who receive both Medicare and Medicaid benefits. Other nondual residents of long-term care facilities may or may not choose to enroll in Part D plans.

the provision of drugs in NFs (Stevenson et al. 2007). They conducted 31 semistructured interviews between November 2006 and January 2007 with nursing homes and chain operators (6), LTCPs (6), GPOs/LTCP networks (2), Part D plans (4), financial analysts who cover the LTCP sector (3), physicians working in NFs (4), consultant pharmacists (2), state and federal policymakers (2), and advocates for nursing home residents (2). The researchers tried to select specific stakeholders to maximize representation of Medicare beneficiaries; for example, they tried to interview the larger nursing home chains, LTCPs, and PDPs.

The research team found that, by some accounts, the transition to Part D has been challenging in the long-term care sector. Part D brought about a substantial departure from how prescription drugs were previously financed and administered in NFs, and providers are struggling to adapt to some of these changes. At the same time, meeting the needs of NF residents and working with LTCPs are new challenges for most PDP sponsors as well. Interviewees identified a range of longer term issues that merit attention to ensure that Part D works well for residents of NFs. The Harvard team reported the following conclusions:

- The overall fit between Part D and the nursing home pharmacy sector is a matter of contention among the stakeholders interviewed. Many stakeholders characterized the Part D benefit as being a better fit for community-based beneficiaries who access medications in retail pharmacies than for institutionalized beneficiaries.
- Medicare beneficiaries in nursing homes have the same freedom to choose plans as community-based beneficiaries; however, stakeholder interviews highlighted sensitivities between ensuring this freedom of choice and allowing nursing home providers to encourage enrollment into plans they perceive to be a better fit with residents' medication needs and that minimize facility and pharmacy administrative burden.
- Part D increased the variation around formularies and drug management processes for residents at the facility level. In general, stakeholders described tension between cost-saving strategies PDPs used, such as prior authorization, and the burden these utilization management processes can place on clinical staff at NFs and pharmacy staff.
- Formulary coverage appears adequate for many medications used by NF residents, and the special protections required for six medication classes plus Part D transition coverage requirements helped to shield residents from coverage limitations. However, stakeholders noted what they consider to be important exceptions to overall formulary adequacy for the institutionalized population and instances when the application of utilization management policies was particularly problematic.
- Empirical analyses are needed to assess the impact of Part D on utilization patterns, outcomes, and quality of care. Noting this important caveat, stakeholders pointed to within-class drug utilization shifts but did not report a change in overall use of drugs. To date, stakeholders have not perceived any adverse impact on resident outcomes or quality of care attributable to Part D.
- Stakeholders indicated that Part D's financial impact on nursing homes is evolving. Part D altered the relationship between nursing homes and their LTCPs, introducing a tension between facilities' need to dispense medications quickly and LTCPs ensuring coverage for those drugs. Nursing homes and LTCPs have an incentive to minimize prescriptions for noncovered drugs, but how these entities will share the financial impacts of these costs depends on nursing home–LTCP contracting, which will likely continue to vary across providers.
- The impact of Part D on the future competitiveness of the LTCP sector is also evolving. Although the LTCP sector is concentrated, financial analysts with whom we spoke characterized the sector as very competitive overall, with few barriers to entry. The prominent role of GPOs and LTCP network organizations in particular has helped smaller LTCPs access more favorable pricing from manufacturers and PDPs so that most small LTCPs have joined these organizations.
- Consensus among stakeholders was that LTCP rebates—which currently continue—will likely decline in future years. CMS has not disallowed LTCP rebates under Part D, but it has expressed strong reservations about them, raising the possibility that they could constitute fraud and abuse.
- If LTCP rebates decline or disappear, these changes could lead to increased transparency of pricing

because LTCPs would need to unbundle their services and begin charging for services explicitly. Although reduced rebates would likely have a greater negative impact on larger LTCPs, these entities would still likely maintain certain economies of scale that might be advantageous in terms of service pricing, dispensing costs, and negotiating power.

- A reduction or elimination of rebates also could result in LTCPs passing increased administrative costs or a greater share of costs for items like consultant pharmacist services on to the nursing homes with which they contract.
- PDPs generally did not express reluctance to have institutionalized enrollees in their plans; however, there seemed to be a level of uncertainty among PDPs about the adequacy of payment and risk adjustment for this population as risk corridors widen. Reassessing the methodology of risk adjustment going forward and possibly making future refinements could be important to ensuring adequate availability of plans for dual-eligible beneficiaries.

Policy concerns related to pharmacy benefits for NF residents

The use of Part D's system of competing private plans in the long-term care sector has led to a number of concerns among stakeholders. Some predate Part D and relate to the appropriateness of drug use among residents. Others arose because Part D uses multiple competing plans.

Concerns about quality and appropriateness of drug use in NFs

Historically, NFs have struggled with appropriate prescribing and dispensing for residents (Stevenson et al. 2007). Individuals who reside in NFs take 6 to 10 drugs per day, which raises their risk for adverse drug events (ADEs)—a term that describes harm caused by the use of a drug or the inappropriate use of a drug (Nebeker et al. 2004). Recent research suggests that preventable ADEs remain a significant problem (Gurwitz et al. 2005). Reducing medication errors and ADEs has been a focus of past federal reforms, such as those in OBRA 1987 and OBRA 1990.

While NFs operate within a highly regulated environment, processes for referring noncompliant facilities and enforcing standards do not always work well (OIG 2005). With respect to residents' drug regimens, CMS officials recently raised strong concerns about the overuse of drugs and safety. For example, in a meeting with investment analysts, CMS officials noted that about half of all ADEs occur in long-term care settings, despite the presence of consultant pharmacists and procedures intended to limit medication errors (Stifel Nicolaus 2007). Underlying this comment is the view that past standards of practice among LTCPs may not have served NF residents well. At a separate investors' conference, officials argued that LTCPs "have a very strong incentive to promote the use of drugs for which they receive rebates" (Lueck 2006).

An important goal for policymakers should be that, in the midst of changes brought about by Part D, beneficiaries in NFs receive safe and appropriate drug therapies. Data on drug claims are not yet available to examine the degree to which Part D has affected residents' drug utilization, health outcomes, and quality of care. Stakeholder interviews suggest that they have seen shifts among drugs within specific classes—for example, therapeutic substitution of one cholesterol-lowering statin for another. To date, however, stakeholders do not report broad changes—increases or decreases—in gross utilization of drugs. Nor have stakeholders reported changes in quality of care as Part D has gotten under way. Researchers need to conduct empirical analyses to examine the issue more systematically.

The apparent lack of change thus far is likely due to protections for residents within current law, such as OBRA 1987, which obligates NFs to provide residents' prescribed medicines even when financing for such services has not been identified. Other protections are through CMS guidance that requires Part D plans to supply all or nearly all drugs in certain therapeutic classes and to provide transition supplies during the first 90 days of enrollment.

Although stakeholders dealt with requirements for prior authorization under state Medicaid before, physicians and some NFs characterized these as more challenging under Part D.[14] NF and LTCP interviewees highlighted access challenges under Part D for drugs to treat Alzheimer's disease, selected antibiotics, erythropoietin, and some alternative formulations of medicines such as injectables and inhalation therapies. Importantly, the clinical impact of plans' coverage limitations or prior authorization requirements depends on a number of factors, including the prevalence of a drug's use, available alternatives, and the efficacy and safety of specific medications. For instance, limited access to therapies widely used among NF residents could affect the clinical quality of care. Alternatively, if a drug is seldom used because clinically

superior alternatives are available, a plan's coverage limitations may be appropriate.

Policymakers need to monitor closely the quality and appropriateness of prescription drug use among NF residents as the relationship among NFs, LTCPs, and Part D plans evolves. A few independent organizations such as the Pharmacy Quality Alliance are working to develop quality measures specific to long-term care settings. CMS has begun measuring certain aspects of quality for Part D plans, but initially the agency's efforts focused on measures such as call center performance, complaint rates, and generic dispensing rates rather than on measures of drug safety, polypharmacy, and the appropriateness of prescribing.

Concerns about directing residents into specific Part D plans

CMS guidance restricts providers who serve NF residents (the NFs themselves, physicians, and pharmacies) in the information they give residents about particular plans. Providers may give objective information to residents, including how well drug plans cover medications of interest, but they are restricted from directing residents to a smaller number of plans and from distributing information that could be construed as having that aim (CMS 2006c). This guidance was designed to limit conflicts of interest—for example, by keeping NFs from steering residents into plans solely out of concern for the facility's administrative ease or to retain a past working relationship.

At the same time, cognitive impairment among so many NF residents complicates the issue of plan selection. Some stakeholders believe that the marketing guidelines undercut an advisory role that many residents and families want providers to play. Along those lines, the Washington Legal Foundation filed suit against CMS, arguing that the guidelines violate the first amendment rights of NF providers (WLF 2006). Formularies of Part D plans vary a great deal, and CMS's random assignment process may have placed some NF residents in plans that typically do not cover the drugs that residents used (Long Term Care Pharmacy Alliance 2007, OIG 2006).

On the other hand, some NFs strongly support CMS's marketing guidelines because of concerns about undue pressure from large LTCPs to take actions that may not be in either the resident's or a facility's best interest. Not all NFs want such a responsibility—some are reluctant to assume liability for recommending a particular plan. Some NFs turned to outside assistance: Workers from State Health Insurance Assistance Programs (SHIPs) helped residents use CMS's Part D Plan Finder tool at www.medicare.gov to select among plans based on their current mix of prescribed drugs. Although SHIP resources are often limited, this approach is one way to provide residents with unbiased help in choosing a plan.

Stakeholders report that the existence of multiple Part D plans has increased the workload for NFs. One reason is that NFs must now educate residents and family members about their choices of Part D plans. This task was especially burdensome during 2006, the year Part D began, and the challenge associated with such education may diminish. An ongoing challenge is that NFs often have residents enrolled in several different Part D plans, and staff (with the help of their LTCPs) must navigate each plan's utilization management techniques. For example, to meet prior authorization requirements or initiate grievances and appeals procedures, NF staff may need to provide supporting documentation from residents' medical records on the clinical reasons why the prescribing physician prefers a specific drug. This task can be a logistical challenge when the prescribing physician is not on site—in other words, the drug order is written by a physician in a community practice rather than by the facility's staff or medical director. Under these circumstances, NF staff or the LTCP must contact the prescribing physician's office to initiate the process. Although CMS requires plans to accept standardized forms for prior authorization, providers report that some Part D plans continue to require their own forms.

Stakeholders describe this increased burden as sizable, but its costs are difficult to quantify. Interviewees from NFs report that so far they have largely handled higher administrative burden with current staff. However, at least for some NFs, financial constraints kept them from increasing staff levels to address the workload, and staff were reportedly stretched thin.

Concerns about how to manage relations between PDPs and LTCPs

In guidance to plans for 2007, CMS requires LTCPs to begin reporting rebate information to the Part D plans with which they contract and, in turn, to CMS (CMS 2006d). Under current law, Part D plans rather than LTCPs are expected to create and maintain formularies. Yet, in practice, LTCP formularies and consultant pharmacists

still influence NF prescribing practices. Agency officials have voiced concern about continuing rebates directly to LTCPs because, from their point of view, it could lead to higher Medicare program spending. This could occur if an LTCP is steering residents toward higher cost drugs for which they receive higher rebates, particularly if the LTCP's formulary placement is at odds with that of the Part D plan's formulary.

Disclosing rebates could change the way LTCPs do business. Rebate information is highly proprietary, and we do not know the magnitude of those revenues. However, given that LTCPs have the capacity to achieve significant formulary compliance, it is reasonable to assume that rebates have been sizable (Lueck 2006). If manufacturers begin to reduce or eliminate rebates, LTCPs may need to begin charging explicit fees for services such as drug regimen reviews.[15] In turn, this could have implications for other payers such as Medicaid.

CMS's guidance to plan sponsors and LTCPs regarding rebates raises the broader issue of the overall fit between Part D and the nursing home pharmacy sector. A specific question is whether the program's consumer choice approach will lead Part D plans to manage quality and costs well for the long-term care sector, including the potentially higher costs associated with separate rebates to LTCPs.

Ideally, Part D's competitive system should provide the incentive for plans to strike a balance between providing enrollees with access to appropriate and high-quality drug therapies while controlling drug spending. Under the program's approach, competing plans attract enrollees by offering formularies that cover many of the drugs they want at reasonable copayments and an attractive premium. Informed consumers should also look at the quality of plan services and the convenience of their pharmacy networks when selecting a plan. Medicare's payments to plans are based on plan bids and their relative popularity as measured by past enrollment. For dual eligibles who pay no premiums and minimal or no cost sharing, the program maintains competitive pressure by limiting the number of Part D plans that qualify to receive autoassigned enrollees to those with premiums at or below regional premium thresholds.

In the opinion of some stakeholders, several characteristics of NF residents make Part D's approach a questionable fit. About two-thirds of NF residents have cognitive or mental impairments, and some do not have family members or legal representatives to help them choose among plan options or consider alternatives to assigned plans. NF residents who are eligible for full Medicaid benefits pay no cost sharing and thus are not concerned whether they are enrolled in a plan that covers the drugs they currently use on tiers with lower cost sharing. It is also unclear how much attention, on average, Part D plans pay to managing this population. Stakeholder interviews suggest that, while this share varies among plans, NF residents typically make up just 3 percent to 5 percent of total plan enrollment—roughly the same percentage as in the overall Medicare population.

On the other hand, plans may pay more attention to managing this population than enrollment levels might suggest. NF residents have higher average drug spending, and thus Part D plans have more incentive to manage their care. Since the advent of Part D, some plans have made strides in becoming more knowledgeable and attuned to the long-term care setting, both to manage their own risk and to work effectively in meeting the needs of their nursing home enrollees. In addition, CMS adjusts monthly payments to plans for the higher average spending of institutionalized enrollees to provide an incentive for plans to enroll these individuals. Plan representatives generally did not express reluctance to enroll NF residents. For the future, however, there is some uncertainty about the adequacy of payment and risk adjustment as Part D's risk corridors widen and plans bear a greater degree of insurance risk.

Alternative approaches for providing drug benefits to residents

For the future, policymakers may want to consider whether Part D's consumer choice approach is most appropriate for Medicare beneficiaries who reside in nursing homes. Would other approaches better serve this population? When evaluating options, decision makers should consider whether policy alternatives address the following goals:

- less complexity of plan choice for long-term care residents and their legal representatives;
- close attention to the appropriateness of drug therapies provided to each resident to improve patient safety and reduce ADEs;
- timely access to appropriate drug therapies;

- reasonable administrative burden for carrying out requirements for prior authorization, exceptions, grievances, and appeals; and
- incentives for controlling drug spending.

What follows is a discussion of alternative delivery approaches. The Commission does not have recommendations on these issues. How the program evolves for beneficiaries and providers may influence whether these options make sense as alternatives to the existing structure.

Continue with multiple Part D plans

One alternative is to keep today's approach of using multiple PDPs to deliver pharmacy benefits in NFs. Since general enrollment in Part D is concentrated among relatively few plans, the number of plans available could decline. If plans with relatively few enrollees decide to exit the market, enrollment could become even more concentrated and there would likely be fewer plans with premiums at or below regional benchmarks for LISs. CMS has also announced certain policies for 2008 that will reduce the number of plans that qualify for autoassigned enrollees. In its notification of changes in Part D payments for 2008, the agency stated that Medicare will transition to enrollment-weighted averages for calculating monthly plan payments and regional low-income premium subsidy thresholds (CMS 2007c).[16] CMS will also lower its de minimus policy from $2 to $1—the monthly dollar amount by which a plan's premiums may surpass its regional low-income premium threshold before the plan is no longer premium-free to beneficiaries who receive Part D's LIS. Moreover, Part D's risk corridors are scheduled to widen in 2008 and beyond. Widened risk corridors mean that plan sponsors will bear relatively more insurance risk for the drug spending of their enrollees than they do today.

Fewer Part D plans would make choosing a plan less complex for residents and their representatives and would also reduce administrative burden for NFs and LTCPs. PDPs would gain experience at managing pharmacy benefits within long-term care settings and might become more attuned to the needs of this population. (The Commission is also exploring the pros and cons of autoassigning LIS beneficiaries into Part D plans based on the current mix of drugs they use—an approach that could be applied to the long-term care population.)

On the other hand, it is unclear how the relationship between PDPs and LTCPs will evolve and to what extent the incentives of those providers for controlling drug spending will align. Most PDPs are relatively inexperienced at providing benefits in long-term care settings, and plans use LTCPs to deliver benefits to comparatively few enrollees. Given the degree of concentration in the LTCP market, the largest providers retain considerable market power in their negotiations with PDPs.

Given the agency's concerns about ADEs and the overuse of drugs, CMS might want to consider requiring Part D plans to report specific quality data based on drug claims for their institutionalized enrollees. However, when discussing the quality of pharmacy services to NF enrollees, one central issue is the extent to which stand-alone PDPs, which manage only pharmacy benefits, should be held accountable for prescribing behavior. Policymakers may want to share responsibilities for quality reporting between Part D plans, which have more detailed information about individual drug claims, and NFs, which have access to the residents' medical history and may have more influence with providers about their prescribing behavior. Ideally, one would include physicians among the group responsible for such quality reporting as well. Policymakers may want to also ensure that CMS monitors Part D plans for compliance with provisions for patient protection.

Another approach toward improving and monitoring quality for NF residents could involve the medication therapy management programs (MTMPs) of Part D plans. The law requires each plan to administer an MTMP in cooperation with pharmacists and other providers, with the goals of improving therapeutic outcomes for targeted beneficiaries and reducing the risk of ADEs. Part D plans submit proposals to CMS for how their individual MTMP will operate. Current CMS guidance defines targeted beneficiaries as a Part D plan's enrollees who have multiple chronic diseases, are taking multiple Part D drugs, and (for 2007) are likely to incur annual covered drug costs of $4,000 or more. Although many NF residents probably fit these criteria already, policymakers might want to consider requiring Part D plans to enroll all residents in plans' MTMPs. CMS may also need to make MTMPs somewhat more uniform than they are today; for example, not all currently review drug regimens (Touchette et al. 2007). However, a key legal question to investigate before using MTMPs in this manner is whether Part D payments to LTCPs for drug regimen reviews

would duplicate services required under NFs' conditions of participation for Medicaid and whether that would constitute an impermissible double payment.

Hold periodic competitions to select regional PDPs for NFs

Under a different approach, CMS would hold competitions periodically to select a PDP that would become the sole plan for all NF residents within a given PDP region (Frank and Newhouse 2007). This option would reduce complexity for residents, NFs, and LTCPs by virtue of using a single plan rather than multiple plans.

An open question is how well this approach would address CMS's concerns about patient safety, quality, and appropriateness of drug therapies. Arguably, if a PDP's sole focus is to deliver benefits to NF residents, that plan can devote greater attention to concerns about quality and safety. However, to promote quality improvement, policymakers may want to make a portion of payment and future contract awards conditional on attainment of certain performance goals.

Medicare could continue to pay the regional PDP the same way it pays other Part D plans; alternatively, the program could pay on a fee-for-service basis. Under the current approach, Medicare pays plans a monthly amount based on the nationwide average bid to provide basic Part D benefits.[17] This approach means that Part D plans bear some insurance risk for the drug spending of their enrollees, which, in turn, gives plans an incentive to control drug spending. One risk of using a single regional PDP is that only smaller or more specialized organizations may choose to bid for such contracts. Since NF residents tend to use many prescription drugs, smaller sponsoring organizations would probably have a combined pool of Part D enrollees with relatively high drug spending. This could lead to higher premiums for long-term care plans and, since Medicare pays the Part D premiums for many NF residents, potentially higher Medicare program spending. Using a single regional PDP for NFs would avoid any problems stemming from incentives among multiple plans to enroll relatively less costly NF residents or to avoid this population altogether. Paying a regional PDP on a fee-for-service basis would probably address concerns about timely access to residents' medications, but it would not create incentives to control drug spending or to examine patterns of drug use more closely.

If CMS pursued this approach, the agency may want to consider limiting the number of regions in which any one sponsoring organization could operate a long-term care PDP. By limiting sponsors to a few geographic regions, CMS could keep several organizations providing services in this market. A credible threat of losing the next period's regional contract to another sponsor would provide plans with a greater incentive to keep an eye on the cost and quality of their services.

To keep all sponsors of long-term care PDPs interested in this specific market, CMS would need to verify periodically that risk adjusters the agency uses to pay for the higher cost of institutionalized enrollees are accurate. This point may be especially relevant for 2008 and beyond as Part D's risk corridors widen. CMS would also want to consider explicitly requiring MTMPs for these long-term care PDPs as well as public reporting of quality measures.

Reimburse LTCPs directly for delivering Part D benefits

Under a third approach, Medicare could reimburse LTCPs directly for drugs delivered to residents who are Part D enrollees. This option would eliminate complexity for residents because they would no longer need to select a plan. It would also reduce the administrative burden for LTCPs, NFs, and prescribing providers. The incentives for how closely LTCPs monitor drug spending and the safety and appropriateness of drugs dispensed would depend on how policymakers structure reimbursements—on a fee-for-service basis or with risk-based payments.

Paying LTCPs on a fee-for-service basis would establish a system similar to what those providers experienced when Medicaid was the primary payer for the pharmacy benefits of dually eligible NF residents. This approach is also similar to the idea of a "fallback" plan—a provision in current law for situations in which no plan sponsor is willing to bear insurance risk. (To date, CMS has not needed to operationalize the law's fallback provision.) Unless coupled with strong pay-for-performance provisions, fee-for-service payments would provide no incentive to manage residents' drug spending; indeed, the incentive would be to increase utilization.

By comparison, requiring LTCPs to bear some insurance risk would provide strong incentives for cost control and, particularly if coupled with performance measures and formulary reviews, for examining concerns about safety and overuse. Policymakers may want to give LTCPs the

Evaluating Part D

Before the start of Part D, the Commission discussed how policymakers would need to monitor implementation of the new drug benefit to evaluate plan performance and to measure how well the program meets cost, quality, and access objectives (MedPAC 2005). In 2005, MedPAC staff convened a panel of experts to discuss performance measures and to identify ways policymakers could use measures to monitor the Part D program over time. The panelists represented health plans, pharmacy benefit management companies, employers, pharmacies, consumers, quality assurance organizations, and researchers. Panelists discussed several areas of performance that purchasers often use when selecting and monitoring health plans or pharmacy benefit management companies. Table 7-2 lists these areas of performance as well as examples of more specific measures in each area. ■

(continued next page)

same incentives to manage residents' drug use as Part D plans face today: risk-based payments to ensure attention to cost control, coupled with individual reinsurance and risk corridors to mitigate incentives to stint on benefits. This approach would also likely change the relationship between NFs and LTCPs more than it has already changed under Part D. Specifically, NFs would continue to be most concerned with timely access to drug therapies for their residents, while LTCPs would face stronger incentives to consider prescription costs before dispensing.

Requiring LTCPs to bear insurance risk raises practical problems. For example, LTCPs would likely need to partner with insurers to meet state licensing requirements for risk-bearing entities. Pharmacies would need to develop information systems for verifying eligibility, enrolling and disenrolling residents in their plan, bidding, collecting premiums and cost sharing, and adhering to CMS's reporting requirements. Given stronger incentives for controlling drug spending, LTCPs might also apply utilization management tools such as prior authorization to a much greater degree than they do currently as well as administer processes for formulary exceptions, grievances, and appeals. Each of these new functions could raise costs, and it is not clear how well smaller LTCPs could take on these roles and compete with the larger ones.

Directions for future research

The Commission intends to continue monitoring the two topics discussed in this chapter—overlapping coverage of drugs under Part B and Part D and delivery of Part D benefits for residents of long-term care facilities. A unifying theme between the two topics is the need for performance measures to help watch for any problems that arise. For example, if overlapping Medicare drug coverage is leading to problems with beneficiaries' access to needed medications because of prior authorization requirements in certain plans, performance measures that capture wait time until dispensing or timeliness of handling requests for prior authorization presumably would reflect these difficulties. Likewise, monitoring performance measures such as ADEs for enrollees who reside in long-term care facilities might shed light on whether Part D's approach is addressing long-standing concerns about the safety and appropriateness of drug therapies for this population.

CMS has taken initial steps to measure the performance of Part D plans using metrics such as call-center wait times, complaint rates, and generic dispensing rates. However, the agency has considerably more work to do before measuring other important facets of pharmacy benefits (see text box).

The Commission urges CMS to capture more dimensions of Part D plan operations in its performance measures and make those measures available publicly in a timely manner. Part D's approach to delivering drug benefits provides consumers with a broad choice among private plans. However, for that approach to work well, beneficiaries need to be able to distinguish among plans by the characteristics they think are most important. Today, the Medicare Prescription Drug Plan Finder tool available at www.medicare.gov provides considerably more information about plans' premiums, cost-sharing requirements, and formularies than it does about important factors related to plan quality.

TABLE 7–2 Examples of performance measures for evaluating drug benefit management

Measurement area	Example
Cost control	
Plans' drug spending	Average drug spending per member per month (risk-adjusted)
Out-of-pocket drug spending	Average annual out-of-pocket spending on covered drugs (risk-adjusted)
Pharmacy discounts on drugs	Average rate of discount on brand and generic drugs
Pharmacy dispensing fees	Dispensing fees for brand and generic drugs
Manufacturer rebates	Total aggregated rebates as a percent of total drug spending, annually
Drug utilization	Average number of prescriptions per member per year, by therapeutic category
Generic use	Ratio of generic drugs to total drugs that have an available generic
Formulary adherence	Ratio of preferred to nonpreferred brand-name drugs covered
Access and quality assurance	
Pharmacy network	Ratio of preferred network pharmacies to all pharmacies in service area
Enrollee refill adherence	Percentage of members who refill chronic medications
Formulary review process	Average time P&T committee takes for initial review of new drug
Prior authorization and nonformulary exceptions	Average time for plan decision on prior authorization request
Appeals process and rates	Percentage of appeals that are overturned
Point-of-sale electronic messaging to pharmacists	Frequency of updates to clinical safety messaging software
Utilization of drugs contraindicated for the elderly	Percentage of drugs contraindicated for the elderly on prior authorization
Adverse drug interactions, events	Number of adverse drug interactions and/or adverse drug events per 1,000 members
Drug utilization review	Presence of screening to identify drugs filled beyond maximum therapeutic duration
Electronic prescribing use	Percentage of prescriptions submitted through e-prescribing per year
Benefit administration and management	
Claims processing	Percentage of claims processed accurately per year
Eligibility determination	Percentage of claims processed for ineligible individuals per year
Data management for coordination of benefits	Accuracy of benefit-spending calculations
Enrollee satisfaction	
Enrollee survey results	Member satisfaction rates
Call-center availability	Hours per day the call center is open
Call-center response times	Abandonment rates (percentage of time caller hangs up while on hold)
Grievance reporting	Average number of complaints reported per 100 members per year
Plan retention and disenrollment	Percentage of enrollees who voluntarily disenrolled

Note: P&T (pharmacy and therapeutics). The measures included in the second column are examples meant for illustrative purposes. Drug benefit purchasers (e.g., employers) may use many other more detailed measures to assess health plan or pharmacy benefit manager performance. In some cases, results from these measures can be interpreted differently, depending on other plan variables.

The Commission and other stakeholders also need more performance measures to evaluate how well Part D plans are complying with CMS's procedures and guidelines. The agency carried out the provisions of the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 and implemented the Part D program admirably within very tight time constraints. Understandably, much of CMS's attention focused on attracting private plans to this new market, creating bidding processes and payment systems for those plans, and enrolling beneficiaries into the program. However, now that Part D plans are more established, policymakers may want to turn their attention to ensuring that CMS enforces the rules it created for the program, such as making sure that plans keep to the agency's timelines for reviewing requests for prior authorization, exceptions, and appeals. ■

Endnotes

1 Plans use prior authorization for many purposes, such as to prevent the overuse of certain high-cost medications. For additional information see MedPAC's June 2005 report to the Congress (MedPAC 2005).

2 Pharmacists do not bill separately for medication provided to patients in Medicare-covered stays in skilled nursing facilities.

3 Carriers are private organizations that contract with CMS to make coverage and payment decisions for items provided by physicians and suppliers.

4 Ultimately, plans have the final decision over what information to accept for coverage determinations.

5 In long-term care settings, plans must provide a 90-day supply of medication. They also must provide an emergency supply of a new prescription outside the transition policy.

6 Interviewees representing home infusion therapy companies and some specialty pharmacies also said they found it easier to obtain coverage for their patients under Part B. PDPs cannot cover the supplies, equipment, and nursing services necessary to administer some therapies. Under Part B, physicians are not limited by a formulary when they choose a drug for their patient.

7 Definitions of long-term care facilities vary. The MCBS (from which the 5 percent estimate was taken) includes facilities that have three or more long-term care beds and provide either personal care services to residents, continuous supervision of residents, or long-term care services throughout the facility or in a separately identifiable unit. Types of facilities include licensed nursing homes, skilled nursing homes, intermediate care facilities, retirement homes, domiciliary or personal care facilities, distinct long-term care units in a hospital complex, mental health facilities and centers, assisted and foster care homes, and institutions for the developmentally retarded and developmentally disabled.

8 See Chapter 3 of MedPAC's June 2004 report to the Congress for an analysis of the characteristics of all dual eligibles (MedPAC 2004).

9 By contrast, a few states such as New York bundle payment for most drugs with that for daily care. NFs must then reimburse LTCPs for their services. Likewise, Medicare bundles reimbursement for drugs provided during a covered stay in a skilled nursing facility within a broader prospective per diem rate.

10 Some states have collaborative practice agreements that permit the pharmacist to change prescriptions for a predetermined list of drugs. These agreements are between the pharmacist and the physician (Lewin 2004).

