JUNE 2012

REPORT TO THE CONGRESS

Medicare and the Health Care Delivery System

MEDPAC Medicare Payment Advisory Commission

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The Medicare Payment Advisory Commission (MedPAC) is an independent congressional agency 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.

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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
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June 15, 2012

The Honorable Joseph R. Biden
President of the Senate
U.S. Capitol
Washington, DC 20510

The Honorable John A. Boehner
Speaker of the House
U.S. House of Representatives
U.S. Capitol
Room H-232
Washington, DC 20515

Dear Mr. Vice President and Mr. Speaker:

I am pleased to submit the Medicare Payment Advisory Commission's June 2012 *Report to the Congress: Medicare and the Health Care Delivery System*. This report fulfills the Commission's legislative mandate to evaluate Medicare payment issues and to make recommendations to the Congress.

This report contains six chapters. In the first four chapters, we examine several issues central to the beneficiaries' experience of the Medicare program. While much of the Commission's work focuses on providers and their payment incentives, how beneficiaries view the Medicare program and how they make decisions about their health care are vital to the program's success:

- One chapter examines the design of the fee-for-service (FFS) Medicare benefit package and recommends ways to increase beneficiary protection and program efficiency.
- One chapter assesses care coordination for beneficiaries in FFS Medicare, including the results of past demonstration projects and a review of new models.
- One chapter examines improving care coordination for beneficiaries dually eligible for Medicare and Medicaid, discusses upcoming issues with the care of this population, and recommends ways to make the Program of All-Inclusive Care for the Elderly more effective.
- One chapter considers improvements to risk adjustment to more accurately make payments to Medicare Advantage plans on behalf of beneficiaries who enroll in these plans, especially those beneficiaries with complex clinical conditions.

We also include chapters on two congressionally mandated topics:

- One chapter examines care for beneficiaries in rural areas of the United States, including access to care for rural beneficiaries, the quality of the care they receive, special rural payments, and the adequacy of payments for rural providers. It also develops several principles to help formulate and guide rural policies in the future.

- One chapter examines issues related to Medicare payment for infusion of drugs in the beneficiary's home and the circumstances under which enhanced coverage could better meet the beneficiary's needs and save money for the program.

In an appendix, as required by law, we review the Centers for Medicare & Medicaid Services' preliminary estimate of the update to payments under the physician fee schedule for 2013.

I hope you find this report useful as the Congress continues to grapple with the difficult task of controlling the growth of Medicare spending while preserving beneficiaries' access to high-quality care.

Sincerely,

Glenn M. Hackbarth, J.D.

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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Table of contents

Acknowledgments v

Executive summary xi

Chapters

1 Reforming Medicare's benefit design 3
Introduction 5
Cost sharing under Medicare's FFS benefit 5
Design issues for reforming Medicare's benefit 9
Commission's views on FFS benefit design reform 19
Illustrative benefit package 20

2 Care coordination in fee-for-service Medicare 33
Consequences of poor care coordination 36
Reasons for poor care coordination 37
Care coordination: Models and types 38
Care coordination demonstrations in FFS Medicare 42
Challenges of establishing an effective care coordination intervention 47
Care coordination and Medicare payment policy 49
Conclusion 54

3 Care coordination programs for dual-eligible beneficiaries 61
Introduction 67
Analyses of the Program of All-Inclusive Care for the Elderly 68
Analyses of dual-eligible special needs plans 82
CMS demonstrations on integrated care programs 85

4 Issues for risk adjustment in Medicare Advantage 95
Evidence that MA enrollees tend to be lower cost than FFS beneficiaries 100
Improving predictive accuracy of the CMS–HCC model 101
Issues related to financial neutrality between FFS Medicare and the MA program 105

5 Serving rural Medicare beneficiaries 115
Background information on rural Medicare beneficiaries 125
Access to health services by rural Medicare beneficiaries 126
Rural volumes of care are similar to urban volumes of care, but large regional differences exist 131
Quality of care in rural areas 141
Payment adequacy and special rural payment adjustments 153

6 Medicare coverage of and payment for home infusion therapy 171
Background 175
Provision of home infusion by private health plans, MA plans, and other payers 179

Medicare beneficiary experience 185
Potential for abuse of a Medicare home infusion benefit 186
Assessment of cost data 187
Cost implications of expanded home infusion coverage in Medicare 188
Design considerations for expanded home infusion coverage in Medicare 197
Conclusion 202

Appendixes

A Review of CMS's preliminary estimate of the 2013 update for physician and other professional services 211
How temporary increases and other legislative provisions have affected payments for physician and other professional services 211
How CMS estimated the SGR formula's update for 2013 213

B Commissioners' voting on recommendations 221

Acronyms 227

More about MedPAC

Commission members 231

Commissioners' biographies 233

Commission staff 237

Executive summary

Executive summary

As part of its mandate from the Congress, each June the Commission reports on Medicare payment systems and on issues affecting the Medicare program, including changes in health care delivery and the market for health care services. In this report, we examine several issues central to the beneficiaries' experience of the Medicare program. While much of the Commission's work focuses on providers and their payment incentives, how beneficiaries view the Medicare program and how they make decisions about their health care are vital to the program's success. Aligning the beneficiary, the provider, and the program has the potential to improve health, to improve the experience of health care provided through Medicare, and to control costs for the beneficiary and the taxpayer alike. In the first four chapters of this report we consider:

- The design of the fee-for-service (FFS) Medicare benefit package, which has remained essentially unchanged since the creation of the program in 1965. We recommend creating an out-of-pocket maximum cost-sharing amount to protect beneficiaries against high medical expenses, replacing coinsurance with fixed-dollar copayments, giving the Secretary authority to adjust cost sharing according to the value of the service, reforming other aspects of the package, and including a charge on supplemental insurance to account, in part, for the additional cost supplemental coverage imposes on Medicare.
- Care coordination for beneficiaries in FFS Medicare with an emphasis on the results of past Medicare care coordination demonstration projects and a review of promising new models. Near-term methods to encourage care coordination within the current FFS system—such as explicit payments for related services to primary care clinicians—may need to be pursued until more integrated payment and delivery systems evolve.
- Improving care coordination for beneficiaries dually eligible for Medicare and Medicaid, a population that may benefit the most from improved care coordination, including recommendations to make the Program of All-Inclusive Care for the Elderly (PACE) more effective and more widely available. We also discuss issues involving forthcoming demonstrations to integrate Medicare and Medicaid's care for the dual-eligible population, including subgroups of dual eligibles with special needs.
- Risk adjustment for Medicare payments to Medicare Advantage (MA) plans. Accurate risk adjustment is essential to pay plans correctly. Although invisible to beneficiaries, risk adjustment can dictate their desirability to MA plans because the mix of beneficiaries a plan enrolls can help determine the plan's financial performance.

We also include in-depth reports on two congressionally mandated topics:

- Care for beneficiaries in rural areas of the United States, including access to care for rural beneficiaries, the quality of the care they receive, special rural payments, and the adequacy of payments for rural providers. We also develop and bring forward several principles to help formulate and guide rural policies in the future.
- Medicare's payment for home infusion. We examine issues related to Medicare payment for infusion of drugs in the beneficiary's home and the circumstances under which enhanced coverage could better meet the beneficiary's needs and save money for the program.

In an appendix, as required by law, we review CMS's preliminary estimate of the update to payments under the physician fee schedule for 2013.

Reforming Medicare's benefit design

Medicare's benefit package under FFS has remained substantially unchanged since 1965. During that time, insurance products in the private sector have undergone numerous changes, medical technology has evolved radically, and Medicare payment systems have changed as well. Over the years, Medicare FFS prices and the amount of services beneficiaries receive have grown dramatically; as a result, some beneficiaries may now incur very large cost-sharing liability because under the current benefit design no upper limit exists on the amount of Medicare cost-sharing expenses a beneficiary can incur. The Commission has been considering ways to reform the traditional benefit package so that it gives beneficiaries better protection against high out-of-pocket (OOP) spending and creates incentives for them to make better decisions about their use of discretionary care.

In part due to the gaps in coverage in the FFS benefit design, about 90 percent of FFS beneficiaries receive supplemental coverage through medigap, employer-sponsored retiree plans, or Medicaid. This additional coverage protects beneficiaries from unlimited OOP spending, but it also reduces their incentives to weigh decisions about the use of care, because many supplemental plans cover all or nearly all of Medicare's cost-sharing requirements. Moreover, most of the costs of the resulting increased utilization are borne by the Medicare program. As a matter of equity among beneficiaries and fiscal sustainability, Medicare should recoup at least some of those additional costs.

Current law makes it difficult to change Medicare's benefit design as our health care system evolves. Although the practice of medicine and medical technology change rapidly, fairly rigid statutory parameters give Medicare's program managers little flexibility to change its benefit design in response, even as other insurers change their benefit packages. Giving the Secretary some flexibility to change cost-sharing rules, within budget-neutrality parameters established by the Congress, would provide at least some way to recognize that services can be of different and changing value to the program and its beneficiaries.

Therefore, in Chapter 1, we recommend that the Congress should direct the Secretary to develop and implement a FFS benefit design that would replace the current design and would include:

- an OOP maximum;
- deductible(s) for Part A and Part B services;
- replacing coinsurance with copayments that may vary by type of service and provider;
- secretarial authority to alter or eliminate cost sharing based on the evidence of the value of services, including cost sharing after the beneficiary has reached the OOP maximum;
- no change in beneficiaries' aggregate cost-sharing liability; and
- an additional charge on individually purchased and employer-provided supplemental insurance.

For illustration, we demonstrate how one such design could result in a cap on beneficiaries' OOP liability while leaving the cost-sharing liability of all beneficiaries taken together unchanged. It includes an additional charge on supplemental insurance (designed to recover some of the cost of the increased utilization borne by the program) and would yield modest savings to Medicare. However, we are not recommending a particular detailed design but rather that the Secretary develop one that adheres to the above principles.

Care coordination in fee-for-service Medicare

In Chapter 2, we consider care coordination in FFS Medicare. Poor care coordination can result in beneficiaries having to repeat medical histories and tests and receiving inconsistent medical instructions, poor transitions between sites of care, and unnecessary use of higher intensity settings. Gaps exist in care coordination because of the fragmentation of service delivery, the lack of tools to easily communicate across settings and providers, and the lack of a financial incentive to coordinate care. These gaps are particularly important for Medicare beneficiaries because they are more likely to have multiple chronic conditions than younger patients and thus more involvement with the health care system.

Findings from recent Medicare demonstrations on care coordination and disease management models have not shown systematic improvements in beneficiary outcomes or reductions in Medicare spending. Despite those findings, many health care providers and researchers still see significant potential for care coordination programs to improve care. The most successful model in the Medicare demonstrations emphasized restructuring systems to support a care coordination intervention. This finding supports the conclusion that successful care coordination cannot be a "plug-in module" but must be an integral part of the system providing the care.

Ideally, as more integrated payment and delivery systems evolve, the incentives for greater care coordination inherent in such systems will develop as well, leading to greater care coordination. However, in the interim, additional methods for encouraging care coordination may need to be pursued, including those that make explicit payments for related services to primary care clinicians—the linchpin of more coordinated care and eventual system redesign.

Policy options to improve care coordination in the current FFS system could include creating a per beneficiary payment for care coordination, adding codes or modifying existing codes in the fee schedule that would

allow practitioners to bill for selected care coordination activities, and using payment policy to reward or penalize outcomes resulting from coordinated or fragmented care.

Care coordination programs for dual-eligible beneficiaries

Dual-eligible beneficiaries are eligible for both Medicare and Medicaid benefits and are a population that could particularly benefit from improved care coordination. In 2010, there were approximately 9.9 million dual-eligible beneficiaries—accounting for about 18 percent of Medicare FFS enrollment and 31 percent of Medicare FFS spending. They also account for about 15 percent of Medicaid enrollment and 40 percent of Medicaid spending. These individuals are high cost; require a mix of medical, long-term care, behavioral health, and social services; and have more limited financial resources than the general Medicare population. Programs that help dual-eligible beneficiaries access and coordinate services could improve their quality of care and have the potential to reduce Medicare and Medicaid spending.

In Chapter 3, we look at the two main integrated care programs for dual-eligible beneficiaries—PACE and dual-eligible special needs plans (D–SNPs)—and examine the structure of their care coordination models, quality outcomes, and Medicare payments. We also examine a set of demonstration programs in development by the states and CMS.

PACE is a provider-based integrated care program structured around day care centers, which serve about 21,000 beneficiaries in 2012. PACE makes it possible for frail beneficiaries to remain in the community, and there is evidence that the program improves the quality of care relative to FFS. We also found that most PACE sites operate on a small scale, that enrollment in the PACE program is generally slow, that most PACE providers were able to reach positive margins after a few years of operation, and that Medicare spending on PACE exceeds FFS spending for similar beneficiaries. PACE payments are based on the MA payment rates in force before enactment of the Patient Protection and Affordable Care Act of 2010; those rates are significantly higher than current law MA benchmarks, which govern payment for D–SNPs.

To make the PACE program accessible to more beneficiaries and to pay more accurately, the Commission recommends that the Congress should direct the Secretary to improve the MA risk-adjustment system to more accurately predict risk across all MA enrollees, which would make payments more appropriately reflect the costs of the population PACE programs enroll (see Chapter 4 for an analysis of the MA risk-adjustment system). Using the revised risk-adjustment system, the Congress should direct the Secretary to pay PACE providers based on the current MA payment system for setting benchmarks and quality bonuses. These changes should occur no later than 2015. After these changes are made:

- the Congress should change the age eligibility criteria for PACE to allow nursing home–certifiable Medicare beneficiaries under the age of 55 to enroll, and
- the Secretary should provide prorated Medicare capitation payments to PACE providers for partial-month enrollees and establish an outlier protection policy for new PACE sites to use during the first three years of their programs.

In addition, the Congress should direct the Secretary to publish select quality measures on PACE providers and develop appropriate quality measures to enable PACE providers to participate in the MA quality bonus program by 2015.

In contrast to the provider-based PACE program, D–SNPs are managed care plans that focus their enrollment on dual-eligible beneficiaries. D–SNPs enrolled about 1.16 million beneficiaries in 2012. Some have state contracts to cover all of a state's Medicaid benefits, including long-term care, and some do not. We were not able to conclude whether D–SNPs provide better quality of care than FFS or other MA plans because of a lack of available quality data. Using the measures that are available for D–SNPs, we found that their quality of care is generally mixed. We found that plan bids for Medicare Part A and Part B services and Medicare spending on D–SNPs both exceed FFS spending, which raises the question of whether these plans can provide Part A and Part B services at a cost that is equal to or below FFS.

CMS is in the process of working with states to promote the development of integrated care demonstration programs. CMS has offered states the opportunity to test a capitated model or a managed FFS model. As the demonstrations are developed, a number of issues must be addressed:

- Is the scale of the demonstration in some states too large? Will the size of the demonstrations leave

adequate comparison groups and is there an orderly process for disenrollment if the demonstration fails?

- Are there plans with the requisite experience and capacity to handle the large scale of the demonstration?
- How will beneficiaries be matched to care delivery organizations that are appropriate to meet their needs under passive enrollment models, and can an opt-out enrollment policy be structured to accommodate beneficiaries with cognitive and other limitations?
- What plan standards will be required, considering that passive enrollment with opt out could be construed as a restriction on freedom of choice?

The Commission's greatest concern is that all dual-eligible beneficiaries in a state will be enrolled in the demonstration—in effect, a program change rather than a demonstration. The Commission will continue to consider this and other concerns as we move forward.

Issues for risk adjustment in Medicare Advantage

Health plans that participate in the MA program receive monthly capitated payments for each Medicare enrollee. Each capitated payment is the product of: a base rate, which reflects the payment if an MA enrollee has the health status of the national average beneficiary, and a risk score, which indicates how costly the enrollee is expected to be relative to the national average beneficiary. If the risk-adjustment system systematically favors the selection of beneficiaries with less complex conditions over others, it could create incentives for plans to design their benefit packages and focus their marketing to preferentially attract those beneficiaries. Alternatively, if a plan's care delivery strategy focuses on patients who require the most complex care, it could be disadvantaged. In Chapter 4, we examine the performance of the risk-adjustment system in the MA program and offer alternatives for improving its performance.

CMS uses the CMS–hierarchical condition category (CMS–HCC) model to risk-adjust each MA payment. This model uses enrollees' demographics and medical conditions collected into 70 HCCs to predict their costliness. It is a much better predictor of a beneficiary's costliness than the demographic-based model that preceded it. The demographic model explained only about 1 percent of the variation in costliness among individual beneficiaries, whereas the CMS–HCC explains about 11 percent—about half of the variation predictable from past spending.

Nonetheless, systematic payment inaccuracies remain. For example, for all beneficiaries who have the same condition, the CMS–HCC adjusts MA payments by the same proportion. But disease severity can vary across beneficiaries with a given condition, and those with greater severity tend to be more costly. Therefore, for a given condition it is possible that plans can be financially advantaged or disadvantaged based on the disease severity of their enrollees. We compared the costliness in 2007 of those who enrolled in an MA plan in 2008 (joiners) and those who stayed in FFS Medicare in 2008 (stayers). We found that within nearly all the disease categories in the CMS–HCC, the joiners were less costly than the stayers, meaning that MA enrollees are systematically lower cost than their FFS counterparts, even though the aggregate HCC risk score for all MA plans is about equal to the aggregate risk score for FFS Medicare.

Not only can systematic payment inaccuracies in the CMS–HCC result in opportunities for favorable selection in the MA program, plans that focus on high-risk populations, such as SNPs and PACE, may be adversely affected. If high-risk populations—such as those who have many conditions—are systematically underpaid, then plans specializing in high-risk populations will be at a financial disadvantage.

We explored several policy options for reducing these errors. We found that:

- Including beneficiaries' race and measures of income does not improve payment accuracy.
- Including the number of a beneficiary's medical conditions in the model improves payment accuracy.
- Using two years of diagnoses to identify beneficiaries' conditions improves payment accuracy for high-risk beneficiaries (but to a lesser extent than adding the number of conditions) and also reduces year-to-year fluctuations in beneficiaries' risk scores—which would result in more stable revenue streams for MA plans.
- Adding the number of conditions and two years of diagnosis data to the model results in more accurate payments and smaller year-to-year fluctuations in beneficiaries' risk scores.

Serving rural Medicare beneficiaries

In the Patient Protection and Affordable Care Act of 2010, the Congress required that the Commission report to the Congress on:

- rural Medicare beneficiaries' access to care,
- rural providers' quality of care,
- special rural Medicare payments, and
- the adequacy of Medicare payments to rural providers.

In Chapter 5, in addition to the findings presented on each of those four topics, we present a set of principles that are designed to guide expectations and policies with respect to rural access, quality, and payments. By consistently following this set of principles, Medicare policy can be refined to more efficiently provide access to high-quality care for rural beneficiaries.

When evaluating access, we focus on beneficiary-centered indicators rather than provider-centered ones. These indicators include patient claims data, beneficiary surveys, and beneficiary focus groups.

Looking at utilization of health care services, we find that despite lower physician-to-population ratios and difficulties of recruiting physicians to practice in rural areas, beneficiaries in urban and rural areas used comparable amounts of health care in every service we examined and across the spectrum of rural areas (from those adjacent to urban areas to those in sparsely populated frontier counties). We find significant differences in health care service use by Medicare beneficiaries across regions of the country but little difference between rural and urban beneficiaries' service use within those regions. Rural service use is high in regions where urban use is high, and rural service use is low in regions where urban use is low. In Texas and Louisiana, for example, where service use is high for urban beneficiaries, it is also high for rural beneficiaries. Similarly, in Minnesota and Hawaii, where service use is low for urban beneficiaries, it is also low for rural beneficiaries.

Beneficiaries in rural and urban areas also report similar levels of satisfaction with access to care even if some rural beneficiaries have to travel outside their area to obtain care. We find the volume of care is comparable with and without adjustments for health status. Notwithstanding, some are concerned that rural populations have a significantly greater illness burden than urban populations that is not detected by Medicare claims data. However, we see no clear evidence that rural Medicare beneficiaries are older, are sicker, or consistently live in communities with greater levels of poverty. Although some rural areas tend to have poor and sick populations (looking across Medicare beneficiaries and others), differences in health status and wealth appear to differ more among regions of the country than across the rural/urban continuum.

Considering these findings, the Commission has determined this principle for access: All beneficiaries, whether rural or urban, should have equitable access to health care services. However, equitable access does not necessarily mean equal travel times for all services or that all services are available locally.

Beneficiaries in small rural communities often have to travel farther to see specialists because there are too few local residents to support some specialties, but that does not mean they do not have access to those services. Whether access is equitable and results in beneficiaries receiving equal services can be evaluated by examining the volume of services received as well as beneficiaries' reported satisfaction with access to all services.

With respect to quality of care, we do not find major differences in quality between urban and rural providers in most sectors. Patient satisfaction is similar, and quality measures for skilled nursing facilities, home health agencies, and outpatient dialysis facilities do not show major differences between urban and rural providers or across the rural spectrum. Similarly, hospital readmission measures do not point to major differences based on rural or urban location. However, we do find that rural hospitals continue to not perform as well as urban hospitals on most process measures and on condition-specific 30-day mortality rates—consistent with long-standing findings in the literature.

We have determined the following principles for quality: Expectations for quality of care in rural and urban areas should be equal for nonemergency services rural providers choose to deliver. By contrast, emergency services may be subject to different quality standards to account for different levels of staff, patient volume, and technology between urban and rural areas. Quality metrics should be reported by even the smallest hospitals, and all hospitals should be expected to practice evidence-based medicine.

The relevant quality benchmark for emergency care should be other small hospitals or the expected outcomes if the small rural hospital no longer offers emergency care and patients must travel farther for emergency services.

With respect to payment, we find that in general, the adequacy of FFS payments to rural providers does not differ systematically or significantly from the adequacy of urban providers' payments. On average, freestanding rural skilled nursing facilities and home health agencies have margins for Medicare patients similar to those of urban providers, with some rural and urban agencies having relatively high margins. When we examined the adequacy of physician payments, we found similar service use rates, similar ability to obtain appointments with existing and new physicians, and similar satisfaction with access. These indirect indicators suggest that payments to rural physicians are at least as adequate as those made to urban physicians. In addition, physician incomes per hour are comparable in rural and urban areas. However, the Commission has raised concerns about the adequacy of payments to primary care physicians relative to payments to subspecialists—concerns that apply to physicians in both rural and urban areas.

Medicare payments are as adequate for rural hospitals as for urban hospitals, in part due to implementation of certain increases in rural hospital payments that followed from previous Commission recommendations. As a result, the number of rural hospital closures has declined dramatically in recent years. However, some rural special payments have been enacted that go beyond the Commission's recommendations, and some of those special payments are not consistent with the set of payment principles we establish below:

- Payments should be targeted toward low-volume isolated providers—that is, providers that have low patient volume and are at a distance from other providers.
- The magnitude of special rural payment adjustments should be empirically justified. That is, the payments should increase to the extent that factors beyond the providers' control increase their costs.
- Rural payment adjustments should be designed in ways that encourage cost control on the part of providers.

Medicare coverage of and payment for home infusion therapy

The Congress requested the Commission to conduct a study on home infusion therapy; we report our findings in Chapter 6. Home infusion involves the intravenous administration of drugs to an individual at home. Home infusion involves several components (drugs, supplies, equipment, and nursing). Medicare FFS covers some or all components of home infusion, depending on the circumstances, with total program spending of about $1 billion in 2009. The Commission was asked to assess the benefits and costs associated with providing infusions in the home versus alternative settings, including whether savings could be achieved from broader Medicare coverage of home infusion. In addition, the Commission was asked to examine sources of data that could be used for setting home infusion payment rates, coverage and payment for home infusion by commercial insurers and MA plans, and potential abuse of a home infusion benefit.

We found that the most common payment method used by private health plans included a payment for drugs, a separate payment for nursing as needed, and a per diem amount covering supplies, equipment, pharmacy services, and additional services. Providers we interviewed described a wide range of payment levels for per diem services. All plans use utilization management techniques, particularly prior authorization, to ensure that home infusion is provided appropriately.

Whether home infusion yields Medicare savings or costs for an individual beneficiary depends on the setting where the beneficiary otherwise would have received infusions, how payments compare between infusion in the home and the alternative setting, how frequently the drug is infused, and how often home nurse visits are needed. Some opportunities likely exist to achieve savings for beneficiaries who would otherwise be admitted to skilled nursing facilities for the sole purpose of receiving infusions; savings from moving infusions from other sectors to the home may also be possible under certain circumstances.

For expanded home infusion coverage to realize overall savings for Medicare, any net savings from shifting infusion to the home would need to exceed the additional costs to Medicare of home infusion services that would otherwise have been paid by other insurers or beneficiaries and more beneficiaries using intravenous drugs instead of other therapies. The cost implications of broader home infusion coverage vary by drug. Thus, a targeted expansion of home infusion coverage focusing on a subset of drugs would have more likelihood of savings than a broad expansion. However, we cannot draw conclusions about net savings or costs with the data currently available.

Collecting the data needed for constructing a home infusion payment system would be difficult. Current data on the cost associated with providing home infusion

services is very limited; options for additional data might include Medicare payment rates for similar services or competitive bidding. Alternatively, the feasibility of obtaining data on providers' acquisition costs or manufacturers' sales prices for equipment and supplies could be explored.

In Chapter 6, we discuss two approaches for increasing access to home infusion: filling in the gaps in current coverage and setting up a demonstration project for beneficiaries who need infused antibiotics. In general, Medicare has had less ability to monitor care provided in the home than in facility settings and it has been more difficult to create payment systems with incentives for appropriate utilization. While private payers have not reported fraud to be a problem in the home infusion industry, a broad, unmanaged expansion of Medicare FFS coverage could lead to fraudulent actors entering the field. To ensure appropriate utilization of such a benefit, management controls such as prior authorization would likely be needed. The demonstration project could test Medicare's ability to administer a targeted prior authorization policy designed to improve quality of care and reduce costs. A successful program in the specific context of home infusion could be expanded to other candidate components of FFS Medicare.

Review of CMS's preliminary estimate of the 2013 update for physician and other professional services

In CMS's annual letter to the Commission on the calculation of the proposed update for physician and other professional services, the agency's preliminary estimate of the 2013 update is –27.0 percent. The prescribed reduction is due to a series of temporary increases enacted over several years that—under current law—expire at the end of 2012. Those increases prevented a series of negative updates under the sustainable growth rate (SGR) formula—the statutory formula for annually updating Medicare's payment rates for physician and other health professional services. If the temporary increases expire, the physician fee schedule's conversion factor must decrease by 27.5 percent. The SGR formula's update—specific to 2013—of 0.7 percent would then be applied to the reduced conversion factor yielding the estimated update of –27.0 percent.

In the appendix, we provide the Commission's mandated technical review of CMS's estimate. We find that CMS's calculations are correct and that—absent a change in law—the expiration of the temporary increases and the formula's update for 2013 are very unlikely to produce an update that differs substantially from –27.0 percent. The temporary increases—by far, the largest factor influencing the payment reduction—were specified in law. The estimate of the SGR formula's update of 0.7 percent for 2013 could change between now and when CMS would implement the update in January, but any such changes are likely to be small compared with the total reduction prescribed by law.