11 In 2006, one large LTCP reached a settlement agreement with 42 states and the federal government in a dispute over dosage switches for three drugs. In a separate settlement agreement, the same LTCP agreed to pay the state of Michigan over accusations of Medicaid overbilling. The company admitted no wrongdoing in either settlement (Lueck 2006).

12 The number will likely decline for 2008 because CMS announced changes to payment policy that will reduce the number of plans with premiums at or below regional low-income premium thresholds. See a further discussion of this point on p. 176.

13 To qualify for autoassigned enrollees, Part D plans must have monthly premiums at or below regional threshold amounts. In 2006 and 2007, PDP regions had a median of 13 and 15 plans, respectively, that qualified for autoassigned enrollees.

14 See, for example, a recent survey of long-term care physicians by the American Medical Directors Association (AMDA 2006).

15 One alternative is for LTCPs to negotiate with Part D plans to be paid for drug regimen reviews through each plan's medication therapy management program (MTMP). To date, however, the services provided in MTMPs vary widely and not all provide regimen reviews (Touchette et al. 2007). NFs have a clearer regulatory requirement to review drug regimens of their residents under their conditions of participation for Medicaid than do the MTMPs of Part D plans. One important question is whether drug regimen review services provided under MTMPs would duplicate those reviews required for participation in Medicaid. In turn, this would have implications for whether such arrangements constitute a double payment to the LTCP.

16 See Chapter 4 of MedPAC's March 2007 report to the Congress for a discussion of how enrollment weighting influences Medicare's payments to plans and enrollee premiums in Part D (MedPAC 2007b).

17 Plans also receive federal individual reinsurance subsidies that cover much of the cost of benefits for enrollees above a high threshold of drug spending as well as risk corridor payments that limit each plan's aggregate losses or profits.

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CHAPTER 8

Skilled nursing facilities: The need for reform

CHAPTER 8

Skilled nursing facilities: The need for reform

Chapter summary

This chapter discusses issues related to Medicare's payment system for skilled nursing facilities (SNFs) and the measures used to assess the quality of care provided in them. The first section outlines the research CMS funded to examine ways to improve the accuracy of SNF payments. The current design of the SNF prospective payment system (PPS) results in impaired access for certain beneficiaries who require expensive nontherapy ancillary (NTA) services and encourages providers to furnish therapy even when it is of little or no value. CMS's researchers explored ways to establish and calculate a separate payment for NTA services, to base therapy payments on a patient's predicted need for the service, and to defray some of the costs of treating unusually expensive cases through outlier payments. We conclude that options can be designed that better target payments for NTA services and for stays with unusually high costs. The options vary in their ability to predict cost differences across patients, the resources required for CMS to implement them, the changes required of providers, whether the option makes clinical sense, and the incentives to furnish

In this chapter

inappropriate care. Better data on the use of NTA services during the SNF stay, patient diagnoses, nursing costs, and patient assessment information at admission and discharge would facilitate redesign efforts.

The second section considers why some hospitals continue to operate SNFs, despite their apparent poor financial performance, while other hospitals have closed their units. Many hospitals opened hospital-based SNFs during the 1990s to take advantage of the cost-based payments but began closing them after the PPS was implemented in 1998. We examine the considerable differences between hospital-based and freestanding facilities in their facility and patient characteristics, patterns of care, daily costs, and financial performance. In site visits and interviews, hospital administrators told us their reasons, including nonfinancial factors, for keeping their SNFs open or for closing them. The administrators indicated that they consider how the SNF contributed to the combined financial performance of both the hospital and the SNF. Our analyses found that hospital and SNF revenues together covered the combined direct costs of these patients. In addition, we learned about three distinct models of hospital-based SNFs, with various patient and facility characteristics and financial performances. These models reflect the different roles SNFs play in the overall provision of inpatient and post-acute care.

Refinements to the inpatient hospital PPS and the SNF PPS may help to narrow the differences in financial performance between hospital-based and freestanding SNFs. Adjusting the inpatient PPS for the patient's severity of illness will improve the accuracy of payments for the inpatient portion of the stay. Reforming the SNF PPS to better capture differences in use of NTA services and adopting an outlier policy would also improve the financial situation for hospital-based SNFs.

In our March 2007 report, we noted that two measures of SNF quality—risk-adjusted rates of discharge to the community and avoidable hospital readmissions—indicated that quality had worsened between 2000 and 2004. After adjusting for case-mix differences, factors most strongly associated with the two quality measures included whether the facility was present only

in 2000 (indicating facilities that later closed), geographic region, staffing levels, ownership, and whether the facility was hospital based. Hospital-based facilities, which made up a larger share of facilities in 2000 than in 2004, had higher quality measures and higher staffing levels, while for-profit facilities had worse quality measures. There were also large regional differences, with facilities in the West having better quality measures than facilities in other parts of the country. However, we may not have controlled for all of the factors that contribute to differences in the quality measures among facilities.

SNFs that appeared to provide good quality of care using these two measures appeared to be poor-quality facilities using the publicly reported post-acute measures. This inverse relationship, combined with our previous concerns about the publicly reported measures, leads us to urge CMS to report community discharge rates and rehospitalization rates for Medicare patients and to reconsider our recommendation to change the timing of required assessments so that changes in health status are gathered for all patients. ■

Options for reforming the skilled nursing facility prospective payment system

In July 1998, CMS implemented a per day prospective payment system (PPS) for skilled nursing facilities (SNFs), as required by the Balanced Budget Act of 1997. Shortly thereafter, two concerns were raised about its design. First, the system does not properly distribute payments for nontherapy ancillary (NTA) services such as drugs, intravenous (IV) medications, and respiratory therapy. As a result, some beneficiaries who require those services have difficulty accessing SNF care. Second, the PPS encourages SNFs to furnish therapy services, even those of little or no value. As a result, beneficiaries may receive some therapy that provides no benefit, and the program is purchasing unnecessary care.

In 2000, the Congress directed the Secretary to study different systems for categorizing patients that account for variation in resource use across patients. Some of this research was already under way. Beginning in 1998 and spanning five years, CMS contracted first with Abt Associates and, more recently, with a team of researchers directed by the Urban Institute to evaluate alternative designs. This team included researchers from the University of Colorado at Denver and Health Sciences Center, the University of Michigan, and Harvard University. In the rest of this chapter, we refer to the work this team conducted as "CMS's research." Although CMS refined the SNF PPS in fiscal year 2006, the Commission believes the changes do not correct key problems in the payment system.

This section outlines CMS's research that could form the basis of further SNF reforms, organized by issue: the inaccurate payments for NTA services, the incentive to furnish therapy services, and the lack of an outlier policy to defray the costs of exceptionally high-cost stays. Some options build on the current system's design; others explore alternative patient classification systems to explain cost differences across patients. We summarize the research findings and evaluate the options in terms of their incentives, the ease of implementation for CMS, and the amount of change required of providers. Several options are better able to predict cost differences across patients than the current PPS design but would require additional resources to implement. This tension between improved accuracy and ease of implementation makes it difficult to choose among the options. In addition, some options may create new provider incentives. The reforms should minimize undesirable behavioral responses.

How Medicare pays for SNF care

Medicare covers up to 100 days of SNF care when a beneficiary requires skilled nursing and therapy after a hospitalization of at least 3 days in the preceding month. In 2003, Medicare paid $14.3 billion to SNFs. The average SNF stay is 25 days; stays in hospital-based facilities are typically shorter than those in freestanding facilities (Liu and Black 2003).

SNFs receive a daily rate to cover nursing, ancillary, and capital costs. A base payment rate is adjusted for case mix with the resource utilization group (RUG) classification system.[1] Patients are classified into a RUG based on the number and type of minutes of therapy they use or are expected to use, the need for certain services (e.g., respiratory therapy and specialized feeding), the presence of certain clinical conditions (e.g., pneumonia and dehydration), the ability to perform activities of daily living (e.g., eating and toileting), and, in some cases, the presence of signs of depression. The original PPS had 44 RUGs; currently, the system has 53 groups.

Information used to classify patients is gathered from patient assessments conducted on a set schedule throughout the patient's stay (the first one is conducted on day 5 of the stay). The assessments must be conducted with the Minimum Data Set (MDS). MedPAC previously raised concerns about the timing of the MDS assessments (MedPAC 2006b, 2005b). Many patients are not assessed shortly after admission (only 4 percent of patients are assessed within three days of being admitted to the SNF) and assessments are not conducted at discharge, making it impossible to gauge changes in patient function (MedPAC 2006b). In addition, some of the assessment questions ask about care furnished before the SNF stay.

Each payment has three components: a nursing component to reflect the intensity of nursing care and NTA services that patients are expected to require, a therapy component to reflect the physical and occupational therapy and speech–language pathology services provided or expected to be provided, and an "other" component to cover room and board and other capital-related costs. The nursing and therapy components are case-mix adjusted to reflect the patient's relative resource requirements; the other component is a fixed amount for all patient groups. In 2007, the daily nursing base rate for urban SNFs is $142.04, the therapy base rate is $106.99, and the other component is $72.49. For each day's payment, the three components are summed.

Problems with the SNF PPS

CMS, researchers, and the SNF industry have identified and discussed two key problems with the SNF PPS: (1) patients who need expensive NTA services may have difficulty accessing care, and (2) providers are encouraged to furnish therapy even when the services are of little or no value (MedPAC 2005a).

First, the RUG classification system does not adequately address the variation in providers' costs for NTA services. NTA services make up a sizable share (16 percent on average) of total costs but payments are not higher for patients who use these services (White et al. 2002, GAO 1999). Instead, NTA costs are included in the nursing component and payments are adjusted according to differences in nursing time. Thus, for example, payments are the same for patients with and without respiratory therapy (which includes tracheotomy and ventilator care), as long as nursing costs are the same.

Research indicates that NTA costs are highly variable across stays (White et al. 2002). In addition, CMS found that they vary considerably more than nursing costs—18-fold compared with 2-fold (CMS 2006). CMS has acknowledged that nursing costs are only a modest predictor of the variation in NTA use, explaining less than 10 percent of the variation (CMS 2006). As a result, payments are too low for beneficiaries who need above-average amounts of these services, and patients can experience access problems. The Office of Inspector General (OIG) found that, while access was good (and had improved since 2001) for most beneficiaries, especially those requiring rehabilitation therapies, hospital discharge planners had problems placing patients who needed IV antibiotics, expensive drugs, ventilator care, or dialysis (OIG 2006). These placement problems were consistent with previous findings of OIG studies (OIG 2001, 2000, 1999). Last year during our site visits, hospital and SNF administrators echoed these concerns (MedPAC 2007).

The second key problem with the SNF PPS is that it encourages SNFs to furnish therapy, even when it is of little or no benefit. This is because payment is based on the amount of therapy services a patient receives or is expected to receive, rather than on patient characteristics and care needs. As a result, over time the number of beneficiaries receiving therapy has increased, as has the amount of therapy each beneficiary has received (MedPAC 2007). Evaluating the benefit of this additional therapy is difficult because patients are not routinely assessed at discharge. Further, patients often receive the minimum number of minutes to qualify them for a payment group or do not receive even the minimum, because to qualify for some groups the number of minutes can be estimated (GAO 2002b). These patterns raise questions about the medical appropriateness of some of the therapy furnished. For example, some patients may have received medically unnecessary services that qualified them for a higher payment group, while other patients could have benefited from services they were assessed as needing but did not receive. Although fewer patients receive the minimum qualifying number of minutes now than when the PPS was first implemented, the pattern persists (CMS 2006).

Recent SNF PPS refinements

CMS implemented refinements to the SNF PPS in fiscal year 2006, adding nine groups at the top of the classification hierarchy for patients who qualify for both rehabilitation and extensive services.[2] Early work had found that Medicare beneficiaries who qualified for high therapy and extensive services categories had higher NTA costs (Abt 2000). With the additional groups, the classification better explained NTA cost variations without requiring additional data from the SNF or the prior hospitalization. CMS noted that the refinement represented an incremental improvement and did not add undue complexity (CMS 2005b).

CMS also added an across-the-board increase to the nursing component for all RUGs. CMS stated that the large variability in NTA costs across stays made the adjustments for all RUGs appropriate (CMS 2005a). The Commission disagreed with this conclusion. In a comment letter to CMS when the refinements were proposed, the Commission noted that both changes were inadequate (MedPAC 2005b). Although RUGs were added for patients who typically have above-average NTA costs, NTA payments continue to be tied to a component that is poorly related to the variation in NTA costs. As a result, the expanded set of RUGs only marginally improves the accuracy of payments for patients with high use of NTA services. We also stated that the across-the-board increase was not a good proxy for better targeted payments for NTA costs.

CMS did not adopt any refinements that would dampen the incentives to furnish therapy services of little or no value. In its comment letter to CMS, the Commission stated that the proposed refinements did not correct the incentives of the PPS to provide therapy to maximize

payments (MedPAC 2005b). CMS continues to base a substantial portion of the SNF per diem on the amount of therapy provided rather than on patient characteristics or care needs.

Further SNF reforms

CMS stated that the RUG refinements it adopted represented the "first of an ongoing series of analyses" and that the agency would continue to investigate an outlier program and alternatives to the RUG system (CMS 2005b). The Commission agrees that additional changes are needed. In 2006, MedPAC repeated its recommendation to modify the PPS, noting that CMS's refinements did not address the Commission's longstanding concerns about the payment system (MedPAC 2006b).

In this section, we consider the research CMS conducted that could form the basis of further reforms, taking the current design (the RUG–53) as the starting point. The reform options address:

- the poor targeting of payments for NTA services,
- the incentive to furnish therapy services of little or no benefit, and
- the lack of an outlier policy for exceptionally costly stays.

Several criteria can be used to evaluate each option, including: the ability to explain cost differences across patients, the incentives to furnish inappropriate care, whether the option makes clinical sense, the burden placed on the industry, and the ease of implementation. The redistributive impacts of each option have not been reported and therefore are not included.

CMS's research was generally promising. It found options that could better target payments for NTA services than the current PPS design. Options to predict therapy costs by using patient characteristics had more mixed success, most likely because the current incentives have distorted the use of physical therapy and occupational therapy. While decoupling therapy payments from service provision is attractive, policymakers would need to be careful not to encourage providers to stint on services. Therefore, CMS would have to monitor outcomes for all patients or require that the therapy furnished be within a specified range of the predicted amount. Research also found that an outlier policy is likely to benefit hospital-based SNFs more than freestanding facilities. Each option varies in the changes it would impose on CMS and providers, the ability to predict costs, and the time frames needed to implement them.

Reforms to accurately pay for NTA services

In this set of reforms, CMS would remove the costs of NTA services from the nursing component and use a new component to calculate a separate NTA payment, in addition to the payments established by the other three components (nursing, therapy, and other). CMS's researchers found that two predictive models considerably increased the ability to explain differences in NTA costs across patients: the RUG–58 + service index model (SIM) and the new profiles (NP)–NTA model.[3] Although the researchers considered using hospital diagnosis related groups (DRGs) for explaining differences in NTA costs, preliminary work did not show promise and the idea was set aside. They also explored an outlier policy that would make additional payments for stays with unusually high NTA costs (see outlier discussion on p. 200).

The RUG–58 + Service Index Model

The RUG–58 + SIM starts with the current RUG classification system and improves its explanatory power by adding MDS variables associated with NTA costs. These variables include patient age, use of IV medication or respiratory therapy, the presence of respiratory disease, and absence of infection during the SNF stay. The model also checks to see if IV medications and respiratory therapy were used during the patient's SNF stay, as opposed to during the preceding hospitalization.[4] This check is necessary because the MDS questions about NTA services refer to services patients received in the past 14 days. Depending on when the assessment is conducted, this "look-back period" could include services provided at the hospital (see NTA data discussion on p. 201).

Results: CMS reports that the combined RUG–58 + SIM more accurately predicts NTA costs than the RUG–58 without the SIM (Table 8-1, p. 194). A collapsed version of the RUGs, called the grouped RUG–58 + SIM (in which just the eight broad categories such as rehabilitation, rehabilitation plus extensive services, and special care were used), did almost as well as the RUG–58 + SIM using all the individual RUGs.[5]

CMS's researchers also examined how well the alternatives correctly predicted high-cost cases (those in the top 10 percent of NTA costs). The grouped RUG–58 + SIM

TABLE 8–1

RUG + SIMs are better predictors of 2001 NTA costs than RUG-only models

Model	Percent of NTA cost variation explained	Percent of high-cost cases accurately predicted
RUG–44	6.4%	31%
RUG–58	9.5	38
RUG–58 + SIM	21.9	46
Grouped RUG–58 + SIM	21.2	45

Note: RUG (resource utilization group), SIM (service index model), NTA (nontherapy ancillary [service]). RUG–58 includes some groups that CMS later collapsed into 53 groups because there were few or no patients in them. The grouped RUG–58 + SIM categorizes patients into the eight broad groups used in the RUG system: rehabilitation plus extensive services, rehabilitation, extensive services, special care, clinically complex, impaired cognition, behavior only, and reduced physical function. Percent of high-cost cases accurately predicted is the share of cases in the top 10 percent of NTA costs accurately predicted to be high cost.

Source: Urban Institute 2006a.

outperformed the RUG-only model in accurately predicting cases with high NTA costs (RUG–58 + SIM correctly identified 46 percent, compared with 38 percent for RUG-only).

MedPAC contracted with the Urban Institute to run these models on more recent data. The models had similar results with 2003 data (Urban Institute 2006b). The RUG–58 model did a modestly better job than the RUG–44 model in predicting NTA costs but was no better at accurately predicting high-cost cases. The RUG + SIM had more than double the explanatory power of the RUG–58 without SIM model and was considerably better at accurately predicting high-cost cases.

Evaluation: Although the SIM models add complexity to the RUG model, they double the variation in NTA costs explained. The SIM does not require CMS to collect any new data but it does require CMS to make systems changes to add the NTA component to the payment calculations and the billing and cost reporting systems. CMS would also need to make systems changes to check that use of NTA services occurred during the SNF stay and not during the preceding hospitalization. CMS could modify the MDS to inquire about IV medication and respiratory therapy services furnished during the SNF stay. If the SIM were adopted, CMS would need resources to educate providers about the NTA component and changes to the MDS (if implemented).

Providers would need to learn about the new NTA component and, if the MDS was changed, would need to train assessors about the modifications to the questions. We do not know how long it would take assessors to incorporate the new definitions into practice.

With regard to the service incentives, clinicians might disagree about whether the model creates incentives for providers to furnish IV medications and respiratory therapy (the high-cost NTA services) because service use would raise payments. The model may need to specify which IV medication use and respiratory therapies are considered to ensure that clinically unnecessary services are not furnished to increase payments. For example, paying only for oxygen use related to specific medical conditions could discourage indiscriminate provision of respiratory therapy services.

NP–NTA model

CMS also reported on the ability of an alternative classification system, the NP groupings, to explain differences in NTA costs. This classification system groups patients into clinically meaningful categories—rehabilitation, acute, and chronic—using patient clinical and functional characteristics and hospitalization history from available administrative data (see text box). The NP–NTA model starts with the NP classification system and adds variables that help explain differences in NTA resource use across patients. These factors include:

- demographic information (e.g., age and gender) from the MDS,
- clinical diagnoses gathered from the SNF and qualifying hospital stay,
- service indicators from the SNF (e.g., indications of use of NTA services from MDS and SNF claims) and the qualifying hospital stay (e.g., radiology and drug charges),
- functional status (calculated from the MDS), and
- facility characteristics (e.g., whether the SNF was hospital based).

CMS's researchers explored models to predict drug, respiratory therapy, and other NTA costs—as well as a combined model.

New profiles classification system

Using administrative data, researchers at the University of Colorado at Denver and Health Sciences Center developed the "new profiles" (NP) classification system, which groups skilled nursing facility (SNF) patients into three categories—rehabilitation, acute, and chronic:

- ***Rehabilitation patients*** are admitted primarily for rehabilitation services, such as physical therapy and occupational therapy, and are defined according to their functional status on day 5 of their stay in a SNF (calculated from the Minimum Data Set using the Barthel index).[6] The provision of therapy services is not used to group patients.
- ***Acute patients*** are admitted for skilled nursing care (e.g., wound care or intravenous medications) after an acute medical or surgical event. Diagnosis information from the hospital stay identifies these patients.
- ***Chronic patients*** are admitted for skilled nursing after a hospitalization for a chronic condition or an acute flare-up of an underlying or a chronic disease, such as chronic obstructive pulmonary disease. To distinguish between acute patients and patients with an acute manifestation of a chronic condition, claims data are used to examine the medical history of the patients. Patients with a hospital or SNF stay within the past six months are categorized as chronic.

Starting with this basic classification scheme, CMS's researchers developed separate models to explain variations in nontherapy ancillary and therapy resource use. ■

Results: Researchers found that use of NTA services varied considerably across the three patient groups. Some factors had a large effect on ancillary use for one or two patient groups but not for all three. For example, patients in the acute group who had undergone a solid organ transplant had costs that were $70 a day higher than those for patients without a transplant (Urban Institute 2006a). Other factors were associated with higher NTA costs for all three patient groups but by very different amounts. For example, the use of IV medications increased daily costs by $68 for acute cases but only by $39 for patients in the chronic group (CMS 2006). Tracheotomy care increased daily costs by $36 for chronic patients but only by $15 for rehabilitation patients (Urban Institute 2006a). Given this variation, the researchers developed separate models for each patient group.

The NP–NTA classifications were better at explaining the variation in NTA costs than the RUG–58 groupings. The individual NP–NTA models were best able to explain the variation in the NTA costs of acute patients and least able to explain the variation in NTA costs of chronic patients (Table 8-2, p. 196). A combined model predicting all NTA costs for all patient groups explained 25 percent of the NTA cost variation and accurately predicted 46 percent of the high-cost cases (Urban Institute 2006a). Researchers recommended using these analyses to develop an NTA payment component.

Evaluation: The NP–NTA model starts with a clinically meaningful classification system that considers in broad terms the reason for the SNF stay. It does a better job than the current system of explaining the variation in NTA costs but implementing it would require additional resources. CMS would need to make several changes such as adding the NTA component to the payment calculations, billing, and cost-reporting systems. It would also need to install the NP classification system, calculate Barthel functional status measures for each patient from the five-day MDS assessment, and, like the RUG–58 + SIM, confirm that the use of NTA services occurred during the SNF stay (or modify the MDS to ask about use of NTA services during the SNF stay).

Information about a patient's preceding hospitalization would need to be transferred to the SNF before a provider could know the payment group to which a patient would be assigned. While this information is currently communicated between many hospitals and SNFs as a way to facilitate care coordination, such communication does not always occur. One benefit of this alternative is that all SNFs would receive this information about every

TABLE 8–2

Ability of the NP–NTA model to accurately predict 2001 NTA costs varies by patient group and type of NTA

	Percent of NTA cost variation explained, by patient type			
Type of NTA	**Acute**	**Chronic**	**Rehabilitation**	**All**
Drugs	17%	10%	13%	12%
Respiratory therapy	47	48	45	48
Other NTA	31	15	26	25
All NTAs	25	23	24	25

Note: NP (new profiles), NTA (nontherapy ancillary [service]). Other NTA includes lab tests, basic radiology procedures, and parenteral feeding.

Source: Urban Institute 2006a.

patient, thus facilitating their care planning. CMS could explore the possibility of modifying the common working file (CWF)—a database CMS contractors maintain that includes merged information about beneficiary entitlement, utilization, and payment history—to make hospital utilization information available to SNFs through their fiscal intermediaries. Although the development of a common assessment tool and an electronic health record would facilitate the flow of information between the hospital and the SNF, neither is near implementation.

As with the RUG–58 + SIM, the NP–NTA model could create incentives for providers to furnish IV medications and respiratory therapy because using these services would raise payments. Refinements to the service use categories could reduce these incentives.

Comparing the NTA alternatives

The RUG–58 + SIM and the NP–NTA alternatives are better predictors of NTA costs than the current PPS design. The NP–NTA is the best predictor but more resources would be required to implement it than a RUG–58 + SIM because it uses a different classification system and requires data about the prior hospitalization (Table 8-3). The RUG + SIM option would be easier to implement than the NP–NTA option but its explanatory power is somewhat more limited.

Removing incentives to furnish therapy of little or no value

CMS's researchers explored models to accurately predict therapy costs without including incentives to furnish services. They examined two classification systems to group patients with similar therapy needs—NPs and DRGs—and compared them with the RUG–44 system previously used in the SNF PPS. The alternative classification systems predict therapy care needs using patient characteristics likely to be associated with needing more or less therapy, rather than therapy minutes. CMS could base the therapy portion of the payment on either classification system, replacing the current therapy component. However, because either model would base payments on predicted need, providers would have an incentive to furnish fewer services yet receive the same payment. The potential for underprovision is a particular concern because we do not have good information about how much therapy patients can benefit from or what outcomes they achieve from the therapy they receive. The incentive to stint could be dampened if CMS gathered patient assessment information at discharge and used it to monitor the amount of therapy furnished, compared outcome measures, and implemented pay for performance. Alternatively, CMS could require providers to furnish therapy services within a specified range of the amount predicted.

NP therapy model

The NP therapy model starts with the NP classification system and adds variables that help explain differences in therapy costs across patients. Factors include the functional and cognitive status of the patient gathered from the MDS and information from the prior hospitalization indicating a patient's probable need for therapy services (e.g., diagnosis and previous therapy use). Because the patterns of use for physical therapy (PT) and occupational therapy (OT) are

TABLE 8–3 **Comparison of classification systems to predict NTA costs**

Characteristic	RUG–58 + SIM	NP–NTA
Basic design	• RUGs • SNF service use variables	• New classification system • Patient and service use variables from prior hospital stay and SNF stay
Amount of variation in NTA costs explained	22%	25%
Clinical meaning of the classification system	Slightly more clinically meaningful than RUG-only system because SIM variables point to clinical conditions that lead to higher NTA costs.	Moderate. Three broad groups make clinical sense.
CMS burden	• Requires no new data. • Systems changes to add new component, revise the billing and cost reporting, and verify NTA use during SNF stay (or modify MDS questions). • Educate providers about new NTA component and MDS changes (if made).	• Requires no new data. • Systems changes to add new component, revise the billing and cost reporting, verify NTA use during SNF stay (or modify MDS questions), add new classification system, calculate new functional status scores from MDS data, and merge hospital and SNF stay information. • Educate providers about new NTA component, new classification system, MDS changes (if made), and method of transferring information from hospital.
Provider burden	Educate staff about new NTA component. If MDS is revised, train assessors on revisions.	Educate staff about new NTA component, method of getting information from hospital, and classification system. If MDS is revised, train assessors on revisions.
Incentive to furnish inappropriate NTAs	Possible. Same incentive as NP–NTA.	Possible. Same incentive as RUG–58 + SIM.

Note: NTA (nontherapy ancillary [service]), RUG (resource utilization group), SIM (service index model), NP (new profiles), SNF (skilled nursing facility), MDS (Minimum Data Set).

Source: MedPAC analysis of options outlined in CMS 2006 report to the Congress.

so different from those for speech–language pathology (SLP) services, CMS's researchers examined them separately.

Results: CMS reported mixed success of the NP models in predicting therapy costs compared with the RUG system (Table 8-4, p. 198). Researchers found that the NP model for PT and OT did not predict these therapy costs as well as the RUG–44 model did. This result is not surprising given that the RUG design encourages providing therapy that may be unrelated to the patient's characteristics and care needs. Given the distortions in the amount of therapy currently furnished, it may be difficult to accurately estimate the costs of needed care. The NP model performed better than the RUG–44 model in predicting SLP costs and the NP model was equally proficient at predicting PT and OT costs and SLP costs. In comparison, the RUG–44 model is considerably better at predicting PT and OT costs than at predicting SLP service costs.

Evaluation: The NP therapy models have one clear advantage over the current RUG system. They establish payments on the basis of patient characteristics, not service use. Like the NP–NTA model, the NP therapy model would require CMS to make several systems changes

TABLE 8–4

Ability of NP therapy to accurately predict 2001 therapy costs is mixed

Type of therapy	Percent of therapy cost variation explained: RUG–44	Percent of therapy cost variation explained: NP therapy model	Percent of high-cost cases accurately predicted
Physical and occupational therapy	39%	19%	28%
Speech–language pathology services	11	19	42

Note: NP (new profiles), RUG (resource utilization group). Percent of high-cost cases accurately predicted is the share of cases in the top 10 percent of nontherapy ancillary costs accurately predicted to be high cost.

Source: Urban Institute 2006a.

such as adding a new classification system, replacing the current therapy component, calculating functional status measures from the five-day MDS assessment to classify each patient into an NP patient group, and revising the cost reports and billing. CMS would also need to use information from the prior hospitalization (for which the CWF may be useful) and verify use of NTA services during the SNF stay.

The NP therapy models would also impose changes on providers. Providers would need to learn about the NP classification system and they may be confused by having different classification systems for the therapy and nursing components. Information about a patient's preceding hospitalization would need to be transferred to the SNF before a provider could know the payment group to which a day would be assigned. The CWF and inquiries to the fiscal intermediaries might be a feasible approach for providers to gather this information.

Because payments would be based on predicted need for therapy, providers may underfurnish services. CMS would need to monitor patients' outcomes to ensure that beneficiaries continue to receive the therapy they need. Monitoring service use underscores the need for CMS to require patient assessments at discharge (see discussion on p. 202).

DRG + functional status model

An alternative therapy model starts with the DRG to which the patient was assigned during the prior hospitalization. Because DRGs do not distinguish among patients with different functional dependencies, the researchers also added MDS-based measures of functional and cognitive status to the model.

Results: The DRG + functional status model explained 12.5 percent of the variation in per day therapy costs, suggesting that the model is worse than the current RUG system at predicting PT and OT service costs but slightly better at predicting SLP service costs. The DRG model accurately predicted 24 percent of the high-cost cases (Urban Institute 2006a). It is possible that expanding the factors included in the model, such as specific indicators for clinically complex patients, would increase its explanatory power.