While the appendix is limited to technical issues, the Commission has concerns about the SGR formula as a payment policy. The SGR may have resulted in lower updates, but it has failed to restrain volume growth and, in fact, for some specialties may have exacerbated it. In addition, the temporary increases, or "fixes," to override the SGR are undermining the credibility of Medicare by engendering uncertainty and frustration among providers, which may be causing anxiety among beneficiaries. In an October 2011 letter to the Congress, the Commission recommended repealing the SGR and replacing it with specified updates that would no longer be based on an expenditure-control formula. These updates would include a 10-year freeze in current payment levels for primary care where potential access problems are most readily apparent and, for all other services, annual payment reductions of 5.9 percent for 3 years, followed by a freeze for the remainder of the 10-year window. ■

CHAPTER 1

Reforming Medicare's benefit design

R E C O M M E N D A T I O N

The Congress should direct the Secretary to develop and implement a fee-for-service benefit design that would replace the current design and would include:

- an out-of-pocket maximum;
- deductible(s) for Part A and Part B services;
- replacing coinsurance with copayments that may vary by type of service and provider;
- secretarial authority to alter or eliminate cost sharing based on the evidence of the value of services, including cost sharing after the beneficiary has reached the out-of-pocket maximum;
- no change in beneficiaries' aggregate cost-sharing liability; and
- an additional charge on supplemental insurance.

COMMISSIONER VOTES: YES 17 • NO 0 • NOT VOTING 0 • ABSENT 0

CHAPTER 1

Reforming Medicare's benefit design

Chapter summary

The Commission has been considering ways to reform the traditional benefit package with two main goals: to give beneficiaries better protection against high out-of-pocket (OOP) spending and to create incentives for them to make better decisions about their use of discretionary care.

The current fee-for-service (FFS) benefit design includes a relatively high deductible for inpatient stays, a relatively low deductible for physician and outpatient care, and a cost-sharing requirement of 20 percent of allowable charges for most physician care and outpatient services. Under this design, no upper limit exists on the amount of Medicare cost-sharing expenses a beneficiary can incur. Without additional coverage, the FFS benefit design exposes Medicare beneficiaries to substantial financial risk.

In part due to the lack of comprehensiveness in the FFS benefit design, almost 90 percent of FFS beneficiaries receive supplemental coverage through medigap, employer-sponsored retiree plans, or Medicaid. This additional coverage addresses beneficiaries' concerns about the uncertainty of OOP spending under the FFS benefit. However, it also reduces incentives to weigh their decisions about the use of care. As currently structured, many supplemental plans cover all or nearly all of Medicare's cost-sharing requirements, regardless of whether there is evidence that the service is ineffective or, conversely, whether it might prevent a hospitalization.

In this chapter

- Cost sharing under Medicare's FFS benefit
- Design issues for reforming Medicare's benefit
- Commission's views on FFS benefit design reform
- Illustrative benefit package

Moreover, most of the costs of increased utilization are borne by the Medicare program.

Much of the Commission's work focuses on changing Medicare's payment systems to give providers incentives to maintain access to care and improve quality and efficiency in light of limited financial resources. However, to control program expenditures in a way that protects access and quality, provider and beneficiary incentives should be aligned. To date we have devoted most of our attention to provider payments and delivery system reform; it is equally important to consider how beneficiary choices affect the program.

In this chapter, we focus on key design issues related to restructuring cost sharing under the FFS benefit. We present an illustrative benefit package that shows one way to address each of the key design issues. We also present the budgetary and distributional effects of this illustrative package.

The chapter concludes with the Commission's recommendation on the redesign of the FFS benefit package. The goal of the recommendation is to protect beneficiaries against high OOP spending, thus enhancing the overall value of the FFS benefit and mitigating the need for beneficiaries to purchase supplemental insurance. The recommendation creates clearer incentives for beneficiaries to make better decisions about their use of care while holding the aggregate beneficiary cost-sharing liability about the same as under current law. It also allows for ongoing adjustments and refinements in cost sharing as evidence of the value of services accumulates and evolves. Finally, by adding a charge on supplemental insurance, the recommendation aims to recoup at least some of the additional costs resulting from the higher service use supplemental insurance imposes on the Medicare program while still allowing risk-averse beneficiaries the choice to buy supplemental coverage if they wish to do so.

Many recently proposed changes to the Medicare program would require beneficiaries to pay more. By contrast, the Commission's recommendation to hold beneficiary liability neutral reflects our position that beneficiaries' costs in the aggregate should not increase in the redesign of the FFS benefit. Furthermore, we believe that the actuarial value of the benefit package should not be reduced while protecting beneficiaries against high OOP spending. At the same time, in recommending an additional charge on supplemental insurance, we maintain that it is reasonable to ask beneficiaries to pay more when their decision to get supplemental coverage imposes additional costs on the program—those costs are currently paid for by taxpayers and all Medicare beneficiaries. ■

Introduction

The design of fee-for-service (FFS) Medicare's Part A and Part B benefits affects program spending and value through coverage policies and cost-sharing requirements. For certain situations and conditions, Medicare's cost sharing can affect beneficiaries' decisions about whether to initiate care, whether to continue care, what types of providers to see, and which treatments to use. While Medicare Advantage (MA) plans have multiple ways to influence beneficiary behavior, under FFS, variation in cost sharing is the primary option available to the program to encourage efficient use of program resources.

Reforming the FFS benefit presents an opportunity to improve the benefit package while aligning beneficiary incentives and program goals to obtain high-quality care for the best value. Of particular importance, reforms could improve financial protection for individuals who have the greatest need for services and who currently have very high cost sharing. Under the current design, no upper limit exists on the amount of Medicare cost-sharing expenses a beneficiary can incur. In addition, the use of coinsurance based on charges that the patient does not know in advance creates uncertainty for beneficiaries about how much they owe. As a result, most beneficiaries purchase supplemental coverage. However, the prevalence of supplemental coverage eliminates beneficiary incentives at the point of service and limits Medicare's ability to use cost sharing as a policy tool.

Because of the high rates of cost growth experienced by the health care sector, the Medicare program and other health care payers are on an unsustainable financial path. In light of limited financial resources, much of the Commission's work focuses on changing Medicare's payment systems to give providers incentives to maintain access to care and improve quality and efficiency. The treatment recommendations of medical providers strongly influence the amount of care beneficiaries receive. However, to control program expenditures in a way that protects access and quality, provider and beneficiary incentives should be aligned. To date, we have devoted most of our attention to provider payments and delivery system reform; it is equally important to consider how beneficiary choices affect the program.

The basic benefit design has changed little since Medicare's inception in 1965. But since that time, employers and private insurers have experimented with benefit design to influence when and from whom patients seek care, to guide patients toward preferred providers or more valuable therapies, and to shift the incidence of health care costs to patients.

In the future, FFS benefit design and cost sharing could be used to pursue policy goals, such as encouraging the use of providers with better track records on quality and resource use, encouraging patients to adhere to certain treatments, and encouraging provision of high-value services. Moreover, a benefit package that meets beneficiaries' need to lower financial risk and uncertainty could lessen their desire to purchase supplemental coverage. These considerations are particularly important as employer-sponsored supplemental benefits erode over time. Aligning the benefit design with what beneficiaries value and consider important could reinforce more effective use of cost sharing as a policy tool in aligning beneficiary incentives.

Cost sharing under Medicare's FFS benefit

The current FFS benefit has considerable cost-sharing requirements. For Part A services, it includes a relatively high deductible for inpatient hospital care ($1,156 in 2012) and daily copayments for long stays at hospitals and skilled nursing facilities. Patients with more than one hospital admission in a year can owe more than one hospital deductible for the year. For Part B services, the FFS benefit has a relatively low deductible ($140 in 2012) and requires beneficiaries to pay 20 percent of allowable charges for most services, except for home health, clinical laboratory, and certain preventive services. Annual changes in the deductibles and copayments under Part A and Part B are linked to average annual increases in Medicare spending for those services. (Tables 1-1 and 1-2 summarize Part A and Part B premiums and cost sharing in 2012.)

Under this design, no upper limit exists on the amount of Medicare cost-sharing expenses a beneficiary can incur. As a result, a small percentage of Medicare beneficiaries incur very high levels of cost-sharing liability each year (Table 1-3, p. 8). For example, among FFS beneficiaries who enrolled in Part A and Part B for 12 months in 2009, 6 percent had a cost-sharing liability of $5,000 or more. Without additional coverage, they would be subject to significant financial risk from very high levels of out-of-pocket (OOP) spending.[1]

TABLE 1–1 **Premiums and cost-sharing requirements for Part A services in 2012**

Category	Amount
Premiums	$0 if entitled to Social Security retirement or survivor benefits, railroad retirement benefits, Social Security or railroad retirement disability benefits, or end-stage renal disease benefits. $248 per month for individuals who are not eligible for premium-free Part A and have 30–39 quarters of Medicare-covered employment. $451 per month for individuals who are not eligible for premium-free Part A and have fewer than 30 quarters of Medicare-covered employment.
Hospital care	$1,156 deductible for days 1–60 each benefit period. $289 per day for days 61–90 each benefit period. $578 per "lifetime reserve day" after day 90 each benefit period (up to 60 days over lifetime).
Skilled nursing facility care	$0 for the first 20 days each benefit period. $144.50 per day for days 21–100 each benefit period. All costs for each day after day 100 in the benefit period.
Home health care	$0 for home health care services.
Hospice care	$0 for hospice visits. Up to a $5 copay for outpatient prescription drugs.
Blood	All costs for the first 3 pints (unless donated to replace what is used).

Note: A benefit period begins the day a beneficiary is admitted to a hospital or skilled nursing facility and ends when the beneficiary has not received hospital or skilled nursing care for 60 days in a row. If the beneficiary is admitted to the hospital after one benefit period has ended, a new benefit period begins and the beneficiary must again pay the inpatient hospital deductible. There is no limit to the number of benefit periods. Part A cost sharing increases over time by the same percentage update applied to payments to inpatient hospitals and adjusted to reflect real change in case mix.

Source: Centers for Medicare & Medicaid Services 2012b.

But for most Medicare beneficiaries, their OOP spending is much smaller than their cost-sharing liability. In part due to the lack of comprehensive coverage in the FFS benefit design, about 90 percent of beneficiaries receive supplemental benefits that fill in some or all of Medicare's cost sharing. For example, almost one-quarter of Medicare beneficiaries enrolled in Part A and Part B in 2007 had medigap policies and 31 percent had employer-sponsored retiree policies (Medicare Payment Advisory Commission 2011a).[2]

Supplemental plans include medigap plans and employer-sponsored retiree plans. Low-income beneficiaries can receive supplemental benefits through Medicaid and other programs. Most beneficiaries can also choose MA plans that include some supplemental benefits and variations on cost sharing. These four sources of supplemental benefits are briefly described below.

Medigap plans

Medigap plans are individually purchased from private insurance companies and are offered in 10 standard packages of benefits, identified by letters of the alphabet. Standard medigap policies vary in how they wrap around Medicare's cost sharing (Table 1-4, p. 9).[3] The most popular types of medigap policies—standard Plan C and Plan F—fill in nearly all of Medicare's cost-sharing requirements, including the Part A and Part B deductibles.[4] More recent enrollment trends, however, show that the newer standardized medigap plans, which include enrollee cost sharing, are becoming more popular. For example, Plan N represented 15 percent of new medigap policies purchased in early 2011 and is the most popular of the newer standardized plans (America's Health Insurance Plans 2011).

Employer-sponsored retiree plans

Employer-sponsored insurance typically provides beneficiaries with broader coverage for lower premiums than medigap policies, but it requires retirees enrolled in Medicare to pay deductibles and cost sharing just as active workers and younger retirees do. Retiree policies through large employers typically include a lower deductible for hospitalizations than Medicare's deductible; a cap on OOP spending; and sometimes benefits that FFS Medicare does not cover, such as dental care (Yamamoto 2006).

TABLE 1–2

Premiums and cost-sharing requirements for Part B services in 2012

Category	Amount
Premiums	$99.90 per month: All beneficiaries with incomes below the thresholds shown below or with premiums paid by state Medicaid programs or Medicare Savings Programs.
	$139.90 per month: Single beneficiaries with incomes between $85,001 and $107,000. Couples with incomes between $170,001 and $214,000.
	$199.80 per month: Single beneficiaries with incomes between $107,001 and $160,000. Couples with incomes between $214,001 and $320,000.
	$259.70 per month: Single beneficiaries with incomes between $160,001 and $214,000. Couples with incomes between $320,001 and $428,000.
	$319.70 per month: Single beneficiaries with incomes above $214,000. Couples with incomes above $428,000.
Deductible	The first $140 of Part B–covered services or items.
Physician and other medical services	20% of the Medicare-approved amount for physician services, outpatient therapy (subject to limits), and durable medical equipment.
Outpatient hospital services	A coinsurance or copayment amount that varies by service, projected to average 21% in 2012. These rates are scheduled to phase down to 20% over time. No copayment for a single service can be more than the Part A hospital deductible ($1,156 in 2012).
Mental health services	40% of the Medicare-approved amount for outpatient mental health care. This coinsurance rate is scheduled to phase down to 20% by 2014.
Clinical laboratory services	$0 for Medicare-approved services.
Home health care	$0 for home health care services.
Durable medical equipment	20% of the Medicare-approved amount.
Blood	All costs for the first 3 pints, then 20% of the Medicare-approved amount of additional pints (unless donated to replace what is used).

Note: Medicare began phasing in income-related premiums over a three-year period beginning in 2007. As of 2012, higher income individuals pay monthly premiums equal to 35 percent, 50 percent, 65 percent, or 80 percent of Medicare's average Part B costs for aged beneficiaries, depending on income. Normally, all other individuals pay premiums equal to 25 percent of average costs for aged beneficiaries. About 5 percent of Medicare beneficiaries currently pay the higher premiums. For individuals paying standard premiums, an increase in Part B premiums cannot exceed their cost-of-living adjustments in Social Security benefits. The Part B deductible changes over time by the rate of growth in per capita spending for Part B services.

Source: Centers for Medicare & Medicaid Services 2012b.

Employers that offer retiree plans often pay much of the premium for supplemental coverage. One 2007 survey found that, on average, large employers subsidized 60 percent of the total premium for single coverage; retirees paid 40 percent (Gabel et al. 2008).

Although the percentage of Medicare beneficiaries with employer-sponsored retiree coverage has remained fairly constant since the early 1990s (Merlis 2006), the number of large employers offering such coverage to new retirees has been declining, which will affect future cohorts of Medicare beneficiaries. For example, among large employers offering health benefits to active workers, the percentage offering retiree health benefits has declined from 66 percent in 1988 to 26 percent in 2011 (Kaiser Family Foundation and Health Research & Educational Trust 2011). Moreover, some employers might offer retiree coverage to new retirees only until they become eligible for Medicare. As those cohorts replace older ones

TABLE 1–3 **Distribution of Medicare beneficiaries' cost-sharing liability in 2009**

Range of cost-sharing liability per beneficiary	Percent of FFS beneficiaries	Average amount of cost-sharing liability per beneficiary
$0	6%	$0
$1 to $135 (2009 Part B deductible)	3	85
$136 to $499	34	289
$500 to $999	19	713
$1,000 to $1,999	16	1,456
$2,000 to $4,999	16	3,048
$5,000 to $9,999	4	6,869
$10,000 or more	2	15,536

Note: FFS (fee-for-service). Amounts reflect cost sharing under FFS Medicare—not what beneficiaries paid out of pocket. Most beneficiaries have secondary insurance that covers some or all of their Medicare cost sharing. Beneficiaries included in this analysis were enrolled in both Part A and Part B for the full year and not enrolled in private Medicare plans.

Source: MedPAC based on data from CMS.

in Medicare, employer-sponsored supplemental coverage will play less of a role than it does today.

Supplemental coverage for beneficiaries with low incomes

Medicare and Medicaid provide supplemental coverage for low-income Medicare beneficiaries but the eligibility criteria vary by state. Beneficiaries with incomes below 75 percent of the federal poverty level with assets no greater than $2,000 for individuals ($3,000 for couples) are entitled to full Medicaid benefits as well as coverage for the Medicare Part B premium and Medicare cost sharing.[5] Additionally, Medicare Savings Programs help beneficiaries with limited incomes pay for Medicare premiums and cost sharing: Beneficiaries with incomes below 100 percent of the federal poverty level who meet their state's resource limits can enroll in the qualified Medicare beneficiary program with Medicaid covering their Part B premium and cost sharing, and beneficiaries with incomes below 135 percent of the poverty level can have their Part B premium covered under the specified low-income beneficiary or the qualifying individual program. About 9.9 million individuals were dual-eligible beneficiaries in 2010.[6]

For Medicare's Part D drug benefit, the Congress designed a low-income subsidy to provide supplemental coverage to individuals with limited incomes. Beneficiaries who meet resource limits and have incomes below 135 percent of poverty have full coverage of Part D premiums and nominal cost sharing. In addition, beneficiaries with incomes between 135 percent and 150 percent of poverty who meet resource limits can apply for a partial subsidy with sliding scale premiums and reduced cost sharing. In 2011, about 10.5 million beneficiaries (36 percent of Part D enrollees) received the low-income subsidy.

Medicare Advantage plans

About one-quarter of Medicare beneficiaries receive supplemental benefits through private health plans under the MA program. MA plans must cover all Medicare benefits, but they can also provide extra benefits, including lower cost sharing.[7] Plans can also limit the choice of providers through networks, use utilization management techniques, and establish different cost-sharing requirements than those in FFS Medicare. Although cost sharing is substantially lower in MA plans than in FFS Medicare on an actuarial basis, cost sharing for particular services in some MA plans can be higher.

As MA plans have the flexibility to design their own benefit packages (within actuarial and nondiscrimination limits), there is variation in MA benefit designs. In general, plans have been able to adopt designs similar to employer-sponsored plans for the under-65 population. Beneficiaries are familiar with these designs and accept them as they age into Medicare. Some plans mimic FFS Medicare's benefit package, while others offer no in-network cost sharing at a substantial premium. Also of note, beneficiaries in FFS Medicare may buy a medigap policy that covers some or all Medicare cost sharing, but MA enrollees may not be sold medigap policies.

TABLE 1–4

Benefits offered under standard medigap policies in 2012

Benefit	Plan type										
	A	B	C	D	F	F (high deductible)	G	K	L	M	N
Part A hospital costs up to an additional 365 days after Medicare benefits are used up	✓	✓	✓	✓	✓	✓* ($2,070)	✓	✓	✓	✓	✓
Part B cost sharing for other than preventive services	✓	✓	✓	✓	✓	✓	✓	✓** (50%)	✓** (75%)	✓	✓** ($20/$50)
Blood (first 3 pints)	✓	✓	✓	✓	✓	✓	✓	✓** (50%)	✓** (75%)	✓	✓
Hospice care cost sharing	✓	✓	✓	✓	✓	✓	✓	✓ (50%)	✓ (75%)	✓	✓
SNF coinsurance			✓	✓	✓	✓	✓	✓ (50%)	✓ (75%)	✓	✓
Part A deductible		✓	✓	✓	✓	✓	✓	✓ (50%)	✓ (75%)	✓ (50%)	✓
Part B deductible			✓		✓	✓					
Part B excess charges					✓	✓	✓				
Foreign travel emergency (up to plan limits)			✓	✓	✓	✓	✓			✓	✓

Note: SNF (skilled nursing facility). Insurers began offering standard Plan M and Plan N in June 2010.
* High-Deductible Plan F pays the same benefits as Plan F after one has paid a calendar year deductible of $2,070 in 2012. Out-of-pocket expenses for this deductible are expenses that would ordinarily be paid by the policy. These expenses include the Medicare deductible for Part A and Part B but do not include the plan's separate foreign travel emergency deductible.
** Plan K and Plan L require the insured to pay 50 percent and 75 percent, respectively, of cost-sharing payments other than cost sharing for extended hospital stays. After meeting an out-of-pocket limit of $4,660 in Plan K or $2,330 in Plan L, the plan pays 100 percent of Medicare cost sharing for covered services for the rest of the calendar year. Plan N has set dollar amounts that beneficiaries pay in lieu of certain Part B coinsurance payments ($20 for office visits and $50 for emergency room visits).

Source: Centers for Medicare & Medicaid Services 2012a.

Design issues for reforming Medicare's benefit

Several key design issues are broadly related to beneficiary cost sharing. Generally, the overall structure of cost sharing is defined by three "zones" of relative financial responsibility between the beneficiary and the payer: the OOP maximum, above which the beneficiary pays no (or minimal) costs; the deductible, under which the beneficiary pays all costs; and in between, where the beneficiary pays for some portion according to a specified set of rules. Design issues in restructuring the benefit can be boiled down to deciding where to draw the boundaries between these three zones and how to organize the rules for the middle zone. Those decisions will affect the overall cost of the program.

OOP maximum

An OOP maximum is a classic feature of an insurance program. It provides financial protection against an unlikely but highly costly event. Because the current FFS benefit does not have a limit on the amount of beneficiaries' cost sharing, a small percentage of Medicare beneficiaries incur very high levels of cost sharing each year. Adding an OOP maximum to the FFS benefit would protect those beneficiaries from very high Medicare cost sharing.[8]

In general, an OOP maximum is valuable to beneficiaries in two ways. First, those who actually incur catastrophic levels of Medicare costs in a given year would be able to limit their liability at the specified OOP maximum. Therefore, their cost sharing would be lower with the OOP maximum than without it. Moreover, as one considers insurance coverage over a period of several years, a larger percentage of beneficiaries would reach the OOP maximum at some point. For example, the percentage of beneficiaries with annual cost-sharing liability of $5,000 or more at least once over a four-year period is about double the number for a single year—13 percent compared with 6 percent.

Second, even if beneficiaries did not reach the OOP maximum, they still were subject to less risk of paying for very high OOP spending. For risk-averse beneficiaries, the uncertainty and variability in medical spending are an exposure to be protected from. Therefore, an OOP maximum that makes very high OOP spending less uncertain and variable has real value, regardless of whether the actual OOP spending for a given beneficiary is high enough to benefit from it. Although beneficiaries may vary in the level of protection they desire and may even have difficulty quantifying how much the value of insurance protection is worth to them, the value of an OOP maximum would be the peace of mind some beneficiaries get from having such protection if they need it. (See text box, opposite page, on the value of insurance.)

According to the focus groups we conducted in summer of 2011, current and future Medicare beneficiaries (between the ages 55 and 64 years) wanted to reduce uncertainty about their OOP costs in making their health insurance decisions.[9] Of all the benefit design features we discussed, they were most interested in having an OOP maximum on annual spending for this reason. Some said that fear of costs that would exceed their ability to pay is a primary motivation for purchasing supplemental coverage. Some beneficiaries also liked that their supplemental plans allowed them to simplify the paperwork and budget their expenses through monthly premiums. Some individuals, particularly future beneficiaries, thought a cap on costs would reduce their need to purchase supplemental coverage.

Although a limit on spending was clearly important to them, individuals were not able to articulate specific amounts they would pay for an OOP maximum through higher deductibles, cost sharing, or premiums. Their individual choices were based on their economic situation and their current health status. They were aware that health risks and costs will grow as they age. For this reason, most wanted the ability to reconsider their choices in future years.

Beneficiaries' perceptions of potential changes in benefit design were closely tied to their current insurance and health status, based on how much they would spend or save compared with their current situation. For Medicare beneficiaries with supplemental coverage, including generous retiree benefits, any potential benefit change was often perceived as a loss. They expressed a desire for more protection against high costs and liked the idea of an OOP limit on spending.

In contrast, future beneficiaries were more likely to consider trade-offs. They generally said they would choose a product that would cost them the least money overall, taking into account premiums and cost sharing for the coming year. There was considerable discussion of trading higher deductibles for lower premiums in the context of an OOP cap on spending. Several noted similar trade-offs between deductibles and premiums in automobile insurance. Some participants seemed comfortable with much higher deductibles (in the thousands of dollars) if they thought they could set aside the money they would need in advance. This option was particularly attractive if the money came from savings on premiums. The above differences point out the importance of what people expect from the Medicare program: Future beneficiaries who were not familiar with the FFS benefit design and had few preconceptions about it were more flexible in considering changes in it, whereas current beneficiaries who were used to the existing benefit were not.

Deductibles for Part A and Part B services

A deductible is a fixed dollar amount that a beneficiary pays in a given year before Medicare starts paying for covered services. Its use in benefit design is more pragmatic than intrinsic. If the goal of an OOP maximum is to provide insurance protection against very high medical costs and the goal of cost sharing—copayments and coinsurance—is to provide incentives at the point of service, the role of a deductible is mainly to reduce the cost of other aspects of the benefit package, such as premiums, copayments, and coinsurance. (However, compared with copayments and coinsurance, a deductible can have a different effect on incentives at the point of service.) While beneficiaries might consider a deductible to be financially burdensome, their overall cost might be

Value of insurance

One key purpose of insurance is to reduce the financial risk posed by catastrophic medical expenses. Risk-averse individuals want protection from the risk of very high and unpredictable medical expenses. To avoid such risks, they are willing to pay a premium higher than the average cost of care they might face. The more risk-averse they are, the more willing they are to pay for the insurance. And the more variable potential outcomes are, the more valuable the insurance protection will be.

The overall spending patterns of Medicare beneficiaries show that in a given year, Medicare spending is highly concentrated, with a small number of beneficiaries accounting for a large proportion of the program's annual expenditures (Congressional Budget Office 2005). This pattern is characteristic of insurance programs in general. However, only about half of beneficiaries with high spending one year continue to incur high spending the next year. (Most of the remaining beneficiaries have lower spending the next year, but some of them die and a small number of them disenroll from fee-for-service Medicare.) Although the presence of serious chronic illness can predict high spending, much of very high spending is largely random, due to health costs that are unpredictable. This spending pattern implies that the probability of catastrophic spending over time is higher than the probability in one year would indicate. Even beneficiaries with low spending in a particular year would benefit from the financial protection of insurance as they face greater odds of having a high-spending year over time. Therefore, additional insurance protection that mitigates the risk under Medicare will be valuable to beneficiaries.

Premiums on supplemental insurance imply that Medicare beneficiaries highly value the extra protection such plans provide from the potentially unlimited cost-sharing liability under Medicare. In theory, the difference between the premiums and the expected benefit of the supplemental insurance beneficiaries choose could provide a lower bound estimate of the value of reducing uncertainty, or their "risk premium." However, there are several complicating factors. For example, in the case of medigap policies, the actuarial value excludes the implicit subsidy that Medicare pays on additional services beneficiaries get because they have medigap insurance. In the case of employer-sponsored retiree plans, the actuarial value excludes the tax preference of the retiree health benefit.

Although most people are risk averse and are willing to pay to reduce risk, an optimal benefit design does not mean no risk at all. There is a fundamental trade-off between two opposing forces: risks and incentives. On the one hand, more generous benefits offer lower risk for risk-averse individuals. On the other hand, more generous benefits raise moral hazard and induced demand. Although the value of insurance in reducing uncertainty is real and important, it must be balanced against the positive effect that cost sharing can have on moderating the use of lower value care. This factor means that the ideal level of cost sharing is probably above zero but below the uncapped liability in the current Medicare benefit. ■

lower due to a lower premium and cost sharing with a deductible than without it. For example, beneficiaries with low spending might be better off with a higher deductible and lower premiums, whereas beneficiaries with high spending might not be.

The current FFS benefit has separate deductibles for Part A and Part B services: $1,156 for inpatient services and $140 for Part B services in 2012. This structure of having two distinct parts is mainly historical, reflecting the structure of private insurance as it existed in the 1960s. Since then, the norms in private insurance have changed and a single deductible for all medical services is typical. (Most plans still have a separate deductible for drug benefits.) From a perspective of using cost sharing to create appropriate incentives for beneficiaries, the current structure of deductibles is not ideal: a relatively high deductible for inpatient care, which is usually not optional and less likely to be influenced by cost sharing, coupled with a low deductible for physician and outpatient care, which are more discretionary and more likely to be influenced by cost sharing. A single combined deductible for both types of services might lessen the effects of the current structure on beneficiary incentives somewhat. In addition, it would be easier for beneficiaries to understand and track

all Medicare services together, rather than to track them in separate categories.

However, a combined deductible would affect individual beneficiaries' cost sharing differently, depending on their use of services. In general, beneficiaries who use only Part B services—the majority of beneficiaries in a given year—would see an increase in their deductible amount compared with their currently low Part B deductible. In contrast, under a combined deductible (depending on its level), beneficiaries who received inpatient services—roughly 20 percent in a given year—could see a decrease in their deductible amount compared with their currently high Part A deductible. Given these dynamics, beneficiaries' desire for a low combined deductible based on their individual circumstances is certainly understandable. However, their circumstances can change suddenly and unpredictably, and their calculations may turn out very wrong. For example, if individuals who have few health problems get sick unexpectedly, they may be better off under a benefit package with a higher deductible coupled with lower copayments and a lower OOP maximum.

In addition to being unpredictable, the risk of paying a high Part A deductible can increase over time. Beneficiaries' circumstances change as they get older. While about 19 percent of full-year FFS beneficiaries had at least one hospital admission in 2009, the odds of having one or more hospital admissions increase considerably over several years. For example, 46 percent of beneficiaries who were in FFS Medicare had at least one hospital admission at some point during the four years from 2006 to 2009.

Because the role of a deductible is to reduce the cost of other aspects of the benefit package—such as premiums, copayments, and coinsurance—a lower deductible would not necessarily lower total costs for a given beneficiary. For example, trading off higher premiums for a lower deductible would spread the cost of reducing the deductible equally among all beneficiaries. In contrast, trading off higher copayments and coinsurance for a lower deductible would spread the cost proportionally by service use. Alternatively, trading off a higher OOP maximum for a lower deductible would impose a higher cost on beneficiaries with very high spending. To keep aggregate beneficiary cost sharing the same, the cost of reducing the deductible would be paid for by increasing cost sharing through other parameters of the benefit package.

Combining Part A and Part B deductibles presents important challenges for implementation. Under current law, Part A benefits are automatic for individuals who receive benefits from Social Security on the basis of age or disability, whereas Part B enrollment is voluntary. As a result, a small percentage of beneficiaries do not participate in both parts of the program. About 93 percent of beneficiaries enrolled in Part A also enroll in Part B. For the 7 percent of beneficiaries who participate in Part A or Part B only, issues related to how a combined deductible and OOP maximum would apply need to be resolved. Moreover, a separable participation in Part A and Part B could increase adverse selection in response to the new benefit design and raise additional issues, especially those related to financing the program. (For a more detailed discussion, see American Academy of Actuaries (2012).)

Copayments for services above the deductible

Copayment is a form of cost sharing that specifies a fixed dollar amount paid by the beneficiary at the point of service, whereas coinsurance specifies a fixed percentage of medical expense paid by the beneficiary. The current FFS benefit uses both forms of cost sharing: daily copayments for long stays at hospitals and skilled nursing facilities and 20 percent coinsurance of allowable charges for most Part B services, except for home health, clinical laboratory, and certain preventive services.

Because copayments are set dollar amounts known in advance, they are more clearly understood by beneficiaries and they reduce uncertainty. Especially if the amounts are set to create incentives for beneficiaries to make better decisions about their use of care, copayments are easy to understand, compare, and respond to. Their simplicity makes copayments more effective in influencing people's use of services. Participants in our focus groups echoed these positive qualities of copayments. In contrast, the idea of paying 20 percent of an unknown total bill worried many participants, who considered coinsurance an open-ended liability for which they could not budget in advance.

Compared with the current FFS benefit, any changes in cost sharing—in the form of a deductible or copayments—will bring about changes in beneficiaries' use of services. Ideally, perfectly rational and informed beneficiaries would respond to changes in cost sharing selectively—decreasing the use of nonessential services that are unlikely to improve their health but not changing the use of essential services that are necessary for maintaining good health despite the increase in cost sharing. Not surprisingly, beneficiaries

do not conform to the ideal. As discussed in our previous reports, extensive literature about the effects of cost sharing on the use of health care services shows that people generally reduce their use of health care when they have to pay more (see text box, pp. 14–15). Their responses tend to vary by type of service—larger responses for discretionary care and smaller responses for urgent care—but not necessarily based on whether the service is appropriate or essential. Reduction in the use of both effective and ineffective care raises the question of whether any potential negative effects from reducing essential care could lead to higher rates of hospitalization and ultimately to higher total spending. This issue of "offset effects" may be particularly important if low-income people in poorer health were more likely to forgo needed care, along with nonessential care, as cost sharing increased.

Two recent studies raise concern about such offset effects among Medicare beneficiaries. One analysis involved retired California public employees who faced increased copayments for physician visits and prescription drugs (Chandra et al. 2010). The study found that increases in copayments for ambulatory care modestly increased hospital use for the average elderly person, but hospital spending increased significantly for chronically ill patients as physician visits and drug use decreased. Overall, the size of this offset was not large enough to overcome the savings of copayment changes on physician visits and prescription drugs.

A separate study observed enrollees in MA plans that increased ambulatory care copayments and matched them to control plans with no copayment increases (Trivedi et al. 2010). In the year after the copayment increases, researchers found a significant drop in outpatient visits and a significant rise in hospital admissions and inpatient days. This finding cannot be generalized to FFS Medicare, however. In managed care, cost-sharing requirements typically work in conjunction with established rules and limits on beneficiaries' use of services and providers. In other words, if a plan is well managed, there may be less use of unnecessary care to begin with. Consequently, increased cost sharing in an MA plan is more likely to reduce the use of necessary care. The effects of cost-sharing changes, therefore, could differ from those in the FFS environment where very few restrictions on services and providers exist.

Although questions remain about the degree to which their results can be generalized, the above two studies suggest the need for attention to cost-sharing changes, as they can have beneficial and detrimental effects. The RAND Health Insurance Experiment (HIE) did not show adverse health effects due to reductions in the use of health care for the average person in the study, but those findings are unlikely to hold true for everyone. (The HIE excluded the elderly population from the study.) In fact, although the results were not statistically significant, the HIE found that low-income people with chronic conditions were at greater risk of adverse health outcomes. Because the elderly are more likely to be both low income and have chronic conditions, changes in cost sharing could have an impact on health outcomes among the Medicare population. Cost sharing may be too blunt a tool—although it may be one of the few policy tools available in the FFS program—for encouraging efficient and appropriate use of health care.

Over the long term, the Medicare program needs to move toward benefit designs that give individuals incentives to use higher value care and discourage using lower value care. These determinations must be evidence based. Several years ago, the Commission recommended that policymakers establish an independent, public–private entity that would produce information to compare the clinical effectiveness of a health service with its alternatives (Medicare Payment Advisory Commission 2008). Along the same lines, the Patient Protection and Affordable Care Act of 2010 established the Patient-Centered Outcomes Research Institute to identify national priorities for and sponsor comparative clinical-effectiveness research. In addition, Medicare could examine the factors that affect beneficiaries' health care decisions and use that information to help transform the structure of health care delivery.

Policymakers have become more aware that not all health care services have the same value—or the same value for everyone—but identifying which services are of higher or lower value for a given individual is difficult. The term "value based" is used in two ways. Value-based purchasing refers to strategies for paying providers, and value-based insurance design refers to cost-sharing options designed to encourage beneficiaries to use high-value health care services or providers and discourage use of low-value services or providers (value-based insurance design). Testing these approaches would help policymakers decide which of them could steer beneficiaries more effectively toward the use of high-value services or away from low-value services.

Some insurers have begun setting different levels of cost sharing for the same medical intervention based on its clinical benefit to the individual (Chernew et al. 2007,

Evidence on effects of cost sharing

Extensive literature about the effects of cost sharing on the use of health care services shows that people generally reduce their use of health care when they have to pay more. The RAND Health Insurance Experiment (HIE), a large-scale randomized experiment conducted between 1971 and 1982, remains the gold standard on this subject because its randomized design allowed researchers to measure the effects of insurance coverage while limiting selection bias (RAND Corporation 2006). All participants in the HIE were under the age of 65. Overall, the HIE results suggested that individuals are moderately sensitive to price: A 10 percent increase in cost sharing led to about a 2 percent decline in patients' use of services (Newhouse 1993). The main findings were:

- Participants who paid a share of their health care used fewer health services than a comparison group given free care.
- Cost sharing reduced the use of both highly effective and less effective services in roughly equal proportions. Cost sharing did not significantly affect the quality of care participants received.
- In general, cost sharing had no adverse effect on participant health but there were exceptions: free care led to improvements in hypertension, dental health, vision, and selected serious symptoms. These improvements were concentrated among the sickest and poorest patients.
- Participants with cost sharing made one or two fewer physician visits annually and had 20 percent fewer hospitalizations than those with free care. Declines were similar for other types of services.
- Reduced use of services was attributed mainly to participants declining to initiate care. Once patients entered the health care system, cost sharing only modestly affected the intensity or cost of an episode of care.

A recent review of the literature on cost sharing since the HIE found that the key results of the HIE are still valid (Swartz 2010). In general, people reduce their use of health care in response to higher cost sharing. Their responses tend to vary by type of service, although not necessarily based on whether the service is appropriate or essential. Their responses also tend to differ by their income and health status. In particular, low-income people in poorer health may be more likely to forgo needed care as cost sharing increases.

Effects of cost sharing on the Medicare population

There is reason to believe that the Medicare population's response to cost-sharing requirements may differ from the non-Medicare population's response. Price sensitivity to goods and services without substitutes is generally low. Medicare beneficiaries, who tend to have a higher disease burden than other populations, may perceive few substitutes for medical care. Thus, as a group, Medicare beneficiaries may be less sensitive to cost-sharing requirements, although considerable variation in the health status of Medicare beneficiaries suggests that cost sharing could affect the health care decisions of some.

Studies that attribute at least a portion of higher spending observed among Medicare beneficiaries with supplemental coverage to an insurance effect find a spending increase of about 25 percent, with estimates ranging from 6 percent to 44 percent (Atherly 2001). One often-cited estimate based on data from the mid-1990s suggests that use of services ranged from 17 percent higher for those with employer coverage to 28 percent higher for those with medigap policies (Christensen and Shinogle 1997). Estimates for the effects of medigap policies are generally higher than for employer-sponsored retiree coverage, and they tend to show larger effects for outpatient than for inpatient services.

Another set of studies finds small or statistically insignificant induced demand for care resulting from supplemental insurance after controlling for selection bias (Long 1994, Wolfe and Goddeeris 1991).

(continued next page)

Evidence on effects of cost sharing (continued)

Some contend that previously reported differences in spending might be overstated, as supplemental coverage encourages beneficiaries to adhere to medical therapies that prevent hospitalizations or future use of other services. Because most studies on supplemental coverage are cross sectional or have short time horizons, they may not detect lower use of services over a longer period (Chandra et al. 2007). Another line of research suggests that the responsiveness of beneficiaries to cost sharing is varied and the effects of supplemental coverage are more modest for individuals in poorer health (Remler and Atherly 2003). Differences in the methodologies used to control for selection bias have contributed to the wide range of expenditure differences found in the literature.

In general, studies that examine whether cost sharing affects health outcomes among the elderly are few and their findings are mixed. Among seven studies reviewed by Rice and Matsuoka, four support the idea that increased cost sharing is correlated with worsened health status, as measured by mortality rates (two studies) and health status (two studies) (Rice and Matsuoka 2004). Two of the remaining three studies, which showed no effect on health outcomes, focused on myocardial infarction (Magid et al. 1997, Pilote et al. 2002). In those studies, individuals' perceptions about being in a life-threatening emergency may have made them less responsive to price changes (Rice and Matsuoka 2004).[10]

Commission-sponsored study

A recent Commission-sponsored study showed evidence that when elderly beneficiaries are insured against Medicare's cost sharing, they use more care and have higher Medicare spending (Hogan 2009). The study estimated that total Medicare spending was 33 percent higher for beneficiaries with medigap policies than for those with no supplemental coverage after controlling for demographics, income, education, and health status. Beneficiaries with employer-sponsored coverage had 17 percent higher Medicare spending, and those with both types of secondary coverage had 25 percent higher spending.

That analysis found that the effects of supplemental coverage differed depending on the service. For example, having secondary insurance was not associated with higher spending for emergency hospitalizations, but it was associated with higher Part B spending that ranged from 30 percent to over 50 percent more. Overall, beneficiaries with private supplemental insurance spent more on elective hospital admissions, preventive care, office-based physician care, medical specialists, and services such as minor procedures, imaging, and endoscopy.

By contrast, other findings from the study indicate that beneficiaries with only Medicare coverage and no secondary insurance obtain less health care. These beneficiaries appear to use acute care services in response to serious illness, but they appear to get less well-patient care, less preventive care, fewer scheduled inpatient admissions, and fewer procedures that are costly but do not address life-threatening conditions. On the basis of Medicare Current Beneficiary Survey data, the study estimated that 20 percent of elderly individuals with no supplemental coverage had no Part B spending during the year, compared with 5 percent of beneficiaries who had private secondary insurance. Whether Medicare's cost sharing impedes the use of care for people without secondary coverage, who typically have lower incomes, or whether cultural reasons or other factors make these beneficiaries less inclined to seek care have important implications for how to address this concern.

The Commission's analysis suggests that individuals with a severe illness are somewhat less sensitive to cost sharing, but they do not ignore it entirely. Even among the seriously ill, cost sharing can affect when and from whom patients seek care. The analysis also found that lower income beneficiaries were somewhat more sensitive to cost sharing than higher income individuals. In general, when either lower income or higher income beneficiaries had supplemental insurance, their Medicare spending was higher than that of individuals without supplemental coverage but with a similar income. However, the presence of secondary insurance had a somewhat stronger effect on spending for lower income beneficiaries. ■

Fendrick et al. 2001) When there is evidence that specific therapies are comparatively more effective and appropriate for certain patients, lowering their cost sharing could improve health outcomes. If greater adherence leads to fewer exacerbations of the patient's condition, this approach could offset some of the additional spending. However, many services do not save money, although they are cost-effective, and encouraging their use will not reduce total spending. At the same time, where evidence suggests that medical therapies are less effective, increasing beneficiaries' cost sharing could deter use of those services. In previous reports, we discussed the literature testing key elements of this benefit design (Medicare Payment Advisory Commission 2010). In sum, the extent to which lowering copayments for high-value services could reduce Medicare program spending would depend on beneficiaries' underlying health risk, the cost of adverse outcomes, beneficiaries' responsiveness to copayments, and the effectiveness of medical therapies at reducing risk (Chernew et al. 2010). Increased cost sharing for low-value services could save money with few detrimental consequences on health outcomes.

To examine ways to identify the value of services and the implications for Medicare, we convened a technical panel in 2010, including academics, employers, benefit consultants, a consumer advocate, and health plan representatives (Medicare Payment Advisory Commission 2011b). They suggested strategies to encourage use of high-value, high-quality health care: lowering cost sharing for services identified as high value (e.g., preventive care) and raising cost sharing for services identified as low value, providing incentives for beneficiaries to see high-quality efficient providers, and encouraging beneficiaries to adopt healthier behaviors.

Panelists also noted that Medicare supplemental policies must be aligned with these benefit changes. They were concerned that first-dollar coverage would blunt any incentives created by variable cost sharing. Panelists mentioned not just medigap but also employer-sponsored retiree plans. Some panelists suggested that, to the extent that private payer incentives are also aligned, the effect on utilization of high-value and low-value services would be magnified. Others suggested that medical management needs to be synchronized with the identification of services. For example, one plan charges higher copayments for advanced imaging without precertification. Panelists mentioned that medical management is particularly important for lower income beneficiaries because higher cost sharing would be impractical.

The Commission continues to be interested in innovative benefit designs being tested in the private sector. Although changes in cost sharing are a key lever to encourage use of high-value services and efficient providers, beneficiaries also need sufficient educational resources to make informed decisions. Thus, providing information that is objective, comprehensible, and useful needs to support a value-based approach.

Overall cost of the benefit design

There are many different ways to combine the three design elements discussed above. Within the general structure of cost sharing defined by a deductible, a set of copayments by type of service, and an OOP maximum, there are—in theory—many possibilities consisting of different levels of cost-sharing amounts and definitions of services to which they are applied. In practice, however, a set of feasible design combinations would be constrained by the overall cost of those choices.

For example, adding an OOP maximum can be paid for by increasing the deductible amount, or copayments on certain services, or both. (Alternatively, policymakers could also trade off increasing the Part B premium with adjusting the deductible and copayments. The premium approach would spread the cost of adding an OOP maximum equally among all beneficiaries, whereas adjustments in cost sharing would spread the cost by beneficiaries' use of services.) The science of benefit design may identify the set of feasible trade-offs between various design parameters, but the art of benefit design may be needed to find a reasonable compromise among competing policy goals.

Mitigating the effects of first-dollar coverage

For most Medicare beneficiaries, their actual OOP spending is much smaller than their cost-sharing liability under FFS Medicare because they have additional coverage. In fact, the lack of comprehensive coverage of the FFS benefit design leads many beneficiaries to take up supplemental coverage that fills in some or all of Medicare's cost sharing and protects them from catastrophic financial liability.

At the same time, supplemental coverage can lead to more use of services and spending. In general, there are two possible reasons for the higher spending. First, many supplemental plans cover all or nearly all of Medicare's cost-sharing requirements, regardless of whether there is evidence that a given service is ineffective or, conversely, whether it might prevent a hospitalization. Under such

minimal exposure to cost sharing, beneficiaries have incentives to receive more care without experiencing many additional costs, and providers have no incentives to manage utilization. Therefore, some portion of the higher spending observed among beneficiaries with supplemental coverage is arguably due to an insurance effect (also called moral hazard). Second, beneficiaries who are sicker and likely to use more services are more likely to buy supplemental coverage. Conversely, beneficiaries who are healthy and do not expect to use many services are more likely to risk potentially high cost sharing without supplemental coverage. It is likely that this selection effect is also partly responsible for the higher spending observed among those with supplemental coverage.

Preliminary analysis of CMS administrative and claims data shows how both insurance and selection effects might be in play. For example, the average Medicare spending in 2009 for full-year beneficiaries with medigap coverage was significantly higher (over $9,700) than that for beneficiaries with Medicare only (about $7,000). The observed higher spending was partly due to medigap beneficiaries' being older and having higher risk scores. However, such differences in beneficiary characteristics are unlikely to account for all difference in spending (see text box, pp. 14–15, on the effects of cost sharing).

Since the FFS benefit provides indemnity insurance, cost sharing is one of the few means by which the Medicare program can provide incentives to affect beneficiaries' behavior with regard to use of medical services. But almost 90 percent of FFS beneficiaries have supplemental coverage that fills in some or all of Medicare's cost sharing, effectively nullifying the program's tool for influencing beneficiary incentives. By effectively eliminating FFS Medicare's price signals at the point of service, supplemental coverage generally masks the financial consequences of beneficiaries' choices about whether to seek care and which types of providers and therapies to use. Therefore, unless supplemental policies were restructured to retain some cost sharing, any changes in cost sharing in the FFS benefit package would have a limited effect on beneficiaries with supplemental coverage.

There are two philosophically different approaches to address the insurance effect of supplemental coverage. One approach is to regulate how supplemental policies can fill in FFS cost-sharing requirements. Another approach is to impose an additional charge on supplemental policies. Rather than prohibiting supplemental insurance from filling in all of Medicare's cost sharing, this approach would not change the use of Medicare services among beneficiaries who choose to keep their supplemental coverage. However, it would change the effective price of their coverage. These two approaches are discussed below in more detail. (Additionally, see text box, p. 18, on public supplemental plan.)

Regulatory approach

One strategy is to redefine medigap policies so that they no longer completely fill in FFS cost-sharing requirements. For example, the Congressional Budget Office (CBO) estimated that if medigap insurers were barred from paying any of the first $550 of a policyholder's cost sharing and medigap coverage was limited to 50 percent of the next $4,950 in Medicare cost sharing with all further cost sharing covered by the policy, the option would lower federal spending by over $5 billion per year beginning in 2014 (Congressional Budget Office 2011).[11] This CBO option would apply only to medigap policies—it would not affect beneficiaries with employer-sponsored retiree coverage.

Another strategy to prohibit first-dollar coverage is to regulate how supplemental insurance can fill in FFS cost sharing. For example, an approach used by medigap Plan N and commonly used by MA plans and commercial insurers is to require beneficiaries to pay a fixed-dollar copayment for services such as office visits and use of hospital emergency rooms. Copayments could be set to change beneficiaries' incentives toward certain types of care—for example, by setting lower copayments for office visits to primary care providers.

Additional charge on supplemental policies

A separate approach imposes an additional charge on supplemental policies that fill in Medicare's cost sharing, including medigap and employer-sponsored retiree plans. This approach uses a different philosophy in that it does not prohibit supplemental policies from filling in all of Medicare's cost sharing but instead charges the insurer for at least some of the added costs imposed on Medicare for having such comprehensive coverage. If the regulatory approach can be described as not allowing beneficiaries to add costs to Medicare through supplemental coverage, the additional charge approach can be described as allowing beneficiaries to add costs to Medicare but requiring them to pay for at least some of those additional costs.

In theory, changes in the FFS benefit and the additional charge on supplemental insurance could alter the individual cost–benefit analysis of having supplemental coverage. First, for some individuals, the benefit of extra

Public supplemental plan

Some policymakers have suggested that Medicare develop a public medigap plan to supplement the basic fee-for-service benefit (Aaron and Lambrew 2008, Davis et al. 2005). The proposals have many features in common. In all cases, the plan would be voluntary and enrollees would pay the full cost of the supplement for Part A and Part B services. Unlike most current medigap plans, the public medigap plan would not provide first-dollar coverage. In these plans, the supplement would be based on a combined deductible, an out-of-pocket (OOP) cap on expenditures, and reduced coinsurance for Part B services. The Commission also considered a public medigap option but did not issue recommendations (Medicare Payment Advisory Commission 2002).

Davis et al. (2005) provided the most detailed analysis of a public medigap plan, which they called Medicare Extra or Part E.[12] In this proposal, coinsurance for Part B services would be reduced to 10 percent, hospital coinsurance would be eliminated, and there would be no cost sharing for home health or selected preventive services. Drug coverage would be included in the benefit. The drug benefit would include no deductible, no coverage gap, and coinsurance averaging 25 percent. The overall annual OOP cap on expenditures would be $3,000 including drug costs. Although the supplement is meant to be beneficiary financed, Medicare would subsidize drug costs at the same rate as under Part D.

Proponents of a public medigap plan argue that it should be less expensive than current Medicare supplements, simpler for beneficiaries to understand, and facilitate care coordination. They contend that Medicare Extra should be able to lower administrative costs, which would be the main source of savings. In particular, costs would be lower because most current supplements are sold in the individual market, which entails high marketing and enrollment costs. Savings would also accrue because it would no longer be necessary to coordinate between multiple sources of coverage (e.g., Medicare, medigap, and Part D drug plans).

The authors devoted less attention to how a transition to Part E could be implemented but they considered ways to prevent adverse selection. This option assumes that many current beneficiaries would switch from traditional medigap plans to Part E if it did not experience adverse selection. All beneficiaries would pay the same premium for Part E except for those late enrollees who refused coverage when they enrolled in Medicare. Most current medigap plans base premiums on an enrollee's age, leading to lower premiums for younger beneficiaries that increase with age. This policy could result in higher Part E premiums for beneficiaries at age 65 compared with private medigap plans. Under this plan, medigap insurers would be required to community rate their products to prevent this selection against the Part E plan.

The plan would not eliminate the role of private insurers but would reduce their role in Medicare. Private medigap plans would still be permitted but the analysts assume they would become less viable over time. Private insurers would still offer Medicare Advantage plans. In addition, insurers would serve as fiscal intermediaries for Part E. ■

protection provided by supplemental insurance would be lower if the FFS benefit were to have an OOP maximum. Without a larger decrease in supplemental premiums to offset the lower value, those beneficiaries would choose to drop supplemental policies. Second, holding the FFS benefit constant, the additional charge on supplemental insurance would increase the effective premiums on those plans and provide an incentive for beneficiaries to switch to medigap policies that required paying more of Medicare's cost sharing or to drop supplemental coverage altogether. If beneficiaries were to drop supplemental insurance, they could choose to stay in traditional FFS or switch to MA. Implementation of an additional charge would need to be combined with a process through which beneficiaries can make their changes without a penalty.[13] If dropping all supplemental coverage led some beneficiaries to forgo necessary care, it could worsen their health outcomes.

As an example, CBO has estimated that if a 5 percent "excise tax" were levied on medigap plans, revenues would increase on the order of $1 billion per year and Medicare spending would decrease by $100 million to $200 million per year (Congressional Budget Office

2008). Such a tax would need to be significantly greater than 5 percent to recoup the induced demand attributable to medigap coverage. However, because of the difficulty in disentangling the effects of a pure insurance effect from selection bias, the exact percentage is uncertain. If the excise tax encouraged beneficiaries to change to the newer medigap policies that required paying more of Medicare's cost sharing at the point of service, that change could lead to slower growth in Medicare spending.

Commission's views on FFS benefit design reform

The Commission and its predecessor commissions have explored problems with traditional Medicare's benefit design for many years (Medicare Payment Advisory Commission 2009, Medicare Payment Advisory Commission 2010, Medicare Payment Advisory Commission 2011b, Physician Payment Review Commission 1997). In particular, the Commission believes that protecting beneficiaries against the economic impact of catastrophic illness is very important. Providing an OOP maximum on spending would reduce the financial risk for beneficiaries with very high spending and could mitigate the need to purchase supplemental insurance, a significant expense for many beneficiaries. In addition, reforming the FFS benefit design offers an opportunity to align beneficiary incentives and program goals to obtain high-quality care for the best value.

There are many different ways to "pay for" an increase in the benefit—such as adding an OOP maximum—in one dimension or the other. Therefore, the ultimate implementation of changes to the FFS benefit design must not only specify a set of cost-sharing requirements and define services to which those requirements would apply but also allow for flexibility to alter or eliminate cost sharing based on the value of services. To encourage the use of high-value services and discourage the use of low-value services, the Congress may wish to consider giving the Secretary authority to reduce cost sharing on services if evidence indicates that doing so would reduce Medicare spending or lead to better health outcomes without increasing costs or to raise cost sharing on low-value services. This authority would be exercised through the usual notice and comment rulemaking process. For example, under current law, there are no cost-sharing requirements for many preventive services, and the Secretary has administrative authority to modify or eliminate coverage of preventive services based on evidence. This flexibility to adjust and refine cost sharing is especially important as evidence evolves. This provision does not diminish congressional authority. If the Congress disagreed with the Secretary's proposed actions, it could act to stop the changes.

The Commission considers it important to allow for different possible combinations of design elements and subsequent adjustments and refinements by the Secretary. However, the Commission does not wish to shift the cost of improving the benefit package to provide better protection against high OOP spending to the beneficiary in the aggregate. The Commission has decided, therefore, to hold the average cost-sharing liability of the beneficiary about the same as under current law. In effect, this approach allows the Congress to set the expenditure target for the Secretary's benefit package and the Secretary is then given discretion within a budgetary constraint established by the Congress.

In considering policies related to supplemental coverage, the Commission prefers the additional charge approach over the regulatory approach. The additional charge would apply to most sources of supplemental coverage, including medigap and employer-sponsored retiree plans. (However, implementing consistent changes with respect to medigap and employer-sponsored retiree plans would require different legislative changes. The additional charge would not apply to MA plans because they are at risk for benefit designs that increase costs relative to their capitation payments and are able to employ other tools for managing their enrollees' costs.) The Commission considers it important that risk-averse beneficiaries who wish to buy first-dollar coverage or reduce the uncertainty in their OOP spending through supplemental insurance should be allowed to do so but effectively at a higher price. Regulating supplemental benefits, in contrast, would prevent even those beneficiaries who very much value extra insurance from buying such policies at any price.