Evaluation: Although this model does not consistently improve on the RUG classification system, it does have two advantages over the RUG system: It does not include incentives to furnish therapy services and, because DRGs have a clinical logic to them, it has considerable clinical appeal. By using hospital diagnoses and functional status measures during the SNF stay, the model uses a fair amount of available clinical information.

This option does not require any new information beyond what SNFs and hospitals currently gather. It does require systems changes to replace the therapy component and revise the billing and cost reporting. It would also need to add a new classification system and merge hospital and SNF stay information. SNF providers, particularly freestanding facilities, are unlikely to have detailed knowledge of the DRG system, so CMS would need to train them. SNFs will also need a way to obtain information about the preceding hospitalization.

Some interest in a DRG-based classification system stems from the lack of reliable diagnosis information for SNF stays. While using hospital diagnosis information is a reasonable way to obtain such information, a better long-term strategy would be to require International Classification of Diseases, Ninth Revision, Clinical Modification (ICD–9–CM) codes on SNF claims (see SNF diagnoses data discussion on p. 201). The claims currently have space for these codes but facilities, particularly freestanding facilities, often do not use them. More accurate SNF coding is likely to increase the explanatory power of any model and would greatly improve our ability to compare the costs, resource use, and outcomes of patients.

TABLE 8–5 **Comparison of classification systems to predict therapy costs**

Characteristic	NP therapy	DRG + functional status
Basic design	• New classification system • Patient and service use variables from prior hospital stay and SNF	• DRG • Functional status measures from SNF
Amount of variation in NTA costs explained	• PT and OT: 19% • SLP: 19%	12.5% for all therapies
Clinical meaning of the classification system	Moderate. Three broad groups make clinical sense.	Considerable.
CMS burden	• Requires no new data. • Systems changes to replace therapy component, add new classification system, calculate new functional status scores from MDS data, merge hospital and SNF stay information, and revise billing and cost reporting. • Educate providers about new component, classification system, and mechanism to get information from hospital.	• Requires no new data. • Systems changes to replace therapy component, add new classification system, merge hospital and SNF stay information, and revise billing and cost reporting. • Educate providers about new component, classification system, and mechanism to get information from hospital.
Provider burden	Training on a new classification system and mechanism for getting information from hospital.	Training on a new classification system and mechanism for getting information from hospital.
Incentive to furnish inappropriate NTAs	None	None

Note: NP (new profiles), DRG (diagnosis related group), NTA (nontherapy ancillary), PT (physical therapy), OT (occupational therapy), SLP (speech–language pathology services), MDS (Minimum Data Set), SNF (skilled nursing facility).

Source: MedPAC analysis of options outlined in CMS 2006 report to the Congress.

Comparing the therapy alternatives

Moving away from basing payments on providing therapy is likely to involve sacrificing explanatory power (for PT and OT services) and will require CMS resources to implement a different therapy component design (Table 8-5). Indeed, it is difficult to predict current therapy costs given the distortions in the payment system. Both alternatives (NP therapy and DRG + functional status) were better than the RUG–44 model at predicting SLP costs. NP therapy models did a better job of predicting the costs of PT and OT combined and SLP services than the DRG + functional status alternative.

Because both models use patient characteristics to predict resource use, they do not include incentives to furnish unneeded therapy services. The DRG + functional status model may have more clinical meaning than the NP therapy model because it uses more information from the preceding hospital stay, but both models have more clinical meaning than the current RUG-based component. A predictive model may encourage facilities to stint on services; therefore, CMS would need ways to ensure that beneficiaries receive the services they need, such as evaluating patient outcomes or requiring that the amount of therapy provided is within a specified range of the predicted amount. Gathering patient assessment

information at admission and discharge is essential to monitoring patient outcomes.

Paying for exceptionally costly care

CMS's researchers also considered outlier payment policies for stays with unusually high total costs or NTA costs. By defraying some of the costs of treating unusually expensive cases, outlier policies protect providers from extreme financial losses. Medicare has outlier policies for most of its PPSs except SNFs. Most other PPSs pay for services on a per stay or per episode basis. By comparison, Medicare pays SNFs on a per diem basis, so payments increase as a patient's stay increases. The SNF payment system thus provides some built-in protection against extreme financial losses for patients with long stays. In addition, the SNF PPS excludes the costs of several high-cost, infrequently provided services (e.g., ambulatory surgery performed in an operating room, chemotherapy agents, and customized prosthetic devices) and pays for them separately under Part B.[7] This policy may help reduce the number of outlier cases that otherwise might occur if the costs of such services were included in the daily rate.

To retain incentives for providers to be efficient, Medicare's outlier payments to providers cover only a portion of costs above a fixed loss amount. Before outlier payments are made, providers incur the costs covered by the PPS payment and the fixed loss amount. Then, outlier payments compensate providers for a portion of the losses beyond the fixed loss. Outlier payments are typically financed by lowering the base rate for all cases. Base rates are reduced by 2 percent to 8 percent in the other PPSs with outlier payments.

Although the SNF PPS is a per diem payment system, outlier policies typically consider a patient's costs during the entire stay. Given the large differences in per day costs between freestanding and hospital-based providers (hospital-based providers have much higher daily costs but comparable per stay costs), an outlier policy that focuses on per stay costs would be more neutral toward facility type than a per day outlier policy. Outlier policies also generally consider the total costs of care and not specific categories of costs. But because NTA costs are a specific concern in the SNF PPS, CMS's researchers investigated separate outlier policies for stays with extremely high total costs as well as outlier policies for stays with extremely high NTA costs.

Results: CMS's researchers found that total and NTA cost outlier policies are likely to have different effects by facility type because the cost distributions differ by facility type. While the median total and NTA costs are relatively similar, the costs at the 99th percentile vary considerably (Table 8-6).

CMS's research found that total cost and NTA cost outlier policies would improve the financial condition for SNFs that are hospital based, government owned, or small facilities as well as those that have a large share of Medicare patients. The estimated impact on freestanding facilities was more variable. The aggregate financial condition of freestanding SNFs remained the same under an NTA cost outlier policy, but it declined under a total cost outlier policy. That is, under a total cost outlier policy, the freestanding facilities would pay more into the outlier pool (in the form of lower base payments) than they would receive in outlier payments (Urban Institute 2006a).

Evaluation: In separate work, the Government Accountability Office found that hospital-based facilities had higher routine costs than freestanding facilities because of differences in case-mix severity, cost inefficiencies, and cost accounting practices (GAO 2002a). Some of these reasons clearly do not warrant higher Medicare payments. However, an outlier policy is a promising avenue to explore as a way to cushion the financial impact of extremely costly care that is beyond the control of the provider. Outlier policies do not require additional data but they would require CMS to make systems changes to calculate payments. An outlier policy could target stays with unusually high total or NTA costs, although outlier policies typically are not used to correct known systematic problems with a classification system. The Commission has previously discussed outlier policies for SNFs and noted that changes to the classification system—rather than an outlier policy—may better address a consistent bias in the PPS, such as the poor targeting of payments for NTA services (MedPAC 2005a). However, an NTA outlier policy would be relatively easy to implement and could be an interim solution until more fundamental reforms are made to the classification system. Such reforms would not eliminate the rationale for an outlier policy—to compensate providers for some of the costs of exceptionally high-cost cases.

CMS plans to continue its investigation of an outlier policy. It will evaluate total cost and NTA cost outlier models in addition to the basic components of an outlier policy—the share of SNF payments set aside for outlier

payments, the fixed loss amount, and the portion of the costs the outlier payment will cover above the fixed loss (CMS 2006).

Better data are needed to develop reform options

The research efforts to develop alternatives to the current SNF PPS underscore several problems with the information collected about SNF patients. Better information—about use of NTA services in SNFs, SNF patients' diagnoses, SNF nursing costs, and patients' functional status at admission and discharge—would help explain differences in resource needs across patients and the relationship between costs and outcomes.

Accurate information about use of NTA services in SNFs

To accurately predict the costs of SNF care, the payment system should closely track the costs of the NTA services that SNF patients need. However, under current assessment requirements, it is difficult to know which NTA services the SNF furnished as opposed to those furnished during the preceding hospital stay. The MDS asks about NTA services received in the past 14 days. At the day 5 assessment, this "look-back period" covers days spent in the hospital; thus, the recorded use of NTA services will include services the hospital provided. CMS's researchers found that the MDS alone is an unreliable indicator of use of NTA services in a SNF. In comparing information from the day 5 assessment and SNF claims, CMS's researchers found that about half the stays indicated IV medication use in the MDS; yet, few had SNF charges for the NTA services. The researchers concluded that the NTA services were most likely furnished during the prior hospital stay.

To correctly identify NTA services furnished while the patient was in the SNF, CMS needs to revise the MDS to ask about services furnished only during the SNF stay. This revision could take the form of additional questions or changes to the definition used in the existing questions. Some providers prefer that questions be added to the MDS because they use the current information for care planning. CMS plans to evaluate potential modifications to the MDS so that only services furnished after admission to the SNF are reported (CMS 2006).

SNF diagnosis information

To correctly classify patients with similar resource needs, CMS needs accurate information about diagnoses and comorbidities. CMS noted that its researchers found incomplete or missing diagnosis information on SNF claims. As proxies, the researchers used diagnoses from the prior hospital stay. Because the SNF stay is a continuation of the hospital stay, for many patients this information will accurately project the care needs during the SNF stay. However, information about some patients' hospital stays (e.g., those whose conditions have changed or those with chronic conditions unrelated to the hospital stay) may not accurately represent their clinical condition in the SNF.

The Commission urges CMS to require that SNFs include accurate and complete diagnosis codes on their claims. Claims have fields for this information but the fields are not required for payment. Even when codes are recorded, it is common for SNFs to use generic codes that do not provide much information. SNFs should be required to use full five-digit ICD–9–CM codes to describe the principal diagnosis and comorbidities of each patient stay. If CMS instructed the fiscal intermediaries to reject claims without this information, providers would quickly supply it. For example, when CMS needed revenue codes from outpatient therapy providers to operationalize the therapy caps, its contractors rejected claims without the revenue codes. Within a year, the vast majority of claims included this information.

Alternatively, the MDS could gather improved diagnosis information. CMS indicated that it will consider including

TABLE 8–6 **Hospital-based SNFs had higher costs per stay than freestanding SNFs**

Type of per stay cost, by SNF type	Median	Percentile 95th	Percentile 99th
Total			
Freestanding	$5,609	$20,913	$29,567
Hospital based	6,272	20,977	36,800
NTA			
Freestanding	735	3,968	8,177
Hospital based	738	4,997	10,800

Note: SNF (skilled nursing facility), NTA (nontherapy ancillary). Costs are adjusted for geographic differences in labor costs.

Source: MedPAC analysis of 2003 SNF stay costs prepared by the Urban Institute.

variables that increase the accuracy of the diagnosis information in developing the next version of the MDS (CMS 2006).

SNF nursing costs

Accurate nursing cost information at the patient level is fundamental to measuring differences in care needs across patients, especially in SNFs where nursing care represents a large portion of total resource use. CMS uses staff time measurement (STM) studies to gather staff time data on individual patients. These STM studies are costly to administer and therefore are undertaken only periodically in a sample of facilities. In 2006, CMS undertook the first STM survey since the PPS was implemented in 1998. CMS will use results from this survey to update the relative weights of the nursing component.

CMS needs a timely and less expensive way to gather patient-level nursing cost data. In 2004, MedPAC recommended that the Secretary direct SNFs to report nursing costs separately from routine costs when completing the SNF Medicare cost reports (MedPAC 2004). It would be useful for these costs to be categorized by type of nurse (RN, licensed practical nurse (LPN), and nurse aide). While not a substitute for patient-level information, this facility-level information would allow us to examine the relationship between staffing, case mix, quality, and costs, especially for facilities that treat a large share of Medicare patients. In these facilities, the nursing costs are likely to be reasonably accurate for beneficiaries. However, for SNFs that treat few Medicare patients, facility-level cost information may not accurately reflect the costs of treating beneficiaries.

SNF patient assessment information at admission and discharge

The lack of information about patients' conditions at admission and discharge hinders CMS's ability to measure patient changes during the SNF stay and to compare patient outcomes across post-acute settings. While CMS requires SNFs to assess patients on day 5 of the SNF stay, there is variation in when these assessments are completed. Only a small share of patients (4 percent) are assessed within three days of being admitted (MedPAC 2006b). As a result, differences in patients' conditions can be the result of actual patient differences or of the timing of the assessment. In addition, CMS does not require SNFs to assess patients at discharge, so we cannot know how patients' conditions changed during their stays. Assessments are required on day 14, but many beneficiaries (45 percent) do not stay that long. In 2005 and 2006, the Commission recommended that CMS collect information about activities of daily living at admission and discharge (MedPAC 2006b, 2005c). CMS is conducting a demonstration on a patient assessment instrument to be administered at hospital discharge and at discharge from post-acute care (PAC) settings, but the findings will not be available until 2011.

Next steps

The payment system requires reforms to accurately pay for SNF services without creating incentives to furnish unnecessary care. Building on CMS's research, options can better target payments for NTA and therapy services and for stays with unusually high costs. Many of the options will require trade-offs between their predictive abilities and the burdens they impose on CMS and providers. The options differ in the time frames needed for implementation. Some options, such as an outlier policy and the NTA option using RUG + SIM, could be implemented in a relatively short time. Other options would require additional resources and time because they would involve modifying the MDS and transferring data between the SNF and the hospital. In the long term, CMS may want to consider developing a payment for an entire PAC episode of care or bundling hospital and SNF payments.

The options also differ in whether they facilitate future comparisons of costs, payments, and outcomes across PAC settings. Some options have an advantage in requiring fewer changes but do not create a foundation for future refinements. For example, options for improving payments for NTA services that build on the RUG classification system will be limited in their ability to improve the accuracy of payments because NTA costs are not closely linked to these patient groups. As we learn how to more accurately predict SNF costs, we can consider how this information can be used in other PAC payment systems. The Commission and CMS have stated their interest in putting PAC on a common metric at some future time. While the development of a payment system to use across all PAC sites is a longer term goal, it is years from implementation. Meanwhile, SNF payments need to be more accurate than they are now, thus warranting interim reforms.

Over the next year, MedPAC plans to further explore alternative ways to reform the PPS. The Commission has contracted with the Urban Institute to improve the NTA and predictive therapy models it developed for CMS and

to consider new ones, such as models that explain per stay costs. A per stay unit of payment would create more incentives for providers to be efficient than a per day unit, but it could encourage providers to stint on services. Given the considerable variation in the SNF population, per day models may be able to explain more of the variation in costs across patients than per stay models. Researchers will refine previously developed per stay models that might represent viable alternatives to a per diem PPS.

In addition to evaluating individual alternatives, we will assess combinations of options. For example, a reform might replace the current therapy component with a predictive one, add a separate payment component for NTA services, and establish an outlier policy. Our intent is to contribute to the development of a PPS that accurately pays for SNF services, including NTA services, while discouraging providers from furnishing therapy services that may be of no value to beneficiaries. In this way, the program will be more likely to purchase services of value while helping to ensure access for all beneficiaries.

Hospital-based SNFs: Analysis from the hospital perspective

Hospital-based SNFs have had much poorer financial performance under Medicare than their freestanding counterparts; in 2005, Medicare margins for hospital-based SNFs were −85 percent compared with a 13 percent margin for freestanding SNFs. Since 1998, one-third of hospital-based SNFs have closed, many as a result of their poor financial condition. These closings raise questions about why some hospitals keep their SNFs open in the face of what appears to be their poor financial performance under Medicare and what factors other than financial performance might play a role in the decisions to retain or close them.

To better understand these issues, the Commission undertook qualitative and quantitative analyses of hospital-based SNFs. We interviewed hospitals that have or recently had hospital-based SNFs to gain insight about why the facilities remained opened or closed. We also conducted detailed analysis of the similarities and differences between hospital-based and freestanding SNFs, including their facility characteristics, the mix of patients they treat, and their patterns of care. In addition, we looked at the profitability of hospital-based SNFs setting aside overhead and capital costs for both the hospital and the SNF stay.

We identified three models of hospital-based SNFs that we further examined to help us understand the variation among them and the roles they play in their hospitals.

From the early 1990s to 1998, the number of hospital-based SNFs increased 62 percent (Figure 8-1, p. 204). After the SNF PPS was implemented in 1998, however, more than one-third of hospital-based SNFs closed. Currently, hospital-based SNFs account for about 8 percent of the facilities offering skilled nursing services and 16 percent of Medicare cases using SNF services after discharge from the hospital.

How do hospital-based and freestanding SNFs differ?

In this section, we look at how select facility and patient characteristics and patterns of care differ between hospital-based and freestanding SNFs. We also examine the large differences in financial performance between the two types of facilities. We find that hospital-based SNFs tend to be smaller and have a higher concentration of Medicare patients. The patients appear similar in many respects, but hospital-based SNFs see a higher proportion of patients with certain conditions, such as hip and knee replacements. We also see differences in patterns of care—the use of other PAC services and the SNF lengths of stay. Hospital-based SNF patients have shorter stays but they use another PAC service more frequently than patients discharged from freestanding facilities.

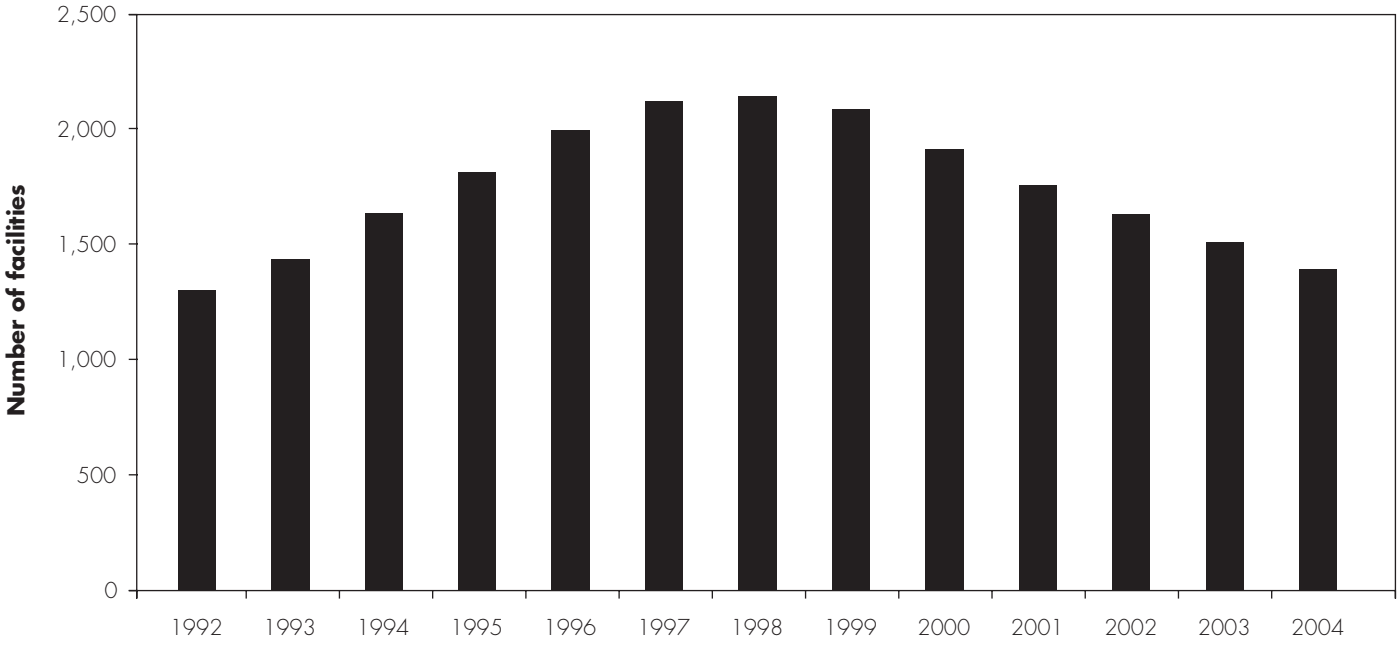
Differences in facility characteristics

Hospital-based and freestanding facilities differ in size and payer mix. Hospital-based SNFs are generally much smaller than their freestanding counterparts. The median hospital-based facility has 26 beds, whereas the median freestanding facility is almost four times as large with 98 beds (Table 8-7, p. 204). Medicare accounts for 73 percent of patients in hospital-based facilities, compared with 12 percent in freestanding facilities. In addition, the average stay in a hospital-based SNF is about half the length of stay in a freestanding SNF.

We also see differences in staffing between the two types of facilities. Hospital-based SNFs have more staff per bed and per patient day than freestanding SNFs. Hospital-based SNFs also have a more skilled staff, with more licensed nursing personnel (RNs and LPNs) per bed than freestanding facilities (Liu and Black 2003). This higher level of staffing contributes to much higher routine costs per day in hospital-based units (see cost discussion,

FIGURE 8–1

The supply of hospital-based skilled nursing facilities increased before and declined after the prospective payment system for skilled nursing facilities was implemented in 1998



Source: MedPAC analysis of CMS Online Survey, Certification, and Reporting system data.

p. 207). Even though we observe rather substantial differences in the characteristics of freestanding and hospital-based SNFs, some hospital-based facilities look much more like freestanding SNFs—with more beds, low Medicare shares, and longer SNF stays (see discussion on how hospital-based SNFs differ, p. 209).

TABLE 8–7

Differences between hospital-based and freestanding SNFs

SNF characteristic	Hospital based	Freestanding
Beds	26	98
Medicare patient share	73%	12%
Average length of stay (in days)	13	27
Staffing per bed (in FTEs)	1.00	0.82

Note: SNF (skilled nursing facility), FTE (full-time equivalent). Median values are shown.

Source: MedPAC analysis of 2004 hospital cost reports and claims files from CMS.

Characteristics of hospital inpatients bound for SNFs

Inpatients who go on to use hospital-based SNFs differ slightly from those who go on to use freestanding SNFs. The average beneficiaries using hospital-based SNFs tend to be slightly younger and have lower severity-of-illness (SOI) scores as measured by all patient refined DRGs for the inpatient care preceding their SNF stay (Table 8-8). Although relative SOI scores are lower, the share of inpatient hospital days spent in an intensive care unit before the SNF stay is higher for patients discharged to hospital-based SNFs.

Hospital-based SNFs also see a higher concentration of certain types of patients. For example, 27 percent of hospital-based SNF patients had been treated in the hospital for musculoskeletal conditions, such as hip and knee replacements, compared with 18 percent of patients in freestanding SNFs. A disproportionate share of inpatients also go to hospital-based SNFs after major

small and large bowel procedures and cellulitus, a serious bacterial infection of the skin.

Inpatients who come from a nursing home tend to be discharged from the hospital back to a freestanding SNF rather than to a hospital-based facility; 2.4 percent of hospital-based SNF patients were nursing home residents, compared with 5.2 percent of patients in freestanding SNFs.[8]

Patterns of care in hospitals with and without SNFs

Although hospitals with and without SNFs discharge patients with similar frequency to PAC, they use different PAC services. Hospitals with a SNF send their patients to SNF care more often than do hospitals without a SNF. In hospitals with SNF units, about 17 percent of patients are discharged to a SNF, compared with about 14 percent of patients in hospitals without a SNF (Table 8-9). However, hospitals with a SNF use their own SNF for only about a third of the patients utilizing SNF services, raising the question of how hospitals decide which patients will use their SNF or another SNF.

Patients in hospitals with SNF services are less likely to use other types of PAC services immediately after discharge than patients discharged from a hospital without a SNF. For example, 9.7 percent of them use home health care compared with 11.2 percent of patients discharged from hospitals without a SNF.

TABLE 8–8 Characteristics of hospital patients who go to SNFs

Patient characteristic	Hospital based	Freestanding
Average age	78.8	80.4
Percent SOI 3 or 4	42.1%	46.6%
Share of inpatient days in ICU	27.0	23.4
Percent in MDC8 (musculoskeletal)	27.0	18.3
Percent nursing home residents	2.4	5.2

Note: SNF (skilled nursing facility), SOI (severity of illness), ICU (intensive care unit), MDC (major diagnostic category). SOI is measured using all patient refined diagnosis related groups from 3M Health Information Systems. Values range from 1 to 4, with 4 being the most severely ill. Values shown are patient-level averages.

Source: MedPAC analysis of 2004 Medicare Provider Analysis and Review file from CMS.

TABLE 8–9 Hospitals with SNFs are more likely to send their patients to SNFs

	Percent of hospital discharges using PAC	
Type of PAC setting	Hospital with SNF	Hospital without SNF
Hospital's own SNF	5.5%	0.0%
Other SNF	11.4	13.9
Home health agency	9.7	11.2
Inpatient rehabilitation facility	3.2	4.0
Long-term care hospital	0.7	0.9
Total	30.6	30.0

Note: SNF (skilled nursing facility), PAC (post-acute care). Values shown are aggregate averages.

Source: MedPAC analysis of 2004 claims files from CMS.

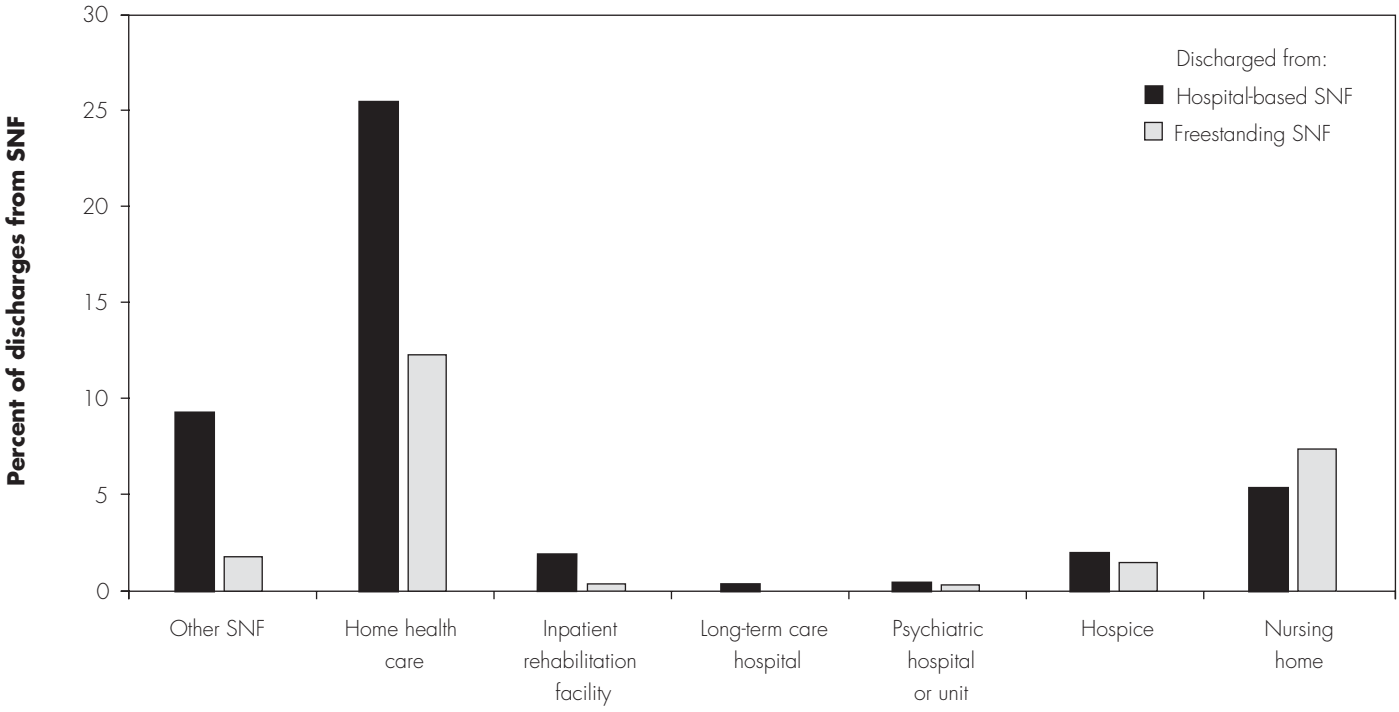
Patterns of care in hospital-based and freestanding SNFs

Among the patients using SNF care, those who use hospital-based SNFs had slightly shorter preceding hospital stays than patients discharged to freestanding SNFs. In some DRGs (major joint procedures, stroke, major small and large bowel procedures), the stays are shorter by a day or more. However, in a few DRGs (miscellaneous digestive disorders, gastrointestinal hemorrhage, and circulatory disorders with acute myocardial infarction and major complications), the average acute inpatient hospital stay is longer for patients discharged to hospital-based SNFs than to freestanding SNFs. For those DRGs, the average SOI score for the patient is also higher, indicating that hospital-based SNFs may be taking the more complicated patients with these conditions.[9]

The average stay in a hospital-based SNF is about half as long as in a freestanding SNF. This difference holds across all inpatient diagnoses with high use of SNFs. The shorter stays in hospital-based SNFs may be related to the types of patients treated but they also may be due to hospital-based SNFs' tendency to discharge patients to another PAC setting. Overall, 9 percent of patients discharged from a hospital-based SNF are discharged to another SNF, compared with fewer than 2 percent of patients using freestanding SNFs (Figure 8-2, p. 206). Hospital-based SNFs are also twice as likely to discharge patients to home

FIGURE 8–2

Percent of SNF cases discharged to different PAC settings



Note: SNF (skilled nursing facility), PAC (post-acute care). Subsequent use of a second PAC provider is determined using matched claims files for the different PAC services. Discharge to a nursing home is based on a different source. It is determined based on the discharge destination field on the claim and not on a matched claim. Total percent of cases discharged from hospital-based SNFs to other PAC settings was 43.8 percent; total percent of cases discharged from freestanding SNFs to other PAC settings was 23.1 percent. Patient-level averages are shown.

Source: MedPAC analysis of 2004 claims files from CMS.

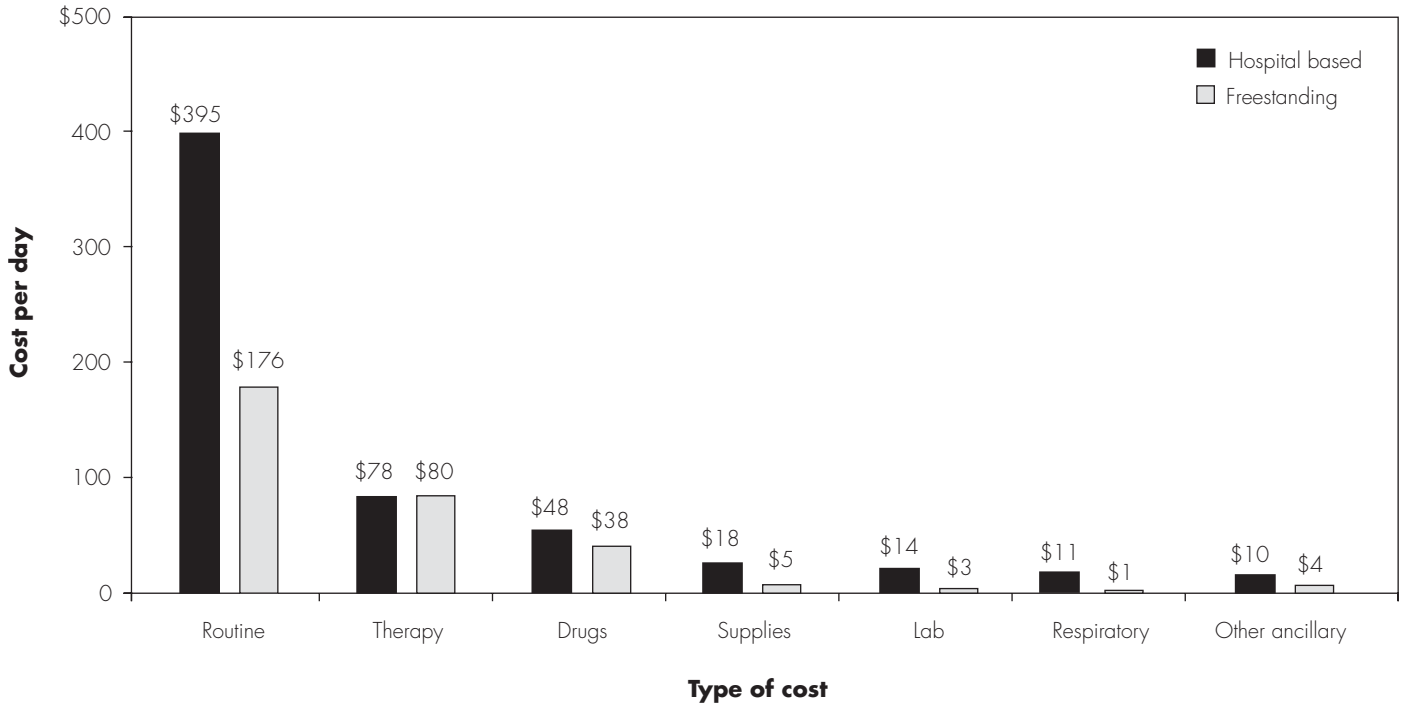
health care, with 25 percent of patients discharged to home health care compared with 12 percent of freestanding discharges. (A large share of these patients (44 percent) use the hospitals' home health agency.) Use of inpatient rehabilitation hospitals and long-term care hospitals is also higher for patients discharged from hospital-based SNFs. Thus, some hospital-based SNFs may focus on providing care at the less intensive end of the hospital stay and the most intensive part of the SNF stay. This is consistent with a smaller proportion of hospital-based SNF patients (41 percent) being discharged directly home without any additional PAC services compared with freestanding SNF patients (48 percent).

A larger proportion of freestanding SNF patients are discharged to a nursing home after their SNF stay (7 percent) compared with 5 percent of hospital-based SNF patients. This could reflect differences in patient selection consistent with other research showing that hospitals tend to not use their hospital-based SNF for patients who are unlikely to be discharged home (Stearns et al. 2006).

Hospital-based and freestanding SNFs also differ in their readmission rates to hospitals. Of the patients discharged to a freestanding SNF, 23 percent are readmitted to the hospital within 30 days of discharge from the hospital, compared with 19 percent of inpatients discharged to a hospital-based SNF.[10] Differences in readmission rates could be due to differences in the complexity and mix of the patients. In addition, hospital-based SNFs have a larger proportion of patients recovering from hip and joint replacements, who have a much lower readmission rate than patients with other conditions frequently treated with SNF care, such as pneumonia and heart failure. Hospital-based SNFs may also have fewer readmissions because of their close proximity to the hospital (which makes physician visits more common) and their higher staffing and greater use of RNs. With its more immediately

FIGURE 8–3

Costs per day are higher in hospital-based SNFs



Note: SNF (skilled nursing facility). Costs include associated overhead and capital expenses. Costs were not standardized for wages or case-mix differences.

Source: Analysis of 2004 Medicare Provider Analysis and Review file and cost report data from CMS.

available resources, the hospital-based SNF may be able to handle more resource-intensive patients, who otherwise might need to be readmitted.

Differences in financial performance

The financial performance of hospital-based and freestanding SNFs measured using Medicare margins is very different. The aggregate Medicare margin for hospital-based facilities was −85 percent in 2005 compared with an aggregate of 13 percent for freestanding facilities. A large difference in margins has persisted since the SNF PPS began. This is somewhat expected because the Congress directed that the payment system not reflect all the higher costs of hospital-based facilities and provided no payment adjustments that would specifically pay hospital-based facilities more than freestanding facilities.[11]

Differences in cost of the SNF day

The differences in margins for SNFs are largely due to differences in per diem costs which, on average, are more than twice as high in hospital-based SNFs as in freestanding SNFs (Figure 8-3). Routine costs (including room and board and nursing costs) are also more than twice as high in hospital-based SNFs as in freestanding facilities.[12] The higher routine costs may be due in part to higher staffing levels and a higher mix of licensed professional nursing staff. Hospital-based SNFs also generally pay their staff the same as equivalent hospital employees. These rates tend to be higher than what freestanding facilities pay in the same market. Moreover, because hospital-based SNFs tend to be smaller, certain administrative costs are spread over fewer patients, which may also raise hospital-based units' costs relative to those of freestanding facilities.

Differences between hospital-based and freestanding SNFs in the cost of ancillaries vary by type of service. The costs of therapy services are similar but the costs for NTA services (drugs, supplies, lab, and respiratory therapy) are considerably higher in hospital-based SNFs than in freestanding facilities. For example, the average drug cost per day in hospital-based SNFs is $48 compared with $38

in freestanding facilities. According to our interviews, hospitals often had difficulty placing patients who required very expensive drugs in freestanding SNFs, especially if they required certain IV medications. This may explain the difference we observe in drug costs between the two types of facilities. We see even larger differences for other NTA services, averaging $53 in hospital-based facilities compared with $13 in freestanding facilities. The higher nontherapy costs may be due to differences in the complexity of some patients. In addition, our interviews with hospital-based SNFs indicated that some physicians tend to treat hospital-based SNF patients as if they are still hospital inpatients, ordering ancillary tests—which are more readily available in this setting.

Why did hospital-based SNFs close?

The high closure rate of hospital-based SNFs raises questions about the reasons for, and the consequences of, hospitals' decisions to close or keep open their SNF units. In 2006, we interviewed officials at 15 acute care hospitals that operated Medicare SNF units in 1998, some of which have since closed (Liu and Jones 2007). We selected a sample of hospitals in several urban and rural geographic areas for this qualitative study. We also interviewed administrators of three freestanding SNFs that are geographically near some of those hospitals.

Hospitals that kept SNF units open noted that the units fostered savings on the acute care side by providing an easily accessible source of PAC, which helped them shorten their inpatient stays and free up acute care beds for other patients. In some areas, hospitals continued to operate their units in part because few PAC alternatives were available locally, particularly for medically complex patients. Other hospitals reported that keeping the SNF open was important to maintain continuity of care or good relationships with physicians in the community or to provide resources for teaching health care professionals.

Hospitals that closed their SNF units mentioned various reasons. Financial losses associated with operating the SNF were cited as a major reason for closing the unit. The need for additional acute beds, or other more profitable uses for the space the SNF unit occupied, was cited frequently as another important reason. Hospitals noted other contributing factors that added to their operating costs, such as burdensome state SNF regulations, particularly the survey and certification process, and difficulties staffing the unit with RNs.

The consequences of SNF closures varied among the hospitals we interviewed. In some cases, especially for metropolitan hospitals, there were so many other local PAC options that closure of hospital-based SNF units did not affect the ability to place patients in PAC after discharge from hospitals. In other areas, however, discharge from hospitals was more problematic because of the limited capacity of alternative PAC providers or the ability or willingness of freestanding SNFs to take certain complex patients. In such situations, some patients had longer acute hospital lengths of stay after the hospital's SNF unit closed.

Regardless of the presence of other PAC options, hospitals told us that some categories of patients were hard to place. Medically complex patients, such as those requiring vacuum-assisted closure care of wounds, ventilator care, or intensive IV antibiotic care, can be hard to place because many freestanding SNFs are not staffed with the requisite RNs or respiratory specialists. Some hospitals reported that placement of such patients could be improved if the SNF PPS were refined to more accurately pay for the care these patients need. Long-term care hospitals accepted some of these difficult cases. Extended stays in acute care inpatient units were another option.

Consequences of SNF operations on hospitals' margins

A hospital's decision to retain or close a SNF was often multifaceted. The large negative SNF margin has to be considered along with the impact of the SNF on the Medicare inpatient margin, the inpatient length of stay, and the potential for freeing up inpatient capacity for additional acute care patients. Medicare inpatient margins were slightly higher in facilities with a hospital-based SNF, −0.4 percent compared with −1.1 percent for hospitals without a SNF in 2005. On average, hospital stays for patients discharged to a hospital-based SNF were a little shorter than for patients discharged to a freestanding facility. The slightly shorter inpatient hospital stays could contribute to the somewhat higher Medicare inpatient margin for hospitals that have SNF units.

The poor financial performance of hospital-based SNFs, however, affects the overall Medicare margin, which reflects the six largest services' lines of business provided to Medicare patients by hospitals plus graduate medical education. In 2005, overall Medicare margins were lower in hospitals with a SNF than in hospitals without one (−3.9 percent compared with −3.0 percent), an indication that the losses from SNF services were bringing down

the overall Medicare margin. However, the approximate 1 percentage point difference in overall margins in 2005 is the smallest difference that has been observed since the SNF PPS was implemented in fiscal year 1998. This may be an indication that hospital-based SNFs have closed in facilities where they had the greatest negative impact on overall Medicare margins.

Costs and profitability of inpatient stays discharged to SNFs

Inpatient hospital costs for beneficiaries who use SNFs are generally much higher than costs for beneficiaries with the same condition who are discharged home with no PAC provider use, reflecting differences in severity not captured under the current inpatient hospital payment system. In 2004, the average payment-to-cost ratio for patients who did not use PAC was 1.13 compared with payment-to-cost ratios less than 0.90 for patients discharged to a SNF. This relationship was fairly consistent across DRGs. Thus, on a fully allocated cost basis (including capital and overhead), the hospital portion of care for inpatients discharged to a SNF was unprofitable. However, on a direct cost basis, with overhead and capital costs removed, the cases were profitable for inpatient care, although the relative profitability varies by DRG. Refinement of the hospital inpatient PPS to more accurately capture differences in inpatient severity should help to narrow or eliminate this difference.

Direct costs and profitability of a hospital and SNF stay combined

Hospital administrators told us that that they looked at the direct costs of the SNF unit operations when viewing a unit's profitability. Hospitals also considered the potential savings they achieved from reducing inpatient length of stay. Because hospitals with SNFs provide both the acute and post-acute care, costs and payments for both sets of services should be considered in evaluating the financial viability of the SNF operations. If Medicare payments cover the combined direct costs of inpatient and SNF care for a patient, then hospitals will have an incentive to provide care to such patients as hospitals are covering the individual expenses those patients incur. On a fully allocated cost basis, the combined Medicare payments for the hospital stay and the SNF stay in 2004 did not cover the cost of care if overhead and capital costs (the fixed costs) were included. However, if we look only at direct costs (excluding overhead and capital) for both the hospital and the SNF stays, we find that Medicare hospital and SNF payments covered slightly more than the direct costs of care. The payment-to-direct-cost ratio for these cases was 1.05. At a minimum, the payment system needs to cover the direct costs of hospital and SNF services combined: The system did so in 2004.[13]

How do hospital-based SNFs differ?

Our interviews with hospital-based SNFs revealed three different models of hospital-based SNF operations:

- *The long-term care model* looks very much like freestanding SNFs: The facilities have a large number of beds and treat a predominantly long-stay nursing home population. These facilities are often located in a separate building from the acute care hospital.
- *The rehabilitation model* concentrates on patients, mostly Medicare beneficiaries, who require large amounts of therapy services, such as patients recovering from joint replacement.
- *The complex medical model* focuses on providing care to medically complex patients who might stay in the hospital a little longer if a SNF unit were not available. These units, sometimes referred to as transitional care units, often act as step-down units, providing just a slightly lower level of nursing intensity than general medical–surgical units in the hospital. In this model, hospitals attempt to shorten the inpatient stay, essentially substituting SNF days for inpatient hospital days. Hospitals benefit because they receive the same inpatient payment (since the hospital is paid on a per discharge basis with the exception of cases that are paid as PAC transfers, which are paid a per diem) and they receive a separate SNF payment that they would not have received had the patient remained in the hospital. In addition, the hospital has freed up the inpatient bed for a new patient.

Using Medicare claims files and Medicare cost reports, we classified hospital-based SNFs into one of these three models.[14] We found that about 16 percent of hospital-based SNFs fit into the long-term care model, 47 percent fit into the rehabilitation model, and 17 percent fit into the complex medical model. The other 20 percent of hospital-based SNFs did not fit neatly into one of these three models.[15] These distinct models have different facility characteristics that may shed light on differences in Medicare financial performance of freestanding and hospital-based facilities.

TABLE 8–10 **Characteristics of freestanding SNFs and different hospital-based SNF models**

Characteristic	Freestanding	Hospital-based SNF model		
		Long-term care*	Rehabilitation	Complex medical
Number of facilities	13,129	183	537	197
Share of hospital-based SNFs**	N/A	16%	47%	17%
Beds	98	80	24	20
SNF LOS (in days)	26.9	26.5	12.8	10.7
Staff per bed (in FTEs)	0.82	0.83	1.03	1.22
Medicare share	12%	9%	79%	83%
MDC8 (musculoskeletal) case share	15	17	32	22
Percent ICU days	13	13	15	32
Percent SOI 3 or 4	45	47	39	45
Percent of cases:				
Discharged to another SNF	1	0	7	14
Discharged to home health care	6	7	23	27

Note: SNF (skilled nursing facility), N/A (not applicable), LOS (length of stay), FTE (full-time equivalent), MDC (major diagnostic category), ICU (intensive care unit), SOI (severity of illness). Long-term care SNFs treat predominantly long-stay nursing home patients. Rehabilitation SNFs treat predominantly Medicare patients requiring rehabilitation services. Complex medical SNFs treat predominantly patients who are medically complex. SOI is measured using all patient refined diagnosis related groups from 3M Health Information Systems, with values ranging from 1 to 4 (4 being the most severely ill). Table shows median values.
*23 percent of these facilities are in New York.
**20 percent of hospital-based SNFs did not fit neatly into one of these three models.

Source: Analysis of 2004 Medicare Provider Analysis and Review file and cost report data from CMS.

Patient and facility characteristics

Across most characteristics, the long-term care model of hospital-based SNFs is similar to freestanding SNFs (Table 8-10). They are larger, have longer SNF stays, and have lower staffing ratios than other hospital-based SNFs. Medicare also accounts for a small share of these facilities' patient days. In looking at patient characteristics, we see other similarities to freestanding SNFs, including the small share of SNF admissions that are for musculoskeletal conditions (MDC8), which includes hip and knee replacements. The portion of SNF patients' preceding inpatient hospital days that were spent in the intensive care unit is also similar, as is the small percentage of patients discharged to a second SNF. This model is the predominant model of hospital-based SNFs in New York state, where 23 percent of these facilities are found. They also make up a large share of the hospital-based SNFs in Minnesota. Despite the concentration in some states, the long-term care model can be found across the country in 34 states.

By comparison, hospital-based SNFs following the rehabilitation model are much smaller than hospital-based SNFs following the long-term care model, with shorter SNF stays and a higher level of staffing. These facilities concentrate more on patients who will require therapy services, as 32 percent of their patients have musculoskeletal conditions. Compared with freestanding SNFs and the long-term care model of hospital-based SNFs, a larger share of patients are discharged to another SNF or to home health care.

Compared with other hospital-based SNFs, the complex medical model SNFs have the shortest SNF stays, the highest SNF staffing, and a very high share of preceding hospital inpatient days spent in the intensive care unit. They also have the largest proportion of patients continuing SNF care in another facility and the largest share using home health care after discharge. This use of SNF and home health care is very similar to that found among patients discharged from hospitals without a SNF.

TABLE 8–11 **Hospital-based SNFs have differing financial performance**

Characteristic	SNF model		
	Long-term care	Rehabilitation	Complex medical
SNF payment per day	$322	$314	$319
Cost per day	367	594	686
Routine cost	276	413	472
Ancillary cost	91	181	214
Direct cost per day	250	397	461
Ratio of hospital and SNF payments to direct costs of hospital and SNF	1.25	1.04	1.03

Note: SNF (skilled nursing facility). Direct costs include all patient care costs less overhead and capital expenses. Costs were not standardized for differences in wages or case mix. Values shown are aggregate averages.

Source: Preliminary analysis of 2004 Medicare Provider Analysis and Review file and cost report data from CMS.

Differences in profitability of different types of hospital-based SNFs

There are considerable differences in costs among these three models of hospital-based SNFs (Table 8-11). The long-term care model has the lowest per diem costs, while the complex medical model has the highest. These differences can also be observed for routine and ancillary costs. The daily costs for the complex medical model patients are 86 percent higher than for the patients in the long-term care model. Given the greater use of intensive care units by the complex model patients during their preceding hospital stays, we might expect a lower payment-to-cost ratio for their hospital stays, but we actually see a slightly higher ratio (0.89 on average) than that for inpatients who go on to use other types of hospital-based SNFs (0.87) (data not shown). This indicates that hospitals may use these units to substitute for the later days of an inpatient stay.

To evaluate the combined financial performance of hospitals with their hospital-based SNFs, we considered the costs and payments of both the hospital and SNF stays. Our analysis shows that in 2004 the ratio of payments to direct costs for hospital and SNF services combined for the long-term care model SNF patients was 1.25. Thus, patients in these facilities contributed to the bottom line operations of the hospital by more than covering their direct costs. For hospitals with rehabilitation and complex models of hospital-based SNFs, the combined payment-to-direct-cost ratios for the hospital and SNF stays were both a little above 1.0, indicating that—on average—hospitals received payments that covered the direct costs of their patients.

Conclusion

To evaluate the performance of hospital-based SNFs, we need to consider both the hospital and the SNF portions of care. We found that hospitals with hospital-based SNFs covered the direct costs (costs less overhead and capital) of inpatient acute care and SNF care. We also need to consider the cost of an efficient provider: Despite the higher costs in hospital-based SNFs compared with freestanding facilities, it is not clear that the Medicare program should recognize their higher costs. Yet, we report in the next section that hospital-based SNFs appear to provide higher quality of care than freestanding facilities, though factors unaccounted for in the analysis may explain some of these differences. The provision of better care, not facility type, using these or other measures would warrant higher payments if Medicare paid on the basis of performance.

The Commission believes the best way to address the financial circumstances of hospital-based SNFs is to reform the applicable payment systems so that they more accurately account for cost differences attributable to patient characteristics rather than differences attributable to facility characteristics. Adjusting the inpatient hospital PPS for severity, as the Commission has recommended,

Methodology used to examine factors associated with changes in outcome measures

Researchers from the University of Colorado at Denver and Health Sciences Center linked data on Medicare-covered stays in skilled nursing facilities (SNFs), the preceding qualifying hospitalization, patient assessment information from the Minimum Data Set (MDS), facility characteristics, and staffing from the Online Survey Certification and Reporting System and community factors from the Area Resource File for 2000–2004. Data on the MDS-based post-acute care measures were added from the CMS database. Resident characteristics were aggregated to the facility level and the community discharge and rehospitalization outcome measures were risk-adjusted using measures of functional and cognitive performance, presence of advance directives, comorbidities, length of stay of the qualifying hospitalization, and other patient assessment information. To ensure that the quality measures were stable, only facilities with more than 25 discharges (excluding deaths) were included in the analysis (Donelan-McCall et al. 2006). About 13,000 facilities were included from each year (more than 80 percent of the industry and 99 percent of the SNF stays). For the subset of facilities present each year, differences in outcomes over time were calculated.

Community discharge was defined as a discharge to the community or to assisted living facility within 30 days and excluded patients who were rehospitalized (they were included in the rehospitalization measure). Rehospitalizations included direct hospital transfers within 100 days to an acute care hospital that were considered potentially avoidable—that is, due to heart failure, electrolyte imbalance, respiratory infection, sepsis, or urinary tract infection.

Researchers conducted descriptive and multivariate analyses to examine the case mix, facility, and community characteristics associated with the outcomes and the extent to which these factors explained temporal changes in the outcomes. For each outcome measure, regression models were estimated that included year indicators and measures of case mix, facility, and community characteristics. ■

would likely result in an increase in Medicare inpatient payments for patients who subsequently use hospital-based SNFs. Moreover, refinements to the SNF PPS discussed in the first section of this chapter that better recognize differences in use of NTA services should also result in more accurate payments for SNF care, regardless of the type of facility.

Understanding the declines in SNF quality

In addition to focusing on payment issues, the Commission has examined the quality of care SNFs furnish and the measures used to gauge it. In the March 2007 report, we noted that two risk-adjusted quality measures for Medicare SNFs—facility rates of discharge to the community and potentially avoidable hospital readmissions—indicated that quality worsened between 2000 and 2004 (MedPAC 2007). To better understand these trends, we contracted with researchers from the University of Colorado at Denver and Health Sciences Center to identify the factors associated with the changes over time, such as differences in case mix, facility mix, staffing, and regional practice patterns. We also examined the relationship between these two measures and the CMS publicly reported Nursing Home Compare short-stay quality measures.

Measures of SNF quality of care

To assess the quality of care furnished in SNFs, the Commission has examined facility rates of community discharge and potentially avoidable rehospitalizations for any of five conditions (congestive heart failure, respiratory infection, urinary tract infection, sepsis, and electrolyte imbalance). We use these measures for two reasons. First, they relate to major goals of SNF care. Regaining physical function and being discharged to the community are the goals for many SNF patients recovering from acute events, surgery, or debilitating medical problems. About 80 percent of SNF patients received rehabilitation services.

Stabilizing patients after acute care and avoiding costly and harmful hospital readmissions are goals for many SNFs. Second, the measures overcome the data limitations of the publicly reported Nursing Home Compare PAC measures (facility rates of delirium, pain, and pressure ulcers for short-stay patients), including the timing of patient assessments, sample bias, and questionable validity (Donelan-McCall et al. 2006; MedPAC 2006b, 2005b; Abt 2005). In this work, we report the results for community discharge within 30 days of admission to the SNF and rehospitalizations within 100 days—the two measures that changed the most over time. The text box describes the methodology used to examine the factors associated with changes in the outcome measures.

Factors associated with community discharge and potentially avoidable rehospitalization rates

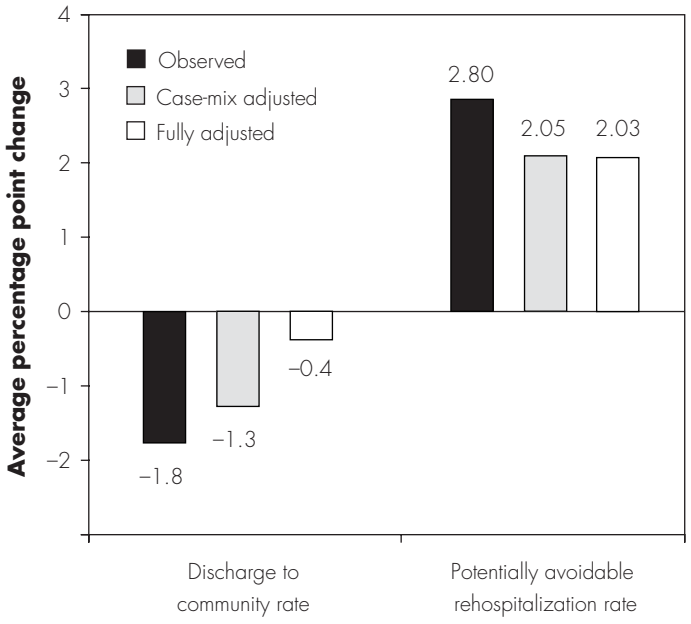
Two outcome measures—observed rates (unadjusted for differences in case mix) of discharges to the community within 30 days and hospital readmissions within 100 days of the SNF admission—got worse between 2000 and 2004. At the facility level, the average decline in the community discharge rates was 1.8 percentage points (from 23.7 percent in 2000 to 21.0 percent in 2004) and the rate of potentially avoidable rehospitalizations increased 2.8 percentage points (from 14.7 percent in 2000 to 17.5 percent in 2004).[16] The observed rates varied considerably by facility characteristic, especially for community discharge rates. Most rehospitalizations (85 percent) occurred at least 3 days after SNF admission, suggesting that they were not attributable to admitting SNF patients who were too unstable to be discharged from the hospital.

Controlling for differences in case mix, facility characteristics, and other factors reduced—but did not eliminate—the differences in the quality measures between 2000 and 2004 (Figure 8-4).[17] Adjusting for case mix eliminated about one-third of the change in rates over the period. After accounting for many additional differences—including staffing levels, length of stay for the qualifying hospital stay, SNF location, facility type, and market characteristics—the quality measures, particularly the average rehospitalization rate, still declined. Unmeasured case-mix changes could possibly explain some of the differences. For example, the availability of patients' social support could influence a facility's ability to discharge them to the community.

Key factors associated with community discharge and rehospitalization rates included the mix of facilities present only in 2000 (specifically, hospital-based facilities that closed after 2000), SNF location, staffing levels, whether the SNF was hospital based, and ownership (Table 8-12, p. 214). On average, facilities present only in 2000 had community discharge rates 17.5 percent higher and rehospitalization rates 4.0 percent lower than facilities present in both 2000 and 2004 or facilities present only in 2004. The impact of higher staffing ratios, particularly for RNs and total licensed nurses, was also large. There were significant differences in community discharge and potentially avoidable rehospitalization rates across the regions. Facilities in the Northeast, Midwest, and South had lower community discharge rates and higher potentially avoidable rehospitalization rates than facilities in the West. Hospital-based SNFs had much better quality measures (higher community discharge rates and lower potentially avoidable rehospitalization rates) than freestanding facilities, while for-profit SNFs had worse

FIGURE 8–4

After adjusting for case mix and other factors, SNF quality measures declined between 2000 and 2004



Note: SNF (skilled nursing facility). Table shows mean facility rates. Community discharges occurred within 30 days of the SNF admission. Potentially avoidable rehospitalizations include hospitalizations within 100 days to an acute care hospital for heart failure, electrolyte imbalance, respiratory infection, sepsis, and urinary tract infection. Fully adjusted includes adjustments for differences in case mix, staffing levels, length of the qualifying hospital stay, SNF location, facility type, and market characteristics.

Source: Kramer et al. 2007.

TABLE 8–12 **Facilities with certain characteristics had higher or lower SNF quality measures**

Characteristic (facility average)	Change in: Discharge to community rate	Change in: Potentially avoidable rehospitalization rate
SNF present only in 2000 (compared with present only in 2004 and present in 2000 and 2004)	17.5%	–4.0%
Each additional hour per patient day		
Registered nurse	8.0	–1.9
Licensed nurse	5.0	–1.2
Certified nurse aide	1.6	–0.4
SNF location (compared with West)		
Northeast	–5.3	2.8
Midwest	–7.5	2.3
South	–4.3	1.9
Hospital based (compared with freestanding)	19.0	–5.7
For profit (compared with nonprofit and government)	–3.6	2.3
Average acute hospital length of stay of preceding hospitalization	0.0	0.0

Note: SNF (skilled nursing facility). Rates are adjusted for case mix, time, and presence in 2000 only and 2004 only. Community discharges occurred within 30 days of the SNF admission. Potentially avoidable rehospitalizations include hospitalizations within 100 days to an acute care hospital for heart failure, electrolyte imbalance, respiratory infection, sepsis, and urinary tract infection.

Source: Kramer et al. 2007.

quality measures (lower community discharge rates and higher potentially avoidable rehospitalization rates) than nonprofit facilities. The length of the preceding hospital stay was not a factor in predicting either rate. However, as we discuss later, we may not have controlled for all of the factors that contributed to differences between facilities.

Facilities with the largest observed changes in the two quality measures had the greatest changes in the severity of the cases they admitted. SNFs with the largest declines in community discharge rates treated patients with worse functional status; fewer rehabilitation patients; and more patients with dementia, genitourinary disease, and do-not-resuscitate orders than other facilities. SNFs with the largest increases in potentially avoidable rehospitalizations treated patients with worse functional status and more patients with catheters, pressure ulcers, genitourinary disease, respiratory disease, or musculoskeletal disease than other facilities. For example, an increase of 10 points in the average functional status score increased the community discharge rate by 2.5 percent and decreased the rehospitalization rate by 1 percent. Researchers adjusted for these case-mix changes in their multivariate analyses.