The additional charge would reflect more appropriately the additional costs imposed on the program due to the insurance effect of supplemental coverage. By setting the additional charge as a fixed percentage of premiums or the value of supplemental benefits, in a given market, the additional charge would be proportional to the generosity of supplemental benefits and the additional costs imposed on the program as a result. Across markets or insurers, a fixed percentage charge would mean that those areas with the highest utilization would bear the largest share of the recoupment represented by the additional charge. Such an

TABLE 1–5 **Illustrative benefit package**

FFS benefit package	Illustrative package keeping beneficiary liability neutral
Out-of-pocket maximum	$5,000 per year
Part A & Part B deductible	$500 per year
Hospital (inpatient)	$750 per admission
Physician	$20 PCP/$40 specialist visit $100 advanced imaging
Part B drugs	20% coinsurance
Outpatient hospital	$100 per visit
Skilled nursing facility	$80 per day
Durable medical equipment	20% coinsurance
Hospice	0% coinsurance
Home health care	$150 per episode*

Note: FFS (fee-for-service), PCP (primary care physician).
*For simplicity, we modeled the $150 copayment per episode considered by the Commission in 2011 as a 5 percent coinsurance on home health services.

approach is in contrast to increasing the Part B premium, which would affect all beneficiaries equally. Alternatively, the formulation of the additional charge could be modified to include a minimum threshold of generosity and be limited to some, rather than all, medigap and employer-sponsored retiree plans.[14]

In summary, the Commission believes that a new FFS benefit design should include:

- an OOP maximum (measured in cost-sharing liability incurred by the beneficiary) to protect beneficiaries from the financial risk of very high Medicare costs;
- deductible(s) for Part A and Part B services that may be combined or separate;
- copayments, rather than coinsurance, that may vary by type of service and provider;
- secretarial authority to alter or eliminate cost sharing based on the evidence of the value of services;
- no change in beneficiaries' aggregate cost-sharing liability; and
- an additional charge on supplemental insurance to recoup at least some of the added costs imposed on Medicare.

Many recently proposed changes to the Medicare program would require beneficiaries to pay more: reducing the actuarial value of the benefit package, increasing Part B premiums, increasing premiums only for high-income beneficiaries, increasing the age of eligibility, and recalculating the beneficiary contribution under a premium support system. By contrast, the Commission's recommendation to hold beneficiary liability neutral reflects our position that beneficiaries' costs in the aggregate should not increase in the redesign of the FFS benefit. Furthermore, we believe that the actuarial value of the benefit package should not be reduced while protecting beneficiaries against high OOP spending. At the same time, in recommending an additional charge on supplemental insurance, we maintain that it is reasonable to ask beneficiaries to pay more when their decision to get supplemental coverage imposes additional costs on the program that are not fully reflected in their supplemental premiums. Those costs are currently paid for by all Medicare beneficiaries through higher Part B premiums and taxpayers. The additional charge is not the only way to involve beneficiaries. Aside from preserving the actuarial value of the benefit package, the Commission has not expressed a position with respect to other proposed changes noted above that require beneficiaries to pay more.

Illustrative benefit package

Table 1-5 presents an illustrative benefit package consistent with the Commission's views on FFS benefit design reform. The package is modeled after the MA-style benefits that include the following copayments: $20 for each primary care physician visit, $40 for each specialist physician visit, $100 for each hospital outpatient visit, $750 for each inpatient hospital admission, and $80 for each skilled nursing facility day.[15] We also included 20 percent coinsurance for durable medical equipment and a $150 copayment per episode for home health care.[16] The annual OOP maximum is $5,000. To keep cost sharing relatively reasonable, the package includes a $500 combined deductible.[17] We kept the overall beneficiary cost sharing of this package roughly equal to that of the current FFS benefit. We want to emphasize that this package is for illustration only, to analyze the trade-offs between design elements. It does not represent the Commission's recommended benefit package.

In general, the set of copayments in the illustrative benefit package is within the range of typical copayments we see in MA plans. However, MA plans tend to use medical management to complement their use of cost sharing and to mitigate the potentially negative effects from reducing essential care or increasing less essential care. While copayments can make beneficiaries aware of the price

of care at the point of service, thus creating incentives to make better decisions about their use of discretionary care, medical management can mitigate the effects of reducing care indiscriminately.

We modeled the effects of the above illustrative benefit package using Medicare claims data from 2009.[18] Here is the list of assumptions underlying our estimates.

- Assumptions on the change in utilization in response to cost-sharing changes come from CBO's model of Medicare spending: a 10 percent increase in cost sharing leads to a 0.5 percent decrease in Part A spending; a 10 percent increase in cost sharing leads to a 1.5 percent decrease in Part B spending.[19]
- We assumed that medigap plans, on average, fill in all of Part A cost-sharing liability and 80 percent of Part B cost-sharing liability. Analogous assumptions for employer-sponsored retiree plans are that they cover, on average, 50 percent of Part A and Part B cost-sharing liabilities. (Retiree plans through large employers typically include some cost sharing and are less generous than medigap plans.)
- The scope of our modeling excludes dual-eligible beneficiaries because we assumed that Medicaid would fill in any changes under the alternative benefit package and would keep the cost sharing the same for those beneficiaries.
- We assumed a simple 20 percent additional charge on supplemental policies. For revenue effects, we calculated 20 percent of the average premiums on medigap and employer-sponsored retiree plans ($2,100 and $1,000 per year, respectively).[20]

For modeling changes in the take-up of supplemental insurance in response to higher premiums, we consulted the Actuarial Research Corporation. It estimates that take-up of medigap insurance would decrease by about 2 percentage points in response to a 20 percent tax on medigap premiums. Unfortunately, there are few data on this specific question. The conventional assumption seems to be that the response to a premium increase among those who have purchased medigap policies would be minimal, at least in the short term. The lack of plan switching among Part D beneficiaries in the past in response to premium changes is consistent with this view.

However, there are reasons to believe that the take-up of supplemental insurance would change over time. With more baby boomers turning 65, the Medicare population is changing rapidly. The program will see a net increase in enrollment of about 3 percent per year in the next decade. The younger population aging into the program is accustomed to health insurance that includes deductibles, a cap on OOP expenditures, and copayments. They are also less likely to have retiree health insurance. Therefore, although actuaries believe that only a small number of current beneficiaries would drop supplemental coverage under a new benefit design, new beneficiaries are more likely to make different choices. In the focus groups we conducted with individuals age 55 to 64 in 2010 and 2011, many future beneficiaries discussed the possibility of declining supplemental coverage depending on the size of the OOP maximum and copayment structure. A number of them pointed out that the money they would save on medigap premiums could finance copayments for most of their routine medical needs.

Recent data on medigap coverage and enrollment also suggest that beneficiaries' preferences for supplemental coverage would change over time. America's Health Insurance Plans reported that in the first quarter of 2011, 23 percent of new beneficiaries chose coverage under the following medigap plans, which require beneficiary cost sharing: high-deductible Plan F, Plan K, Plan L, Plan M, and Plan N (America's Health Insurance Plans 2011). Plan N, which includes cost sharing of up to $20 for physician office visits and up to $50 for certain emergency room visits, is the most popular of the new policies and accounted for 15 percent of all new medigap policies in early 2011. These data suggest that over time, more beneficiaries will be comfortable with some cost sharing and may choose to forgo some or all supplemental coverage.

With respect to employer-sponsored supplemental coverage, beneficiaries' decisions are more indirect. Changes in retiree benefits in response to the new Medicare benefit package are more likely to be driven by what employers decide to offer, especially in relation to benefits for active workers, rather than what retirees want. If the new Medicare benefits were to become similar to what is offered in employer-sponsored insurance, employers may be more inclined not to offer retiree benefits at all. We expect that the benefits, coverage, and offer rates of employer-sponsored supplemental plans will continue to erode over time.

In modeling the effects of the illustrative benefit package, given the uncertainty in beneficiaries' decisions related to supplemental insurance, we considered four levels of take-up rates: Among beneficiaries who currently have medigap or employer-sponsored retiree benefits, we

TABLE 1–6

Budgetary effects of the illustrative benefit package, 2009

Percent keeping supplemental coverage	Percent change in Medicare program spending in 2009	Revenue offset generated by 20% additional charge	Net percent change in Medicare program spending
100%	+1.0%	–1.5%	–0.5%
75%	0.0	–1.0	–1.0
50%	–1.5	–0.5	–2.0
0%	–4.0	0.0	–4.0

Note: Numbers are rounded to the nearest 0.5 percent. Beneficiaries included in this analysis were enrolled in both Part A and Part B for the full year in 2009 and not enrolled in private Medicare plans or Medicaid. We estimated a one-year snapshot of relative changes in Medicare program spending, compared with the actual spending in 2009, if the illustrative benefit package had been in place. Additional charge on supplemental insurance represents revenue to the program and is shown as a decrease in program spending. These estimates do not represent a budgetary score, which would take additional factors into account.

Source: MedPAC based on data from CMS.

assumed that all, three-quarters, half, or none of them keep their current supplemental coverage under the new benefit package. (This characterization is very stylized because beneficiaries can also decide to switch to supplemental insurance with higher cost sharing and lower premiums rather than drop supplemental coverage altogether.) Those beneficiaries who keep their supplemental insurance would pay a 20 percent additional charge on their premiums or the value of the benefit. In contrast, those beneficiaries who drop their supplemental insurance would pay their cost-sharing liability OOP but would save on their supplemental premiums.

Spending impacts

Table 1-6 shows the relative change in annual Medicare program spending under the illustrative benefit package, combined with a 20 percent additional charge on supplemental insurance. It presents only a one-year snapshot of relative changes. Most importantly, it does not represent a budgetary score, which would take additional factors into account.

Under the illustrative benefit package, which holds average beneficiary cost-sharing liability roughly equal to current law, program spending would increase by about 1 percent if beneficiaries kept their current supplemental coverage. Given the OOP maximum—which made the illustrative benefit package more generous compared with current law—the same level of cost-sharing liability would correspond to higher total spending under the illustrative benefit package. As a result, program spending would also be higher. In addition, the 20 percent charge on supplemental insurance would generate about 1.5 percent in revenue offsets. The net budgetary effect would be about 0.5 percent in savings. In contrast, if all beneficiaries dropped their current supplemental coverage, program spending would decrease by about 4 percent, with a net budgetary effect of about 4 percent in savings.

Distributional impacts

Overall, the average beneficiary cost-sharing liability under the illustrative benefit package would be roughly

FIGURE 1–1

Changes in Medicare out-of-pocket spending under the illustrative benefit package, 2009

Note: Beneficiaries included in this analysis were enrolled in both Part A and Part B for the full year in 2009 and not enrolled in private Medicare plans or Medicaid. We assumed no change in supplemental coverage among beneficiaries who currently have supplemental coverage. Out-of-pocket spending excludes Part B premium.

Source: MedPAC based on data from CMS.

TABLE 1–7 **More beneficiaries would be better off with an out-of-pocket maximum over time**

Full-year fee-for-service beneficiaries who had:	2009	2006–2009
1 or more hospitalizations	19%	46%
2 or more hospitalizations	7	19
$5,000 or more in annual cost-sharing liability	6	13
$10,000 or more in annual cost-sharing liability	2	4

Note: Includes beneficiaries who were enrolled in fee-for-service Medicare for four full years, from 2006 to 2009. Excludes those who had any months of private Medicare plan enrollment.

Source: MedPAC based on data from CMS.

equal to current law by design. However, it would be much less variable because of the OOP maximum. For example, assuming no change in current supplemental coverage, the standard deviation of cost-sharing liability in 2009 among beneficiaries included in our analysis decreased from $2,370 under current law to $1,250 under the illustrative benefit package, around the mean liability of $1,380.

The effects of the illustrative benefit package on beneficiaries in 2009 would vary by their use of services. First, those beneficiaries with cost-sharing liability above the $5,000 OOP maximum and no supplemental coverage would see their OOP spending go down. In Figure 1-1, this group would be included in the 9 percent of beneficiaries whose OOP spending decreased by $250 or more. (Results in Figure 1-1 assume no change in supplemental coverage among beneficiaries who currently have supplemental coverage.[21]) By contrast, those beneficiaries with no hospitalization and not much use of Part B service would see their cost sharing go up, since the revised benefit design would effectively lower the Part A deductible and raise the Part B deductible compared with current law. In Figure 1-1, this group would be included in the 21 percent of beneficiaries whose OOP spending increased by $250 or more. In general, beneficiaries with at least one hospital admission would see their cost sharing go down under the illustrative benefit package compared with the current benefit package. For the majority of beneficiaries, their OOP spending would not change much because for many of them, their supplemental insurance would dampen the changes in their cost-sharing liability.

Figure 1-1 highlights that a small percentage of beneficiaries incur very high cost sharing in a given year and thus would benefit from the OOP maximum under the illustrative benefit package. But a larger percentage of beneficiaries would reach the OOP maximum at some point over a longer period of time. Table 1-7 compares beneficiaries' hospitalization and spending over one year versus four years. For example, in 2009, 19 percent of full-year FFS beneficiaries had at least one hospitalization, whereas 46 percent did from 2006 to 2009. Similarly, 6 percent of full-year FFS beneficiaries had $5,000 or more in cost-sharing liability in 2009, whereas 13 percent had at least one year of $5,000 or more in cost-sharing liability over four years.

Some beneficiaries who currently have supplemental insurance would drop their coverage in response to higher premiums and the new Medicare benefits. Figure 1-2 (p. 24) shows the estimated distributional impact of changes in total OOP costs—the sum of OOP spending and supplemental premium—under the four scenarios: Among beneficiaries who currently have medigap and employer-sponsored retiree insurance, we assumed that all, three-quarters, half, or none of them keep their current supplemental insurance. Compared with Figure 1-1, the distributional impacts in Figure 1-2 are noticeably different. For beneficiaries who keep their supplemental coverage, total OOP costs would be higher because of the 20 percent additional charge on supplemental insurance: At 2009 premium levels, the 20 percent additional charge would translate into a $420 increase per year on medigap plans and a $200 increase per year on employer-sponsored retiree plans. In contrast, for beneficiaries who drop their supplemental coverage, total OOP costs would be the net effect of higher cost sharing paid OOP and savings on their supplemental premiums ($2,100 per year on medigap plans and $500 per year on employer-sponsored retiree plans, assuming a 50 percent employer subsidy rate).

FIGURE 1–2

Changes in Medicare out-of-pocket spending and supplemental premium under a 20 percent additional charge on supplemental insurance, 2009

Note: Beneficiaries included in this analysis were enrolled in both Part A and Part B for the full year in 2009 and not enrolled in private Medicare plans or Medicaid. We assumed four different levels in take-up rates among beneficiaries who currently have medigap insurance: 100%, 75%, 50%, and 0%. Out-of-pocket spending excludes Part B premium. The change in supplemental premium includes the 20% additional charge on supplemental insurance. Percentages may not sum to 100 due to rounding.

Source: MedPAC based on data from CMS.

If all beneficiaries kept their current supplemental coverage, the 20 percent additional charge on supplemental insurance would increase the total OOP cost significantly. Whereas 70 percent of beneficiaries have very little change in OOP costs under the illustrative benefit package in Figure 1-1, 70 percent of beneficiaries have an increase of $250 or more under the illustrative benefit package because of the 20 percent additional charge on supplemental insurance in Figure 1-2. The distribution shifts as fewer beneficiaries keep their current supplemental coverage, as the savings from dropping their medigap or employer-sponsored retiree plans decrease their total OOP costs. If all beneficiaries dropped their current supplemental coverage, 32 percent would experience an increase of $250 or more, compared with 70 percent if all beneficiaries kept their current supplemental coverage. The remaining 68 percent would have little change in their OOP costs or a decrease of $250 or more.

RECOMMENDATION 1

The Congress should direct the Secretary to develop and implement a fee-for-service benefit design that would replace the current design and would include:

- **an out-of-pocket maximum;**
- **deductible(s) for Part A and Part B services;**
- **replacing coinsurance with copayments that may vary by type of service and provider;**
- **secretarial authority to alter or eliminate cost sharing based on the evidence of the value of services, including cost sharing after the beneficiary has reached the out-of-pocket maximum;**
- **no change in beneficiaries' aggregate cost-sharing liability; and**
- **an additional charge on supplemental insurance.**

RATIONALE 1

Under the current FFS benefit design, no upper limit exists on the amount of Medicare cost-sharing expenses a beneficiary can incur. Without additional coverage, the FFS benefit design exposes Medicare beneficiaries to substantial financial risk. The recommended benefit design provides better protection against high OOP spending and thus enhances the overall value of the FFS benefit, mitigating the need for beneficiaries to purchase supplemental insurance. It also creates clearer incentives for beneficiaries to make better decisions about their use of discretionary care while holding the aggregate beneficiary cost-sharing liability about the same as under current law. It also allows for ongoing adjustments and refinements in cost sharing as evidence of the value of services accumulates and evolves. An additional charge on supplemental insurance would recoup at least some of the additional costs imposed on the Medicare program due to the insurance effect of supplemental coverage. However, it would still allow risk-averse beneficiaries to buy supplemental coverage if they wish to do so.

IMPLICATIONS 1

Spending

- The impact on Medicare program spending relative to current law depends on the levels of cost sharing, the additional charge on supplemental insurance, and which plans are subject to the additional charge, as specified in the ultimate benefit design implemented by the Secretary.

Beneficiary and supplemental insurer

- Under the recommended benefit design, the aggregate beneficiary cost-sharing liability would remain unchanged. Some beneficiaries who incur very high Medicare spending would see their liability reduced, while others who incur low Medicare spending may experience higher liability. If an individual's cost sharing were to increase, he or she might reduce both effective and ineffective care, and some beneficiaries may experience worse health as a result. Finally, the effects on beneficiaries with supplemental coverage would also depend on whether they retain their supplemental coverage, drop it, or switch to a plan with a lower premium. If beneficiaries decide to keep or purchase supplemental coverage, they will pay the additional charge on their supplemental insurance.
- For medigap plans, the additional charge will increase their premiums, and some beneficiaries might drop their medigap or move to MA in response to the benefit change and higher medigap premiums. The effects on employers that offer retiree benefits are uncertain. ■

Endnotes

1 Throughout this chapter, we use cost-sharing liability to refer to the amount of total spending on Medicare services not paid for by the Medicare program. This amount can be paid by the beneficiary, or additional insurance, or both. We use OOP spending to refer to the amount of cost-sharing liability actually paid by the beneficiary. Therefore, if the beneficiary has Medicare only, her OOP spending would be equal to her cost-sharing liability, whereas the former would be smaller than the latter if she has supplemental insurance. In addition, we use total OOP costs to refer to the sum of OOP spending and premiums on supplemental coverage paid by the beneficiary.

2 In addition, in 2007, 23 percent of Medicare beneficiaries were in MA plans, 12 percent were in Medicaid, 8 percent were in Medicare only, and 1 percent were in other public programs.

3 Over the years, standards for medigap policies have changed through introductions of new plans and revisions of existing plans. For example, the Medicare Prescription Drug, Modernization, and Improvement Act of 2003 created two types of standard products—Plan K and Plan L—that fill in less of Medicare's cost sharing in return for lower premiums. In June 2010, medigap insurers introduced two new types of policies—Plan M and Plan N—that do not fill in all of Medicare cost sharing. Plan M covers 50 percent of the Part A deductible but none of the Part B deductible. Plan N covers all of the Part A deductible but none of the Part B deductible, and it requires copayments of up to $20 for office visits and up to $50 for emergency room visits. Plan N's cost sharing is the lesser of a $20 copayment or Medicare's coinsurance amount for Part B evaluation and management services for specialist or nonspecialist office visits. The lesser of a $50 copayment or Part B coinsurance applies for each covered emergency room visit. However, that cost sharing is waived if the beneficiary is admitted and the emergency visit is covered subsequently by Part A (National Association of Insurance Commissioners 2010a).

4 The Patient Protection and Affordable Care Act of 2010 directs the National Association of Insurance Commissioners (NAIC) to revise standards for medigap policies Plan C and Plan F to include requirements for nominal cost sharing to encourage the use of appropriate physician services under Part B. New standards are to be based on evidence published in peer-reviewed journals or current examples used in integrated delivery systems. NAIC's revised standards are, to the extent practicable, to be in place as of January 1, 2015.

5 These criteria are tied to eligibility for the Supplemental Security Income program. States have the option to make their coverage more generous by raising the income level, disregarding certain types of income, or extending Medicaid benefits to additional categories of the elderly and disabled population, including the medically needy (Kaiser Commission on Medicaid and the Uninsured 2010).

6 This number includes both full and partial dual-eligible beneficiaries who had at least one month of enrollment in Medicaid or Medicare Savings Programs in 2010.

7 Few MA plans use FFS Medicare's cost-sharing structure. For example, only 1 percent of MA enrollees are in plans that charge the Part A deductible. Moreover, all MA plans are required to have an OOP maximum of no more than $6,700 for Medicare-covered services, and they can have lower OOP maximum amounts.

8 A variation on adding an OOP maximum is to apply the concept of "true" OOP, under which the OOP maximum counts only the OOP spending actually paid, rather than incurred, by the beneficiary (as in Part D). Under the true OOP concept, therefore, the portion of cost-sharing liability incurred by the beneficiary but paid by supplemental insurance would not count toward the OOP maximum. Consequently, supplemental plans would not be able to benefit from an OOP maximum in the Medicare program because they still would have to pay for cost sharing above the maximum amount until the beneficiary's portion of cost sharing reached that amount.

9 We conducted 13 focus groups in Bethesda (Maryland), Dallas, and Boston in June and July 2011 as part of our annual round of beneficiary focus groups. There were seven groups of beneficiaries and six groups of future beneficiaries between the ages of 55 and 64 years. Each group consisted of 8 to 10 individuals and was facilitated by researchers from NORC (formerly National Opinion Research Center) and Georgetown University. Participants were recruited from certain income ranges to ensure that they had a financial stake in their insurance choices (e.g., they were not covered by Medicaid but also were not so wealthy that budgeting for health expenditures was unimportant). In addition, beneficiaries and future beneficiaries had a mix of health insurance arrangements. In terms of our future beneficiaries, 41 had employer-provided health insurance, 12 purchased individual insurance, and 3 were uninsured. Medicare beneficiaries included 32 with retiree coverage and 29 who purchased individual supplemental policies or were enrolled in MA plans. Ten beneficiaries did not specify their source of coverage but all had some supplemental coverage.

10 Rice and Matsuoka (2004) also reviewed studies that examined the relationships between cost sharing and use of appropriate care that are thought to improve health status.

Among the nine studies examined, six found evidence that higher cost sharing tends to reduce the appropriate use of services. Evidence was strongest for prescription drugs and was less definitive for other services.

11 CBO prepared estimates for this option beginning in 2013, with the amounts of restrictions on medigap policies indexed each year to the average annual growth in Medicare costs. Because CBO assumed some ramp up of the policy in 2013, we present its fully implemented estimates for 2014.

12 The current Medicare statute includes Part E, titled "Miscellaneous Provisions." These provisions are unrelated to the proposed Medicare Extra.

13 In general, purchasing a medigap plan is subject to underwriting after the initial period of guaranteed issue, or six months after enrolling in Part B. (Some states require community rating of medigap plans.) Therefore, an implementation process would need to allow for beneficiaries' changing their supplemental coverage in response to the additional charge.

14 This formulation of the additional charge may be effective if the incentives to use more services mainly come from the most generous plans offering first-dollar coverage rather than from plans with some cost sharing.

15 Many plans charge separate copayments for emergency room visits. For modeling simplicity, we imposed copayments of $100 on all outpatient visits, including emergency room visits.

16 In 2011, the Commission recommended a per episode copayment for home health episodes that are not preceded by hospitalization or post-acute care use. At that time, the Commission considered an illustrative copayment of $150 per episode (Medicare Payment Advisory Commission 2011c).

17 The $500 deductible amount is used for illustration only. Given the $5,000 OOP maximum and the set of copayments that are typical under MA benefits, we solved for the deductible that would keep the average cost-sharing liability about the same as under current law. The Commission did not take a definitive position on combining Part A and Part B deductibles.

18 We linked the claims data with Medicare administrative data on Medicare and Medicaid enrollment status and CMS coordination of benefits files to determine beneficiaries' supplemental coverage. Our modeling was based on about 21 million beneficiaries who were enrolled in both Part A and Part B for the full year in 2009 and not enrolled in Medicaid or MA.

19 CBO assumptions expressed in terms of arc elasticities are: –0.05 for Part A services and –0.15 for Part B services. Arc elasticity is defined as the ratio of the percentage change in spending in response to the percentage change in cost sharing, and the percentage change is calculated relative to the average or midpoint of the two values before and after the cost-sharing change, rather than at the original value. Alternatively, assumptions more commonly used by actuaries are based on standard induction factors: A $10 increase in cost sharing leads to a $2 decrease in Part A spending, and a $10 increase in cost sharing leads to a $7 decrease in Part B spending (Cubanski et al. 2011). These estimates are expressed in terms of dollar changes. Both sets of assumptions are based on the RAND HIE. However, they have different implications for the magnitude of the spending response because elasticity is a relative measure. In other words, a $10 change in cost sharing represents a larger percentage change to a beneficiary with low spending and cost-sharing liability than to a beneficiary with high spending and cost-sharing liability. Therefore, under the CBO assumptions, a $10 change in cost sharing would result in a different percentage response in spending depending on the beneficiary's level of spending. In contrast, under induction factors, a $10 change in cost sharing would result in the same dollar response in spending independent of the beneficiary's level of spending.

20 In 2009, the average annual premium on medigap weighted by enrollment across all plan types was $2,100 (National Association of Insurance Commissioners 2010b).

21 We assumed no change in supplemental premiums from the change in Medicare's benefit design because the illustrative package held the average beneficiary cost-sharing liability roughly equal to current law.

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CHAPTER 2

Care coordination in fee-for-service Medicare

CHAPTER 2

Care coordination in fee-for-service Medicare

Chapter summary

Gaps exist in care coordination in fee-for-service (FFS) Medicare because of the fragmentation of service delivery, the lack of tools to help communicate across settings or providers, and the lack of a financial incentive to coordinate care. These gaps are particularly important in Medicare because beneficiaries are more likely to have multiple chronic conditions than younger patients, requiring more interaction with the health care system.

The effects of poor care coordination include beneficiaries having to repeat medical histories and tests, receiving inconsistent medical instructions or information, experiencing poor transitions between sites of care, and using higher intensity settings when it is not necessary. Models to improve care coordination include physician practice transformation models to better deliver chronic care, care manager models, and models focusing on facilitating transitions between settings. The Center for Medicare & Medicaid Innovation is also establishing tests of care coordination models to provide additional information on their efficacy in Medicare.

Findings from recent Medicare demonstrations on care coordination and disease management models have not shown systematic improvements in beneficiary outcomes or reductions in Medicare spending. The most successful program in the Medicare demonstrations emphasized developing a care coordination intervention as well as restructuring providers'

In this chapter

- Consequences of poor care coordination
- Reasons for poor care coordination
- Care coordination: Models and types
- Care coordination demonstrations in FFS Medicare
- Challenges of establishing an effective care coordination intervention
- Care coordination and Medicare payment policy
- Conclusion

administrative and care delivery processes so that they would work well around the intervention. Restructuring the way care is provided may be necessary to achieve good care coordination, but such restructuring is difficult in a FFS environment.

The incentives in FFS Medicare to increase volume often work at cross-purposes with efforts to coordinate care and improve care delivery. Further, the fee schedule for physicians and other health professionals is widely perceived to favor procedures and tests over cognitive activities such as care coordination that primary care practitioners are more likely to provide. Care coordination also cannot work without a robust, well-supported primary care system, and therefore the decline in the primary care workforce is cause for alarm.