Mix of facilities contributed to declines in the two quality measures

Hospital-based facilities made up slightly more than 13 percent of SNFs in 2000 but only 9 percent in 2004. This is because 50 percent of the facilities that were in business in 2000 and no longer in business by 2004 were hospital based, whereas only 5 percent of the new facilities in 2004 were hospital based. Because freestanding facilities treated more complex patients (reporting greater complexity for 16 of the 22 case-mix measures), some of the decline in the two observed quality measures reflects a shift in the mix of facilities. However, after adjusting for case-mix

differences, hospital-based facilities still had higher risk-adjusted community discharge rates (19 percent higher) and lower risk-adjusted rehospitalization rates (5.7 percent lower) than freestanding facilities. With the closing of many hospital-based SNFs during the study period, the mix of facilities that reported only in 2000 had higher average community discharge rates and lower average rehospitalization rates than the SNFs that reported in both periods or only in 2004.

Although the researchers controlled for many case-mix factors, there still could be unmeasured selection differences between hospital-based and freestanding facilities, such as the availability of community support. In addition, as discussed earlier (p. 205), we found that patients treated in hospital-based SNFs were more likely to use other PAC services, including inpatient rehabilitation facilities, long-term care hospitals, and home health care.

Staffing levels explained some of the declines in the two quality measures

After controlling for differences in case mix, one additional hour of RN time per resident day was associated with an 8 percent increase in the community discharge rate and a 1.9 percent decrease in the rehospitalization rate. Different staffing levels also partly explained some of the differences in the rates between hospital-based and freestanding facilities. Hospital-based facilities had much higher staffing levels than freestanding facilities—five times the RN hours per resident day and more than twice the licensed nurse hours per resident day—even though they treat a less complex mix of patients.[18] Facilities that were present only in 2000 had four times more RN hours per resident day and two times more licensed nurse hours per resident day relative to facilities that were new in 2004, and their closing contributed to the declines in the two quality measures in 2004.

Other factors may help explain differences in quality

Other factors may help explain the differences across facilities and over the study period. These unaccounted factors may include unmeasured differences in staffing (e.g., staff turnover and experience) and case mix, the availability of community support, market characteristics (e.g., the availability of inpatient rehabilitation facilities and long-term care hospitals), and facility practice patterns, such as the frequency of physician visits.

Relationships between different quality measures

In general, facilities that had good community discharge scores (where higher rates reflect better quality) also had good rehospitalization scores (where lower rates reflect better quality). In 2004, 50 percent of facilities with the highest community discharge rates (the top 25 percent) also had the lowest potentially avoidable rehospitalization rates (the bottom 25 percent). Facilities that performed poorly on one quality measure generally also performed poorly on the other—43 percent of facilities with the highest rehospitalization rates also had the lowest community discharge rates.

Quality based on the risk-adjusted rates of community discharge and rehospitalization was inversely related to quality for the same facilities based on CMS's publicly reported post-acute quality measures (rates of delirium, pain, and pressure sores for short-stay patients measured on day 14 of their stay). That is, SNFs that appeared to provide good quality of care using community discharge and rehospitalization rates appeared to provide poor quality using CMS's measures. One possible explanation of the inverse relationship is that the indicators measure patients at different points in time and, as a result, can include different mixes of patients. Almost half the SNF admissions were not present on day 14 of their stays (because they were discharged, they were readmitted to a hospital, or they died) and are not included in the publicly reported measures but are counted in the community discharge and rehospitalization rates. As a result, for example, facilities with high community discharge rates (indicating good quality) may discharge their healthiest patients, leaving the sickest patients to be included in the publicly reported quality measures.

The inverse relationship between quality based on the publicly reported measures and quality based on community discharge and avoidable rehospitalization rates is of concern. We previously reported on the shortcomings of the publicly reported measures, including that they do not reflect the goals of most SNF patients and data accuracy problems (MedPAC 2006b, 2005b). In addition, the timing of the patient assessments may not accurately capture changes in patients' conditions. Although assessments are required at admission, there is some flexibility in when the assessments are conducted; as a result, they are completed within three days of admission for only 4 percent of patients, which may understate the improvements patients achieve during their stay (MedPAC

2006b). Because assessments are not required at discharge, the publicly reported measures capture information about only those patients with stays of at least 14 days, which may penalize SNFs that treat patients with short stays, discharge their healthiest patients, or elect to treat their sickest patients rather than send them to the hospital. We previously recommended that CMS gather assessment information at patient discharge.

Other problems with the publicly reported information center on the measures. While pain is an important dimension to capture, SNF quality experts told us that the current measure is too narrow and confusing (MedPAC 2006b). For example, assessors may differ in how to code a patient with considerable pain that was successfully managed. Because pressure ulcers take time to develop, experts thought that process measures (e.g., whether a facility follows well-established guidelines to prevent, identify, and treat the sores) would be valuable measures. The delirium measure is neither specific to delirium nor sensitive relative to reported literature on rates of delirium.

Conclusions

The declines in the two quality measures—the community discharge rates and potentially avoidable rehospitalization rates—are of concern to the Commission and we will continue to monitor them. In light of the extensive problems of the publicly reported measures and the fact that they do not reflect the goals for most SNF patients, the Commission urges CMS to consider adding the community discharge and rehospitalization measures to the publicly reported measures. We also ask that it reconsider our previous recommendation to gather patient assessment information at admission and discharge so that changes in health status are known for all patients. ■

Endnotes

1 Urban and rural SNFs have separate base rates. The base rates are adjusted for differences in labor costs. For a complete description of the SNF PPS, see MedPAC's Payment Basics series (MedPAC 2006a).

2 In work for CMS, the researchers evaluated a 58-group version of the RUG classification system. In the refinements it adopted in fiscal year 2006, CMS collapsed some of the new groups because there were no patients in them, resulting in nine new groups.

3 The researchers did not evaluate a 53-group version of the RUGs. Conversations with researchers at the Urban Institute indicate they do not think the results would vary significantly from the RUG–58 results included in the CMS report.

4 The check includes matching use of NTA services reported in the MDS with use of NTA services reported in the SNF claims.

5 The eight groups are rehabilitation plus extensive services, rehabilitation, extensive services, special care, clinically complex, impaired cognition, behavior only, and reduced physical function.

6 The Barthel index is a measure of a patient's independence. It scores a patient's time and assistance needed to perform activities of daily living (Mahoney and Barthel 1965).

7 The costs of certain services provided during a stay are paid for separately under Part B. Excluded services include certain chemotherapy and dialysis-related items, cardiac catheterizations, computed tomography scans, MRIs, ambulatory surgery that requires an operating room, radiation therapy, angiography, lymphatic and venous procedures, emergency services, radioisotope services, customized prosthetic devices, and ambulance transportation for dialysis.

8 These results are based on an indicator on the hospital claim file, which shows where the patient came from before the hospital stay.

9 In looking at the top 20 DRGs discharged to hospital-based SNFs, this occurs for esophagitis, gastroenteritis, and miscellaneous digestive disorders (DRG 182); gastrointestinal hemorrhage (DRG 174); and circulatory disorders with acute myocardial infarction and major complications (DRG 121).

10 Although we report differences in 30-day readmission rates, the actual difference in discharge from the SNF back to the hospital is bigger, in large part because of differences in the length of the SNF stay; 24 percent of freestanding SNF patients are discharged from the SNF directly to the hospital compared with 12 percent of patients discharged from hospital-based SNFs.

11 Because of policymakers' concerns, the calculation of the PPS base rates explicitly did not recognize the full amount of the higher costs of hospital-based SNFs. The base rates for the SNF PPS were set at a weighted average of the freestanding SNF average cost plus 50 percent of the difference between the freestanding average and a weighted average of all facilities' (freestanding and hospital-based) costs. In addition, the base rate did not include the costs of SNFs that were exempt from Medicare cost limits.

12 These costs include associated overhead and capital costs.

13 This is likely a lower bound estimate for the relationship, as our measure of direct costs is based on the average cost of providing variable cost services such as nursing, food, tests, drugs, and supplies. However, the additional cost the hospital must incur is likely less than the average cost of providing many of the services the patient requires.

14 We did this by developing three composite scores for each facility as to how well they fit into each of the three hospital-based SNF models. The composites were based on a number of factors that help to differentiate the different types of hospital-based SNFs, such as SNF length of stay and inpatient use of the intensive care unit. Facilities were identified as fitting into a particular model based on which one produced the highest composite score.

15 We found that 8 percent appear to be a mixture between the rehabilitation model and the complex medical model and 11 percent appear to be similar to the long-term care model, except the Medicare patients tend to have shorter SNF stays.

16 In aggregate, unadjusted rates of discharges to the community declined 5.1 percentage points, from 34.4 per 100 residents in 2000 to 29.2 per 100 residents in 2004, indicating that facilities treating the most SNF patients had the largest declines. In aggregate, rehospitalizations increased from 13.5 to 17.4 per 100 residents during the study period.

17 Factors associated with community discharge rates explained 70 percent of the variation across facilities; factors associated with potentially avoidable rehospitalization rates explained 54 percent of the differences in rates across facilities. The model controlled for market characteristics including the Medicare managed care penetration rate; the number of hospitals and hospital admissions per 100,000 residents; the number of SNFs and beds per 100,000 residents; the number of nursing facility beds per 100,000 residents; and the number of home health agencies. Researchers controlled for the availability of home health care but not inpatient rehabilitation facilities or long-term care hospitals.

18 On average, there were 1.72 RN hours and 3.72 licensed nurse hours per patient day in hospital-based SNFs compared with 0.35 RN hour and 1.44 licensed nurse hours per patient day in freestanding SNFs.

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CHAPTER 9

Analysis of changes to physicians' practice expense payments

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Chapter summary

The physician fee schedule has three components: physician work, practice expense (PE), and professional liability insurance. The PE component pays for the direct costs (nonphysician clinical staff, medical equipment, and medical supplies) and indirect costs (administrative staff, office rent, and other expenses) of operating a physician practice.

In this chapter, the Commission examines how CMS determines PE payment rates, because PE payments are substantial, accounting for close to half of the $58 billion Medicare spent under the physician fee schedule in 2005. The goal of this chapter is to help policymakers understand this complex payment methodology and focus attention on major changes that CMS has recently made to improve its accuracy. We describe these changes and their impacts, examine CMS's method for allocating indirect costs to specific services, and explore how the agency adjusts PE payment rates to account for geographic differences in input prices. Although the Commission does not recommend changes to the PE methodology in this chapter, we have previously suggested

In this chapter

ways for CMS to improve the accuracy of the survey data, direct cost estimates, and equipment prices used in the methodology (MedPAC 2006).

Ensuring the accuracy of payments under the physician fee schedule is important for several reasons. First, inaccurate payment rates can distort the market for physician services. Overvalued services may be overprovided, because they are more profitable than other services. Undervalued services may prompt providers to increase volume to maintain their overall level of payment. Conversely, some providers may not furnish services that are undervalued, which can threaten beneficiaries' access to care. Second, if certain types of services become undervalued relative to others, the specialties that perform them may become less financially attractive, which can affect the supply of physicians. Finally, when services are misvalued, Medicare is paying too much for some services and not enough for others and therefore is not spending taxpayers' and beneficiaries' money wisely. Because Medicare spends a great deal of money on PE, those payments could be a tool for achieving important policy goals such as rewarding providers for efficient use of resources.

Beginning in 2007, CMS is using:

- new methods to calculate direct and indirect PE relative value units (RVUs),
- the same approach to calculate PE RVUs for services that do and do not involve physician work, and
- more current practice cost data to calculate indirect PE RVUs for eight specialty groups.

In addition, CMS adopted significant changes to physician work RVUs, which affect both the physician work and the PE components of the fee schedule. Collectively, these changes represent the biggest revision to the methods and data used to calculate PE RVUs since the agency implemented resource-based PE payments in 1999. CMS will phase in these changes over a four-year period.

The new PE methods and data redistribute PE payments across services. When CMS fully implements the changes in 2010, PE RVUs will increase by 7 percent for evaluation and management (E&M) services and by 3 percent for other (nonmajor) procedures and tests. By contrast, PE RVUs will decrease by 8 percent for major procedures and by 9 percent for imaging services.

To better understand these impacts, we isolated the separate effects of the new methods and the new data on PE RVUs. Our analysis shows that E&M services, other (nonmajor) procedures, and tests, on average, benefited from the change in the methods, while major procedures and imaging services did not. In some instances, the new methods and new data CMS used—more current practice cost data from some (but not all) specialties and the 2007 work RVUs (which include the budget-neutrality adjustment)—had offsetting effects. On average, other procedures, imaging services, and tests benefited from using more current practice cost data because the specialties that submitted the data account for a substantial share of the total volume of these services. Finally, using the 2007 work RVUs to calculate indirect costs had a downstream benefit for services, such as E&M services, whose work values increased because of the third five-year review.

Because indirect costs represent about two-thirds of total practice costs, we examine CMS's new method for calculating indirect PE RVUs, explore other methods to pay physicians' indirect practice costs, and analyze the sensitivity of PE RVUs to changes in the indirect method. We find that indirect PE RVUs are quite sensitive to changes in the methodology. For example, under an alternative approach, allocating indirect costs using nonphysician clinical labor plus physician work for the service would shift PE RVUs from imaging services, tests, and other procedures to E&M services and major procedures.

Finally, we examine how CMS adjusts PE payment rates to account for geographic differences in the price of inputs used in operating a physician practice. The PE geographic practice cost index (GPCI) includes three components that correspond to three types of practice costs: nonphysician

staff wages; office rent; and medical equipment, supplies, and other expenses. The current PE GPCI does not recognize that individual services have different shares of inputs for which prices vary geographically (e.g., nonphysician staff and office space) and for which prices are uniform (e.g., equipment and supplies). Thus, for services with below-average shares of equipment and supplies, the index does not adjust a large enough portion of the PE RVU; for services with above-average shares of equipment and supplies, it adjusts too large a portion of the RVU. This distorts prices, which may alter the mix of services provided within a high- or low-cost area.

PE payments might be more accurate if CMS excluded the equipment and supplies component from the GPCI and applied the GPCI only to the portion of the PE RVU related to nonphysician clinical labor and indirect costs. This alternative would better recognize that services have different shares of inputs for which prices vary geographically. ■

CMS's methods and data changes redistributed practice expense payments across services

The physician fee schedule has three components: physician work, practice expense (PE), and professional liability insurance. PE payments cover the direct and indirect costs of operating a physician practice. Direct expenses include costs for nonphysician clinical labor, medical equipment, and supplies. Indirect expenses include costs for administrative labor, office expenses (e.g., rent and utilities), and all other expenses. CMS bases PE payments on the relative resources needed to provide a service, known as relative value units (RVUs). PE accounts for close to half of the $58 billion Medicare spent under the physician fee schedule in 2005.

In the final rule for the 2007 physician fee schedule, CMS:

- implemented new methods to calculate direct and indirect PE RVUs;
- calculated PE RVUs using the same method for services that do and do not involve physician work (i.e., eliminated the nonphysician work pool);
- used more current practice cost data to calculate indirect PE RVUs for eight specialty groups; and
- adopted significant changes to physician work RVUs, which affected both the physician work and the PE components of the fee schedule.

To mitigate the impact on providers, the agency will phase in the changes over a four-year period beginning in January 2007. The text box (pp. 228–229) describes the changes in calculating PE RVUs.

Implementing new methods and data will redistribute PE RVUs across services because CMS is implementing the changes in a budget-neutral manner, as required by statute (Table 9-1, column C, p. 230). On average, PE RVUs will fall for major procedures and imaging by about 8 percent and 9 percent, respectively. PE RVUs for evaluation and management (E&M) services, other (nonmajor) procedures, and tests will increase on average by about 7 percent, 3 percent, and 3 percent, respectively, when CMS phases in all of the changes.

More specific types of services experience fairly large changes under the new PE method and data. The largest reductions in PE RVUs occur in echography of the heart, standard chest X-ray, and electrocardiograms. For these types of services, the average reductions in PE RVUs range from about 20 percent to 28 percent. The largest gains in PE RVUs go to echography–other, coronary angioplasty, ambulatory skin procedures, colonoscopy, and upper gastrointestinal endoscopy, with increases ranging from 24 percent to about 37 percent.

We isolated the effect of using new methods, more current utilization data, more recent practice cost data for some specialties, and 2007 work RVUs to better understand their impact on PE RVUs. We found substantial redistributions of PE RVUs across some types of services.

First, we isolated and examined the effect of changing the methods—moving to a bottom-up method to calculate direct PE RVUs, refining the methods used to calculate indirect PE RVUs, and eliminating the nonphysician work pool—and using more current utilization data on PE RVUs (Table 9-1, column A, p. 230). We compared 2006 RVUs (the baseline) with an alternative in which we calculated RVUs with the new 2007 methods and new (2005) utilization data. Both the baseline and alternative approach use old practice cost data for all specialties and 2006 work RVUs.

Next, we quantified the effect of using more current practice cost data on PE RVUs (Table 9-1, column B, p. 230). We compared 2006 RVUs with an alternative in which we calculated RVUs using the new 2007 methods, new utilization data, and more current data for the eight specialties. Both the baseline and alternative approach use 2006 work RVUs.

Last, we quantified the impact of all changes CMS made to PE RVUs (Table 9-1, column C, p. 230). This analysis compares 2006 PE RVUs with 2007 PE RVUs (assuming full implementation of the changes). The 2006 PE RVUs reflect the old methods, old practice cost data for the eight specialties, 2006 work RVUs, and old utilization data. The 2007 PE RVUs reflect the new methods, more current practice cost data for the eight specialties, 2007 work RVUs, and 2005 utilization data.

Changing the methods and using more current utilization data

The combined effects of moving to a bottom-up method, refining the indirect methods, eliminating the nonphysician work pool, and using more current utilization data increase payments for E&M services, other (nonmajor) procedures, and tests and decrease them for imaging and major

CMS is using new methods and data to calculate practice expense payment rates

For 2007, CMS made significant changes to both the methods and data used to determine practice expense (PE) relative value units (RVUs); we discuss each type of change separately.

CMS implemented three major changes to the methods

CMS's new method to calculate direct PE RVUs sums the costs of the direct resources—nonphysician clinical staff time, medical supplies, and equipment—required to furnish each service.[1] Stakeholders refer to this method as "bottom-up." Prior to 2007, CMS calculated direct PE RVUs by starting with total direct cost pools and then allocating practice costs to individual services using direct resource estimates—referred to as the "top-down" method. The bottom-up method does not use specialty-specific cost pools, which makes it more understandable and transparent than the top-down method.

Indirect practice costs, which include office rent, utilities, and administrative staff, are important because they represent about two-thirds of total practice costs. Because it is difficult to link indirect costs to specific services, CMS had to come up with a way to allocate them to services based on some other metric. The agency developed a method in which it allocates specialty-specific indirect cost pools to individual codes. Prior to 2007, CMS allocated indirect costs to individual services based on the sum of the direct practice cost and physician work RVU for each service. Beginning in 2007, the agency made two changes in how it allocates costs to specific services:[2]

- It adjusts the direct practice cost of a service based on the ratio of total indirect to total direct costs for the specialties that perform the service.
- For services with low or no physician work RVUs, CMS uses the clinical labor RVU (e.g., the cost of a nurse's time) instead of the physician work RVU in the allocation method (CMS 2006).

In its third major change, CMS began using the same direct and indirect methods to calculate PE RVUs for services that do not involve physician work—nonphysician work pool services—as for other services. The major specialties composing the nonphysician work pool are radiology, cardiology, and internal medicine. Prior to 2007, the agency used a different method to calculate PE RVUs for services that did not involve physician work.

Now that CMS is using a bottom-up method, it is important to make sure that the direct resource estimates are as accurate as possible. The Commission discussed several ways to improve the accuracy of these estimates in our June 2006 report. Because the agency has limited administrative resources, we suggested that CMS focus on areas where the estimates are most out of date and the impact on relative weights is likely to be greatest. The Congress should provide CMS with the financial resources and administrative flexibility to undertake this effort as it will improve the accuracy of Medicare's payments. We summarize each of these four areas in order of priority.

First, CMS should revisit how it estimates the per service price of medical equipment, in particular the assumption that all equipment is operated half the time that practices are open for business. If this assumption is an underestimate, Medicare's per unit price is too high. Our survey of imaging providers in six markets indicated that providers in those markets use MRI machines more than 90 percent of the time they are open for business and use computed tomography (CT) machines more than 70 percent of the time (MedPAC 2006). CMS also assumes that practitioners pay an interest rate of 11 percent per year when borrowing money to buy equipment, but more recent data suggest a lower interest rate may be more appropriate. Increasing the assumption about equipment use and lowering the interest rate estimate would reduce PE payments for CT and MRI services. Because changes to PE relative values are budget neutral, these savings would be redistributed among other physician services.

The American Medical Association (AMA)/Specialty Society Relative Value Scale Update Committee recommended that CMS use a competitive market interest rate and an equipment use rate higher than 50 percent, while allowing specialty societies to present evidence supporting lower rates for specific equipment

CMS is using new methods and data to calculate practice expense payment rates (cont.)

(CMS 2006). In the final rule on the physician fee schedule for 2007, CMS said that it did not have sufficient evidence to change the interest rate and equipment use rate assumptions for 2007 but expressed interest in potentially revising these assumptions in a future rule (CMS 2006).

Second, CMS should set a reasonable schedule for periodically updating the prices it assigns to the direct cost inputs (clinical staff, supplies, and equipment). The agency could also review the prices of expensive supply and equipment items more frequently than other items. Third, to ensure that the types and quantities of direct cost inputs are accurate and complete, CMS—with the assistance of the medical community—could check the consistency of values across similar services and obtain current estimates for services that have no information. Fourth, CMS should set a reasonable schedule for reviewing PE relative weights at least every five years (as required by statute) and more often for services experiencing rapid changes.

Data on practice costs and work RVUs affect the value of indirect PE RVUs

CMS uses four sources of data to calculate indirect PE RVUs: (1) estimates of the types, quantities, and prices of clinical labor, medical equipment, and medical supplies; (2) estimates of each specialty's hourly practice costs; (3) physician work RVUs; and (4) Medicare utilization data. We focus on the latter three data sources, which CMS updated between 2006 and 2007.

CMS multiplies each specialty's average hourly indirect practice cost by the total volume of services it furnishes to derive the specialty's indirect cost pool (i.e., total indirect dollars). The agency allocates this pool to each service the specialty performs (see p. 235).

Beginning in 2007, CMS determines indirect PE RVUs by using more current hourly practice cost data submitted by eight specialties (allergy/immunology, cardiology, dermatology, gastroenterology, urology, radiology, radiation oncology, and independent diagnostic testing facilities). Prior to 2007, CMS had begun using more current cost data from five specialties. The Balanced Budget Refinement Act of 1999 mandated that the agency establish a process to consider more current practice cost data submitted by specialties when updating the physician fee schedule. For most other specialties, CMS uses practice cost data that the AMA collected between 1995 and 1999.[3]

Using more current data for the eight specialties:

- increases their hourly practice costs relative to all other specialties,
- increases their total indirect cost pools relative to all other specialties, and therefore
- distributes a larger share of indirect costs to the services these eight specialties perform relative to all other groups.

The AMA and specialty societies are in the process of fielding a survey to collect more current practice cost data from nearly all specialty groups. CMS supports the AMA's effort to field a new survey and will consider using the data once they are available (CMS 2006). The agency anticipates that the data will be available to incorporate in the fee schedule no earlier than 2009.

CMS uses physician work RVUs to calculate indirect PE RVUs. The larger a service's work RVU, the more indirect costs it will be allocated, all other factors being equal. Using the 2007 work RVUs benefits those services whose work values increased due to the third five-year review, such as some evaluation and management services.

CMS uses Medicare volume data to calculate the indirect cost pools (by multiplying each specialty's hourly practice costs and the total volume of services that each specialty performed). For the 2007 PE RVUs, CMS used 2005 volume data, the most current available. Before 2007, the agency used older (1997–2000) volume data for services that existed during that time period and newer data for services that were introduced after 2000. Using more current volume data increases the PE RVUs of those services with high growth rates between 1997 and 2005, such as imaging services. ■

TABLE 9–1

CMS's changes had a large effect on PE RVUs

Type of service	Impact on PE RVUs due to changes in: Methods and use data only (column A)	Methods and use data, plus practice costs (column B)	All changes* (column C)	Change in volume per beneficiary 2004–2005	Percent of total volume
Evaluation and management	**7.5%**	**0.9%**	**6.5%**	**2.9%**	**40.0%**
Office visit—established patient	6.2	2.9	7.2	2.5	17.1
Hospital visit—subsequent	9.0	–2.9	13.0	2.4	7.8
Consultation	5.9	3.8	9.4	3.6	5.7
Emergency room visit	12.7	–11.7	–4.6	5.0	2.7
Hospital visit—initial	7.8	–8.0	4.3	1.2	1.9
Office visit—new patient	9.0	1.7	0.2	1.9	1.8
Nursing home visit	20.9	2.2	–4.9	1.3	1.8
Imaging	**–19.5**	**–5.8**	**–9.0**	**8.7**	**16.3**
Standard—nuclear medicine	–27.2	–12.6	–16.5	7.1	2.4
Echography—heart	–38.5	–26.0	–28.2	8.2	2.2
Advanced—CT: other	–11.3	6.8	0.7	14.7	2.2
Advanced—MRI: other	–17.0	–3.6	–7.8	14.2	1.9
Standard—musculoskeletal	2.4	6.7	1.7	4.9	1.2
Advanced—MRI: brain	–25.6	–12.3	–16.5	7.1	1.1
Echography—other	10.5	24.0	18.8	12.5	0.8
Standard—chest	–30.8	–14.0	–19.9	3.0	0.7
Standard—breast	–88.9	–82.7	–2.3	4.3	0.7
Imaging/procedure—other	–28.6	–15.8	–19.3	12.8	0.6
Major procedures	**–6.1**	**–9.9**	**–7.6**	**3.5**	**8.9**
Cardiovascular—other	–19.9	–11.4	–3.4	0.4	2.0
Orthopedic—other	4.9	–13.2	–13.0	7.7	1.1
Knee replacement	4.0	–14.8	–13.0	11.1	0.7
Coronary artery bypass graft	–5.5	–20.2	–14.3	–8.6	0.6
Coronary angioplasty	–6.3	43.9	36.9	–0.8	0.5
Hip fracture repair	4.6	–13.8	–12.1	0.5	0.4
Hip replacement	6.0	–13.3	–11.3	2.0	0.4
Other procedures	**5.0**	**5.4**	**2.9**	**8.5**	**22.3**
Minor—other, including outpatient rehab and drug administration	11.0	7.8	6.0	15.6	4.8
Ambulatory—skin	20.5	30.5	24.9	4.9	2.1
Cataract removal/lens insertion	12.7	–6.4	–9.7	7.8	1.8
Colonoscopy	15.6	33.9	23.6	2.9	1.1
Upper gastrointestinal endoscopy	18.1	40.0	29.3	1.2	0.6
Cystoscopy	–26.0	0.8	–1.5	13.9	0.5
Tests	**1.9**	**4.7**	**2.6**	**6.2**	**5.2**
Other tests—other	4.6	6.0	2.4	11.1	2.1
Lab test—other (physician fee schedule)	18.0	14.0	12.9	3.5	1.5
Electrocardiogram	–31.5	–20.4	–25.0	0.8	0.7
Cardiovascular stress test	–6.2	17.4	13.9	4.7	0.6

Note: PE (practice expense), RVU (relative value unit), CT (computed tomography). This analysis does not include the effect of the Deficit Reduction Act cap on imaging services. Some low-volume categories and services are not shown in the table but are included in the summary calculations. Column A models the impact on PE RVUs due to changing the methods and using more current volume data. The impacts in column A are based on old practice cost data for all specialties and 2006 work RVUs. Column B models the impact on PE RVUs due to changing the methods and using current volume data and current practice cost data for eight specialties. The impacts in column B are calculated using 2006 work RVUs. Column C compares the fully phased in new PE RVUs to 2006 PE RVUs and shows the impact of all method and data changes, including using the 2007 work RVUs for calculating PE. Volume is measured as units of service multiplied by each service's RVU from the physician fee schedule. The estimated impact assumes that CMS has phased in all PE changes, which will occur in 2010.
* All changes include using the 2007 work RVUs for calculating PE.

Source: MedPAC and NORC analysis of physician RVU and utilization files, direct practice cost data, Medicare claims, and specialty practice cost-per-hour file from CMS.

procedures (Table 9-1, column A). Each of these changes has a different effect on PE RVUs.

Moving to a bottom-up method increases the PE RVUs of services that are office based and use costly medical equipment and supplies, such as some imaging services, tests, and other procedures. By contrast, moving to a bottom-up method has a negative effect on office-based services that do not use costly equipment and supplies (e.g., E&M services) and services furnished in facilities (e.g., major procedures). Changing the indirect methods has a stronger effect on PE RVUs than changing the direct methods because indirect PE RVUs account for at least two-thirds of total PE RVUs, on average, for the broad service categories. In the case of E&M services, the positive effect of modifying the indirect methods offsets the negative effect of moving to a bottom-up method for direct costs.

Eliminating the nonphysician work pool affects PE RVUs of services administered by nonphysician staff, such as imaging services. Before 2007, the PE RVUs of services administered by nonphysicians (e.g., performing an X-ray) were not resource based. Rather, the services—called nonphysician work pool services—were valued using 1998 charges. The Government Accountability Office noted that some nonphysician work services were overvalued and some were undervalued (GAO 2001). Moving to a resource-based method causes some nonphysician work services to increase and some to decrease depending on the relationship between charges and estimates of resources.

Finally, using more current volume data benefits those services whose volume grows more rapidly than other services. Between 2000 and 2004, imaging services, other procedures, and tests grew 10 percent, 6 percent, and 8 percent per year, respectively, while E&M services and major procedures each grew 4 percent per year (MedPAC 2007).

Changing the methods and using more current utilization and practice cost data

The impact of the new methods is somewhat offset when we use more current practice cost data from eight specialties to determine PE RVUs (Table 9-1, column B). Using more current practice cost data benefits imaging services, other procedures, and tests because specialties that submitted more current data account for a substantial share of the total volume of these services:

- Radiology and cardiology together provide about 60 percent of the total volume of imaging services.
- Dermatology, gastroenterology, urology, and radiation oncology together account for about 35 percent of the total volume of other procedures.
- Cardiology, dermatology, and independent diagnostic testing facilities together account for about one-quarter of the volume of tests.

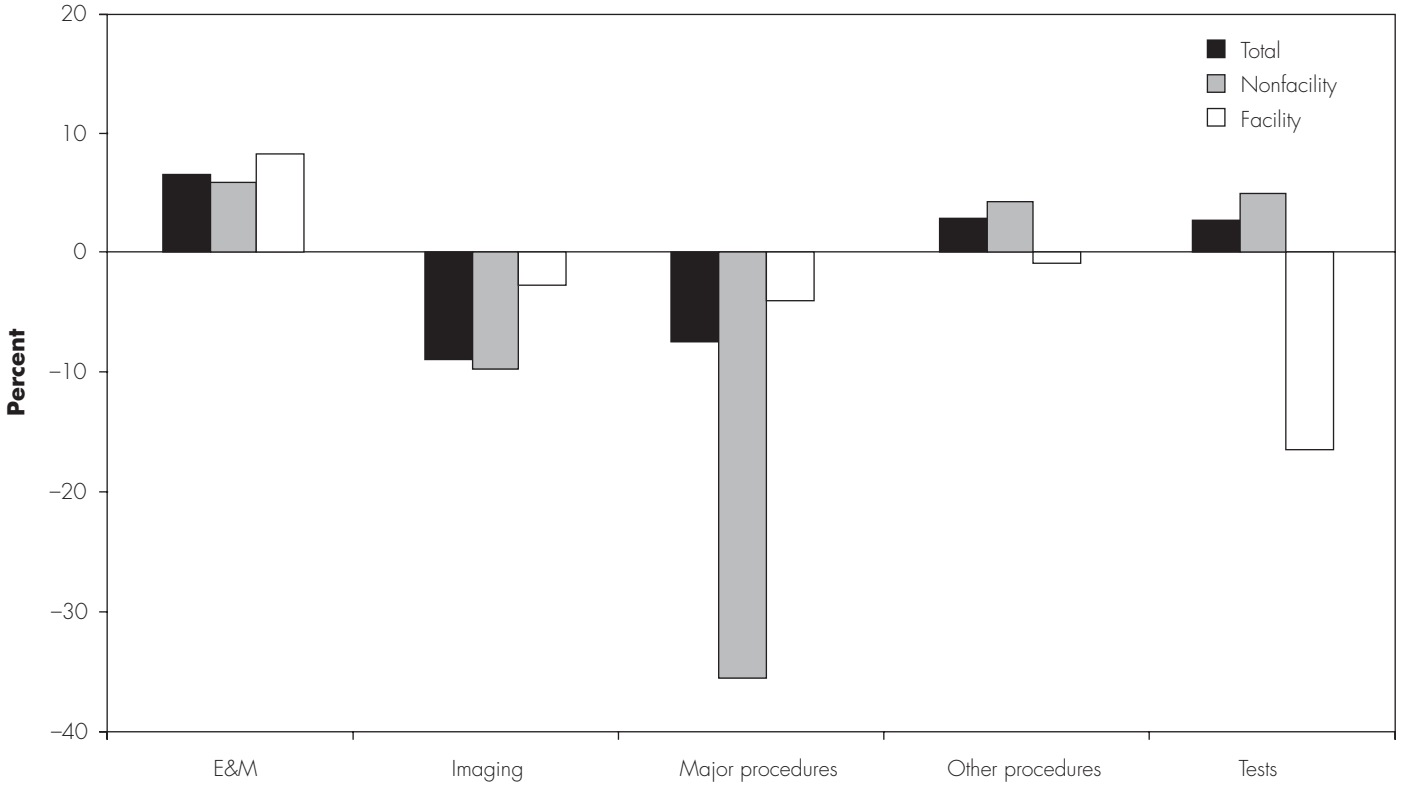
By contrast, for E&M services, using more current practice cost data offsets some of the increases realized from the changes in the methods. The leading two specialties that provide E&M services—internal medicine and family practice—did not submit more current practice cost data. In aggregate, using more current practice cost data for some specialties decreases PE RVUs for major procedures except those services performed primarily by cardiology (e.g., coronary angioplasty).

The American Medical Association (AMA) and specialty societies are in the process of fielding a survey to collect more current practice cost data from nearly all specialty groups. CMS, which supports this effort, anticipates that the new data will be available for use in the fee schedule no earlier than 2009 (CMS 2006).

CMS uses the survey data to estimate *average* hourly practice costs for each specialty, which are used to calculate indirect PE RVUs. Consistent with the Commission's position that Medicare should pay for costs incurred by efficient providers, it is worth asking whether cost data used to set indirect PE RVUs should reflect the costs of efficient practices rather than the costs of average practices. For example, CMS could explore using the hourly cost of a practice at the lowest 25th percentile of costs rather than the mean.[4] In calculating the cost of an efficient practice, CMS would need to adjust for practices' service mix and geographic location, because differences in the type of services provided and input prices probably affect practice cost variations. Unfortunately, the survey data that CMS currently uses to calculate PE RVUs do not contain information on practices' service mix, nor does the survey that the AMA and specialty societies are currently fielding. Thus, in future surveys, CMS might want to consider collecting the data necessary to identify efficient practices, controlling for service mix and other factors. Basing RVUs on the cost of efficient practices might require a statutory change.

FIGURE 9–1

Changes in PE RVUs vary by type and place of service



Note: PE (practice expense), RVU (relative value unit), E&M (evaluation and management). Changes include new methods, new volume data, new practice cost data for eight specialties, and the use of 2007 work RVUs in PE calculations. The estimated impacts assume that CMS has phased in all the PE changes, which will not occur until 2010.

Source: MedPAC analysis of physician RVU and utilization files from CMS.

Implementing all methods and data changes: Comparing 2006 and 2007 PE RVUs

Finally, we look at all the changes—including using the 2007 work values to calculate indirect PE RVUs—by comparing the values of 2006 and 2007 PE RVUs (Table 9-1, column C) (p. 230). The comparisons between 2006 and 2007 RVUs assume that all the PE changes have been fully phased in, which will not occur until 2010. The impact of using the 2007 work RVUs, refined during the third five-year review, is apparent when comparing columns B and C of Table 9-1 (p. 230). The values of many E&M services increase due to the third five-year review. Using the 2007 work RVUs to calculate indirect PE RVUs benefits those categories of E&M services whose work values increased on average due to the five-year review, such as office visits for established patients and hospital visits. By contrast, using the 2007 work RVUs does not help those categories of E&M services whose work values remain unchanged due to the five-year review, such as nursing home visits. To maintain budget neutrality, CMS cut the work value of all services by 10.1 percent when it implemented the five-year review changes.[5]

For major procedures, the use of the 2007 work RVUs to calculate indirect PE RVUs offsets some of the negative impacts from the change in the methods and the use of more current practice-cost data. The third five-year review increases the work value of several major procedures. Nonetheless, when CMS phases in all the methods and data changes, PE RVUs will decline by 8 percent for major procedures.

For other procedures and tests, using the 2007 work RVUs to calculate indirect PE RVUs offsets some (but not all) of the positive effect of the methods changes and the use of more current practice cost data. Even so, PE RVUs will increase by 3 percent for other procedures and tests when considering all the methods and data changes.

Using the 2007 work RVUs to calculate indirect PE RVUs offsets some of the positive effects that imaging services realize from the use of more current practice cost data. Considering all the changes, including the new methods' negative effect on their PE RVUs, imaging PE RVUs will fall by 9 percent.

Our analysis also shows that the changes to the methods and the data can affect PE RVUs of services differently depending on whether providers most frequently furnished them in a facility or in an office (nonfacility) setting (Figure 9-1). For example, PE RVUs for E&M services will increase for services furnished in both settings. By contrast, PE RVUs will decrease substantially for major procedures performed in nonfacility settings (35 percent), while the decrease in PE RVUs will be more modest for facility-based care (4 percent) when CMS phases in all the changes.

Allocating indirect practice expenses

Indirect costs, which include office rent, utilities, and administrative staff, represent about two-thirds of total practice costs. Because it is difficult to link these costs to specific services, CMS has to allocate them based on some other measure of resource use. CMS uses a complex method to allocate specialty-specific indirect cost pools to individual services based primarily on the direct practice cost and physician work value for each service. In this section, we explain CMS's current approach, review some alternatives to this approach, and illustrate that changes to the method can significantly affect the distribution of PE payments across services.

In general cost-accounting systems, indirect costs are allocated to specific items or services by a two-step process (Hawkins and Cohen 2004). First, *cost pools* that incorporate a grouping of indirect costs (e.g., office rent) are created. Second, each cost pool is assigned to individual items by using a *cost allocation basis*, which ideally should reflect a cause-and-effect relationship between the cost pool and the item. For example, in a manufacturing process, direct labor hours might be used to allocate indirect labor costs (e.g., management) to a product; the demand for indirect labor is assumed to be a function of the direct labor hours worked. Likewise, CMS creates cost pools of indirect practice costs and allocates them to specific services based on the amount of physician work and direct practice costs (medical equipment, medical supplies, and nonphysician clinical labor) that each service requires. The underlying assumption of this method is that the use of indirect practice resources is a function of a service's physician work and direct practice costs.

It is important to recognize that, given the variety of physician practices and services and the very nature of overhead costs, there is no single best method for allocating indirect practice costs (CMS 2006, 1998). Since the 1990s, researchers and CMS have examined various ways to allocate indirect costs, some of which are described below. Policymakers may wish to use the following four broad principles to guide any allocation approach:

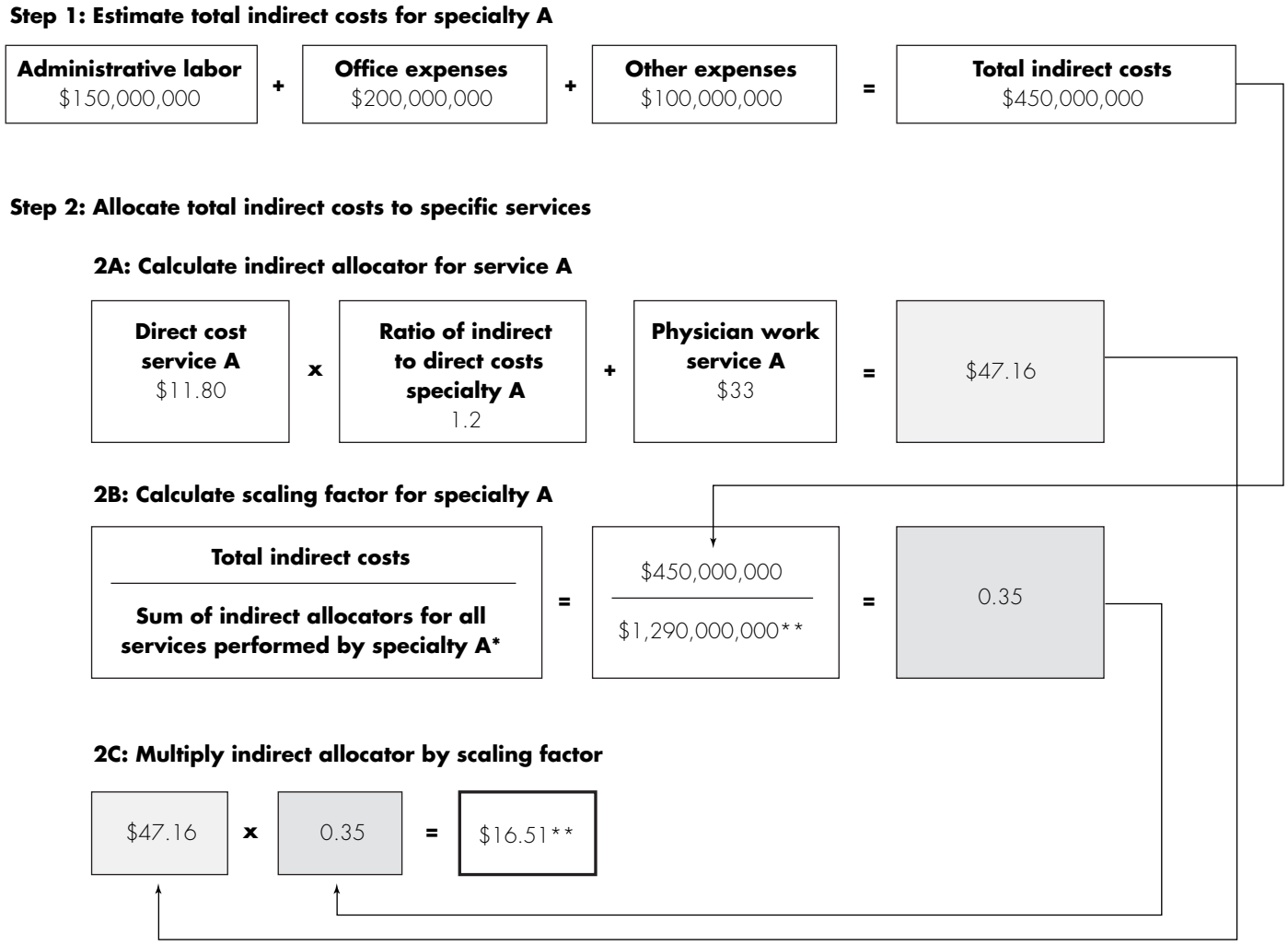
- The allocation should be based on the factors that influence indirect practice costs.
- It should avoid creating financial incentives that favor certain sites of care over others (PPRC 1992).
- It should limit the administrative burden on CMS and providers.
- It should be understandable.

Most indirect costs are fixed in the short run

Practice expenses include costs that are fixed in the short run (e.g., office rent, utilities, equipment) and variable costs (e.g., medical supplies and clinical labor). CMS classifies most fixed costs as indirect costs and most variable costs as direct costs. Some researchers have proposed that Medicare should pay for a practice's fixed costs only until those costs have been covered, perhaps by making a periodic, lump-sum payment that would be related to practice characteristics such as size and location (Latimer and Becker 1992). Because practices incur variable costs for each additional service, Medicare would pay for variable costs on a per service basis.

This approach is conceptually appealing but it would be quite difficult to implement. CMS would need to collect very detailed information about practice characteristics that could affect the level of fixed costs, such as: size, number of individual offices, site of practice, service

FIGURE 9–2 How CMS calculates indirect practice expense for a specific service



Note: All numbers are for illustrative purposes. In this illustration of service A, the physician work value is greater than the nonphysician clinical labor value. Hence, the physician work value is used in the allocator.
*The sum of indirect allocators for all services performed by specialty A is derived by (1) multiplying each service's indirect allocator by the Medicare volume of each service, and (2) summing the products across all services.
**CMS applies a budget-neutrality adjustment to this value.

mix and volume, Medicare's share of overall volume, and specialty. CMS and other organizations do not currently collect nationally representative data on these characteristics at the practice level. Even if CMS collected this information, developing homogeneous payment groups would be difficult. There could also be opportunities for physicians to increase their payments by changing their practice characteristics. For example, physician practices might increase their number of offices to gain more payments if the additional payments exceed their actual indirect costs. Given the difficulty of paying practices for their indirect costs on a lump-sum basis, the more practical alternative is to pay physicians for their indirect costs on a per service basis, which is CMS's current approach.

CMS's method for assigning indirect costs

CMS uses a complicated, two-step process to calculate indirect PE RVUs per service, as described in the following sections.

Creating indirect cost pools

First, CMS creates separate indirect cost pools for each specialty by:

- estimating the specialty's average hourly costs for indirect expenses (administrative labor, office expenses, and other expenses), as derived from an AMA survey or supplemental surveys submitted by specialties; and
- multiplying the average hourly indirect cost by the total Medicare volume of services the specialty furnishes and the amount of time it takes to provide each service.[6]

An illustrative indirect cost pool is shown in Figure 9-2, step 1. Services performed by specialties with indirect cost pools that are larger than average (e.g., cardiology and dermatology) receive more indirect RVUs, while services performed by specialties with indirect cost pools that are smaller than average (e.g., internal medicine and emergency medicine) receive fewer indirect RVUs.

Allocating cost pools to specific services

Until 2007, CMS allocated specialty-specific indirect cost pools to individual services based on the sum of the direct cost RVU (which includes nonphysician clinical labor, medical equipment, and medical supplies) and physician work RVU for each service. The agency used both physician work and direct practice costs in the allocator so that indirect costs could be spread across a broad range of inputs that are traceable to specific services. Although some researchers and stakeholders have argued that only physician work or physician time should be used to allocate indirect costs (see text box, p. 236), using both physician work and direct costs helps balance services performed by office-based and hospital-based specialties. Hospital-based specialties, such as general surgery, incur few direct costs but perform services with higher physician work RVUs. Thus, if the allocator were based only on direct costs, it would be difficult to allocate indirect costs for hospital-based physicians. On the other hand, office-based specialties, such as internal medicine and dermatology, generally perform services with lower work RVUs but higher direct costs.

For 2007, CMS made two changes to the indirect cost allocator (the formula for the current indirect allocator appears in Figure 9-3, p. 237):

- CMS decided to adjust direct costs by the ratio of indirect to direct costs for the specialty that performs the service. To use the example in Figure 9-2 (step 2A), direct costs for service A ($11.80) are multiplied by the ratio of overall indirect to overall direct costs for specialty A (1.2). Because most specialties have higher indirect costs than direct costs (i.e., their ratio of indirect costs to direct costs is greater than 1.0), this adjustment increases the weight of direct costs in the allocator. Because of this change, direct costs now account for roughly one-third of the allocator (on average), compared with one-quarter of the allocator previously (Thompson 2007). This change benefits services whose direct cost RVU is higher than the physician work RVU, such as the technical component of diagnostic tests. Previously, CMS expressed concern that using physician work to allocate indirect costs may disproportionately benefit hospital-based services (CMS 1998).
- Because certain services, such as the technical component of imaging studies and radiation therapy, have no physician work RVUs, CMS decided to use the higher of a service's physician work RVU or nonphysician clinical labor RVU (e.g., the cost of a radiology technologist's time). For example, the technical component of MRI of the brain (without contrast followed by contrast) has no work RVU, but it has an estimated cost of $42.30 for the MRI technologist's time. This cost is converted to an RVU and used twice in the indirect allocator, first as part of the direct cost RVU (nonphysician clinical labor is part of direct costs) and then in place of the physician work RVU. This change increases indirect payments for services with low or no work RVUs.

If a service is performed by multiple specialties, its indirect cost equals the average of each specialty-specific indirect cost for that service. In calculating the average, each specialty's indirect cost is weighted by its Medicare volume for that service.

Issues with CMS's allocation method

Some observers have raised important issues about the allocator, including that it:

- double counts nonphysician clinical labor for services with little or no physician work;
- includes medical supplies and equipment, even though the relationship between indirect costs and equipment and supplies may not be linear; and

Allocating indirect costs using only physician work or time

Some researchers and stakeholders favor allocating indirect costs based solely on the physician time or work involved in a service (Lewin Group 2000, Latimer and Becker 1992). Physician work includes both the time and intensity (mental effort, technical skill, stress, and risk) involved in performing a service. Proponents of this approach argue that physicians should receive the same indirect payment per unit of physician "involvement," defined as the work or time they expend in providing the service (Latimer and Becker 1992). If the indirect payment amount is proportional to the physician's involvement in the service, physicians should have no financial incentive to provide one service over another. An important concern about using only physician time or work as the allocator is that indirect costs would not be assigned to services that are performed primarily in physician offices by nonphysician staff, such as diagnostic tests (CMS 1997).

The Lewin Group simulated the effects of using only physician work or physician time in the allocator. They found that using only physician work would shift about 12 percent of indirect payments to facility-based (e.g., hospital) services and using only physician time would shift about 8 percent of indirect payments to facility-based services (Lewin Group 2000). These effects occur because facility services are more likely to have higher work and time values than office-based services.

Some specialties have favored using physician time over physician work because they argue that indirect costs should vary by the time, but not the intensity, related to a service (CMS 2006, 1998). One study claimed that allocating indirect expenses based on physician time, rather than physician work, is more likely to create neutral financial incentives across services (Latimer and Becker 1992). According to this study, time is a better measure of physician involvement than work because physicians are more constrained by the time they have available for practice than by the number of work relative value units (RVUs) they can bill. (It is easier to substitute a high-work RVU service for a low-work RVU service than to practice more hours.) Allocating indirect costs on the basis of time instead of physician work would reduce practice expense (PE) payments for services that require more work per unit of time (e.g., surgery) and would increase payments for services that require less work per unit of time (e.g., office visits).

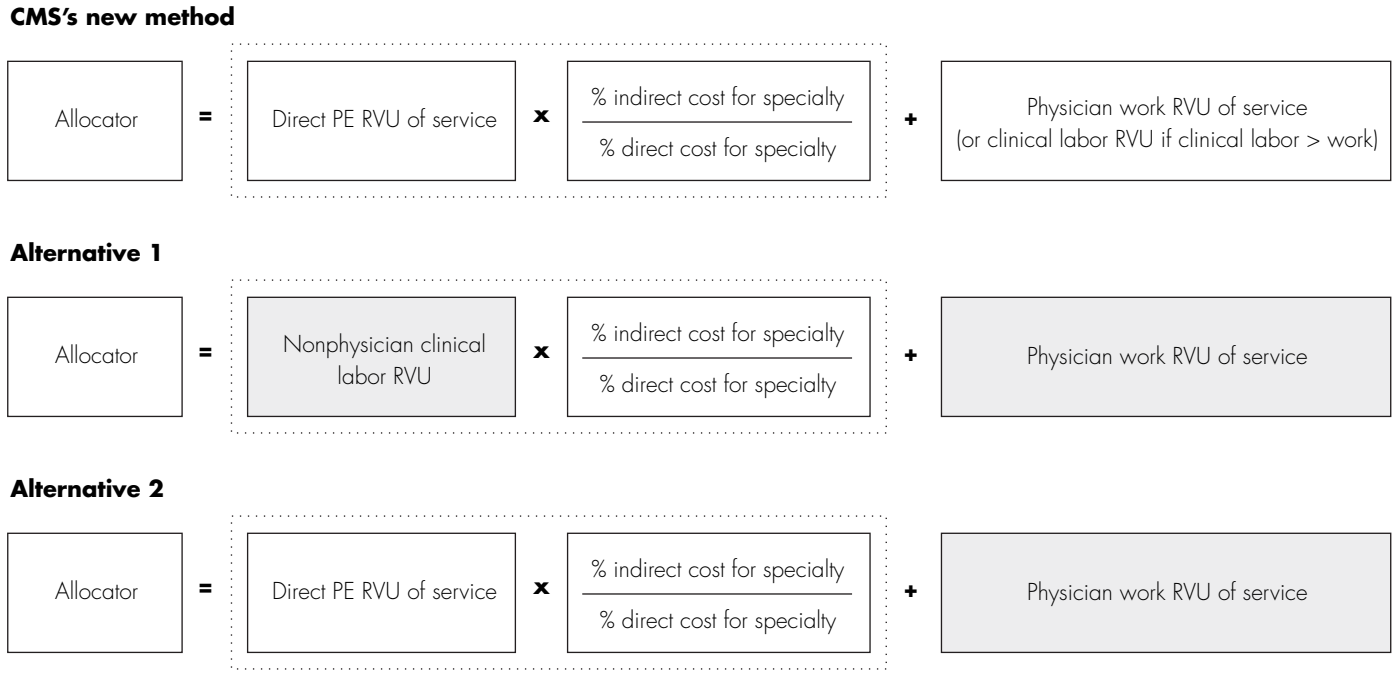
For many services, however, the physician time estimates have not been as rigorously validated as the physician work values, which raises concerns about using physician time to allocate indirect costs (Rich 2007, Lewin Group 2000). The physician time data come primarily from: (1) the American Medical Association/Specialty Society Relative Value Scale Update Committee (RUC), and (2) surveys conducted by William Hsiao and his colleagues during development of the original fee schedule—known as the Harvard time data (Becker et al. 1988). When CMS and the RUC reviewed physician work RVUs during the early 1990s, time estimates did not receive the same scrutiny as the work values because time is one of several components of work (other factors include technical skill, mental effort, and psychological stress) (Rich 2007). However, physician time became more important when CMS implemented resource-based PE RVUs in 1999 because physician time was used in the methodology. For example, CMS uses the time per service to determine the specialty cost pools that are used to calculate indirect PE RVUs. Thus, since 1999, CMS and the RUC have scrutinized physician time estimates more closely. ■

- is calculated using new data for some specialties, which creates distortions among RVUs.

The current allocator double counts nonphysician clinical labor for services with low or no physician work RVUs (e.g., the technical component of imaging studies). This adjustment means that such services are allocated more indirect costs—and receive higher indirect PE RVUs—than they would otherwise, which may create a stronger financial incentive for providers to perform them. Some stakeholders have asked why these services should be treated differently (CMS 2006). Although they have low

FIGURE 9–3

CMS's new method for allocating indirect costs and two alternatives



Note: PE (practice expense), RVU (relative value unit). Direct PE RVU includes nonphysician clinical labor, medical equipment, and medical supplies. CMS's current method and alternative 1 use specialty-specific indirect cost pools; alternative 2 uses a single indirect cost pool across all specialties.

Source: CMS 2006 and MedPAC.

or no work RVUs, these services can still be allocated indirect costs based on their direct costs. Indeed, the average direct cost of services with no physician work is nearly twice as high as the direct cost of services with physician work.[7] In addition, multiplying the service's direct cost by the ratio of total indirect to total direct costs for the specialties that perform the service benefits many services with no physician work. This adjustment increases the weight of direct costs and decreases the weight of physician work in the allocator for services performed by specialties with a ratio of indirect to direct costs greater than 1.0. The three specialties that account for the largest share of spending on nonphysician work services (radiology, cardiology, and internal medicine) have ratios greater than 1.0.[8] On the other hand, CMS contends that services with low or no physician work RVUs would be undervalued unless the agency used a proxy for physician work, such as nonphysician clinical labor, when allocating indirect costs to these codes (CMS 2006).

The indirect allocator includes all three components of direct costs: nonphysician clinical labor, medical equipment, and medical supplies. Practices that use expensive medical equipment probably incur additional costs for office space, utilities, and—in the case of certain imaging machines—radiation shielding. The question is whether the relationship between equipment or supply costs and indirect costs is linear; do overhead costs increase in direct proportion to equipment and supply costs? For example, a $1,000 supply should not require 10 times as much office rent or administrative staff as a $100 supply. Similarly, a $1 million imaging machine may not require overhead costs 10 times as high as a $100,000 machine. CMS's current method allocates indirect costs in proportion to equipment and supply costs and thus may overvalue services that use expensive supplies and equipment. Medicare pays for the direct costs of equipment and supplies through the direct PE method; at issue here is the magnitude of indirect costs associated with equipment and supplies.

By contrast, it seems more likely that a service's overhead costs vary in proportion to the amount of time it takes to perform the service. In other industries, the amount of time required to produce an item is considered a reasonable allocator for overhead costs (Hawkins and Cohen 2004, Bruns 1993). Nonphysician clinical labor and physician work are better proxies of service time than equipment and supplies. Neither, however, is a pure measure of service time; nonphysician clinical labor is based on both time and wage rates and physician work is based on both time and intensity. In addition, using both nonphysician labor and physician work in the allocator may overestimate the time required for a service because nonphysician staff and physicians might be involved in performing a service at the same time (e.g., when a nurse assists a physician during an in-office procedure).

CMS creates indirect cost pools for each specialty using a specialty's average hourly costs for indirect expenses. For most specialties, the agency derives these hourly costs from an AMA survey of physicians, which reflects practice costs from 1995 through 1999. However, CMS uses more recent practice cost data for 13 specialties to estimate their hourly costs. The use of older cost data for many specialties, and newer cost data for others, creates distortions in the indirect cost pools. In addition, the use of separate cost pools for each specialty makes the methodology more complex and difficult to understand.

An alternative would be to use a single indirect cost pool across all specialties, which was the approach CMS proposed in 1997 (GAO 1998). A single cost pool could be based on the amount of indirect PE RVUs in the current payment system. On the other hand, some stakeholders contend that, for the indirect method to be resource based, it should use specialty cost pools based on survey data, including the more recent survey data for the 13 specialties (CMS 2006). If CMS eventually uses the survey data that the AMA and specialty societies are currently collecting on practice costs for all specialties, this would address concerns about the distortions caused by using more recent data for some, but not all, specialties.

Sensitivity of PE RVUs to changes in the indirect method

Based on the four principles outlined earlier (p. 233), we modeled two alternatives to show that choices made in designing the indirect method can significantly affect the distribution of payments (Figure 9-3, p. 237). Neither of these alternatives should be viewed as a proposal or even the best way to allocate indirect costs; other allocators would also be consistent with the four principles.

Our contractor, NORC, estimated the impact of each alternative on PE RVUs by type of service and place of service (facility or nonfacility). Their model uses the new methodology for direct PE RVUs, 2005 utilization data, new practice cost data for eight specialties, and the new work RVUs that CMS adopted for 2007. In addition, each model applies an overall budget-neutrality adjustment to ensure that total indirect payments do not exceed the current level. The text box (pp. 240–241) and Table 9-2 describe the impact of each alternative by type of service.

Alternative 1

Alternative 1 is based on the nonphysician clinical labor RVU (adjusted by the ratio of indirect to direct costs for the specialties that perform the service) plus the physician work RVU for the service. This approach is based on a relatively simple assumption: Indirect costs are related to the amount of labor involved in a service, whether it is provided by a physician or nonphysician clinical staff. It does not allocate indirect costs to services based on their use of equipment and supplies and does not double count nonphysician clinical labor for services with low or no physician work RVUs (e.g., the technical component of imaging studies).