The approaches most likely to achieve significant improvement in care coordination are those that: fundamentally change the FFS incentives to provide more, rather than better, care; give organizations the flexibility to use the best tools for their population; and support, facilitate, and permit innovation that will improve care for beneficiaries. While broad payment reform (such as the shared savings payment approach for accountable care organizations and bundled payments) holds promise for improving care coordination, these changes will take time to develop. In the interim, it may be necessary to take intermediate steps to improve care coordination and provide explicit payments for the related activities that primary care clinicians do but that are not currently paid for under the FFS system. Policy options for care coordination could include adding codes or modifying existing codes in the fee schedule that allow practitioners to bill for care coordination activities, creating a per beneficiary payment for care coordination, or using payment policy to reward or penalize outcomes resulting from coordinated or fragmented care. Each of these options has positive and negative features that the Commission will explore in future work. ■

The Commission has been concerned for many years that gaps exist in care coordination in fee-for-service (FFS) Medicare and that this lack of coordination around transitions and management of illness can harm beneficiaries. Care coordination is particularly important for the Medicare population because beneficiaries often have multiple acute and chronic conditions requiring systemic coordination.

Adding to the urgency of these gaps in care coordination is continued erosion in the base of primary care practitioners. Primary care—comprehensive health care provided by personal clinicians responsible for the overall, ongoing health of their patients—is a crucial component in ensuring that beneficiaries receive coordinated care. Some key components of primary care include: emphasizing a first point of contact with the beneficiary, providing continuity across time and settings, and delivering holistic care for the multiple chronic and acute conditions facing many Medicare beneficiaries (Starfield et al. 2005).

Despite the importance of primary care in ensuring that care is well coordinated for beneficiaries facing chronic illness, primary care faces a mounting crisis due to fewer new physicians opting for primary care specialties and a persistent imbalance in payment between primary care and specialty physicians (Bodenheimer and Pham 2010, Medicare Payment Advisory Commission 2008).

The Commission has raised concerns that the current process of setting Medicare payment rates for physicians and other health professionals undervalues primary care activities relative to specialty or procedural care (Medicare Payment Advisory Commission 2008). This practice has resulted in a preference for specialty care relative to primary care among medical school graduates (Bodenheimer 2006). These trends are also reflected in access to physician services among the Medicare population. Specifically, among the small number of beneficiaries seeking a new physician, a larger share of them (35 percent) encountered a small or big problem when seeking a primary care physician than the share of Medicare beneficiaries seeking a specialist (15 percent) (Medicare Payment Advisory Commission 2012).

In response to these alarming trends in the primary care workforce and the importance of primary care to both coordinated care and future payment reforms (such as the shared savings payment approach for accountable care organizations) that have the potential to improve the delivery of efficient, high-quality care, the Commission has made a number of recommendations to address the undervaluation of primary care services in the fee schedule relative to other services.

First, the Commission has made recommendations that the Secretary of Health and Human Services identify overpriced procedures and collect data to improve the estimates of work and practice expense in the fee schedule (Medicare Payment Advisory Commission 2006, Medicare Payment Advisory Commission 2011a). Second, the Commission has made specific recommendations to establish a payment adjustment for primary care services in the fee schedule and that CMS establish a medical home pilot project (Medicare Payment Advisory Commission 2008). A variant of both recommendations was enacted into law in 2010. Third, the Commission's recommendation for replacing the sustainable growth rate system for physician payment would provide preferential treatment for primary care relative to specialty care (Medicare Payment Advisory Commission 2011a).

Without a well-developed, well-supported primary care system, the care coordination models described in this chapter are unlikely to be widely successful. Furthermore, research has illustrated that higher provision of primary care is correlated with the delivery of more efficient, higher quality care (Baicker and Chandra 2004, Medicare Payment Advisory Commission 2008). Recognizing the costs that primary care clinicians incur in care coordination that are not directly reflected in the fee schedule, through mechanisms such as those discussed in this chapter, would provide further support for primary care, and emphasize its value in a reformed delivery system.

In addition to accurate valuation of primary care in the fee schedule, policies to improve care coordination in Medicare can encompass a continuum ranging from very prescriptive policies (where specific defined activities are paid for) to very broad policies (where a global payment is made for an episode or a beneficiary). For example, the most prescriptive policies include changing billing codes in the physician fee schedule to direct resources toward care coordination activities. Somewhat less prescriptive are policies that make per member per month payments to a medical home or care management entity to manage a population of patients or make transitional care payments for patients being discharged from the hospital. The Commission's published work in this area includes: a review of key elements of care coordination models, models of care for dual-eligible populations, and Medicare's experience with care coordination

demonstrations (Medicare Payment Advisory Commission 2004, Medicare Payment Advisory Commission 2006, Medicare Payment Advisory Commission 2009, Medicare Payment Advisory Commission 2010, Medicare Payment Advisory Commission 2011b).

Somewhat broader policies tie payment to outcomes that are the direct result of good or bad care coordination. One example is Medicare's existing policy that reduces payment to hospitals with high readmission rates. This policy links the payment to the outcome (readmissions) without prescribing specific actions that the provider must take. Care coordination policies at the broadest end of the continuum make the provider responsible for delivering a certain quality of care at a fixed level of spending, with wide leeway on how to do so. These types of policies include fixed payment arrangements such as bundling or capitation.

Consequences of poor care coordination

Coordinating care for Medicare beneficiaries is a substantial task. In 2008, about 20 percent of aged Medicare beneficiaries had an inpatient admission, 14 percent of beneficiaries used a post-acute care provider, 70 percent of beneficiaries had an outpatient hospital department visit, and the average beneficiary had 12 visits for evaluation and management services per year—in a physician's office, hospital, nursing home, or other location (Chronic Condition Warehouse 2012).[1] In addition, in 2009 the average Medicare beneficiary enrolled in Part D filled 4.1 prescriptions per month. The average was higher for Part D enrollees receiving the low-income subsidy (5.0 prescriptions per month) compared with those who do not (3.6 prescriptions per month).

In FFS Medicare, there is little systematic coordination of a patient's care among multiple providers and settings. Coordinating one's own care is challenging even in a single health event, but many beneficiaries have a significant number of such events in a year. Beneficiaries who are physically frail or have cognitive challenges may have limited ability to express their treatment preferences or communicate with multiple providers about their condition. Furthermore, health literacy declines with age, and decision-making processes change (Finucane et al. 2002, Kutner et al. 2006).

Poorly coordinated care is also more likely to occur for people in racial or ethnic minority groups or those with lower incomes, and these patterns are of concern to the Commission. For example, the rate of individuals receiving complete discharge instructions for heart failure when being released from the hospital is lower for American Indians and Alaskan Natives than for other racial and ethnic groups, and the rate of readmissions for heart failure is higher for African Americans and Hispanics than for Whites. Higher income individuals were more likely to report that their health providers asked about their medications and treatments from other doctors than were the poor and near poor (Agency for Healthcare Research and Quality 2011a).

Minority groups are also less likely to use formal post-acute care settings and are more likely to be admitted to post-acute care in worse health than other groups (Konetzka and Werner 2009). If it is the case that post-acute care providers facilitate care coordination for their beneficiaries, this difference in usage of formal post-acute care could exacerbate racial and ethnic differences in obtaining coordinated care. Overall, to the extent that racial and ethnic minorities and those with lower incomes are experiencing adverse health events and facing stress due to uncoordinated care, improving care coordination could improve their overall health and reduce disparities in outcomes.

Repeated medical history and diagnostic tests

Poor care coordination can entail repeated demands for information from patients on their medical history and their current medical regimen as well as repeated diagnostic tests. Survey respondents in the United States were more likely to report care coordination issues than respondents in the five other countries surveyed: Medical records were not available in the doctor's office in time for the appointment or a medical test was ordered that the patient thought was unnecessary because it had already been done (Schoen et al. 2009).

Polypharmacy

Polypharmacy is a term encompassing inappropriate use of medications that can lead to adverse health events. One study of prescription drug patterns among the elderly found that the number of drugs taken and the complexity of prescription instructions have increased over time, with 12 percent of individuals age 65 or over taking at least 10 medications per week (Gurwitz 2004), and consumption of five or more drugs is a risk factor for falls among the

elderly (Berdot et al. 2009). Reconciling medications and instructions across settings and providers can reduce the incidence of adverse drug events and is often a key feature in care coordination models (Gandhi et al. 2003).

Inconsistent medical information and poor communication

The Survey on Chronic Illness and Caregiving, conducted by Harris International in 2000, found that about 20 million individuals with chronic illnesses had received inconsistent information from providers, while a slightly smaller number (18 million and 17 million, respectively) had received different diagnoses for the same chronic illness or had been told by pharmacists that drugs they were prescribed were contraindicated (Anderson and Knickman 2001).

Results from the National Healthcare Quality Report find performance on self-reported measures of poor coordination to be positively correlated with patient severity and age. For example, among respondents with an office visit in the past year, 15 percent of patients with a significant activity limitation reported that they had poor communication with their providers, higher than the rate for those without an activity limitation (10 percent). And respondents over age 65 were more likely than people in other age groups (except children) to report that their physicians did not ask about prescription medications and treatments from other doctors (Agency for Healthcare Research and Quality 2011b).

Poor transitions or hand-offs between settings and providers

Transitions between settings can be jarring and the effect of hospitalizations in limiting mobility is particularly acute for older patients. For example, the prolonged bed rest and change in routine associated with a hospitalization works in tandem with the normal processes of aging (such as reduced muscle strength, declines in bone density and respiratory ability, and declines in sensory continence) to put patients at risk of further decline in functional status and higher rates of anxiety and other psychological disturbances (Creditor 1993, Gillick et al. 1982, Graf 2006). Each transition can limit the beneficiary's ability to recover to the same level of functioning. Transitions from the hospital to the ambulatory setting also pose a special challenge—patients and their families need to establish new patterns of self-care and may lack the experience with their condition to recognize a serious complication (Brown 2009).

Unnecessary emergency department use and hospital readmissions

Poor care coordination can result in patients seeking care from a higher intensity setting than needed—for example, using the emergency department when they could have been treated in the office of a physician or other health professional. Among a survey of U.S. residents, a quarter of adults reported that they went to the emergency department for a condition that could have been treated by a regular doctor if available (Schoen et al. 2009). Of all Medicare hospital admissions, about 19 percent result in a readmission to the hospital within 30 days (Institute of Medicine 2011).

Reasons for poor care coordination

Health care can be poorly coordinated for several reasons. First, no one entity is accountable for care coordination. Second, FFS payment generally does not specifically pay for non-face-to-face activities, which include providers communicating with each other to coordinate a beneficiary's care. And third, no easy way exists to communicate information across providers and settings, and interoperability is poor among existing information systems.

Payment policies

Medicare's FFS system, which generally pays for discrete episodes or services within siloed settings for face-to-face encounters, gives little incentive to providers to spend time coordinating care. Services provided by a physician or other health care professional that do not involve a face-to-face encounter are not billable under Medicare's fee schedule (there are a few exceptions to this general rule).[2] Instead, care coordination activities are largely subsumed in the fee schedule's evaluation and management codes, which pay for in-person visits. Medicare and most other payers have separate payment systems for different provider types, meaning that each care process is broken up into a set of different transactions between the beneficiary and the health care delivery system.

Lack of tools to communicate effectively across settings and providers

The health care system is fragmented, with many providers, settings, and clinical and nonclinical staff involved with each patient's episode of illness. Fragmentation on its own may not be harmful, if clinically

important information is communicated across settings and providers. However, there is significant evidence that communication across providers and settings is poor (Bodenheimer 2008).

Important instructions are often not received before patients have their first visit with the provider—for example, one study found that two-thirds of physicians treated a patient for the first time after being discharged from the hospital but before the physician received the hospital's discharge summary (Kripalani et al. 2007). Another study found that only a quarter of hospital discharge summaries mentioned that there were outstanding medical test results and what tests they were, even though all patients had outstanding tests and their discharge summaries should have included such information (Were et al. 2009). Similar incompleteness was found in transfers between primary and specialty physicians and between community physicians and hospital-based physicians (Forrest et al. 2000, Gandhi et al. 2000, Schoen et al. 2005). Even providers with robust information technology systems are often unable to use them to communicate easily with other providers because their systems are not interoperable (Elhauge 2010).

Care coordination: Models and types

Care coordination is a broad concept that encompasses a wide range of activities and often means different things to different people. The term care coordination is often used interchangeably with terms such as case management, disease management, and care management. However, in this chapter, the Commission views care coordination as a broad term that means a set of tools available for improving the delivery of coordinated care (which could include disease management, case management, and transitional care). Because of the disease burden of the Medicare population, the care coordination models discussed here also generally focus on people who have or who are going to have significant contact with the health care system.

One definition of care coordination is that it "is a conscious effort between two or more participants involved in a patient's care to facilitate appropriate delivery of health care services" (Agency for Healthcare Research and Quality 2011b). Also part of the care coordination discussions are efforts to make care patient centered with a holistic orientation. Patient centered means that the beneficiaries' preferences and perspective should be elicited, understood, and built into their plan of care. A holistic orientation means that the patients' medical treatment should be tailored to their specific situation and should not ignore the other factors that affect health—such as mental and social well-being, nutrition, income or housing security, literacy and education, and other factors.

Practitioners and other researchers have developed a series of models to improve care coordination and improve the experience for individuals with multiple chronic conditions.[3] Table 2-1 groups the models of care coordination by type of intervention or component. The models vary in design and attempt to coordinate care by:

- transforming primary care practices that can better manage patients with a heavy chronic disease burden;
- utilizing a care manager role, either inside or outside the physician's office; and
- managing transitions between settings, targeting hospital patients who are discharged to other settings.

Practice transformation models

Examples of transformed practice models are the chronic care model and medical home model, which restructure medical practices so they can improve the delivery of coordinated care. Principles that underlie the chronic care model include accessing community resources to help patients, creating an organizational culture that promotes safe effective care, empowering and activating patients to express their preferences, supporting clinical care that is consistent with guidelines, and organizing patient and population data. The chronic care model forms the basis for many other interventions, including the medical home model. Medical homes are medical practices that deliver patient-centered care, coordinate care across providers and settings, and have robust information technology to facilitate information transfer (Medicare Payment Advisory Commission 2008).

Embedded care manager models

Guided Care® and the Aetna℠ case manager models place a care manager (often an advanced practice nurse) in a physician's office, versus the medical practice hiring a care manager (as in the practice transformation models). The care manager identifies high-risk and potentially high-risk patients. Because the Aetna model is run by the insurer, care managers in this model are able to use claims information to identify patients who could benefit from

TABLE 2–1

Illustrative models of care coordination

Model name	Principles	Responsible entity
Practice transformation models		
Chronic care model	Six principles of chronic care delivery for transforming physician offices: community resources and policies, health care organization, self-management support, delivery system design, decision support, clinical information systems.	Medical practice
Medical home	Medical home model generally follows seven principles: a personal physician, a physician-directed medical practice, a whole person orientation, care that is coordinated and integrated, quality and safety, enhanced access to care (such as open scheduling and off-hours access), and payment reform to reflect the added value of a medical home.	Medical practice
Embedded care manager models		
Aetna℠ case manager model	Case manager helps manage patient care by communicating with the patient and the clinical staff.	Nurse case manager funded by Aetna and placed in medical practices
Guided Care® model	Eight clinical activities of Guided Care: assessment, planning, chronic disease self-management, monitoring, coaching, coordinating transitions, educating and supporting caregivers, and accessing community resources.	Guided Care nurse placed in primary care medical practice
Transitions models		
Care Transitions Intervention®	Intervention focused on patient activation and self-care, assistance with medication self-management, assistance with medical record owned and maintained by the patient to facilitate cross-site information transfer, follow-up with primary or specialty care, and identification of worsening condition and development of responses.	Transition coach works with the patients and their families.
Transitional Care Model©	Comprehensive discharge planning in the hospital and home follow-up by advanced practice nurses. Transitional care nurse develops an evidence-based plan of care, visits patient in the hospital, conducts home visits, and attends first follow-up visit with primary care physician. Active engagement of patients and caregivers and coordination with other medical staff involved in the patient's care.	Advanced practice nurses trained in the transitional care model
External care manager models		
Community health teams	Provider practices link to community health teams to help them provide coordinated care. Intervention integrating health team with providers, frequently interacting with patients, and facilitating transitions and access to community resources.	Health teams in the community that work with medical practices. Teams can include care coordinators, nurses, and social supports.
Disease management	Generally a telephone-based intervention focused on patient education and activation, monitoring of clinical symptoms, and evidence-based practice.	Disease management organizations that communicate directly with the patient

Source: Boult et al. 2009, Coleman 2003, Congressional Budget Office 2004, Naylor et al. 2011, Patient-Centered Primary Care Collaborative 2007, and Thorpe and Ogden 2009.

better care coordination. The care manager helps with care planning and transitions, provides in-home assessments, and facilitates access to care and social supports for seriously ill patients (Boult et al. 2009, Hostetter 2010). A cluster-randomized controlled trial of Guided Care reported in the *Annals of Internal Medicine* found that the only significant reduction in utilization for beneficiaries receiving Guided Care was for home health episodes (Boult et al 2011).

Transitions models

The Transitional Care Model© and the Care Transitions Intervention® use care managers to facilitate transitions across settings. The Transitional Care Model institutes comprehensive predischarge and postdischarge care management for patients with heart failure and other chronic conditions. In the Transitional Care Model, advanced practice nurses identify hospitalized patients who are likely to need assistance transitioning back home or to another setting and provide care management during hospitalization and through the transition. The advanced practice nurses visit patients in the hospital, develop comprehensive discharge planning, make home visits after discharge, and communicate by telephone. The Transitional Care Model has been applied in different settings and has been shown through a randomized clinical trial and a randomized controlled trial to reduce costs and rehospitalizations (Naylor et al. 1999, Naylor et al. 2004).

The Care Transitions Intervention focuses on patient activation, using coaches to train patients to manage their care by communicating information across providers, fulfilling medication instructions, following up with providers, and identifying what to do when their condition worsens. A randomized controlled trial set in a large integrated delivery system in Colorado found reduced rehospitalization rates and lower overall hospitalization costs from the Care Transitions Intervention (Coleman et al. 2006). Tests of transition models, under way at the Center for Medicare & Medicaid Innovation (CMMI), are expected to provide CMS with further evidence regarding the effectiveness of this type of intervention in the Medicare program.

External care manager models

Community health teams and disease management models use an external entity to perform care coordination activities. Community health teams consist of medical and social service staff that work with the offices of physicians and other health professionals to coordinate care, activate patients in managing their health, and facilitate access to community resources. Community health teams were established in certain communities in Vermont in 2008, although no formal evaluation has been completed (Agency for Healthcare Research and Quality 2012).

Disease management interventions generally entail a commercial disease management organization communicating with patients and their physicians about patient self-management, adherence to recommended guidelines, and coordination of care across providers. Evaluations of the effectiveness and cost neutrality of disease management programs have been mixed (Congressional Budget Office 2004, Fireman et al. 2004, Mattke et al. 2007).

Elements of team-based care

Many of the care coordination models in Table 2-1 emphasize a team-based care delivery model, in which a care coordinator works with a team of medical and social service providers involved in the beneficiary's care. In some of the models, the team is explicit, such as in the community health team model. In others, the team is more fluid and centers on a care manager who coordinates with medical professionals, social service providers, patient coaches, nutritionists, pharmacists, home care workers, and other parties as needed. These team-based models can include elements such as palliative care and social service supports.

Palliative care

Some team-based models include a palliative care component, particularly for beneficiaries with complex health needs. Palliative care focuses on managing symptoms, improving quality of life, and making sure beneficiaries' care is in line with their goals and preferences. Specifically, palliative care can include managing pain and symptoms, providing access to social supports for beneficiaries and their caregivers, supporting beneficiaries to communicate effectively with their physicians and other providers, understanding beneficiaries' preferences and ensuring that their treatment conforms to those preferences, and helping patients understand and anticipate their disease trajectory and how to access medical and social supports if their symptoms worsen.

The goals of palliative care are diverse, as they are typically tailored to the individual patient. Depending

on the patient's condition, palliative care may seek to, for example, minimize pain, reduce side effects, or maintain a certain level of mobility. Palliative care is often offered to patients after they receive a diagnosis of a serious or advanced illness and to those who have expressed a preference for symptom management or goal-directed care. Nonhospice palliative care can be appropriate for patients at all stages of curable and noncurable disease (such as treatable cancers that cause significant pain, conditions that require managing a complex drug regimen, and serious illnesses), although the goals may change if a patient's disease advances.

Palliative care can be delivered as part of an interdisciplinary team for patients with chronic illness or complex health needs, along with other medical staff, social service providers, nutritionists, therapists, and others. Many of the principles of palliative care are akin to the principles underlying other models of care coordination—patient-centered, goal-focused care that facilitates access to diverse medical and social supports and elicits a patient's preferences so that they can be reflected in the plan of care for that patient.

Social service supports

Most models emphasize facilitating patients' access to social support services, welfare programs, nutritionists, and other services for themselves and their caregivers. Caseworkers and patient coaches can also help support patient activation—that is, patients taking an active role in managing their illness or condition—by teaching patients to identify their symptoms and seek assistance, supporting compliance with medical instructions, and helping patients learn to express their treatment preferences.

Upcoming CMS initiatives

The Patient Protection and Affordable Care Act of 2010 (PPACA) established a number of pilots and models to test coordinated care delivery. Some were established as separate provisions of law and others are being developed by CMMI under its authority to test models of care. In addition to the projects listed below, CMMI has assumed oversight of all existing Medicare demonstrations.

Independence at home demonstration

Section 3024 of PPACA establishes a demonstration to test a service delivery model in which medical professionals run primary care teams treating Medicare beneficiaries in their homes. Practices may share in savings provided they meet specific quality and cost targets. Eligible Medicare beneficiaries are those with two or more chronic conditions and one nonelective admission in the past 12 months. Eligible practices must have significant experience providing home-based primary care. Sixteen sites were chosen in spring 2012 under this initiative.

Community-based care transitions program

Section 3026 of PPACA provides funding for models designed to improve care transitions for Medicare beneficiaries. Eligible entities must be acute care hospitals with high readmission rates in partnership with community-based organizations. The community-based organizations must have experience providing care transition services across multiple settings. Thirty sites have been chosen to date to participate in this initiative (Center for Medicare & Medicaid Innovation 2012).

Medical homes

Under the CMMI authority, CMS is running three medical home projects:

- The Comprehensive Primary Care Initiative is a multi-payer model that pays a care management fee to a select group of primary care practices that establish medical homes, with the potential to share in Medicare savings (Center for Medicare & Medicaid Innovation 2012). Applications were due January 17, 2012.
- The Multi-Payer Advanced Primary Care Practice Demonstration consists of CMS joining with certain states to support previously established multipayer health initiatives for advanced primary care. Over the past several years, eight states have worked with public and private payers in their state to establish a payment system to support advanced primary care, and this demonstration adds Medicare to the payer mix so that participating providers face a common payment method. The demonstration began in July 2011 (Center for Medicare & Medicaid Innovation 2012).
- The Federally Qualified Health Center (FQHC) Advanced Primary Care Practice Demonstration will pay qualifying FQHCs a care management fee for their Medicare beneficiaries, and the FQHC must seek certification as a level three Patient-Centered Medical Home. CMS operates this demonstration in conjunction with the Health Resources and Services Administration, which is providing technical assistance. This demonstration started making

payments to FQHCs in November 2011 (Center for Medicare & Medicaid Innovation 2012).

Health care Innovation Challenge

While not specifically for care coordination, the CMMI Innovation Challenge is a large grant program to support innovative methods of improving the delivery of health care and lowering costs, particularly for individuals with a high disease burden. Grants can be made to providers, payers, local governments, multipayer collaboratives, and public–private partnerships. Up to $1 billion has been set aside for this program, and the first batch of awardees was announced in May 2012 (Center for Medicare & Medicaid Innovation 2012). Depending on the applications and awards, this program could provide additional evidence on improving care coordination for Medicare beneficiaries with a high disease burden.

Care coordination demonstrations in FFS Medicare

Over the past decade, FFS Medicare has run seven demonstrations to test care coordination and disease management interventions. Four early ones were disease management or care coordination demonstrations: the Informatics, Telemedicine, and Education Demonstration; the Case Management Demonstration for Congestive Heart Failure and Diabetes Mellitus; Medicare Disease Management for Severely Chronically Ill Beneficiaries; and Disease Management for Dual-Eligible Beneficiaries. These demonstrations generally tested telephonic disease management, with some interventions providing additional in-person visits. Most of the demonstrations were not cost neutral when fees were included. The disease management for dual eligibles demonstration was redesigned a few years into a demonstration with a smaller fee to assess whether it could achieve cost neutrality, but the redesign also failed to generate savings (Bott et al. 2009). Medicare has also conducted demonstrations testing value-based payment, which are listed in online Appendix A to this chapter (http://www.medpac.gov).

More recently, CMS has conducted three large-scale multiyear care coordination demonstrations: the Care Management for High-Cost Beneficiaries demonstration (CMHCB), the Medicare Coordinated Care Demonstration (MCCD), and Medicare Health Support (MHS).

Design of recent Medicare care coordination demonstrations

The three recent demonstrations tested commercial disease management (MHS) or external and practice-based models of care coordination (CMHCB and MCCD). The demonstrations targeted beneficiaries with chronic conditions, high Medicare spending, or high hierarchical condition category risk scores. The demonstrations generally used an intent-to-treat, randomized design and had comprehensive independent evaluations (see online Appendix B for quality measures used in evaluating the demonstrations (http://www.medpac.gov)).

Overall, the results from the three demonstrations do not indicate that the programs were more successful for individuals with certain conditions, although the two programs that showed the most success in MCCD either targeted those with heart disease or showed the largest gains for beneficiaries with congestive heart failure, coronary artery disease, or chronic obstructive pulmonary disease (Brown 2009).

In MHS, the programs were paid a monthly fee per beneficiary and the fees were at risk. Fees at risk means that if the program did not reduce Medicare spending for its beneficiaries over the comparison group by at least the amount of the fee, then the program would have to pay back some or all of the monthly fee. In MCCD, the programs were paid a monthly fee and the fees were not at risk. In CMHCB, the programs must reduce Medicare spending for their beneficiaries over the comparison group by the cost of the fees plus 5 percent. If the program exceeded those savings thresholds, then the programs in CMHCB could participate in shared savings. Overall, the demonstrations would reduce federal spending on Medicare only if they reduce Medicare spending by more than enough to offset their fee.

Medicare Health Support

This intervention, originally called the Chronic Care Improvement Program, tested the efficacy of commercial disease management programs. Eligible beneficiaries were those with heart failure or diabetes, or both, provided their spending was projected to be 35 percent more than the average beneficiary. The disease management programs were paid a monthly fee based on the clinical and financial outcome measures for the populations they covered and faced financial risk for poor

performance. All programs used call center–based care managers to improve patients' ability to understand their condition, improve self-care, and communicate effectively with providers. Five programs (out of eight) dropped out early because they did not foresee being financially viable.

The CMS-sponsored evaluation of MHS found a limited positive effect on clinical quality measures, such as cholesterol and hemoglobin A1c levels. The interventions were also found to have very small effects on hospitalizations and emergency department visits. There was no significant difference in total Medicare spending for the treatment group compared with the control group, and therefore none of the interventions reduced total Medicare spending when care coordination fees were included (McCall and Cromwell 2011).

Medicare Care Management for High-Cost Beneficiaries demonstration

Of the original six care management organizations that CMS selected to participate in CMHCB, two interventions were population based (they were outside the health care delivery system), and four were provider based. Medicare paid these organizations an administrative fee per beneficiary. The programs were designed to be similar to both disease management programs and provider-based care management programs. The interventions focused on engaging physicians and supporting patient management of their conditions.

One program was terminated by CMS in the second year because it did not produce cost savings and had not come up with a way of improving its financial performance. Another program requested early termination in the second year of the demonstration. The other four programs completed the demonstration.

Most programs did not show improved processes of care, beneficiary experience, self-management, or functional status, although two programs reduced hospital admissions and emergency department visits and showed improvements in mortality rates. One program demonstrated significant success in cost reduction (reducing acute care expenditures to a level far exceeding the care management fee); however, the other programs did not reduce Medicare expenditures by an amount sufficient to recoup the administrative fees paid (McCall et al. 2010a, McCall et al. 2010b, McCall et al. 2010c, McCall et al. 2010d, McCall et al. 2011a, McCall et al. 2011b). As of March 2012, three sites were still in operation.

Medicare Coordinated Care Demonstration

This intervention tested the effect of care coordination programs for beneficiaries with at least one chronic condition. Each of the 15 programs was able to define its target population and exclusion criteria, provided the beneficiaries had at least one chronic condition, and was given wide latitude in designing the intervention. As a result, some programs were based on a hospital admission, others excluded beneficiaries with end-stage renal disease or who were under age 65, and most excluded beneficiaries who had serious mental illness or dementia. The participating programs were diverse, including hospitals and academic medical centers, commercial disease management companies, integrated delivery systems, a hospice, and a long-term care facility. All programs assigned beneficiaries to a care coordinator, who assessed their needs, mainly by telephone, and created a care plan. One program (out of 15) dropped out early because it was unable to recruit a sufficient number of participants.

Most programs showed limited or no improvements in quality of care, and none reduced total Medicare expenditures when care coordination fees were included. Two programs showed a reduction in Medicare expenditures, although it was not significant. As of March 2012, one site was still in operation.

The Medicare care coordination demonstrations had modest overall results, but some findings are worth pursuing

Overall, the Medicare care coordination demonstrations have not shown significant effects on spending and outcomes, with most demonstration projects unable to recoup their care management fee through lower utilization.

- ***Very limited effects on Medicare spending*****—**Overall, only 1 program out of 29 in the three CMHCB, MCCD, and MHS demonstrations showed a statistically significant reduction in regular Medicare expenditures when fees were included (Bott et al. 2009, Nelson 2012). Twelve other programs had non-statistically significant reductions in regular Medicare expenditures before accounting for fees; when fees were included, the number dropped to four programs (Nelson 2012).

- ***Programs evolved*—**Many of the programs in the CMHCB, MCCD, and MHS demonstrations changed their target population, the type of intervention, or their fees as the intervention got under way (Bott et al. 2009). One program in the MCCD was unable to recruit sufficient participation and ended early, and another changed the care management fee during its extension period (Bott et al. 2009). In the CMHCB, nearly all programs changed their target population, renegotiated their care management fee, or changed the level of intensity of their intervention (McCall et al. 2010a, McCall et al. 2010b, McCall et al. 2010c, McCall et al. 2010d, McCall et al. 2011a, McCall et al. 2011b).
- ***Sporadic improvement in clinical quality or outcomes*—**Overall, the Medicare demonstrations showed very low rates of improvements in clinical quality measures and intermittent success at reducing hospitalizations and use of other acute care services. For example, among the MCCD, nearly all the programs had an improvement in at least one of five health education measures; however, almost none of them were able to improve the rate of potentially preventable hospitalizations, and only one program showed improvement in three of eight preventable hospitalization measures (Peikes et al. 2009).

While the overall results of the interventions were modest, there is evidence that some interventions may have had directionally positive effects. Analyzing the program results is challenging because they lacked the size and statistical power sufficient to detect small improvements. As a result, the estimates of Medicare spending, hospitalizations and rehospitalizations were generally imprecise. For this reason, in Table 2-2 we look at programs from the Medicare demonstrations that appeared to reduce hospitalizations by more than 5 percent, provided that the p value is no more than 0.20.

The programs in Table 2-2 give a set of case studies to illuminate some of the challenges facing the programs as well as giving some directional evidence on what may be effective. It is also worth noting that, in addition to the programs in Table 2-2, subgroup analyses for a few programs continued under MCCD found that the results were concentrated among the highest risk enrollees, and so the programs may have been more successful if they targeted their interventions to this high-risk group (Schore et al. 2011).

Case study: The most successful program had deep institutional support and undertook extensive planning

The CMHCB program run by Massachusetts General Hospital (MGH) and the Massachusetts General Physicians Organization, called the Care Management Program (CMP), was a practice-based intervention that established care managers in each medical office. The care managers were on the staff of the medical practice but also had access to external resources in the Massachusetts General system, such as mental health and pharmacy services. MGH had piloted a similar type of program in one of its health centers, which helped to troubleshoot issues on integrating the care manager into the clinical staff, what type of services the care manager needed access to, and how the medical staff best received the information from the care manager (McCall et al. 2010c).

The population in the CMP was relatively similar to that in other demonstrations. The selection criteria for CMP included what the program administrators called a loyalty component—beneficiaries had to be regular users of the Massachusetts General Physicians Organization in the past.

The CMP was evaluated by using a model of randomization at the physician group level—because, as described in the evaluation, it was "a community intervention trial" in which the intervention is administered for a specific group or community (McCall et al. 2010c). Therefore, the comparison group consisted of beneficiaries with similar characteristics in physician groups affiliated with other teaching hospitals in Boston. The comparison group was selected based on the distribution of the intervention group with respect to Medicare spending and hierarchical condition category risk scores. In comparing the intervention with the comparison groups for CMP, the intervention group was less likely to include those who were under age 65 or disabled or to include beneficiaries with diabetes as the comparison group. The intervention group was also less likely to include racial and ethnic minorities and less likely to include beneficiaries dually eligible for Medicare and Medicaid. However, the participation rates were quite high for all racial and ethnic groups, and among those eligible to be enrolled, the differential rate of participation in the CMP was slightly higher for African American beneficiaries versus beneficiaries in other racial categories (McCall et al. 2010c).

TABLE 2–2

Potential evidence of a reduction in hospitalizations in Medicare care coordination demonstrations

	Change in hospitalizations		Point-value estimate indicates reduced Medicare spending?	Point-value estimate indicates reduced Medicare spending when fees were included?
	Percentage	*p* value		
Medicare Coordinated Care Demonstration				
Georgetown University	–24%	0.07	Yes	Yes
Health Quality Partners	–11	0.19	Yes	No
Mercy Medical Center	–17	0.02	Yes	No
Care Management for High-Cost Beneficiaries demonstration				
Care Level Management				
Original sample, months 18–29	–6	0.11	No	No
Supplemental sample	–6	0.05	Yes	No
Health Buddy Consortium				
Supplemental sample	–26	0.02	Yes	Yes
Massachusetts General Hospital				
Original sample, months 7–18	–24	0.00	Yes*	Yes*
Original sample, months 25–36	–19	0.01	Yes*	Yes*
Supplemental sample	–24	0.04	Yes*	Yes*
Village Health				
Original sample, months 7–18	–10	0.07	Yes	Yes
Medicare Health Support				
Aetna	–6	0.04	Yes	No

Note: *Statistically significant at 5 percent.

Source: Bott et al. 2009, McCall and Cromwell 2011, McCall et al. 2010a, McCall et al. 2010b, McCall et al. 2010c, McCall et al. 2010d, McCall et al. 2011a, McCall et al. 2011b, Nelson 2012.

The integration of the hospital and the medical practices furthered communication between the care managers and the beneficiaries in a few key ways. First, the information on the hospital systems was transmitted to the physicians' offices (and by extension, the care manager), and vice versa. For example, care managers received an email message or a page when the beneficiary was in the emergency room or admitted to the hospital so the care manager could visit the beneficiary in the hospital and help facilitate the hospital discharge. Second, MGH's integration (affiliations with hospitals, physician practices, community health centers, and post-acute settings) meant that the information was much more likely to be transmitted across providers and that beneficiaries could be easily referred to medical practices or health centers when their condition worsened instead of going to the emergency room.

Over time, the CMP changed the model to facilitate key referrals, with pharmacists taking the lead on medication therapy management and a much more substantial mental health team. They also increased the amount of staff time devoted to hospital and other institutional discharges—with a goal of having a patient assessment within 24 to 72 hours of discharge (McCall et al. 2010c).

Two other components are notable in terms of working with the medical practices—first, each care manager was responsible for one physician's patients, strengthening

the physician–care manager relationship. Second, the physicians were paid $150 per member per year to compensate for their time working with the care managers.

The CMP reduced mortality, improved functional status, reduced utilization and Medicare spending, and was very popular among both medical providers and beneficiaries. The evaluators noted that this success may be due to "the depth of institutional support to (1) develop an MGH-specific program, and (2) fully integrate the CMP into MGH's health care system" (McCall et al. 2010c).

Case study: Promising models were not always able to recruit enough participants

Georgetown University Hospital had promising results for avoided hospitalizations but was able to enroll only 230 patients over the first three years of the demonstration. When the program was unsuccessful at recruiting a significant number of people, it dropped out of the demonstration six months before it was scheduled to end. The reasons for Georgetown's difficulty in recruitment were that it overestimated the number of people in the target population and a large number of individuals refused to participate (Brown et al. 2007).

In contrast to some of the other programs in the MCCD, Georgetown did not partner with physicians in recruiting beneficiaries and reached out directly to beneficiaries once they were identified as potentially eligible (Brown et al. 2007). Overall, the lessons from the evaluation of the MCCD with respect to patient recruitment found that physician support was important and that preexisting physician relationships (either because the provider had positive experiences in dealing with local physician groups or because the program was run by the physician groups) were associated with greater success in enrolling beneficiaries.

Some programs recruited physicians to help them identify potential patients who could be enrolled and then used these physician-generated lists to enroll beneficiaries. Other programs reached out to physicians to urge them to encourage their patients to enroll if they were contacted by the care management organization, or they marketed themselves to physicians before the programs began (Brown et al. 2007). The importance of physician group buy-in was illuminated by the challenges facing one program in recruiting beneficiaries because the physicians in one area did not like the disease management organization running the program based on their experience in a managed care context (Brown et al. 2007).

Programs also had differential success in recruiting different population groups—overall, in MCCD, programs were slightly less successful at enrolling older beneficiaries and were less successful at recruiting dual-eligible beneficiaries (Brown et al. 2007). Disenrollment (other than due to death) from the programs was generally due to the beneficiary moving to a nursing facility or the physician leaving the network of the care management organization (e.g., if the program was run by an insurer, and the physician was no longer a participating provider) (Brown et al. 2007).

Case study: Two programs with different designs were moderately successful at reducing admissions because they emphasized similar features

The two interventions that appear to improve hospitalizations in MCCD (Mercy and Health Quality Partners (HQP)) were quite different on the surface, but there were some similarities in the underlying approach. Mercy was a hospital-based program in a rural area, and HQP was an analytic quality improvement provider relying heavily on data analyses of its beneficiaries. On the basis of evidence to date that both programs could potentially be cost neutral, CMS allowed HQP to continue operating and offered the opportunity for Mercy to continue if they received a reduced fee.

Both HQP and Mercy focused on providing education and information to the beneficiary (vs. intensively working with the clinical staff), and they had generally regular in-person contact with the beneficiary versus just telephone-based communication. They also both had relatively complete information on hospital utilization for their beneficiaries—for Mercy, it was because the program was run by the hospital, and for HQP, it was because the program worked to establish relationships with area hospitals (Schore et al. 2011). Both Mercy and HQP program participants reported receiving medication self-management training.

Case study: Lower hospitalization rates do not necessarily lead to lower program spending

The Care Level Management (CLM) program reduced both hospitalizations and readmissions in the second half of the demonstration. However, these reductions in acute hospitalizations did not correspond to lower Medicare spending, meaning either that the remaining hospitalizations were more costly or the program enrollees used more ambulatory services, more post-acute care services, or other types of care.

Further implicating the cost-effectiveness of the program, CLM was a very intensive intervention, consisting of visiting physicians making home visits along with nurse practitioners. The per member per month fee for CLM was about twice as high as the other programs in the CMHCB—12 percent of comparison group spending. The high cost of the intervention means that the program would have to significantly reduce utilization (including hospital and emergency department visits) to recoup the program fees, which it was not able to do (McCall et al. 2010a).

Mercy, a hospital-based program in Iowa, was able to reduce hospitalizations and appeared to lower Medicare spending (by about 9 percent) for the intervention group. However, the fees paid to Mercy were equal to twice this amount—meaning that overall, the program increased the cost to Medicare.

Case study: Findings from the Medicare demonstrations can shape future interventions for the Medicare population

Of the interventions tested in MHS, only Aetna showed some success in reducing hospital utilization for all conditions. Notably, Aetna's success was not necessarily correlated with a higher-than-average contact with the beneficiary (five programs had more frequent contacts between the care manager and the beneficiary, while two had the same or less frequent contacts). However, Aetna did report that some of its care managers made visits to medical practices and offered to collaborate with the staff. Most analyses of the care coordination models have generally found that a well-functioning relationship between the care manager and the physician or other practitioners is key (Bott et al. 2009, Brown 2009, Nelson 2012).

Aetna has stated that its experience in MHS with having the care managers reach out to the medical practices provided the impetus for the embedded case manager intervention, in which Aetna trains and pays for nurses and embeds them in the physician or medical practices to coordinate care for its high-cost Medicare Advantage beneficiaries (Barr et al. 2010, Hostetter 2010). This is one example of the Medicare demonstrations informing further improvements to the care delivery system—even if the demonstration itself did not succeed in significantly reducing Medicare expenditures.

Case study: Programs changed over time to improve results for later groups

Many of the programs in the CMHCB, MCCD, and MHS demonstrations changed their target population, the type of intervention, or their fees as the intervention got under way (Bott et al. 2009). One program in the MHS, the Health Buddy Consortium (HBC), did not initially succeed at reducing admissions but changed its target population and appeared to have reduced hospital admissions for the refresh population.

For its original sample, HBC did not show significant improvement in hospitalizations, emergency department visits, or rehospitalizations. For the refresh population, HBC targeted a higher severity population than the original group—using the presence of inpatient, outpatient, and physician claims to identify diabetes, heart failure, and chronic obstructive pulmonary disease—and higher utilization thresholds. It also targeted beneficiaries with the highest number of comorbid conditions first, so that it was possible to obtain a higher severity group than in the original population.

In the refresh group, HBC also excluded beneficiaries with certain conditions that it had requested be carved out of the original population—among them dementia, substance abuse, and mental health issues (McCall et al. 2011a). For the refresh group, HBC was able to achieve a rate of hospitalization 26 percent percent lower than would have been expected and this difference was significant at the 5 percent level (McCall et al. 2011a).

Challenges of establishing an effective care coordination intervention

What is the overall take-away from the demonstration findings? It is hard to associate specific features with success, because the design of successful programs was often similar to the design of programs that were unsuccessful. This indicates the difficulty of identifying one key attribute (or set of attributes) that improves care coordination. Furthermore, some interventions that have shown modest results in the context of the Medicare demonstrations work very well for some providers. This finding indicates that a one-size-fits all approach—on the premise that the same component works in different settings—may not be appropriate.

More evidence on care coordination models is warranted

First, there is still an open question about what the key elements of an effective care coordination strategy would entail. There is evidence that some specific interventions (transitions, teaching self-management techniques, and

some care coordination elements) have shown promising results (Brown 2009). In addition to identifying good tools, the knowledge base could be expanded on what care coordination techniques should be used in what circumstances and for which beneficiaries. There is evidence about the utility of some tools at certain points—care transition interventions for frail individuals are one example. But more evidence about what works and the specific setting and population for which it is effective would be helpful.

Applying a promising intervention in a system that has not been designed to accommodate it is unlikely to work

Effective care coordination requires a set of care coordination tools in concert with transformation of the health care delivery system to accept and wrap around these tools. Even if there were very high confidence that these interventions worked, if the system is not redesigned to work with the care coordination intervention, it is unlikely to succeed.

Care coordination models have evolved over time. First, they focused on disease management interventions that worked only with the beneficiary, targeting specific diseases, and little to no interface with the health care system. The lack of success of these interventions then led to other models, such as embedded models that place care managers in direct contact with the medical practice or care teams that perform outreach to medical providers so that the care manager can ally their activities with the direct medical care. Specific events (such as transitions between settings) have also been the focus of specific efforts.

Running in parallel are efforts to improve medical practices through efforts such as the primary care medical home and the chronic care model. These practice transformation efforts focus on emphasizing beneficiary-centered care and improving access to medical care when needed.

The findings to date indicate that each approach may be necessary but not sufficient. Therefore, both components (a set of well-established tools to improve care coordination and a well-functioning health system that can accept those tools) may be necessary to improve the delivery of coordinated care.

Without the well-functioning health system that is modified to accept and incorporate care coordination tools, applying a care coordination intervention to a system that cannot make good use of it is unlikely to improve care delivery. Improving information technology systems to make them interoperable, for example, will not necessarily improve information flow across providers unless they also change their processes so that recipients are able to receive the information and make use of it (see text box on pp. 50–51 for further discussion).

Conversely, without a set of care coordination tools to work across settings or providers, a health care system may deliver excellent, coordinated care within its borders but lack a whole-person orientation because it does not have an easy way to communicate with other providers or does not facilitate access to outside community supports. Some integrated systems do embody both of these components, ensuring that the care coordination tools are available and that the environment supports using them.

Some elements of the MGH CMP were similar to other programs that were not successful. However, one notable difference is that the CMP made a significant, concerted effort to redesign the way information flowed around the medical practices and the other health care settings and to restructure physician practices so they fully accommodated the care management activities.

Challenges specific to the Medicare program

The Medicare program also faces specific operational challenges in applying care coordination models more broadly. First, to be successful in Medicare an intervention must be replicable in different environments (achieving similar levels of success in rural and urban areas, concentrated markets and diffuse markets, and with beneficiaries facing different challenges). Second, models of care delivery that rely on significant patient engagement can be challenging to employ in populations with dementia and other cognitive difficulties. Third, making sure that beneficiaries stay with the intervention poses a particular challenge for Medicare—for example, a model may work in a network-based delivery system but may be less successful if the beneficiary can seek care from any willing provider. Fourth, it may be difficult to target those beneficiaries for whom care coordination is necessary and could potentially be cost-effective.

Applicability in different settings

Care coordination in FFS Medicare needs to occur in a variety of settings—rural and urban, areas with and without strong provider consolidation, and for beneficiaries in facilities as well as the community. However, one model may not work for all settings. For example, a hospital-based care coordination intervention

may work best for managing transitions from the hospital to the community. A primary care practice–based nurse care coordinator may work best for coordinating care for ill beneficiaries. Generally, the Medicare demonstrations have not been prescriptive about the type of care coordination or care management activities run by each program, recognizing that replicating an identical model may not be feasible or desirable.

Identifying beneficiaries in need of care coordination

The care coordination demonstrations in Medicare generally were most likely to recoup their costs if the intervention was targeted to people whose Medicare spending was about twice the average—high enough so that potential existed for an avoidable hospitalization but not so high that hospitalizations were likely unavoidable because of the patient's advanced condition (Brown 2009, Peikes et al. 2009). Of these targeted beneficiaries in the middle range of spending, a substantial number were expected to have lower spending in the subsequent year, even if no intervention occurred. This tendency to "regress toward the mean" was noted in all the evaluations of the FFS Medicare demonstrations (Cromwell et al. 2011).

The need for care coordination is greatest for high-cost Medicare beneficiaries with multiple chronic conditions. For the chronically ill group, there are multiple opportunities to avoid additional hospitalizations that further dependence and increase health care costs. Compared with the overall Medicare population, the group with the highest 10 percent of spending in 2008 averaged 2 inpatient hospital admissions per year, compared with 0.3 per year among the overall population. They also had more than twice as many outpatient hospital visits (10 in the high-spending group compared with 4 in the overall population) and many more covered skilled nursing facility days (16 days in the high-spending group compared with 1.8 days in the overall population). And this high-cost group often remains high—one-third of this population remained in the top 10 percent of spending in the subsequent year (see online Appendix C for more information (http://www.medpac.gov)).

These findings may suggest that different care coordination approaches could be appropriate along a continuum. For beneficiaries who have not received intensive services but who have one or more chronic conditions, care coordination efforts may operate along the lines of those tested in the Medicare care coordination demonstrations—focusing on helping beneficiaries manage and understand their treatment and reconcile medications and other instructions about their care. For those very-high-spending beneficiaries who already have multiple chronic conditions and many hospitalizations, care coordination efforts could focus on making sure information is communicated between providers, managing the patient's symptoms, and closely monitoring patients during transitions between the hospital, home, and other settings. Over time, beneficiaries may shift from one group to another as their disease burden changes.

Patient engagement and activation

Patient engagement and activation are a key part of many care coordination models. These efforts include teaching beneficiaries how to recognize worsening symptoms, how to seek assistance when needed, and how to take a more active role in their health. However, many models specifically exclude patients with mental illnesses and dementia because patient activation with these populations is more challenging. This is a significant issue in Medicare: Of the Medicare population in the highest decile of spending in 2008, one-quarter had Alzheimer's disease or dementia, and more than 30 percent had been diagnosed with clinical depression (see online Appendix C for more information (http://www.medpac.gov)).

Retaining beneficiaries

Another challenge is retaining beneficiaries' participation in a FFS setting. In a care coordination model based around a physician's office, an intervention is most effective when beneficiaries receive a substantial portion of their services from that provider to minimize the number of transfers and hand-offs. One option is to have beneficiaries designate the provider's office as their primary resource for medical care. The Commission's June 2006 report discussed tying the care management fee paid to a medical clinician to the beneficiary's designation of the provider as the beneficiary's primary physician (Medicare Payment Advisory Commission 2006). The medical provider would then have a financial incentive to ensure the beneficiary seeks care from that clinician first so that they can coordinate the beneficiary's care across providers.

Care coordination and Medicare payment policy

The FFS system has evolved over many years to a system that emphasizes increasing volume of services and

Improving communication

Communication between and across providers is often poor, and communication between the care managers, the medical staff, and the beneficiary is also often weak. Communication systems to transfer information from a hospital to an ambulatory setting (such as discharge instructions and test results) or from one provider to another (such as the medical record) are often not sent in the first place or the receiving practitioner does not use them.

All the Medicare demonstrations emphasized improving communication between the beneficiary, the providers, and/or the care manager (or all three). Some programs instituted high-tech systems to remotely monitor the beneficiary's health status—for example, the Health Buddy device used by the Health Buddy Consortium asked the beneficiaries how they felt and relayed that information back to care managers. However, even when this level of real-time patient information is available, providers are often not set up to use the information, and the beneficiaries still may not know whether their symptoms warrant a visit to the emergency room. The information technology was available and in use, but the systems were not always reorganized to make full use of the information.

Information technology in concert with process changes could help in two specific situations in which good communication is important.

Improving communication when many providers are involved

Electronic health information systems have the potential to improve communication across settings or providers, such as when a beneficiary is being treated by a number of specialists as well as a primary care physician, or when a beneficiary is discharged from the hospital to a community setting. However, a better information system by itself is unlikely to improve care unless the systems are interoperable, the providers involved establish protocols for how they will communicate key information to each other, and processes are in place to augment the information provided in the electronic medical record so that all pertinent information can be shared across providers.

The responsibility for communicating effectively with other providers is borne by the provider at the front end of the process (such as the hospital discharging a patient) as well as the provider at the back end (such as the community physician). Process changes to easily communicate medical information could include the following:

- ***Emphasizing team-based care—***The medical practice transformation models (such as the medical home and the chronic care model) emphasize team-based care, with the primary care physician managing a team of service providers and other staff, both inside and outside the medical practice. These types of approaches emphasize communication across providers and settings—that the people caring for the beneficiary are a team and must coordinate like one.

  Some models of care delivery establish specific procedures for ensuring constant and well-organized information flow between the different providers involved in a beneficiary's care. For example, in some Program of All-Inclusive Care for the Elderly (PACE) plans, the medical and social staff at the day care center meet to discuss beneficiaries' needs each day before the beneficiaries arrive. In the Care Management Program, the care managers established what they called "virtual rounds" or weekly emails about the beneficiaries enrolled in the program to all the providers involved in each patient's care (McCall et al. 2010c). However, in a less centralized system or in the ambulatory setting, these tools may not work as effectively because the providers may not know who else is caring for a beneficiary, and establishing these types of protocols can be expensive. Coordinating care requires significant effort both to identify the other providers involved and to overcome the tendency for medical decision making to occur as a set of separate, discrete events.

- ***Establishing a beneficiary-owned medical record—***The Care Transitions Intervention establishes a medical record owned by the beneficiary, who can bring it to medical

(continued next page)

Improving communication (continued)

appointments so that key information is transmitted from one provider to another. These types of solutions, however, require that the providers are accepting of the information in the record, that they are willing to enter pertinent medical information into the record, and that the beneficiary brings it to all appointments.

Improving communication when a beneficiary's condition worsens

Another situation in which communication is important and often breaks down occurs when a beneficiary starts to feel worse and decides whether to go to the emergency room. Many care coordination interventions focused on averting acute events—being able to recognize when a beneficiary's condition was worsening and getting the person access to medical care so that a hospitalization could potentially be avoided. If the beneficiary was admitted to the hospital or went to the emergency department, the care manager could meet him or her there and help coordinate the care and figure out the plan after discharge. Ideally, the intervention to facilitate this type of communication would include two components: changing the beneficiary's behavior and changing the provider or care manager's behavior. That way, if one process fails, the other process would act as a backup.

On the beneficiary side, the program could emphasize to beneficiaries that they can call the care manager and may be able to schedule a medical appointment quickly. This situation would require not only that the care manager be connected to the medical staff but that the medical staff would be able to pivot quickly to schedule an appointment. This requires three key features of care coordination models: care managers who are closely allied with the medical practice, medical practices that are able to easily accommodate scheduling an appointment for a declining patient (and see the benefit in doing so), and deep trust between the care manager and the beneficiary.

On the provider and care manager side, the care manager should know that a beneficiary went to the hospital or the emergency department. However, in the Medicare demonstrations this process was either ad hoc (because the programs had established relationships with some local hospitals, but it was dependent on the program to establish these relationships) or delayed (because the programs were notified only when a hospital claim was filed).

Relying on these ad hoc or delayed methods of getting information about beneficiaries may not be optimal, and other examples may be illustrative. For example, in many cases private insurers know in real time if their enrollees are hospitalized because the hospital or the enrollee must call for prior notification or prior authorization. In the PACE program, the site is also the payer and has established networks with hospitals, and the PACE sites work with hospitals to alert them if one of their enrollees comes to the hospital. One option to consider is whether there are tools that the Medicare program could develop so that hospitals can easily alert care managers if a beneficiary is admitted to the hospital or shows up in the emergency department. ■

does not offer good incentives for improving quality or working across providers or settings. Under FFS, no one entity is accountable for care coordination; this places the burden on beneficiaries, their families, and caregivers to coordinate their care and navigate between different providers, often without the training, medical knowledge, or resources to do so.

Therefore, it is not surprising that Medicare demonstrations that applied a care coordination intervention to the FFS system had only intermittent success at improving quality or reducing spending. These care coordination interventions must work against strong incentives and patterns of behavior in FFS that push in the opposite direction.

The Commission believes that in the FFS setting the approaches most likely to achieve significant improvement in care coordination are those that: (1) fundamentally change the FFS incentive to provide more, rather than better, care and (2) ensure that providers have the flexibility to deploy their resources in the ways that best improve care for their beneficiaries. Some of the new payment models, such as the shared savings payment

approach for accountable care organizations (ACOs) or bundled payment initiatives, can move the Medicare program toward these goals. These models have the potential for providers to work to improve care across settings.