Although this alternative does not allocate indirect costs to individual services on the basis of medical supplies and equipment, it does take into account that some specialties have higher overall indirect costs related to their use of supplies and equipment. The relationship between equipment and indirect costs may not be linear, but practices that use expensive equipment probably incur some additional overhead costs. Like CMS's allocator, this alternative uses the specialty-specific indirect cost pools, which include overhead costs related to medical equipment and supplies. The use of specialty-specific cost pools means that services performed by specialties with large cost pools (e.g., radiology, radiation oncology, and cardiology) will receive higher indirect PE RVUs than if specialty cost pools were not used.

Removing equipment and supplies from the indirect allocator increases the weight of physician work in the allocator from about two-thirds to five-sixths of the total (nonphysician clinical labor accounts for the remaining one-sixth). As described in the text box (pp. 240–241), increasing the weight of physician work would shift PE RVUs from office-based to facility-based services.

TABLE 9–2

Alternative indirect cost allocation methods can change PE RVUs significantly

Type of service	Impact on PE RVUs (relative to current method)		Percent of total volume
	Alternative 1	Alternative 2	
Evaluation and management	**10.4%**	**6.8%**	**40.0%**
Office visit—established patient	6.6	3.7	17.1
Hospital visit—subsequent	18.4	9.4	7.8
Consultation	17.6	–6.6	5.7
Emergency room visit	5.9	80.4	2.7
Hospital visit—initial	18.1	16.1	1.9
Office visit—new patient	9.4	2.8	1.8
Nursing home visit	9.8	21.6	1.8
Imaging	**–13.5**	**–7.2**	**16.3**
Standard—nuclear medicine	–19.0	–21.7	2.4
Echography—heart	–16.6	–25.4	2.2
Advanced—CT: other	–6.9	1.2	2.2
Advanced—MRI: other	–20.3	0.8	1.9
Standard—musculoskeletal	–12.6	–4.3	1.2
Advanced—MRI: brain	–17.4	1.6	1.1
Echography—other	–17.1	–2.3	0.8
Standard—chest	20.8	2.8	0.7
Standard—breast	90.8	7.1	0.7
Imaging/procedure—other	1.7	–7.1	0.6
Major procedures	**11.0**	**–6.6**	**8.9**
Cardiovascular—other	12.0	–5.9	2.0
Orthopedic—other	8.9	–10.2	1.1
Knee replacement	12.4	–13.9	0.7
Coronary artery bypass graft	7.5	8.7	0.6
Coronary angioplasty	34.7	–39.1	0.5
Hip fracture repair	11.6	–14.1	0.4
Hip replacement	12.5	–14.0	0.4
Other procedures	**–1.9**	**–2.7**	**22.3**
Minor—other, including outpatient rehab and drug administration	–4.0	7.5	4.8
Ambulatory—skin	–1.1	–14.4	2.1
Cataract removal/lens insertion	11.1	–9.8	1.8
Colonoscopy	2.9	–22.7	1.1
Upper gastrointestinal endoscopy	3.4	–25.5	0.6
Cystoscopy	–3.5	–12.7	0.5
Tests	**–8.5**	**–5.3**	**5.2**
Other tests—other	–12.4	–2.3	2.1
Lab test—other (physician fee schedule)	–6.9	2.7	1.5
Electrocardiogram	0.4	–22.2	0.7
Cardiovascular stress test	–5.8	–32.6	0.6

Note: PE (practice expense), RVU (relative value unit), CT (computed tomography). This analysis does not include the effect of the Deficit Reduction Act cap on imaging services. Some low-volume categories and services are not shown in the table but are included in the summary calculations. Alternative 1 uses an indirect cost allocator that is based on nonphysician clinical labor (adjusted by the ratio of indirect to direct costs for the specialties that perform the service) plus physician work for the service. Alternative 2 uses an indirect cost allocator that is based on the direct practice costs (equipment, supplies, and nonphysician clinical labor), adjusted by the ratio of indirect to direct costs for the specialties that perform the service, plus physician work for the service. Alternative 1 uses specialty-specific indirect cost pools. Alternative 2, however, uses a single indirect cost pool for all specialties that is based on the amount of indirect PE RVUs in the current payment system. Both alternatives 1 and 2 use current practice cost data for the eight specialties that recently submitted such data, 2007 work RVUs, and 2005 Medicare utilization data. Volume is measured as units of service multiplied by each service's RVU from the physician fee schedule.

Source: NORC analysis of physician RVU files, direct practice cost data, Medicare claims, and specialty practice cost-per-hour file from CMS.

Impact of two alternative indirect cost allocation methods

Under indirect alternative 1, practice expense (PE) relative value units (RVUs) would shift from imaging services (13.5 percent lower than under CMS's current method), tests (–8.5 percent), and other procedures (–1.9 percent) to evaluation and management (E&M) services (+10.4 percent) and major procedures (+11 percent) (Table 9-2, p. 239). Because services that use expensive equipment and supplies are not allocated more indirect costs, PE RVUs would be lower for office-based services that use costly equipment and supplies (e.g., nuclear medicine, MRI, radiation therapy, and certain lab tests). Because work RVUs account for a larger portion of the allocator than under the current method, services with high work RVUs relative to their direct costs would be assigned more indirect expenses. Thus, PE RVUs would increase for hospital visit–subsequent (18.4 percent), cardiovascular procedures–other (12 percent), knee replacement (12.4 percent), and cataract removal and lens insertion (11.1 percent). PE RVUs for some office-based services, such as office visit–established patient and office visit–new patient, would increase because these codes have relatively small equipment and supply costs. Thus, these services would receive some of the indirect expenses no longer allocated to codes that use costly equipment and supplies. Many services would experience fairly large changes in PE RVUs; codes accounting for 40 percent of overall volume would change by more than 15 percent.

PE RVUs for services performed in facilities (e.g., hospitals) would increase by 22 percent, on average. Conversely, PE RVUs for codes provided in physician offices and other nonfacility settings would decline by 7 percent, on average. This shift would occur because physician work RVUs account for a larger share of the allocator, and services with high work RVUs are more likely to be provided in facilities.

Alternative 2 would result in large changes in PE RVUs for several categories of services, but the changes are not as extreme as under alternative 1 (Table 9-2, p. 239). PE RVUs for E&M services would increase by 6.8 percent, while they would decline for other procedures (–2.7 percent), major procedures (–6.6 percent), imaging (–7.2 percent), and tests (–5.3 percent). Imaging and tests would decline for two primary reasons:

- Alternative 2 does not substitute nonphysician clinical labor for physician work if the nonphysician labor RVU is higher than the physician work RVU. This change would result in fewer indirect costs being allocated to imaging services and tests that have no work RVUs (e.g., the technical component of an MRI study).

- Cardiology, which performs about one-quarter of imaging studies and one-fifth of tests, has an indirect cost pool that is much larger than average. Because alternative 2 does not use specialty-specific cost pools, services performed by cardiology would be assigned fewer indirect costs.

(continued next page)

Alternative 2

Alternative 2 uses all the direct practice costs (equipment, supplies, and nonphysician clinical labor), adjusted by the ratio of indirect to direct costs for the specialties that perform the service, plus physician work for the service. However, it does not double count nonphysician clinical labor for services with low or no physician work RVUs. In addition, this alternative does not use specialty-specific indirect cost pools. Instead, it uses a single indirect cost pool across all specialties that is based on the amount of indirect PE RVUs in the current payment system. In CMS's current method, services performed by specialties with larger-than-average indirect cost pools receive more indirect RVUs than other services. In alternative 2, services are neither advantaged nor disadvantaged by the relative size of specialty-specific cost pools.

Eliminating specialty-specific cost pools makes the allocator less complex and eliminates the distortions caused by using more recent data for some, but not all,

Impact of two alternative indirect cost allocation methods (cont.)

Within the major procedures category, PE RVUs would decline for services frequently performed by specialties with indirect cost pools that are larger than average. For example, coronary angioplasty (often performed by cardiology) would decline by 39 percent and hip replacement (often provided by orthopedic surgery) would drop by 14 percent. Conversely, PE RVUs would increase for major procedures generally performed by specialties with indirect cost pools that are smaller than average. For example, heart bypass surgery (performed by cardiac surgery) would increase by 9 percent.

There would be a large effect on PE RVUs for many individual codes: services that account for about one-third of overall volume would change by more than 15 percent. However, shifts of PE RVUs from nonfacility to facility services would be minimal: Facility services would increase by 3 percent, on average, and services provided in physician offices and other nonfacility settings would decline by 1 percent, on average.

Alternative 2 would result in higher PE RVUs for outpatient therapy services (physical therapy, occupational therapy, and speech–language pathology services), which would lead to higher overall Part B spending. This would occur because physician fee schedule rates apply to outpatient therapy services provided in hospital outpatient departments and nursing homes outside of a Part A stay.[9] Thus, when physician fee schedule rates for outpatient therapy increase, this increase affects these other settings. When CMS changes RVUs for services paid under the physician fee schedule, the agency applies a budget-neutrality adjustment to ensure that overall physician spending does not change significantly. However, this adjustment does not consider the impact of RVU changes on spending for other providers, such as outpatient departments and nursing homes. The outpatient prospective payment system (PPS) has its own budget-neutrality adjustment, but it does not include services whose rates are set by the physician fee schedule (e.g., mammography and outpatient therapy). Thus, when changes to the physician fee schedule lead to higher rates for therapy, the additional Part B spending for outpatient department and nursing home services is not offset by a budget-neutrality adjustment.[10] CMS would probably require a change in statute to consider this additional spending when applying budget-neutrality adjustments to the outpatient PPS. ■

specialties to construct the cost pools. On the other hand, some stakeholders could argue that, by not using specialty cost pools based on survey data, this approach is not resource based. Eliminating the specialty cost pools would shift payments from services performed by specialties with relatively high practice costs to services performed by specialties with relatively low practice costs, which may be undesirable. Finally, if CMS eventually uses the survey data that the AMA and specialty societies are currently collecting on practice costs for all specialties, this would address concerns about the distortions caused by using more recent data for some, but not all, specialties.

Although the relative size of specialty-specific cost pools does not matter under alternative 2, each specialty's ratio of indirect to direct costs plays a role because the direct cost for a service is adjusted by the ratio of indirect to direct costs for the specialties that perform the service. Consequently, services performed by specialties with a higher ratio of indirect to direct costs will be assigned higher indirect costs. CMS would still need to use physician survey data to estimate this ratio.

Adjusting for geographic differences in practice expenses

Under the physician fee schedule, Medicare adjusts payment rates to account for geographic differences in the price of inputs used in furnishing physician services. Three separate geographic practice cost indexes (GPCIs)

correspond to each of the three components of physician payment: physician work, PE, and professional liability insurance.[11] The current PE GPCI does not recognize that individual services have different shares of inputs for which prices vary geographically (e.g., nonphysician staff and office space) and for which prices are uniform (e.g., equipment and supplies). Thus, for services with below average shares of equipment and supplies, the index does not adjust a large enough portion of the PE RVU; for services with above average shares of equipment and supplies, it adjusts too large a portion of the RVU. This distorts prices, which may alter the mix of services provided within a high- or low-cost area.

We developed an alternative GPCI, which better recognizes that services have different shares of inputs for which prices vary geographically. This alternative—which excludes equipment and supplies—would be applied to the portion of the PE RVU related to indirect costs and nonphysician clinical labor but not to the portion related to equipment and supplies. It would produce more accurate prices for specific services among different markets, thus reducing financial incentives to provide one service over another. CMS is required to review and revise the PE GPCI every three years and to phase in any changes over two years.[12] The next review is under way and CMS expects to implement any changes in 2008 (CMS 2006). We believe that CMS could adopt the alternative GPCI described here within its current statutory authority.

CMS's current PE GPCI

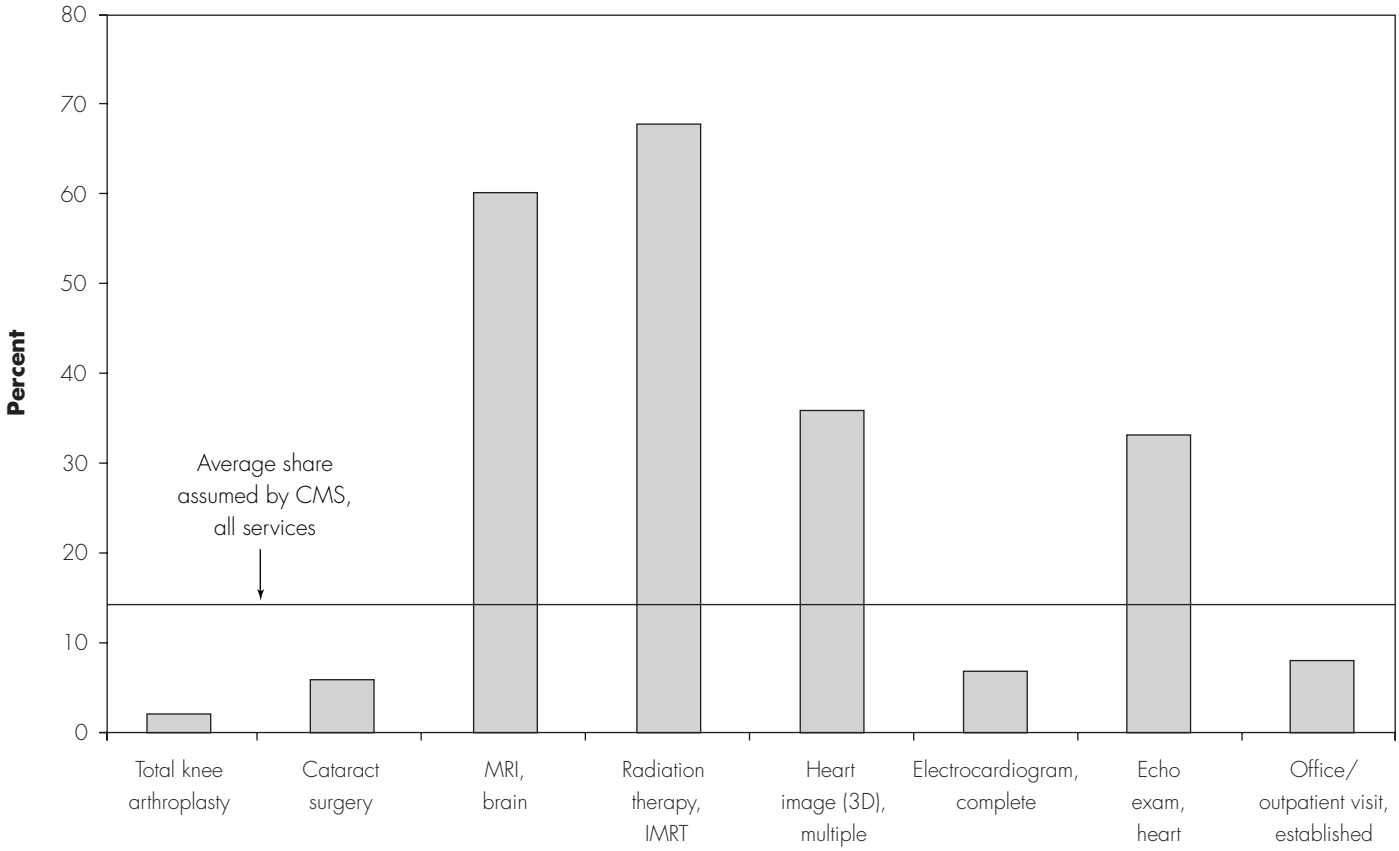
The PE GPCI includes three components that correspond to three types of practice costs: nonphysician staff wages; office rent (which includes utilities); and medical equipment, supplies, and other expenses. Other expenses include legal, office management, and accounting services; professional association memberships; journals; continuing education; and other professional expenses (CMS 2005).[13] CMS assumes that nonphysician staff wages and office rent vary geographically, while the cost of equipment, supplies, and other expenses is uniform nationally because these inputs are generally purchased in national, rather than local, markets. The portion of the index related to equipment, supplies, and other expenses is set to 1.0 for each market. This assumption is based on a study the Urban Institute conducted for CMS, which found no evidence that prices for medical equipment and supplies vary geographically (Zuckerman et al. 1990).[14] When CMS last updated the GPCI for the 2005 fee schedule, it also was unable to find evidence that demonstrated geographic price differences for these inputs (CMS 2004). CMS concluded that some price differences exist among providers but are more likely based on volume discounts than on geographic variations.

Each component of the GPCI is assigned a weight based on the share of each input in the Medicare Economic Index (MEI), which is based on the AMA's 2001 Patient Care Physician Survey (CMS 2005). Staff wages account for 43 percent of the GPCI; equipment, supplies, and other expenses account for 29 percent; and office rent accounts for 28 percent.[15] The national average of the GPCI is 1.0. Geographic areas with input prices above the national average have GPCI values above 1.0. Areas with below-average input prices have index values under 1.0.

The current GPCI uses the average share of equipment, supplies, and other expenses across all services, even though the share of practice expense related to equipment and supplies varies among services. Based on the MEI, CMS assumes that, on average, 14.6 percent of practice costs are related to medical equipment and supplies. As Figure 9-4 demonstrates, the portion of PE attributable to equipment and supplies varies greatly by service (other expenses are not shown because we lack data on these costs by service). Services performed in facilities (e.g., hospitals) tend to have very low equipment and supply costs because Medicare makes a separate payment to hospitals to cover these costs.[16] For example, for cataract surgery and total knee arthroplasty (both facility-based services), equipment and supply shares are well below average (Figure 9-4). Some office-based (nonfacility) services, such as office/outpatient visit (established) and electrocardiogram (complete) also have relatively low equipment and supply shares. Assuming that medical equipment and supplies are indeed purchased in a national market, the GPCI should adjust for a larger share of inputs for these services than it currently does. Consequently, PE payments for these services are too low (relative to input prices) in high-cost areas, and too high (relative to input prices) in low-cost areas.

On the other hand, some high-technology services performed in physician offices have much higher than average shares of PE related to equipment and supplies. For example, equipment and supplies account for 60 percent of the PE rate for the technical component of MRI of the brain, without contrast followed by contrast, and for 67 percent of intensity-modulated radiation therapy

FIGURE 9–4 **Share of practice expenses related to equipment and supplies varies by service, 2007**



Note: IMRT (intensity-modulated radiation therapy). The facility (e.g., hospital) values are shown for total knee arthroplasty and cataract surgery. The nonfacility (e.g., physician office) values are shown for the other services. The global values are shown for MRI, brain; heart image (3D), multiple; and echo exam, heart. CMS's geographic practice cost index assumes that 14.6 percent of practice expenses are related to equipment and supplies.

Source: NORC analysis of physician relative value unit file and direct practice cost data from CMS.

(Figure 9-4). Assuming that medical equipment and supplies are indeed purchased in a national market, the GPCI should adjust for a smaller share of inputs for these services than it currently does. Consequently, PE payments for these services are too high (relative to input prices) in high-cost areas, and too low (relative to input prices) in low-cost areas. These pricing distortions may alter the mix of services provided within a high- or low-cost area. For example, there may be financial incentives to provide more imaging services and fewer office visits in high-cost regions.

An alternative PE GPCI

We developed an alternative PE GPCI that takes into account that individual services have different shares of inputs for which prices vary geographically (e.g., nonphysician staff and office space). This alternative excludes equipment and supplies; it is composed of nonphysician staff wages (50 percent of the index), office rent (33 percent), and other expenses (17 percent). The weights for each component are based on the relative size of each component in the MEI. Staff wages and office rent vary geographically and, according to CMS, input prices for other expenses do not; thus, this portion of the index is uniform across all areas. Even though other

expenses do not vary geographically, we included them in the alternative GPCI because there are no data on the share of other expenses by service.[17] We can exclude equipment and supplies from the alternative GPCI because we have data on their shares by service from the direct cost database used to calculate direct PE RVUs. Compared with the current GPCI, a larger share of the alternative GPCI has inputs that vary geographically (83 percent vs. 71 percent). Thus, the alternative index has more extreme values than the current index. The highest payment area, San Francisco, has a value of 1.55 under the current GPCI and 1.65 under the alternative. The lowest payment area, Puerto Rico, has a value of 0.70 under the current GPCI and 0.65 under the alternative.

Although the alternative GPCI has more extreme values, it is balanced by not applying it to the entire PE RVU. We apply the alternative GPCI to the portion of the RVU related to indirect costs and nonphysician clinical labor but not to the portion related to equipment and supplies. The reason is because the alternative GPCI includes inputs related to indirect costs and nonphysician clinical labor but not equipment and supplies. To determine the full PE RVU, the portion of the RVU adjusted by the GPCI is added to the unadjusted portion (representing equipment and supplies).

Our contractor, NORC, modeled the impacts of the alternative GPCI on PE payments compared with payments under the current GPCI. The alternative would reduce PE payments for services with below-average shares of equipment and supplies (e.g., office/outpatient visit) in areas where input costs are low and increase them in areas where input costs are high. It has the reverse effect on services with above-average shares of equipment and supplies (e.g., MRI of the brain).

Although moving to the alternative GPCI would cause PE payments for individual services to shift geographically, NORC found that the net impact on PE payments by type of service (imaging, E&M, major procedures, other procedures, and tests) across all payment areas would be minimal; aggregate payments for each category would change by less than 1 percent. Increases to payment rates for a given type of service in some geographic areas would be almost fully offset by decreases in other areas. In addition, the alternative GPCI would cause very small shifts in total PE payments among geographic areas; almost all areas would experience total payment changes of less than 1 percent. Within a payment area, payment increases for some types of services would generally be balanced by decreases for others.

Conclusion

This chapter assesses how CMS determines PE payment rates because PE payments are substantial, accounting for close to half of the $58 billion Medicare spent under the physician fee schedule in 2005. This chapter aims to help policymakers understand this complex payment methodology and focus attention on major changes that CMS has recently made to improve its accuracy. Although the Commission does not recommend changes to the PE methodology in this chapter, we have previously suggested ways for CMS to improve the accuracy of the survey data, direct cost estimates, and equipment prices used in the methodology (summarized on p. 228) (MedPAC 2006).

CMS's changes represent the biggest revision to the methods and data used to calculate PE RVUs since the agency implemented resource-based PE payments in 1999. Our analysis showed that CMS's recent changes to the PE methods and data will redistribute PE RVUs across services when they are fully phased in. PE RVUs will fall for major procedures and imaging and increase for E&M services, other procedures, and tests.

CMS uses a complex process to calculate indirect PE RVUs. This method involves creating separate indirect cost pools for each specialty and allocating the cost pools to individual services based primarily on the direct practice cost (nonphysician clinical staff, medical equipment, and supplies) and physician work value for each service. If a service has little or no physician work (e.g., the technical component of imaging studies), CMS counts the nonphysician clinical labor cost twice. Some observers have expressed concern that CMS double counts nonphysician clinical labor for services with little or no physician work, includes medical supplies and equipment in the allocator, and uses more recent cost data for some specialties, which creates distortions among RVUs.

We discussed some alternatives to CMS's indirect allocation method and illustrated two specific approaches based on four principles. Neither alternative should be viewed as a proposal or even the best way to allocate indirect costs; other allocators would also be consistent with these principles. Our modeling of two alternatives demonstrates that choices made in designing the indirect method can significantly affect the distribution of payments.

Finally, we examined how CMS adjusts PE payment rates to account for geographic differences in the price of inputs used in operating a physician practice. CMS assumes that nonphysician staff wages and office rent vary

geographically while the cost of equipment, supplies, and other expenses is uniform nationally because these inputs are generally purchased in national, rather than local, markets.

The PE GPCI assumes an average share of equipment and supplies across all services, even though the share of PE related to equipment and supplies varies among services. Thus, for services with below-average shares of equipment and supplies, the index does not adjust a large enough portion of the PE RVU; for services with above-average shares of equipment and supplies, it adjusts too large a portion of the RVU. This distorts prices, which may alter the mix of services provided within a high- or low-cost area. PE payments might be more accurate if CMS excluded the equipment and supplies component from the GPCI and applied the GPCI only to the portion of the PE RVU related to nonphysician clinical labor and indirect costs. This alternative would better recognize that services have different shares of inputs for which prices vary geographically. ■

Endnotes

1 CMS uses a database that contains estimates of the prices, types, and quantities of the clinical labor, medical equipment, and supplies required to provide each service paid under the physician fee schedule.

2 The new formula for the allocator appears in Figure 9-3, p. 237.

3 The AMA did not collect practice cost data from certain nonphysician specialties, such as audiology, clinical social worker, and nurse practitioner.

4 If all specialties have the same variance between their mean hourly cost and their cost at the 25th percentile, then the RVUs would not be affected. This is because each specialty's indirect cost pool would be reduced by the same percentage. However, if some specialties have a larger variance in practice costs than others, using the 25th percentile instead of the mean would affect RVUs because indirect cost pools would be reduced by different proportions. This change could be implemented in a budget-neutral manner.

5 CMS reduced the work RVUs, rather than the conversion factor, to maintain budget neutrality because reducing the conversion factor would have affected payments for services with no physician work, which were outside the scope of the five-year review (CMS 2006). After the second five-year review in 2002, CMS applied the budget-neutrality adjustment to the conversion factor. After the first five-year review in 1997, the agency applied the budget-neutrality adjustment to the work RVUs.

6 The data on the amount of time it takes to perform a service come from the AMA/Specialty Society Relative Value Scale Update Committee and from surveys conducted during development of the original fee schedule (Becker et al. 1988). Utilization data for each service are from Medicare claims.

7 The average direct cost for services with no physician work is $48 (not adjusted for budget neutrality), compared with $25 for services with physician work RVUs. The average direct cost is weighted by the volume of services for each code.

8 Based on 2000 data, these specialties had the largest share of nonphysician work pool dollars (CMS 2002).

9 Outpatient therapy services provided during a Part A-covered skilled nursing facility (SNF) stay are included in Medicare's per diem payment to the SNF. Outpatient therapy services provided in a nursing home outside of a Part A-covered stay are paid separately according to physician fee schedule rates.

10 The sustainable growth rate formula includes outpatient therapy services provided in a nursing home that are paid under Part B. This spending, however, is not offset by changes to the RVUs for therapy services.

11 There are 89 geographic payment areas, each with its own value for each index.

12 Social Security Act, section 1848 (e) (1) (C).

13 CMS uses wage data from the decennial census to account for geographic wage differences and residential rent data from the Department of Housing and Urban Development to account for variations in office rent.

14 According to the study, anecdotal evidence suggested only minimal price variation for equipment and supplies (Zuckerman et al. 1990).

15 Equipment and supplies combined and other expenses account for equal shares of the index (just under 15 percent each).

16 For facility-based services such as surgery, the physician fee schedule pays for equipment and supply costs related to postoperative follow-up visits in the office.

17 Other expenses are a component of indirect costs. Indirect costs are allocated as a group, rather than by component, to individual codes, so we cannot estimate the share of indirect costs related to other expenses at the level of individual services.

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APPENDIX A

Review of CMS's preliminary estimate of the physician update for 2008

APPENDIX A

Review of CMS's preliminary estimate of the physician update for 2008

CMS's preliminary estimate of the 2008 payment update for physician services is –5.1 percent (Gustafson 2007). However, when combined with the effect of the Tax Relief and Health Care Act of 2006 (TRHCA), CMS estimates the net change to the conversion factor from 2007 to 2008 to be –9.9 percent. Due to continued growth in expenditures on physician services and increased spending associated with legislative overrides to avert payment cuts for physician services, the sustainable growth rate (SGR) formula has called for negative updates since 2002. In communicating its estimate to MedPAC, CMS states that it is embarking on several initiatives to improve the quality and efficiency of physician services delivered to Medicare beneficiaries.

In a recent report to the Congress, the Commission stated that slowing the increase in Medicare outlays is becoming urgent (MedPAC 2007a). Medicare's rising costs, particularly when coupled with the projected growth in the number of beneficiaries, threaten to place a significant burden on taxpayers. Rapid growth in expenditures also directly affects beneficiary liability for out-of-pocket costs through higher Part B and supplemental insurance premiums.

The Commission's report also discussed several flaws associated with using the SGR formula. For example, it neither rewards physicians who restrain volume growth nor penalizes those who prescribe unnecessary services. Ideally, Medicare's physician payment system should include incentives for physicians to provide better quality of care, to coordinate care (across settings and medical conditions), and to use resources judiciously. As mandated by the Congress, the Commission examined alternative approaches to the SGR system in our report, many of which included frameworks with expenditure targets. Although some disagreement exists within the Commission about the utility of expenditure targets, the Commission is united in its belief that a major investment should be made in Medicare's capability to develop, implement, and refine payment systems to reward quality and efficient use of resources while improving payment equity. Examples of such reforms include pay-for-performance programs for quality, improving payment accuracy, and bundling payments to reduce overutilization.

This appendix fulfills the Commission's requirement to review CMS's estimate of the 2008 update for physician services. In reviewing the technical details involved in estimating the update under current law (in accordance with the SGR formula), we find that CMS used estimates in calculating the update that are consistent with recent trends.[1] Moreover, the Commission anticipates that no alteration in the factors of CMS's estimates would be large enough to eliminate the application of the statutory limit the SGR formula imposes. MedPAC concurs with CMS that Medicare should be initiating strategies to improve the quality and efficiency of services delivered to Medicare beneficiaries.

TABLE A–1 **Preliminary estimate of the sustainable growth rate, 2008**

Factor	Percent
2008 change in:	
Input costs for physician services*	2.0%
Real GDP per capita	1.9
Fee-for-service enrollment	–0.2
Change due to law or regulation	–1.5
Sustainable growth rate	2.2

Note: GDP (gross domestic product). Percents are converted to ratios and multiplied, not added, to produce the update. Estimates shown are preliminary.
*Input costs are adjusted for productivity and include inflation measures for services performed by a physician or in a physician's office.

Source: Gustafson 2007.