However, these payment models are only in the beginning stages and represent a fundamental change in how the Medicare program pays for services; it will likely take time before they become prevalent in the health care system. In the interim it may be necessary to consider other approaches to improving care coordination within FFS and in the process bolstering the current system by explicitly supporting primary care. Furthermore, experiences with care coordination approaches in FFS can help lay the groundwork for improved care coordination in new delivery models of care (such as ACOs).

Establishing additional billing codes for care coordination

In Medicare's physician fee schedule, care coordination activities are generally included in the description for evaluation and management (E&M) billing codes, with the exception of two codes for hospital discharge activities. One policy option that has been discussed is to add codes or expand the existing codes to more fully capture the resources required to coordinate care for patients with multiple chronic conditions (Coleman and Berenson 2004).

The advantage of an approach to expand the current fee schedule codes to more fully capture care coordination activities is that it could be designed to be budget neutral within the fee schedule. However, the risk is that these types of proposals could increase spending if the billing volume is higher than projected. Another disadvantage to this approach is that it may be difficult to document whether care coordination activities occur. In addition, unless the policy is designed carefully, there is the risk that many different providers would attempt to bill for a single beneficiary's care coordination.

Paying a provider's office a per beneficiary payment for care coordination

Under this policy, Medicare could make a per beneficiary monthly payment to a provider group for coordinating beneficiaries' care. This is akin to the payment reform element in medical home models.

A primary care practice can undertake significant care coordination activities that are not specifically paid for under FFS. Creating a per beneficiary per month payment can provide support to primary care without further fragmenting payment into a series of discrete activities. And the payment could be targeted—so that instead of a payment for all beneficiaries, it could be established only for those beneficiaries with substantial medical challenges requiring significant management.

Primary care services generally consist of cognitive activities such as E&M services. As an illustration, a visit could include reviewing the patient's current symptoms, taking a patient's medical history, performing a physical exam, eliciting the patient's preferences regarding treatment, making medical decisions, reconciling medication and instructions from other medical providers, and providing medical counseling (including shared decision making) and behavioral counseling (such as smoking cessation). Activities that take place after the medical visit could include communicating with other providers to obtain or send medical records and discuss treatment, communicating with beneficiaries or their families, or conferencing with other medical providers involved in a beneficiary's care (Medicare Payment Advisory Commission 2008). Care coordination models such as the primary care medical home explicitly provide a payment to cover primary care activities—reflecting that some of the activities listed are not specifically paid for under Medicare, and that some of the care coordination activities that primary care clinicians and other practitioners provide occur without a face-to-face appointment with the beneficiary.

The benefit of such a policy is that it inserts the care coordination role into the physician's office or provider group, directly integrating coordination activities with patient care. The physicians and other medical personnel are part of the same staff as the care manager, which facilitates establishing roles and protocol. A further benefit of such a policy is that it provides direct support for the types of activities that primary care practitioners do to coordinate care. If it succeeds at targeting primary care, this policy could also slow the erosion in the primary care base and dampen the financial incentive for new medical graduates to elect procedural specialties over primary care.

A drawback of this policy is that small physician groups may not have a sufficient number of high-cost beneficiaries to make it financially viable to hire staff dedicated to care coordination or to expend the effort to transform their office so that they can better deploy care coordination tools. In addition, this option could fail on

cost and quality grounds unless the provider receiving the payment actively manages the beneficiary's care by acting as a first point of contact, facilitating referrals, and knowing what other services the beneficiary is receiving.

Paying an outside entity a per beneficiary payment for care coordination

This policy is similar to the policy above, but a payer (such as Medicare or a private insurer) would make payments to an outside entity, who would then take on the responsibility of coordinating care. The care manager could be located either in or outside the medical practice. The physician's office responsible for the patient's care could also receive an incentive payment to cover the additional responsibility of engaging with the care management organization or care manager (Medicare Payment Advisory Commission 2006).

On the one hand, this policy would be most effective with smaller provider groups that do not have the start-up resources to invest in care coordination by themselves but wish to coordinate care. The policy also places the financial risk on the care management organization, which should have the expertise to identify and enroll beneficiaries for whom the intervention could be cost-effective. On the other hand, the care management organization remains separate from the clinical staff, which could hamper coordination. Some models (such as the Guided Care and the Aetna case manager models) attempt to address this barrier by placing the care manager directly in the physician's office. However, doing so requires coordination among payers and buy-in from physicians' offices and would also rely on beneficiaries seeking most of their care through the designated medical practice. For the Medicare program, new resources would be needed to support this approach.

Transitional care payment

Given the evidence on transitional care to date, an established transition payment could be made to a care manager who would work with the beneficiaries during their hospitalization and as they move to the community or other setting. This type of policy could also work in tandem with incentives for hospitals to reduce unnecessary hospitalizations, for example. The advantage of a transitional care approach is that the models appear to show some success in randomized clinical trials and target a specific situation where beneficiaries face vulnerability. The disadvantages of such an approach are that it would require establishing a set of criteria for those entities or individuals who could bill for a transitional care payment. For example, it may be desirable to ensure that the care manager has to meet a certain level of training or education, but then the Medicare program would need to oversee these standards.

Using payment policy to pay for outcomes resulting from coordinated care

Another way to use payment policy for care coordination is to create a financial incentive for outcomes that result from coordinated care (or a penalty for outcomes that result from fragmented care, such as hospital readmissions or unnecessary use of the emergency department). Under this design, the financial incentive has the potential to motivate providers to improve their care processes or they otherwise incur a financial penalty. Under current law, a payment penalty for hospitals for excess readmissions will be implemented starting in 2013.

The benefit of using this type of policy to encourage care coordination is that it is less prescriptive. It is likely that different interventions work in different settings, and providers could use their experiences to shape the right intervention for their specific population. For example, in some regions, high use of the emergency department may result from poor hand-offs between hospitals and ambulatory providers. In other regions, high use of the emergency department may result from a lack of access to ambulatory care outside of traditional office hours. In both situations, the result is the same but the root causes are different. Imposing a payment policy related to unnecessary use of the emergency department would allow providers in each community to organize their own targeted intervention. Furthermore, these types of payment policies can be designed so that they reduce Medicare spending.

On the other hand, it may not be appropriate to assume that negative incentives will be sufficient to move lower quality providers to improve their care coordination. Providers may not have the resources to reorganize their care processes or may not be able to find willing partners. For example, if a provider group wishes to establish a care coordination intervention in concert with a hospital, it may need start-up funding, and the hospital may view the negative penalty as not being sufficient to overcome the financial incentive to admit a relatively low-cost patient.

Payment reforms that could change the incentive for coordinated care

Other types of payment reforms (beyond directly penalizing poor outcomes or rewarding good outcomes)

may also change the incentives for care coordination. For example, ACOs consist of a group of providers assuming responsibility for the quality and cost of care delivered to their panel of patients (Medicare Payment Advisory Commission 2009). Bundled payments around a hospitalization would have Medicare pay a single amount to a group of providers (potentially hospitals, physician groups, and post-acute care providers) for a specific episode of illness requiring hospitalization (Medicare Payment Advisory Commission 2008). CMS is currently rolling out multiple models of both the ACO and bundling reforms. Under these payment models, the incentive exists for providers to take responsibility to coordinate care for their patients, particularly if doing so would reduce costs or improve quality. Furthermore, under both models, providers can arrange themselves in cooperative groups, facilitating information transfer. Within the ACO program, the incentives are stronger for ACOs bearing financial risk (or two-sided risk). However, if coordinating care costs money for providers in the short term, and the gain is recouped over the long term, the incentive to deliver coordinated care may remain limited as it is in FFS Medicare. Furthermore, the Physician Group Practice demonstration, which was one example of a bonus-only ACO, resulted in improved quality but had questionable effects on cost (Medicare Payment Advisory Commission 2009).

Conclusion

The evidence from the Medicare demonstrations to date has demonstrated the limitation of taking a specific care coordination intervention and inserting it into the Medicare FFS system when the delivery system has not been reorganized to accommodate and wrap around the intervention. Some models of care coordination have shown improvements in quality and/or reductions in Medicare spending. However, it is difficult to see how these specific interventions can be widely inserted into Medicare FFS and achieve similar outcomes, despite their evidence base. The incentives in FFS Medicare generally push toward higher volume, with only intermittent incentives for quality, and payment silos further fragment care delivery. As a result, a specific care coordination intervention in a FFS setting must overcome substantial financial pressure going the opposite way. For these reasons, the Commission views other payment models as more amenable to fostering innovations in care coordination.

Furthermore, there is evidence that many care coordination interventions are site and operator dependent—that is, if the same activities were carried out by different care managers in a different setting the outcomes would be different. And finally, the interventions do not lend themselves to standardization, because the programs must be adaptable so they can work with beneficiaries facing unique challenges.

There is ongoing work that will help build the evidence base about what types of interventions work for which types of beneficiaries so that providers can choose appropriate tools to coordinate care. At the federal level, in addition to the activity occurring at CMMI, the Patient-Centered Outcomes Research Institute will evaluate health care delivery system interventions as one part of its overall mission of patient-centered outcomes research. Finally, there is a significant ongoing effort by private payers and providers that could furnish additional evidence on payment reforms—such as the Alternative Quality Contract run by Blue Cross/Blue Shield of Massachusetts or the warranty approach pursued by Geisinger and other payers.

If providers are given the flexibility through the payment system to achieve a set of outcomes with leeway on how to do so, they can use the current evidence base for care coordination to select the interventions that are most appropriate for their populations. Overall, a broader payment system would provide the flexibility for providers to choose the right tools for their populations and would support, facilitate, and permit the innovations that will improve care.

While payment reforms that fundamentally change the incentives to provide more care offer the most promise for care coordination, they are unproven and will not be fully operational for a number of years. Also of significant concern to the Commission is the potential for further erosion in primary care to worsen the care coordination that currently occurs. For these reasons, policies to encourage care coordination within the FFS system may be an interim step as Medicare begins to move toward more global approaches to payment. ■

Endnotes

1 This analysis includes only full-year, FFS Medicare beneficiaries.

2 Physicians or other health professionals may bill for care plan oversight of hospice and home health patients without having a face-to-face encounter with the beneficiary. Care plan oversight can include coordination with an interdisciplinary team or pharmacists, reviewing patient status reports, modifying the plan of care, or reviewing lab reports and records. The unit of service for care plan oversight is a full month, and the services must add up to at least 30 minutes to be billable. A monthly capitation payment is also made to physicians treating patients with end-stage renal disease who are on maintenance dialysis. There must be at least one face-to-face visit per month between the physician and the patient (unless waived by the Medicare contractor); however, the payment is for a full month of renal evaluation and management services provided to the beneficiary (a physician may also bill for less than a full month under separate codes). If the patient receives home dialysis, the monthly capitation payment is based on the age of the beneficiary, and if the patient receives dialysis in a center, the monthly capitation payment is based on the age of the beneficiary and the number of visits per month. Some Current Procedural Technology codes for non–face-to-face encounters do exist, such as a telephone call between a physician or other health professional and a patient; however, these encounters are not billable under the Medicare fee schedule.

3 While not discussed here, other care delivery mechanisms mentioned in this context are capitated models for Medicare beneficiaries with chronic conditions, such as the Medicare Advantage (MA) special needs plans (SNPs) and the Program of All-Inclusive Care for the Elderly. These models are run by an insurer or provider who receives a capitated payment to deliver all care under the Medicare benefit (some also have fully integrated financing with Medicaid for dual-eligible beneficiaries). Some of these plans use care management tools along the lines of the models discussed here—for example, Evercare, an MA institutional SNP, uses an embedded care manager model for its enrollees.

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CHAPTER 3

Care coordination programs for dual-eligible beneficiaries

RECOMMENDATIONS

3-1 The Congress should direct the Secretary to improve the Medicare Advantage (MA) risk-adjustment system to more accurately predict risk across all MA enrollees. Using the revised risk-adjustment system, the Congress should direct the Secretary to pay Program of All-Inclusive Care for the Elderly providers based on the MA payment system for setting benchmarks and quality bonuses. These changes should occur no later than 2015.

COMMISSIONER VOTES: YES 16 • NO 0 • NOT VOTING 0 • ABSENT 1

3-2 After the changes in Recommendation 3-1 take effect, the Congress should change the age eligibility criteria for the Program of All-Inclusive Care for the Elderly to allow nursing home–certifiable Medicare beneficiaries under the age of 55 to enroll.

COMMISSIONER VOTES: YES 16 • NO 0 • NOT VOTING 0 • ABSENT 1

3-3 After the changes in Recommendation 3-1 take effect, the Secretary should provide prorated Medicare capitation payments to Program of All-Inclusive Care for the Elderly providers for partial-month enrollees.

COMMISSIONER VOTES: YES 16 • NO 0 • NOT VOTING 0 • ABSENT 1

3-4 After the changes in Recommendation 3-1 take effect, the Secretary should establish an outlier protection policy for new Program of All-Inclusive Care for the Elderly sites to use during the first three years of their programs to help defray the exceptionally high acute care costs for Medicare beneficiaries.

The Secretary should establish the outlier payment caps so that the costs of all Chapter 3 recommendations do not exceed the savings achieved by the changes in Recommendation 3-1.

COMMISSIONER VOTES: YES 16 • NO 0 • NOT VOTING 0 • ABSENT 1

3-5 The Congress should direct the Secretary to publish select quality measures on Program of All-Inclusive Care for the Elderly (PACE) providers and develop appropriate quality measures to enable PACE providers to participate in the Medicare Advantage quality bonus program by 2015.

COMMISSIONER VOTES: YES 16 • NO 0 • NOT VOTING 0 • ABSENT 1

CHAPTER 3

Care coordination programs for dual-eligible beneficiaries

Chapter summary

Dual-eligible beneficiaries are eligible for both Medicare and Medicaid benefits. In 2010, there were approximately 9.9 million dual-eligible beneficiaries. These individuals are, on average, a high-cost population for both Medicare and Medicaid and often require a mix of medical, long-term care, behavioral health, and social services. They also have fewer financial resources than the general Medicare population. While accounting for about 18 percent of Medicare fee-for-service (FFS) enrollment, they represent about 31 percent of total Medicare FFS spending (Medicare Payment Advisory Commission 2011a). They also account for about 15 percent of Medicaid enrollment and 40 percent of Medicaid spending (Kaiser Family Foundation 2011). Given the challenges this particular population faces in accessing services through two payer and delivery systems, care coordination programs have the potential to improve dual-eligible beneficiaries' access to services and the quality of care they receive. These programs also have the potential to reduce Medicare and Medicaid spending through better coordination of care.

In this chapter, the Commission assesses two approaches to care coordination for dual-eligible beneficiaries. We also discuss the forthcoming CMS demonstration projects that aim to improve care coordination for dual-eligible beneficiaries by partnering with states.

In this chapter

- Analyses of the Program of All-Inclusive Care for the Elderly
- Analyses of dual-eligible special needs plans
- CMS demonstrations on integrated care programs

- ***Program of All-Inclusive Care for the Elderly (PACE)*—**PACE is a provider-based program that integrates Medicare and Medicaid benefits for the dual-eligible population who are 55 or older and nursing home certifiable. Through site visits to PACE providers, we analyzed the structure of the PACE program in urban and rural settings. We found that both urban and rural PACE providers retained the core PACE model, which structures service delivery and patient monitoring around the day care center. Enrollment in the PACE program is generally low, and the providers we visited generally enroll small numbers of beneficiaries each month. One barrier to enrollment is that eligibility for PACE is restricted to beneficiaries who are nursing home certifiable and age 55 or older. Most PACE providers we visited were able to achieve positive margins after a few years of operation by balancing costs with enrollees' needs. PACE staff also noted that having the flexibility to use Medicare funds to cover nonclinical services is an important component in being able to keep enrollees residing in the community rather than in an institution.

  The literature on PACE suggests that the program reduces hospitalizations, nursing home utilization, and mortality. However, because quality data on individual PACE providers is not publicly available, we were not able to assess quality. We also found that Medicare spending on PACE enrollees exceeds what it would have been had these beneficiaries remained in traditional FFS.

  The Commission's recommendations on improving the PACE program include paying PACE providers using rates established through the Medicare Advantage (MA) program and allowing these providers to participate in the MA quality bonus program, expanding Medicare eligibility for PACE to beneficiaries under the age of 55, prorating Medicare payments to PACE providers, providing PACE providers with outlier protection, and publishing select quality data on PACE providers.

- ***Dual-eligible special needs plans (D–SNPs)*—**D–SNPs are MA plans that enroll dual-eligible beneficiaries. They can be integrated care programs if the plans contract with a state to cover Medicaid benefits, but most D–SNPs are not integrated care programs. Fully integrated dual-eligible special needs plans (FIDE–SNPs) are a subset of D–SNPs. They have state contracts to cover most or all of a state's Medicaid benefits, including long-term care. We analyzed quality of care and Medicare spending for D–SNPs and FIDE–SNPs. We were not able to conclude whether D–SNPs or FIDE–SNPs provide better quality of care than FFS or other MA plans because quality data were not available. Medicare payments to D–SNPs and FIDE–SNPs are higher than what Medicare would have spent had these beneficiaries remained in FFS; however, MA spending in general is higher than comparable FFS spending. The fact that the

bids submitted for Medicare Part A and Part B services by D–SNPs and FIDE–SNPs in 2012 exceeded FFS spending raises questions about the ability of these plans to provide Part A and Part B services at a cost equal to or below FFS. Finally, we discuss D–SNPs and FIDE–SNPs having the flexibility that PACE providers have to use Medicare funds to cover nonclinical services.

- ***Discussion of CMS demonstrations on integrated care programs—***CMS is in the process of working with states to develop integrated care demonstration programs for dual-eligible beneficiaries. CMS will collaborate with individual states to test a capitated model and/or a managed FFS model for the states' dual-eligible populations. Under the capitated model, CMS will sign a three-way contract with a state and a health plan and will work with each state to develop the Medicare and Medicaid capitation rates for the plans in that state. States may also test passive enrollment with an opt-out provision during the demonstrations. CMS intends to ensure Medicare savings by setting the capitation rates at a level that provides for upfront savings. Under the managed FFS model, states will finance a care coordination program for dual-eligible beneficiaries. In that model, the beneficiaries will remain in Medicare FFS. Under both approaches, CMS intends to share a portion of Medicare savings with the states.

  The Commission supports the goals of the demonstrations and believes they provide an opportunity to learn more about how to improve care management and quality of care for dual-eligible beneficiaries. As the Commission has previously reported, the current FFS Medicare and Medicaid systems for most dual-eligible beneficiaries have conflicting incentives, which can discourage care coordination and lead to poor quality of care and higher Medicare and Medicaid spending (Medicare Payment Advisory Commission 2010a). The demonstrations are an opportunity to test how to encourage care coordination, improve quality of care, and reduce spending by reducing some of the conflicting financial incentives between Medicare and Medicaid.

  The demonstrations are also an opportunity to test how to tailor capitated and FFS overlay models to different subgroups of dual-eligible beneficiaries. The Commission has stated that these two models hold promise to improve care coordination for dual-eligible beneficiaries. In addition, through the three-way contracts, the capitated model demonstration can test how to overcome some of the barriers to the development of integrated care programs (Medicare Payment Advisory Commission 2010a).

However, there are a number of outstanding issues with the demonstrations. We want to ensure that the dual-eligible beneficiaries who participate in the demonstrations are matched with care delivery organizations that can meet their needs and improve the quality of the care they receive. The dual-eligible population is very heterogeneous with respect to health status, cognitive status, and physical or developmental disabilities. It is therefore important that the demonstrations be structured to test which care management models and financial incentives improve quality of care for subgroups of dual-eligible beneficiaries. It is also important that the demonstrations ensure that beneficiaries have alternative sources of care if the demonstration plans fail to meet their needs.

Most states pursuing the capitated model are proposing to enroll most or all dual-eligible beneficiaries in a state or entire subgroups of beneficiaries (such as disabled individuals under the age of 65) in a state into a health plan. However, the varied and complex needs of many of these individuals leads us to question whether care management models should be tested on large numbers of dual-eligible beneficiaries or entire subgroups within a state. In addition, the large scope also makes the demonstrations appear to be large-scale program changes rather than true demonstrations. Further, it can limit the evaluation of the demonstrations if there are not comparable beneficiaries in FFS for comparison.

It is unclear how CMS and the states are going to ensure that dual-eligible beneficiaries are matched with the best care management models to meet their needs given the participating plans' lack of experience with this population. Our work suggests that about 20 health plans have experience being capitated and at risk for all Medicare and Medicaid benefits. These plans do not operate in every state that has proposed a demonstration, most do not operate state wide, and none of these plans serves every subgroup of dual-eligible beneficiary. It therefore is not clear whether every plan that participates in the demonstration will be able to establish provider networks and provider payment rates that encourage high-quality care and care coordination for services with which they lack experience. When selecting plans for the demonstration, CMS and the states will have to balance having plans available to participate in the demonstration with selecting plans with enough experience for there to be a reasonable expectation that the plans will succeed in serving the dual-eligible beneficiaries.

CMS and states propose to use passive enrollment with an opt-out provision for the capitated model demonstrations. Under this enrollment strategy, states will assign beneficiaries to a health plan through passive enrollment with

"intelligent assignment" unless the beneficiaries opt out of the demonstration or select a demonstration plan. We have documented that low enrollment is a barrier to the expansion of integrated care programs (Medicare Payment Advisory Commission 2010a). Passive enrollment with intelligent assignment can be used to increase enrollment into integrated care programs with proven experience providing high-quality care; however, we are uncertain whether it can be appropriately executed during the demonstrations.

We do not know whether every state has the resources and information on dual-eligible beneficiaries to make intelligent assignments that best match beneficiaries' needs to appropriate care management plans. We also do not know whether CMS and each state will require plans to meet certain quality or experience criteria to be eligible for passive enrollment. There are many aspects of this enrollment strategy that CMS and states will need to determine. The structure of passive enrollment with intelligent assignment is an important beneficiary protection.

Finally, CMS and some states are working toward an implementation date of January 1, 2013. This short period may not give CMS and these states adequate time to resolve all the outstanding issues. The Commission's greatest concern is that all dual-eligible beneficiaries in a state will be enrolled in the demonstration, representing a program change rather than a demonstration. The Commission will continue to consider this and other concerns as we move forward. ■

Introduction

Dual-eligible beneficiaries are eligible for both Medicare and Medicaid benefits. In 2010, there were approximately 9.9 million dual-eligible beneficiaries.[1] Most dual-eligible beneficiaries qualify for full Medicaid benefits, including long-term care. They are referred to as full-benefit dual-eligible beneficiaries. Partial-benefit dual-eligible beneficiaries have higher incomes than full-benefit dual-eligible beneficiaries and receive assistance with Medicare premiums and cost sharing but do not receive other Medicaid benefits. The dual-eligible population is diverse and includes individuals with multiple chronic conditions; difficulties with activities of daily living; cognitive impairments such as dementia; individuals who are relatively healthy; and individuals with physical disabilities, developmental disabilities, and severe mental illness. Given the diversity of their needs, dual-eligible beneficiaries require a mix of medical, long-term care, behavioral health, and social services. Dual-eligible beneficiaries also have lower financial resources than the general Medicare population. In 2006, more than half of dual-eligible beneficiaries had incomes below the poverty line, compared with 8 percent of non–dual-eligible Medicare beneficiaries (MedPAC 2010a).

Dual-eligible beneficiaries are, on average, a high-cost population to both Medicare and Medicaid. They account for approximately 18 percent of Medicare fee-for-service (FFS) enrollment but about 31 percent of total FFS spending (Medicare Payment Advisory Commission 2011a). They also account for about 15 percent of Medicaid enrollment and 40 percent of Medicaid spending (Kaiser Family Foundation 2011). Medicaid is a jointly financed federal and state program; therefore, total federal spending on dual-eligible beneficiaries is higher than Medicare spending alone. One study estimated that federal spending accounted for 80 percent of total spending on dual-eligible beneficiaries (Coughlin et al. forthcoming). The 80 percent is a combination of Medicare spending and the federal portion of the Medicaid payments, known as the federal medical assistance percentage (FMAP). FMAP rates vary by state and range from 50 percent to 73 percent for fiscal year 2013 (Kaiser Family Foundation 2012). The average FMAP rate for 2013 is 59 percent.

Given the challenges this particular population faces in accessing services through two payer and delivery systems, care coordination programs have the potential to improve dual-eligible beneficiaries' access to services and the quality of care they receive. A program that integrates Medicare and Medicaid services and financing could improve beneficiaries' quality of care and reduce Medicare and Medicaid spending through better care coordination. To that end, the Commission has been analyzing existing programs that integrate and coordinate care for dual-eligible beneficiaries to assess whether, relative to FFS, the programs improve quality of care and reduce spending (see text box on Commission reports on dual-eligible beneficiaries, p. 68).

Two main integrated care programs cover all Medicare and Medicaid benefits for dual-eligible beneficiaries: the Program of All-Inclusive Care for the Elderly (PACE) and dual-eligible special needs plans (D–SNPs). PACE is a provider-based program and one of the few programs that completely integrates Medicare and Medicaid benefits, including long-term care and behavioral health services as well as medical care. D–SNPs are Medicare Advantage (MA) special needs plans (SNPs) that target enrollment to dual-eligible beneficiaries. These plans can be integrated care programs if they contract with a state to cover all or most Medicaid benefits. PACE and D–SNPs involve one entity (a provider in PACE or a managed care plan under D–SNPs) receiving separate capitation payments from Medicare and Medicaid and assuming full risk for the Medicare and Medicaid benefits that the entities cover. CMS plans to test additional integrated care programs through demonstrations that are under development. Under these demonstrations, states will be able to implement capitated integrated care programs and managed FFS programs.

Our findings on the PACE program stem from site visits to urban and rural PACE providers to assess how the PACE model operates in those settings, literature on the PACE programs' quality of care, and analyses of publicly available quality data on PACE providers and Medicare's payments to PACE providers. To develop findings on D–SNPs and a subset of D–SNPs known as fully integrated dual-eligible special needs plans (FIDE–SNPs), which have state contracts to cover most or all Medicaid services including long-term care, we analyzed the available data on quality of care and Medicare spending on these plans. The Commission also held a panel meeting on opt-out enrollment strategies for dual-eligible beneficiaries. The results from that panel are summarized in the text box (pp. 70–71). Finally, we also discuss our current understanding of the structure of the CMS demonstrations and identify issues to consider with the design and evaluation of the demonstrations.

Commission reports on dual-eligible beneficiaries

The Commission has reported on dual-eligible beneficiaries in the June 2010 and 2011 reports (Medicare Payment Advisory Commission 2010a, Medicare Payment Advisory Commission 2011b). In the June 2010 report, the Commission noted that dual-eligible beneficiaries account for disproportionate shares of Medicare and Medicaid spending relative to their enrollment. We also found that fewer than 2 percent of dual-eligible beneficiaries were enrolled in a program that integrated their Medicare and Medicaid benefits. Barriers to the development of integrated care programs included lack of experience with managed care for long-term care services, resistance from providers and other stakeholders, states wanting to share in savings that accrue to the Medicare program, separate Medicare and Medicaid administrative procedures, and low program enrollment (Medicare Payment Advisory Commission 2010a).

In the June 2011 report, after site visits to managed care–based integrated care programs, provider-based integrated care programs, and fee-for-service care coordination programs, we found that these structurally different programs had key care management characteristics in common: assessing patient risk, developing an individualized care plan, managing service use, conducting medication reconciliation, guiding enrollees through transitions in care, establishing medical advice that is available 24 hours a day/7 days a week, maintaining regular contact with enrollees, and maintaining a centralized electronic health record (Medicare Payment Advisory Commission 2011b). ■

Analyses of the Program of All-Inclusive Care for the Elderly

PACE is a provider-based program that serves frail, elderly Medicare and Medicaid beneficiaries. It is a benefit under the Medicare program and an optional benefit under Medicaid. PACE providers receive separate capitation payments from Medicare and Medicaid and blend those funds to cover all primary, acute, and long-term care; behavioral health services; prescription drugs; and end-of-life care planning. PACE is one of the few programs that completely integrates Medicare and Medicaid benefits. The goal of PACE is to keep enrollees living in the community rather than in long-term care institutions. Beneficiaries are eligible to enroll in PACE if they are age 55 or older and are certified by their state as being eligible for a nursing home level of care. The requirements for determining whether beneficiaries are eligible for a nursing home level of care vary by state, though generally they are defined as needing assistance with two or more activities of daily living or having a cognitive impairment.