For further details on how Medicare pays for physician services, see MedPAC's Payment Basics publications, available on our website.[2]

How TRHCA affects 2007 and 2008 updates for physician services

TRHCA includes several provisions that affect physician payments in 2007 and 2008. To avert a cut in the conversion factor, it provided for a temporary one-year bonus in the fee schedule conversion factor for 2007. This increase offset the 5 percent decrease in the conversion factor required by the SGR formula. Consequently, the conversion factor for 2007 was kept at the same level as for 2006.

TRHCA also requires that the 2008 conversion factor be calculated as if the 2007 one-year bonus had never applied. Thus, estimations for the 2008 conversion factor first assume a 5 percent cut to the 2007 conversion factor and then apply the statutorily required cut (5.1 percent) in 2008, per the SGR formula. While the implementation of the one-time conversion-factor bonus will increase both actual and expected expenditures for 2007, its expiration will decrease both actual and expected expenditures for 2008.

Another provision in TRHCA allows physicians to be eligible to receive a 1.5 percent bonus on all covered services they furnished to Medicare beneficiaries between July 1 and December 31, 2007, provided they submit to CMS data on an adequate number of approved quality measures. CMS will pay this quality reporting bonus to physicians as a lump sum in 2008.

TRHCA also established a $1.35 billion fund to be used toward physician payments at the Secretary's discretion in 2008. Although the law explicitly allows the Secretary to direct the fund toward the 2008 conversion factor update, the Secretary has not yet allocated this fund. Thus, CMS's estimate of the 2008 conversion factor does not account for this fund. Even if the fund were used entirely to update the 2008 conversion factor, a legislative change would still be needed to avert a cut in 2008, because the amount needed to avert a cut exceeds $1.35 billion. CMS plans to implement this provision through the rulemaking process during the summer.

Also, TRHCA extended through 2007 the work geographic practice cost index (GPCI) floor. The floor was imposed by the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 (MMA) and was originally

TABLE A–2 **Update and conversion factor changes for physician services**

Updates and update factors	Percent
***Excluding* TRHCA conversion factor bonus for 2007**	
2007 update per SGR formula	–5.0%
2008 update factors per SGR formula:	
Change in MEI	2.0
Change in update adjustment factor	–7.0
2008 update per SGR formula	**–5.1**
***Including* TRHCA conversion factor bonus for 2007**	
2007 update	0.0
2008 update	**–9.9**

Note: TRHCA (Tax Relief and Health Care Act of 2006), SGR (sustainable growth rate), MEI (Medicare Economic Index). Percents are converted to ratios and multiplied, not added, to produce the update. The MEI—an estimate of the change in input prices (inflation) for physician services—includes a productivity adjustment. Estimates shown are preliminary.

Source: Gustafson 2007.

slated to expire on December 31, 2006, but TRHCA extended it to December 31, 2007.

Together, these four provisions in the TRHCA—the conversion factor bonus, the quality reporting bonus, the physician fund, and the GPCI floor extension—account for $5 billion, which will be directed toward physician payments over the coming years. These spending increases will be financed through Medicare's Supplementary Medical Insurance program, which is funded through general revenues (75 percent) and beneficiary premiums (25 percent).

Calculating the update

Calculating the physician update is a two-step process. CMS first estimates the target growth rate—the sustainable growth rate (SGR)—then computes the update. For the first step, the SGR is the target growth rate in spending for physician fees and is a function of projected changes in:

- productivity-adjusted input prices for physician fees—an allowance for inflation,[3]
- real gross domestic product (GDP) per capita—an allowance for growth in the volume of services,[4]
- enrollment in fee-for-service (FFS) Medicare—an allowance for fluctuations in the number of FFS beneficiaries, and
- spending attributable to changes in law and regulation—an allowance for policy changes that affect spending on physician services.

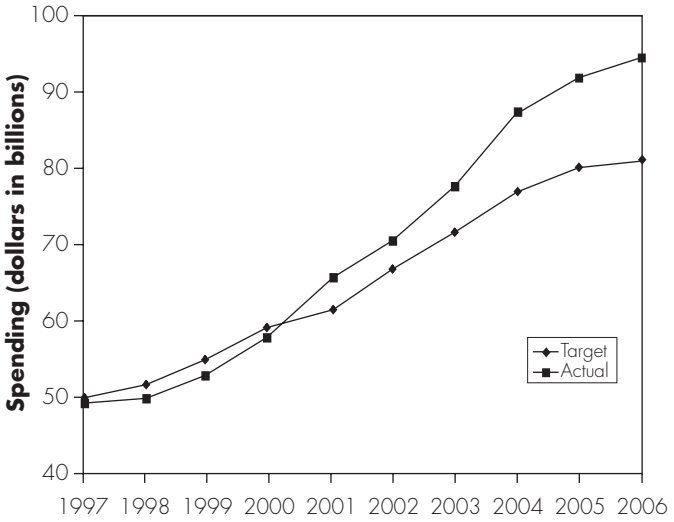
Allowing for these four factors, CMS's preliminary estimate of the SGR is 2.2 percent for 2008 (Table A-1).

For the second step, CMS calculates the update, which is a function of:[5]

- the change in productivity-adjusted input prices for physician services, as measured by the Medicare Economic Index (MEI); and
- an update adjustment factor (UAF) that increases or decreases the update as needed to align actual spending, cumulated over time, with target spending determined by the SGR.

FIGURE A–1

Beginning in 2001, actual spending for physician services has exceeded target



Note: Estimates for 2006 are preliminary.

Source: Office of the Actuary 2007 and Gustafson 2007.

The estimate of the change in input prices for use in the 2008 update is 2.0 percent (Table A-2).[6] The part of the update calculation that has the bigger effect, however, is the UAF, which CMS estimates at –7.0 percent—the maximum negative adjustment permitted under current law. When we combine this adjustment with the estimated change in input prices, the result is an update of −5.1 percent. (Note that this calculation of the estimate converts percentages to ratios, which are multiplied rather than being the sum of the two components of the adjustment.)

The UAF is negative because actual spending for physician services started to exceed the target in 2001 (Figure A-1). Since then, spending has remained above the target. In addition, overrides of the formula (in which the Congress has changed the law to prevent negative updates) have kept payment rates above the level necessary to align actual spending and the target. Indeed, the overrides in the MMA and the Deficit Reduction Act of 2005 (DRA) added to the cumulative growth in physician spending without increases in allowed (or target) spending calculated under the SGR. In total, the estimated cumulative difference in allowed spending versus actual spending results in a UAF that would be −27.7 percent, if not for the –7.0 percent limit.

Reviewing CMS's estimate

CMS's update estimate (–5.1 percent) is unlikely to change by a substantial amount because an update adjustment factor of −27.7 percent is well beyond the statutory limit (–7.0 percent). Thus, the Commission anticipates that no alteration in the factors of CMS's estimates would be large enough to bring the UAF within the limit. Even so, we review the factors that CMS considers in its update estimate for the 2008 SGR.

Changes that affect the target growth rate

As mentioned earlier, CMS's estimate is a function of projected changes in four factors: change in physician input costs, change in beneficiary enrollment, change in real GDP per capita, and change due to law or regulation (Table A-1, p. 252). If, for example, the MEI increases, then the SGR formula would allow for a proportional increase in payments to account for growth in input costs. If, on the other hand, the MEI decreases, then the SGR formula would require a proportional decrease in payments to account for declining input costs.

For the SGR, CMS's estimate of the change in input prices, as measured by the MEI, is within the range of changes in the MEI for the last 15 years—though it is at the low end of the range.[7] The MEI includes an adjustment for productivity. In fact, the recent decline in the MEI is due to recent growth in multifactor productivity (MFP) as estimated by the Bureau of Labor Statistics. Indeed, the two most recent years' MFP rates were among the highest in recent history; as a result, the 10-year moving average of the MFP increased.[8] Consequently, the MEI for 2008 is lower than in previous years because it is reduced by the MFP.[9]

The change in real GDP per capita of 1.9 percent is the 10-year moving average of real GDP estimates from the Bureau of Economic Analysis. These estimates are adjusted for population growth (BEA 2007).

The change in FFS enrollment is a little less certain. CMS assumes a decrease of 0.2 percent. This figure differs by 1 percentage point from the Congressional Budget Office's (CBO's) enrollment projection, which is a decrease in FFS enrollment of 1.2 percent for fiscal year 2008 (CBO 2007). Because CMS and CBO project similar total Medicare enrollment, differences are likely due to difficulties projecting shifts in enrollment from Medicare FFS to Medicare Advantage (MA). (CBO forecasts an increase in MA enrollment of 14 percent in 2008.) CMS may be better able to project any such shift when MA plans submit bids and identify market areas in June 2007. CMS can then revise the enrollment projection, if necessary, before the update becomes final in November 2007. Even then, CMS will have limited information on changes in enrollment in 2008, but the agency will have another two years to revise the enrollment estimate if better data become available, just as the agency does with changes in spending due to law and regulation.

CMS's estimate also allows for anticipated changes in payments due to law and regulation. For example, a change in current law that might increase total payments, such as benefit expansion under Part B, would allow CMS to estimate a proportional increase (positive impact) to the SGR. In contrast, a law change that requires a payment decrease, such as the expiration of a payment bonus, would call for a proportional decrease (negative impact) in CMS's estimate of the SGR.

Although some of the statutory and regulatory changes will, in fact, increase physician spending, CMS expects changes in law and regulation to net a –1.5 percent impact on spending in 2008.[10] Among the three provisions with negative spending effects, two are linked to TRHCA provisions discussed earlier. The provision with the largest negative impact on the SGR stems from the TRHCA conversion factor bonus. Because this bonus applies only to 2007, fee schedule rates will experience a relative decrease in 2008 to account for the absence of the bonus in 2008.[11] A second TRHCA provision that will have a negative impact on the 2008 SGR is the extension of the floor on the work GPCI through 2007. Accordingly, 2008 payment rates will fall in some geographic areas when the floor on the work GPCI expires at the end of 2007.

An MMA provision—the physician scarcity bonus—is also set to expire at the end of 2007. Under this provision, services provided by physicians in scarcity areas—determined separately for primary care physicians and specialists—received a 5 percent bonus in Medicare payments from 2005 through 2007. Thus, CMS's estimate of the 2008 update accounts for a reduction in some physician payments with the elimination of this bonus.

Despite an overall negative impact on the 2008 SGR due to law and regulation, CMS projects that three provisions will have a positive impact on spending. First, in compliance with TRHCA, $1.35 billion will be allocated

toward physician payment in 2008 from an established fund. Although the exact nature of the distribution is not yet known, the statute requires that the fund be directed toward physician payment in 2008. Second, the quality reporting bonus instituted by TRHCA will be paid to eligible providers in 2008 and therefore will increase 2008 total spending.

Finally, CMS expects a positive spending impact on the SGR due to the interaction of the DRA and the reduction in fee-schedule rates. In accordance with the DRA, for certain imaging services, Medicare pays the lesser of hospital outpatient department rates and physician fee schedule rates. Because hospital outpatient prospective payment system (OPPS) services will receive a positive update in 2008, while fee-schedule services will receive a negative update, CMS estimates total spending increases for fee-schedule services as the OPPS and fee-schedule rates come closer together. That is, for certain imaging services, the ceiling for fee-schedule payments will increase consistent with the OPPS update. (Note that, for the 2007 SGR estimate, CMS projected initial savings from the DRA legislation from those items that moved to the OPPS payment level.)

Comparison of target spending with actual spending

The remaining issue concerns CMS's estimates of actual spending for 2006 and 2007. In previous years, CMS provided MedPAC with helpful, preliminary type-of-service volume analyses for the current year with its update estimates. This year, however, CMS did not include such analyses and indicated that it was waiting for more complete spending figures. Therefore, CMS's estimate of actual spending (particularly for 2007) may increase or decrease somewhat before CMS issues a final rule on the update in November 2007.

Summary

Regardless of what happens with the various estimates that determine the physician update, it is quite unlikely that any change will overcome an update adjustment factor of −27.7 percent. For this reason, we anticipate that CMS will revise the update calculations this fall, in preparation for implementing the 2008 update on January 1, and that, barring any overriding statutory provisions, the calculations will show the maximum reduction that the statute permits: the change in productivity-adjusted input prices (as measured by the MEI) minus 7.0 percentage points. ■

Endnotes

1 Note that our purpose in reviewing CMS's estimate is not to assess the adequacy of the update, but rather to evaluate the technical details involved in estimating the update under current law. For further information on the Commission's analysis of payment adequacy for physician services, see our March 2007 report (MedPAC 2007b).

2 http://www.medpac.gov.

3 For calculating the SGR, physician fees include services commonly performed by a physician or in a physician's office. In addition to physician fee schedule services, these fees include diagnostic laboratory tests and most of the drugs covered under Medicare Part B.

4 As required by the MMA, the real GDP per capita factor in the SGR is a 10-year moving average.

5 For the update, physician services include only those services in the physician fee schedule.

6 In MedPAC's earlier update recommendation for physician services, the Commission used an MEI of 1.7 percent, which differed from this 2.0 percent estimate primarily because it was based on a forecast for the fourth quarter of 2008 (MedPAC 2007c). For the physician service update, CMS is statutorily required to use the MEI for the most recent historical quarter for which it has data.

7 Since 1992, the MEI has ranged from 2.0 percent to 3.2 percent.

8 The Bureau of Labor Statistics recently reclassified some industries in its calculations.

9 For MedPAC's physician service payment adequacy analysis, CMS provides us with forecasted input price changes that are not adjusted for productivity. We then adjust (reduce) these figures for productivity separately (MedPAC 2007c).

10 In earlier years, this component of the SGR has been positive to account for spending increases that occur when legislation expands benefits under Medicare Part B.

11 Conversion factor overrides in previous legislation (i.e., MMA and DRA) explicitly did not require a change in law and regulation for purposes of the SGR calculation. In contrast, the conversion factor bonus in TRHCA allows a change in law and regulation to be a factor in CMS's update calculation.

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APPENDIX B

Commissioners' voting on recommendations

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Commissioners' voting on recommendations

In the Medicare, Medicaid, and SCHIP Benefits Improvement and Protection Act of 2000, the Congress required MedPAC to call for individual Commissioner votes on each recommendation, and to document the voting record in its report. The information below satisfies that mandate.

Chapter 1: Medicare in the 21st century: Changing beneficiary profile

No recommendations

Chapter 2: Producing comparative-effectiveness information

The Congress should charge an independent entity to sponsor credible research on comparative effectiveness of health care services and disseminate this information to patients, providers, and public and private payers.

Yes: *Behroozi, Bertko, Burke, Castellanos, Crosson, DeParle, Durenberger, Hackbarth, Hansen, Kane, Milstein, Muller, Reischauer, Scanlon, Wolter*

Absent: *Borman, Holtz-Eakin*

Chapter 3: Update on the Medicare Advantage program and implementing past recommendations

No recommendations

Chapter 4: Value-based purchasing: Pay for performance in home health care

No recommendations

Chapter 5: Payment policy for inpatient readmissions

No recommendations

Chapter 6: An alternative method to compute the wage index

6A The Congress should repeal the existing hospital wage index statute, including reclassifications and exceptions, and give the Secretary authority to establish new wage index systems.

Yes: *Behroozi, Bertko, Burke, Castellanos, Crosson, DeParle, Durenberger, Hackbarth, Hansen, Kane, Milstein, Muller, Reischauer, Scanlon, Wolter*
Absent: *Borman, Holtz-Eakin*

6B The Secretary should establish a hospital compensation index that:

- uses wage data from all employers and industry-specific occupational weights,
- is adjusted for geographic differences in the ratio of benefits to wages,
- is adjusted at the county level and smooths large differences between counties, and
- is implemented so that large changes in wage index values are phased in over a transition period.

Yes: *Behroozi, Bertko, Burke, Castellanos, Crosson, DeParle, Durenberger, Hackbarth, Hansen, Kane, Milstein, Muller, Reischauer, Scanlon, Wolter*
Absent: *Borman, Holtz-Eakin*

6C The Secretary should use the hospital compensation index described in recommendation 6B for the home health and skilled nursing facility prospective payment systems and evaluate its use in the other Medicare fee-for-service prospective payment systems.

Yes: *Behroozi, Bertko, Burke, Castellanos, Crosson, DeParle, Durenberger, Hackbarth, Hansen, Kane, Milstein, Muller, Reischauer, Scanlon, Wolter*
Absent: *Borman, Holtz-Eakin*

Chapter 7: Issues in Medicare coverage of drugs

7A The Congress should direct CMS to identify selected overlap drugs and direct plans to always cover them under Part D. Identified drugs should be:

- low cost
- covered under Part D most of the time.

Yes: *Behroozi, Bertko, Burke, Castellanos, Crosson, DeParle, Durenberger, Hackbarth, Hansen, Kane, Milstein, Muller, Reischauer, Scanlon, Wolter*
Absent: *Borman, Holtz-Eakin*

7B The Congress should allow plans to cover a transitional supply of overlap drugs under Part D under the same conditions as the general transition policy applied by CMS.

Yes: *Behroozi, Bertko, Burke, Castellanos, Crosson, DeParle, Durenberger, Hackbarth, Hansen, Kane, Milstein, Muller, Reischauer, Scanlon, Wolter*
Absent: *Borman, Holtz-Eakin*

7C The Congress should permit coverage for appropriate preventive vaccines under Medicare Part B instead of Part D.

Yes: *Behroozi, Bertko, Burke, Castellanos, Crosson, DeParle, Durenberger, Hackbarth, Hansen, Kane, Milstein, Muller, Reischauer, Scanlon, Wolter*
Absent: *Borman, Holtz-Eakin*

Chapter 8: Skilled nursing facilities: The need for reform

No recommendations

Chapter 9: Analysis of changes to physicians' practice expense payments

No recommendations

Appendix A: Review of CMS's preliminary estimate of the physician update for 2008

No recommendations

Acronyms

Acronyms

ACIP	Advisory Committee on Immunization Practices
ADE	adverse drug event
ADL	activity of daily living
AHIP	America's Health Insurance Plans
AHRQ	Agency for Healthcare Research and Quality
AIDS	acquired immunodeficiency syndrome
ALLHAT	The Antihypertensive and Lipid-Lowering Treatment to Prevent Heart Attack Trial
AMA	American Medical Association
AMDA	American Medical Directors Association
AMCP	Academy of Managed Care Pharmacy
AMI	acute myocardial infarction
APR–DRG	all patient refined diagnosis related group
BBA	Balanced Budget Act of 1997
BEA	Bureau of Economic Analysis
BIPA	Medicare, Medicaid, and SCHIP Benefits Improvement and Protection Act of 2000
BLS	Bureau of Labor Statistics
BMI	body mass index
C3I	Command, Control, Communications & Intelligence
CABG	coronary artery bypass graft
CAH	critical access hospital
CBO	Congressional Budget Office
CBSA	core-based statistical area
CCP	coordinated care plan
CDC	Centers for Disease Control and Prevention
CEA	cost-effectiveness analysis
CHD	coronary heart disease
CHF	congestive heart failure
CMS	Centers for Medicare & Medicaid Services
COPD	chronic obstructive pulmonary disease
CPOE	computerized provider order entry
CRS	Congressional Research Service
CT	computed tomography
CVD	cerebrovascular disease
CWF	common working file
DeCIDE	Developing Evidence to Inform Decisions about Effectiveness
DERP	Drug Effectiveness Review Project
DME	durable medical equipment
DRA	Deficit Reduction Act of 2005
DRG	diagnosis related group
DXA	dual-energy X-ray absorptiometry
E&M	evaluation and management
EHR	electronic health record
ER	emergency room
ESI	employer-sponsored insurance
ESRD	end-stage renal disease
FDA	Food and Drug Administration
FFRDC	federally funded research and development center
FFS	fee-for-service
FHA	Federal Health Architecture
FICA	Federal Insurance Contributions Act
FTE	full-time equivalent
FY	fiscal year
GAO	Government Accountability Office
GASB	Governmental Accounting Standards Board
GDP	gross domestic product
GI	gastrointestinal
GPCI	geographic practice cost index
GPO	group purchasing organization
HCFA	Health Care Financing Administration
HHA	home health agency
HHRG	home health resource group
HHS	Department of Health and Human Services
HMO	health maintenance organization
ICD	implantable cardioverter defibrillator
ICD–9–CM	International Classification of Diseases, Ninth Revision, Clinical Modification
ICU	intensive care unit
IHI	Institute for Healthcare Improvement
IME	indirect medical education
IMRT	intensity-modulated radiation therapy
IOM	Institute of Medicine
IPPS	inpatient prospective payment system
IT	information technology
IV	intravenous
KFF	The Henry J. Kaiser Family Foundation
KPS	Kindred Pharmacy Services
LIS	low-income subsidy
LOS	length of stay
LPN	licensed practical nurse
LTCP	long-term care pharmacy
MA	Medicare Advantage
MA–PD	Medicare Advantage–Prescription Drug [plan]

MCAC	Medicare Coverage Advisory Committee
MCBS	Medicare Current Beneficiary Survey
MDC	major diagnostic category
MDS	Minimum Data Set
MedCAC	Medicare Evidence Development & Coverage Advisory Committee
MedPAC	Medicare Payment Advisory Commission
MEI	Medicare Economic Index
MFP	multifactor productivity
MGCRB	Medicare Geographic Classification Review Board
MHS	Medicare Health Support
MMA	Medicare Prescription Drug, Improvement, and Modernization Act of 2003
MRI	magnetic resonance imaging
MSA	medical savings account
MSA	metropolitan statistical area
MTMP	medication therapy management program
N/A	not applicable
NACDS	National Association of Chain Drug Stores
NBER	National Bureau of Economic Research
NCHS	National Center for Health Statistics
NCQA	National Committee for Quality Assurance
NDC	national drug code
NECTA	New England city and town area
NF	nursing facility
NHSC	National Horizon Scanning Centre
NICE	National Institute for Health and Clinical Excellence (United Kingdom)
NIH	National Institutes of Health
NORC	(formerly) National Opinion Research Center
NP	new profiles
NQF	National Quality Forum
NSF	National Science Foundation
NTA	nontherapy ancillary
OASIS	Outcome and Assessment Information Set
OBQI	Outcome-Based Quality Improvement
OBRA	Omnibus Budget Reconciliation Act
OES	Occupational Employment Statistics
OIG	Office of Inspector General
OMB	Office of Management and Budget
OPPS	outpatient prospective payment system
OT	occupational therapy
P&T	pharmacy and therapeutics
P4P	pay for performance
PAC	post-acute care
PBGH	Pacific Business Group on Health
PBM	pharmacy benefit manager
PCCM	primary care case management
PCMA	Pharmaceutical Care Management Association
PDP	prescription drug plan
PE	practice expense
PFFS	private fee-for-service
PHC4	Pennsylvania Health Care Cost Containment Council
PHR	personal health record
PPO	preferred provider organization
PPS	prospective payment system
PT	physical therapy
PTCA	percutaneous transluminal coronary angioplasty
RN	registered nurse
RTI	Research Triangle Institute
RUC	Relative Value Scale Update Committee
RUG	resource utilization group
RUG–53	resource utilization group, 53-group model
RUG–58	resource utilization group, 58-group model
RVU	relative value unit
SCHIP	State Children's Health Insurance Program
SES	socioeconomic status
SGR	sustainable growth rate
SHIP	State Health Insurance Assistance Program
SIM	service index model
SLP	speech–language pathology
SMS	Socioeconomic Monitoring System
SNF	skilled nursing facility
SNP	special needs plan
SOI	severity of illness
SQI	Standardized Quality Index
SSRI	selective serotonin reuptake inhibitor
STM	staff time measurement
TEC	Technology Evaluation Center
TRHCA	Tax Relief and Health Care Act of 2006
UAF	update adjustment factor
U.K.	United Kingdom
U.S.	United States
U.S.C.	United States Code
VA	Department of Veterans Affairs
WLF	Washington Legal Foundation

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David F. Durenberger, J.D., is president of Policy Insight, LLC; senior health policy fellow at the University of St. Thomas in Minneapolis, MN; and chairman of the National Institute of Health Policy. He is also president of the Medical Technology Leadership Forum, a member of the Kaiser Foundation Commission on Medicaid and the Uninsured, the Board of the National Committee for Quality Assurance, and the National Commission for Quality Long Term Care. From 1978 to 1995, he served as the senior U.S. Senator from Minnesota, as a member of the Senate Finance Committee, and chairman of its health subcommittee. He was a member of the Senate Environment Committee; Government Affairs Committee; and the committee now known as the Health, Education, Labor, and Pensions Committee. He chaired the Senate Select Committee on Intelligence. Senator Durenberger is a graduate of St. John's University, received his J.D. degree from the University of Minnesota, and served as an officer in the U.S. Army.

Glenn M. Hackbarth, J.D., chairman of the Commission, lives in Bend, OR. He has experience as a health care executive, government official, and policy analyst. He was chief executive officer and one of the founders of Harvard Vanguard Medical Associates, a multispecialty group practice in Boston that serves as a major teaching affiliate of Harvard Medical School. Mr. Hackbarth previously served as senior vice president of Harvard Community Health Plan. From 1981 to 1988, he held positions at the U.S. Department of Health and Human Services, including deputy administrator of the Health Care Financing Administration. Mr. Hackbarth received his B.A. from Pennsylvania State University and his M.A. and J.D. from Duke University.

Jennie Chin Hansen, R.N., M.S.N., F.A.A.N., of San Francisco, is president-elect of AARP; a senior fellow at the University of California, San Francisco, chairing the Integrated Nurse Leadership Project; and a part-time nursing faculty member at San Francisco State University. Ms. Hansen was executive director of On Lok Senior Health Services, the prototype for the Program of All-Inclusive Care for the Elderly. She has practiced nursing in both urban and rural settings and taught in undergraduate programs. She currently serves in leadership roles with the AARP Foundation, Agency of Health Care Research and Quality Effective Healthcare Stakeholders group, Lumetra (California's Quality Improvement Organization), the Advisory Board of the Institute for the Future of Aging Services, the Robert Wood Johnson Executive Nurse Fellows Program, and the California HealthCare Foundation Health Care Fellows Program. She was a delegate to the 2005 White House Conference on Aging. Ms. Hansen received her B.S. from Boston College and her M.S.N. from the University of California, San Francisco.

Douglas Holtz-Eakin, Ph.D., is the economic policy chair of the John McCain 2008 Exploratory Committee. Previously, he was the director of the Maurice R. Greenberg Center for Geoeconomic Studies at the Council on Foreign Relations, where he held the Paul A. Volcker Chair in International Economics. He has served as the director of the Congressional Budget Office (CBO) and was the chief economist for the President's Council of Economic Advisors. He also represented CBO on the Federal Accounting Standards Advisory Board. Before joining the federal government, Dr. Holtz-Eakin taught at Syracuse University's Maxwell School, where he chaired its Department of Economics and was associate director

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Arnold Milstein, M.D., M.P.H., is medical director of the Pacific Business Group on Health (PBGH) and U.S. health care thought leader at Mercer Human Resource Consulting. PBGH is the largest employer health care purchasing coalition in the U.S. Dr. Milstein focuses on health care purchasing strategy, clinical performance measurement, and the psychology of clinical performance improvement. He cofounded both the Leapfrog Group and the Consumer-Purchaser Disclosure Project and heads performance measurement activities for both initiatives. Dr. Milstein was previously a Rosenthal Lecturer at the Institute of Medicine, and the *New England Journal of Medicine* described him as a "pioneer" in efforts to advance quality of care. In 2004 and 2005, World-at-Work, the largest global organization of human resource managers, awarded him its highest annual award and the National Business Group on Health recognized him for innovation and implementation success in health care cost reduction and quality gains. He is an associate clinical professor at the University of California at San Francisco. Dr. Milstein has a B.A. in economics from Harvard, an M.P.H. in health services planning from the University of California at Berkeley, and an M.D. degree from Tufts University.

Ralph W. Muller, M.A., is chief executive officer of the University of Pennsylvania Health System, one of the largest academic health systems in the country. Most recently he served as managing director of Stockamp & Associates, a hospital consulting firm, and as a visiting fellow at the King's Fund in London. From 1985 to 2001, he was president and chief executive officer of the University of Chicago Hospitals and Health Systems. Before joining the hospital, he held senior positions with the Commonwealth of Massachusetts, including deputy commissioner of the Department of Public Welfare. Mr. Muller is past chairman of the Association of American Medical Colleges, past chairman of the Council of Teaching Hospitals and Health Systems, and past vice chairman of the University Health System Consortium. He is past chairman of the National Opinion Research Center, a social service research organization, and serves on the board of the National Committee for Quality Assurance. Mr. Muller received his B.A. in economics from Syracuse University and his M.A. in government from Harvard University.

Robert D. Reischauer, Ph.D., is vice chairman of the Commission and president of The Urban Institute. Previously, he was a senior fellow with the Brookings Institution, and from 1989 to 1995 he was the director of the Congressional Budget Office. Dr. Reischauer currently serves on the boards of the Academy of Political Sciences, the Center on Budget and Policy Priorities, and the Committee for a Responsible Federal Budget. He also is a member of the Institute of Medicine, the National Academy of Public Administration, and Harvard Corporation. Dr. Reischauer received his A.B. degree from Harvard College and his M.I.A. and Ph.D. from Columbia University.

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Nicholas Wolter, M.D., is a pulmonary and critical care physician who serves as chief executive officer for Billings Clinic in Billings, MT. Billings Clinic is a regional, not-for-profit medical foundation consisting of a multispecialty group practice, tertiary hospital, critical access hospital affiliates, health maintenance organization, research division, and long-term care facility serving a vast rural area in the northern Rockies. Dr. Wolter began his Billings Clinic practice in 1982 and served as medical director of the hospital's intensive care unit from 1987 to 1993. He began his leadership role with the successful merger of the clinic and hospital in 1993. Dr. Wolter is a diplomate of the American Board of Internal Medicine and serves on the boards of many regional and national health care organizations. He has a B.A. degree from Carleton College, an M.A. degree from the University of Michigan, and an M.D. degree from the University of Michigan Medical School.

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