Background on the PACE program

CMS and states are jointly responsible for oversight of PACE providers. The providers are required to be nonprofit organizations; for-profit organizations can sponsor PACE programs through a demonstration program operated by CMS. Currently, five for-profit PACE sites are operating through a demonstration program and all are located in Pennsylvania. A total of 84 PACE sites in 29 states serve about 21,000 enrollees nationwide (National PACE Association 2012).[2] Enrollment in individual PACE programs ranges from about 20 to almost 2,600, with about two-thirds of sites enrolling fewer than 300 beneficiaries.

The core of the PACE model is the day care center, where enrollees receive therapy and medical services from members of an interdisciplinary team (IDT). The IDT utilizes attendance at the day care center to monitor enrollees' health status and manage their clinical care and supportive service needs. The IDT is required to consist of a primary care physician, registered nurse, master's level social worker, physical therapist, occupational therapist, activity coordinator, dietitian, PACE center manager, home care coordinator, personal care attendant, and driver. The day care center and IDT requirements make PACE a capital-intensive model with high start-up costs. PACE providers can open "satellite" alternative care settings in addition to the day care center, where enrollees receive a limited number of PACE services provided by a subset of the IDT. There is also a conceptual variation of PACE referred to as "PACE without walls." This model would not include a day care center but would include other PACE principles such as the IDT, full financial risk for

services, and full integration of services provided under the Medicare and Medicaid benefits. Interest in this model stems from the desire to expand the PACE model to serve more beneficiaries by eliminating the capital costs and enrollment capacity limitations associated with the day care center.

Most PACE sites employ a primary care physician and enrollees must change from their current primary care physician to the PACE physician when they join the program. However, PACE providers may apply to CMS for a waiver to contract with primary care physicians in the community. If CMS grants the waiver, enrollees can stay with their existing physician and can also be treated by the PACE physician while in the day care center.

Characteristics of PACE enrollees

Most PACE enrollees are dual-eligible beneficiaries; however, Medicare-only beneficiaries can enroll and pay the Medicaid capitated rate out of pocket. States can also permit Medicaid-only beneficiaries to enroll and states pay a higher capitated rate for them.

Medicare PACE enrollees tend to be older than 75, female, and White.[3] Of the almost 21,000 beneficiaries enrolled in PACE in 2009, almost two-thirds (65.8 percent) were over the age of 75. Another 26 percent were between the ages of 65 and 75 and only 8 percent were between the ages of 55 and 64. In addition, more females were enrolled in PACE than males (72.3 percent and 27.7 percent, respectively). More than half of the beneficiaries enrolled in PACE in 2009 were White (56.9 percent), while almost one-quarter (24.8 percent) were African American, almost 8 percent were Hispanic, and 7.4 percent were Asian American.[4] In 2009, 9.8 percent of PACE enrollees died during the year.

Disenrollment from PACE is low. Excluding beneficiaries who died during the year, 5 percent of Medicare beneficiaries disenrolled from PACE in 2009. In addition, a very small number of Medicare PACE enrollees (0.2 percent) disenrolled from PACE in 2009 but reenrolled at the same or another PACE site the same year.

Medicare payments to PACE providers

Medicare payments to PACE providers are based on the MA risk-adjustment system, which develops risk scores using the CMS–hierarchical condition category (HCC) model. Under this system, a county benchmark rate (the base payment rate) is multiplied by the individual participant risk score to determine the risk-adjusted payment for each enrollee. PACE payments differ from payments to MA plans in a number of ways:

- Unlike MA plans, PACE providers do not submit bids to CMS. MA plans use rebates (which occur when a plan's bid is below its applicable benchmark) to offer beneficiaries supplemental services, such as dental and vision care; however, these services are already included in PACE. PACE providers receive the full risk-adjusted benchmark as their Medicare payment.
- CMS began using a revised HCC model in 2012 to risk-adjust payments to PACE providers, whereas MA plans will continue to be paid based on the nonrevised HCC model. The revised risk-adjustment model adds dementia as a condition, which may affect payments to PACE providers as many PACE enrollees have dementia.
- Payments to PACE providers are adjusted for frailty. The frailty adjuster is calculated from the Health Outcomes Survey–Modified data that are collected on PACE enrollees and includes questions about activities of daily living and physical and mental health. The responses are used to produce a frailty factor for each PACE provider, which is added to each PACE enrollee's HCC score. As such, a PACE provider's total risk-adjustment factor consists of the HCC score and the provider's frailty score. For example, the frailty factor is 0.147 for a provider whose enrollees have an average of three or four activities of daily living. This factor is added to the HCC score for every Medicare beneficiary enrolled in that PACE provider's program. An enrollee with an HCC score of 2.4 would have a total risk-adjustment factor of 2.547 (2.4 + 0.147).
- Unlike integrated care programs that are operated by SNPs, PACE providers have statutory waivers that expand the scope of services they can provide to their enrollees. SNPs, like other MA plans, may use Medicare funds only to provide Medicare-covered services and may use rebate dollars only to provide items and services that can be classified as health care services. However, PACE providers can furnish any service or item authorized by the IDT in an enrollee's plan of care, regardless of whether those services are covered under traditional Medicare or Medicaid benefit packages.
- The Patient Protection and Affordable Care Act of 2010 (PPACA) made changes to the MA payment

Results from panel on opt-out enrollment strategy for dual-eligible beneficiaries

In July 2011, the Commission convened a panel of stakeholders who had experience with or expertise in dual-eligible issues to discuss an opt-out enrollment strategy for integrated care programs. Under opt-out enrollment an individual is automatically enrolled in a particular program unless the individual opts out of the program by choosing another plan or choosing to stay in fee-for-service (FFS). Panelists included representatives from managed care organizations, state integrated care programs, beneficiary advocates, and existing managed care and provider-based integrated care programs. They were asked to consider opt-out enrollment for integrated care programs that currently exist or that may be developed in the future. Panelists were asked to discuss any concerns they might have with opt-out enrollment and whether policies could be designed to address these concerns.

Participants gave their perspectives on the types of standards necessary for integrated care programs to be considered candidates for opt-out enrollment. Those requirements included:

- ***Care coordination*****—**Panelists stated that integrated care programs should change the delivery system to achieve real care coordination. They noted that many health plans have networks of providers but do not operate as a true network. One panelist stated that integrated care programs should go beyond care coordination through multidisciplinary care teams and focus on redesigning primary care systems. Panelists also stated that care coordination should involve reviewing beneficiaries' medications, assisting beneficiaries through transitions of care, coordinating with beneficiaries' behavioral health providers, having systems that notify the program within 24 hours of a beneficiary's hospital admission, coordinating with social services, and developing plans for end-of-life care. Some panelists noted that receiving information on beneficiaries' service use before they joined the program would help with care coordination.
- ***Member-centered programs*****—**Many panelists stated that the integrated care programs should be member centered and value the outcomes that the beneficiaries want. Characteristics of member-centered programs include comprehensively assessing beneficiaries, involving beneficiaries or their families in developing their plan of care, ensuring that the care plan is driving the care management, measuring consumer satisfaction, and tracking outcomes related to a beneficiary's condition. One panelist noted that integrated medical records could help facilitate member-centered care.
- ***Benefit packages that meet beneficiaries' needs*****—** Panelists discussed the importance of integrated care programs establishing benefit packages that meet beneficiaries' needs. Some panelists noted the importance of including home- and community-based services and durable medical equipment in the benefit package. Other panelists stated that integrated care programs should meet beneficiaries' needs across a continuum of care. For example, one panelist noted that some beneficiaries might need less-intensive care coordination while beneficiaries with five conditions might need an intensive program.
- ***Consumer representation*****—**Many panelists strongly advised having integrated care programs involve beneficiaries in plan operations. This goal could be achieved by having beneficiary representation on governing or advisory boards. Panelists also stated that beneficiary involvement must be meaningful.
- ***High quality*****—**Many participants were comfortable with only high-quality plans being eligible for opt-out enrollment. Panelists suggested the following quality indicators to measure integrated care programs: time spent on care coordination, beneficiaries' access to a provider of choice, member satisfaction, provider satisfaction, number of appeals and grievances and the nature of those complaints, disenrollment rates, Healthcare Effectiveness Data and Information Set scores, access to a person at a call center, emergency department admission rates, 30-day hospital

(continued next page)

Results from panel on opt-out enrollment strategy for dual-eligible beneficiaries

readmission rates, and number of hospital days and nursing facility days.

Panelists also discussed their concerns about an opt-out enrollment policy and issues that would need to be considered in designing this policy.

- ***Beneficiary choice*—**One concern among panelists was the need for an opt-out policy to respect individual choice and the need to make special efforts on behalf of beneficiaries and their families who are unable to navigate the Medicare and Medicaid systems on their own. The panelists also discussed whether the opt-out policy would be applied only to beneficiaries in fee-for-service, to those enrolled in Medicare Advantage plans, or to beneficiaries already enrolled in another integrated care program.
- ***Plan assignment*—**Panelists questioned how plan assignment would be done under an opt-out enrollment policy if there were multiple plan options. Many panelists discussed the entity that would assign the beneficiary into an integrated care program. While there was not consensus on which entity should make plan assignments, a number of participants noted the importance of the assignments being made by an independent, unbiased entity. One participant noted that an independent entity could make assignments to match beneficiaries' needs with a program designed to meet those needs rather than enrolling beneficiaries in a plan at random. Multiple panelists also discussed the need for the unbiased entity to provide beneficiaries with information about their choices and to help them decide whether to opt out.
- ***Access to providers and services*—**Panelists were largely concerned about beneficiaries losing access to their current providers and services when they transitioned to an integrated care program. They discussed the importance of integrated care programs including beneficiaries' current providers in their networks. However, if beneficiaries had to change providers, a few panelists suggested a transition period of 90 days when enrollees could still access their former providers and make plans to transition to the new ones. Another panelist noted the importance of programs' networks including providers that are close to where beneficiaries live.
- ***Monitoring and oversight*—**Panelists emphasized the importance of monitoring integrated care programs, particularly under an opt-out enrollment policy. Some panelists stated that it is unclear whether the federal government or states would be responsible for monitoring existing integrated care programs. Other panelists noted that budget constraints have reduced some states' capacity to monitor programs. One panelist suggested that ombudsmen may be able to help with monitoring appeals and grievances.

There was no consensus among panelists on the need for an opt-out enrollment policy. Participants expressed more comfort with an opt-out enrollment policy if the integrated care program met the standards described above and the outstanding issues and concerns were addressed. Some panelists were skeptical that integrated care programs could meet all the standards. Other panelists suggested that voluntary enrollment could be improved, eliminating the need for an opt-out enrollment policy. ■

system that do not apply to PACE providers. PPACA established new county benchmarks to better approximate a county's FFS spending; however, PACE providers are still paid on pre-PPACA benchmarks. In addition, PPACA introduced a quality bonus system and a phase-out of indirect medical education payments from MA capitation rates; these changes did not apply to PACE.

For the PACE sites that we visited, average Medicaid monthly payments were higher than Medicare monthly payments. These sites were in states that partially based their payments to PACE providers on the payment rates to nursing homes for long-term care services. For the PACE sites we visited, the average Medicaid per member per month payments ranged from $3,300 to $4,000 (this payment includes the federal and state components of

Medicaid's financing) and the average Medicare per member per month payments ranged from $1,700 to $2,600. This information was given to us anecdotally by the PACE sites and we were not able to independently verify the average Medicare and Medicaid payments. Further, the Medicare and Medicaid payments of these providers may not be representative of payments across all PACE providers.

Quality measures

PACE providers are required to report a number of quality measures to CMS. These measures include the rate of routine immunizations, grievances and appeals, disenrollment, hospital readmissions, emergency care, unusual incidents, deaths, falls or traumatic injuries resulting in death or that require a hospitalization of five days or more, infectious disease outbreaks, and acquisition of a pressure ulcer. CMS uses these data to monitor the quality of care at PACE sites, and certain outcomes trigger an internal investigation by the PACE plan and a root cause analysis of factors that contributed to the event. However, CMS does not publicly report the PACE quality measures.

Rural PACE grant program

To encourage the expansion of PACE into rural communities, the Congress authorized a rural PACE provider grant program in the Deficit Reduction Act of 2005 (DRA). The grant program allocated $7.5 million in fiscal year 2006 to be awarded to up to 15 prospective PACE sites. CMS provided 14 sites with grants of $535,000 each. The grant monies were disbursed after a site entered into a signed agreement with the state and CMS. The rural PACE sites also had access to an outlier pool for the first three years of operation to defray exceptional costs of hospitalizations and related ancillary services. Under the outlier protection, providers could receive 80 percent of costs that exceeded $50,000 per enrollee. The money for the grants and the outlier pool was appropriated by the Congress as part of the DRA.

Methodology of analyses of the PACE program

The analyses of the PACE program consisted of three parts: site visits to urban and rural PACE providers, a review of quality-of-care data on the PACE program, and analyses of the Medicare payment system for PACE. Our site visits included two urban PACE providers in 2010 and four rural PACE providers in 2011. We also interviewed a fifth rural provider in 2011. The PACE sites included in our analysis were Senior CommUnity Care, with day care centers in Montrose and Eckert, CO; Riverside PACE in Hampton, VA; LIFE in Philadelphia, PA; LIFE Geisinger in Kulpmont, PA; Northland PACE, with centers in Dickinson and Bismarck, ND; Piedmont Health SeniorCare in Burlington, NC; and Siouxland PACE in Sioux City, IA. We did not intend for the site visits to be representative of the experiences of all PACE providers. We selected the sites based on geographic variability and variety of sponsoring organizations, including health systems, hospitals, and organizations that provide health care and social services for the elderly. All the rural PACE sites in our study participated in the rural PACE demonstration. Enrollment in the PACE sites ranged from about 50 to over 400. We interviewed PACE center management staff, members of the IDT, and staff from the organization that sponsors the PACE site. Our questions centered on: care management best practices, changes to the core PACE model for rural providers, the necessity of the day care center to the PACE model, barriers to enrollment, PACE providers' experience with nonelderly beneficiaries, and financial operations of the PACE center.

In addition to site visits, we analyzed the literature on PACE providers' quality of care and public availability of quality data on PACE providers. We also analyzed the structure of the Medicare payment system for PACE and Medicare spending on PACE.

Key findings from site visits

PACE providers use care management techniques similar to the other integrated care programs we studied for the June 2011 report (Medicare Payment Advisory Commission 2011b). We also found that rural PACE sites maintained the key characteristics of the PACE model, with few modifications, which heavily emphasized the day care center. Monthly enrollment in PACE sites is low and barriers to enrollment include the inability to enroll beneficiaries on days other than on the first day of the month in this capitated program, beneficiaries not wanting to change physicians, and the 55-or-older age restriction. Many sites have positive margins achieved partly through balancing enrollees' needs with the cost of services.

Care management key principles consistent with other integrated care programs

The PACE sites we visited incorporated many of the same care management key principles as other integrated care programs in our previous analysis (Medicare Payment Advisory Commission 2011b). These principles include

an emphasis on care transitions, conducting medication reconciliation, and patient education. Some PACE sites also focused on end-of-life care. This focus was not one that we heard during our previous study of integrated care programs and appears to depend on the average age of participants, as younger participants may have different goals. One PACE site worked with enrollees to develop a pathway for end-of-life care that specifies enrollees' goals and preferences for aggressive medical treatment and palliative care. The IDT at that site reviewed enrollees' pathways with them every six months and referred to the pathways when deciding on a course of treatment or other services.

Rural providers retain core PACE model

The structures of the rural PACE sites we studied were largely consistent with the core PACE model. The model of care was structured around a day care center where IDT members closely monitored enrollees, frequently communicated with other team members, and intervened with medical and social services. For enrollees who did not want to attend the day care center, extra home visits, rather than telehealth services, were most often substituted. PACE staff strongly stated that the PACE model could not function as well as it does without the day care center. Because of the importance each PACE site placed on the day care center, we did not find support for the PACE without walls concept among rural PACE staff.

Some rural sites we studied made two adjustments to the PACE model—they contracted with primary care physicians in the community and established alternative care sites. Contracting with community-based primary care physicians permits enrollees to keep their primary care physician, while maintaining access to the PACE physician and clinic. The use of alternative care sites allowed PACE staff to monitor beneficiaries and provide some clinic services without having to transport beneficiaries long distances to reach the day care center.

Strong reliance on the day care center Staff at each rural PACE provider we visited emphasized the importance of the day care center in preventing medical and functional declines among PACE enrollees. Staff described their observation of enrollees at the day care center as "constant eyeballing" and noted that all staff members—including transportation drivers and personal care aides—monitor enrollees. For example, drivers have noticed changes in an enrollee's gait or when an enrollee is disheveled. PACE staff have an avenue to discuss their concerns during daily morning meetings or weekly IDT meetings at the day care center. In addition to monitoring and communication, PACE staff were able to utilize the day care center's clinic and therapy services to treat conditions early to help avoid hospitalizations.

Most enrollees at rural PACE sites attended the day care center three days a week. PACE staff reported that many enrollees want to attend because they enjoy the socialization the day care centers offer. Enrollees who do not want to attend generally receive more home care hours or home visits by IDT staff. The day care centers still serve an important role for these enrollees, as they come to the centers at least once a month for clinic visits and IDT staff discuss the enrollees at the day care centers during morning and IDT meetings. The rural PACE sites generally do not use telehealth services to substitute for attendance at the day care centers. One PACE site used telehealth technology with some enrollees to complement IDT monitoring at the day care center. That site placed sensors in the homes of enrollees who lived alone to monitor falls, determine whether the enrollee got out of bed in the morning, and determine whether the stove was left on.

The rural PACE sites we visited did not operate a modified PACE model that could be considered a PACE without walls. IDT members we interviewed generally did not support a PACE model that does not include a day care center. Staff stated that they would not be able to closely monitor and intervene early without a day care center. One exception was staff at an urban site who expressed interest in developing a PACE without walls model.

Although there were conflicting opinions on the possibility of a PACE without walls, it may be possible to incorporate some core elements of the PACE model into a program that is not constrained by a day care center. While needing further development, this concept could be a way to build on the existing PACE model and expand elements of that model to more dual-eligible beneficiaries.

Slight alterations to the PACE model in rural sites Rural PACE sites deviated from the basic PACE model in two ways: contracting with community-based physicians and operating alternative care sites. Two of the rural PACE sites decided to pursue contracts with physicians in the community after finding that changing physicians was a barrier to beneficiaries enrolling in PACE. Another rural site was contracting with many physicians in the community and had been doing so since the beginning of the program. Management staff at this site stated that beneficiaries' ties to their physicians were strong in their rural area and that contracting with those physicians

was necessary to increase enrollment. This site had higher monthly enrollment since the beginning of the program than the other rural PACE sites in our study. The community physicians at this site were required to participate by phone in monthly IDT meetings and at the six-month and annual reevaluations of their patients. Physicians were paid a fee equal to the amount of an office visit for participating. Enrollees were also seen by PACE medical staff in the day care center clinic for services such as urgent care, lab work, and wound care. However, other sites reported that the office visit payments did not encourage physicians in the community to participate in calls with the IDT.

Two of the rural PACE providers established alternative care sites and a third provider was considering opening one. The providers used the alternative care sites as a way to serve beneficiaries in rural areas who live far from a day care center. For example, one rural PACE provider's alternative care site was located across mountains in the same county as the day care center. The alternative care site opened twice a week and enrollees participated in activities and received meals. The site was not a full day care center and did not have a full clinic or therapy staff; however, staff at the site were able to take basic vitals, provide wound care, and administer medications. The PACE provider established the site after achieving enough enrollment that it was financially able to operate an alternative care site.

Reaching enrollment goals helps PACE sites become profitable, but enrollment is generally slow

Operating close to or at their enrollment targets can help PACE sites operate with a positive margin and build up financial reserves. Most PACE sites in our study were not operating at full capacity, although some were near capacity. Monthly enrollment at PACE sites was low, with some sites enrolling between two and five beneficiaries each month on average. While some staff expressed frustration at the slow nature of PACE enrollment, staff were generally consistent in the perception that PACE enrollment needed to occur on a one-at-a-time basis. Staff stated that it is necessary for beneficiaries and their families to understand and buy into the PACE model and that this buy-in is best achieved on an individual enrollment basis. Referral sources varied across the sites; however, common sources were word of mouth and referrals from health care providers.

Enrollment barriers PACE staff identified Medicare regulations, state processes, and characteristics of the PACE model that they perceived as enrollment barriers. For one, CMS does not allow PACE sites to begin marketing the program until the center opens. This restriction was a problem for one PACE site because the provider was unable to achieve a large enough enrollment before the program opened to financially support the day care center and all IDT members. The other PACE sites did not state this issue as a main barrier, and it seems that they factored the costs of the day care center and IDT staff into their initial program start-up costs.

Another barrier to enrollment is that PACE sites can enroll beneficiaries only on the first day of each month because PACE providers receive a prospective per enrollee payment from Medicare and Medicaid at the beginning of each month. PACE providers that enrolled beneficiaries after the first of the month would not receive capitation payments for those beneficiaries until the first of the following month. CMS will not make a retrospective payment for those beneficiaries, though Medicare-covered services would be paid for on a FFS basis. As a result, PACE sites are losing eligible beneficiaries, particularly those who are referred from hospitals and are in immediate need of post-acute care or long-term care after they are discharged.

Another barrier to enrollment identified by a few PACE sites was states' methods for certifying beneficiaries as eligible for a nursing home level of care. This concern occurred specifically in states where the local state agency that makes the certification also operates a Medicaid home- and community-based services (HCBS) program. In these instances, the PACE providers stated that the local state agency competes with the PACE site for beneficiaries and was reluctant to refer potential enrollees to the PACE site.

PACE staff also stated that two characteristics of the PACE model deter some beneficiaries from enrolling: beneficiaries having to change from their existing primary care physician to the PACE physician and the need to attend the day care center. One PACE site tried to ease enrollees' transition from their physician to the PACE physician by allowing enrollees to have a few social visits with their physicians. Other eligible PACE enrollees chose not to enroll because they did not want to attend a day care center and preferred home-based services. A few participants at one PACE site voluntarily disenrolled from the program for this reason.

Increasing enrollment by permitting beneficiaries younger than 55 to enroll One strategy to increase PACE enrollment is to open the program to nursing home–certifiable beneficiaries who are younger than age 55. Interviewees reported on their experiences with the nonelderly population that is currently eligible for PACE (beneficiaries aged 55 to 64 years) and whether the PACE model could serve nursing home–certifiable beneficiaries under the age of 55. In general, staff stated that PACE providers could serve nursing home–certifiable beneficiaries under the age of 55, although the providers might have to make some adjustments to their current practices. The PACE staff we discussed this issue with were largely supportive of PACE providers serving these younger nursing home–certifiable beneficiaries.

The current PACE enrollees between the ages of 55 and 64 tend to have different clinical conditions from the population age 65 or older. At one PACE site, these enrollees were more physically impaired, with diagnoses including severe heart disease, stroke, and neurologic degenerative disease. At other PACE sites, enrollees age 55 to 64 were more likely to have a severe mental illness—such as schizophrenia, bipolar disorder, depression, or severe anxiety—and to have multiple comorbidities as well. One PACE site found that increasing the frequency of day care center attendance for nonelderly enrollees helped control their utilization of emergency department services.

The rural PACE providers largely supported the ability of the PACE model to serve the under 55 population of nursing home–certifiable adult beneficiaries. Staff stated that these beneficiaries could gain from the PACE model and that PACE services were needed among this population. A number of staff noted instances when they had to deny enrollment to a beneficiary who was a few years younger than 55 but otherwise would have qualified for PACE.

Most PACE staff stated that they might have to make some adjustments to the way they operate if they enrolled beneficiaries under the age of 55. Interviewees said they could serve these beneficiaries in the same day care center they use for the existing population; however, the ability to integrate with the existing PACE population might depend on the younger enrollees' conditions and behavior. If the younger enrollees could not integrate well, staff said they could schedule days of attendance at the day care center by age groups or by enrollees' conditions. Staff also said that PACE providers could adjust their services to younger beneficiaries by adding staff with competencies appropriate for working with that population, offering separate activities for those enrollees, providing more individual or group behavioral health therapy, or contracting with local organizations that provide services for those beneficiaries.

Financial operations of the PACE sites

Most urban and rural PACE providers secured the start-up funds from their sponsoring organizations or through grants. While the CMS grant that was part of the rural PACE demonstration was an incentive to many of the sponsors to open the sites, it did not cover all the start-up costs. Most of the urban and rural PACE sites we visited operated with a positive margin. Close management of costs and utilization were key factors to maintaining positive margins.

Starting up a PACE site The most common reason the sponsoring organizations gave for deciding to open a PACE site was to meet a need in the community. Sponsors also considered the PACE program as a part of their organization's continuum of care, as a way to diversify their organization, or as an opportunity to strategically position the organization. For example, one sponsor described the PACE site as an opportunity to market its organization and establish a presence in an area where it intended to expand additional health care services later. Sponsors were also financially able to accept the full risk of providing Medicare and Medicaid benefits to PACE enrollees and to finance some or all of the start-up costs.

The costs of opening up a fully equipped day care center, hiring IDT staff, and arranging for transportation vans were between $2 million and $3 million per site. PACE sites secured the start-up funds from their sponsoring organizations or grants from other institutions. The rural PACE demonstration included a grant from CMS; however, rural providers did not receive the grants until they were operational. The sponsor staff of the rural PACE sites all stated that their organization would have opened the PACE site without the CMS grant but that it helped them to open the site more quickly. For example, one site used the CMS grant for equipment and renovating a building to turn it into a day care center. Sites also varied in the time it took to reach the break-even point. One site broke even after 13 months of operation; another, after 22 months.

PACE programs also said the outlier pool, part of the rural grant demonstration, was an incentive to open a site

but did not consider it a reason to start a program. All the plans we spoke with purchased reinsurance at the start of operation, though CMS does not require them to do so. The plans cited high deductibles and monthly premiums as drawbacks to their private reinsurance plans.

Medicare payments and flexibility in use of Medicare funds Average monthly Medicare payments ranged from $1,700 to $2,600 per member per month across PACE sites. In addition to the Medicare capitated rates, only the rural PACE sites were eligible for outlier protection under the demonstration. The outlier protection was temporary and applied only during the start-up of the PACE site. Staff at the rural sites noted the importance of the outlier protection. Although most rural sites did not have any high-cost outliers when the outlier protection was available, staff stated that having the outlier protection available was an incentive to their sponsoring organization to open the PACE site.

Staff from all PACE providers stated that the flexibility they have to use Medicare funds to cover medical or nonmedical services is central to their ability to intervene with any necessary services to avoid an enrollee's deterioration or hospitalization. With this flexibility, PACE providers are able to pay for all services by blending Medicare and Medicaid funds. PACE staff also noted that this flexibility enables PACE providers to offer enrollees more benefits than they would have received under Medicare or Medicaid FFS. For example, PACE providers are able to cover maintenance therapy rather than only the restorative therapy that Medicare covers. The maintenance therapy, such as range-of-motion exercises, helps enrollees maintain their physical function and prevent further deterioration.

Many sites successfully balance enrollees' needs and costs and have positive margins As under any capitated payment system, management of enrollees' costs and utilization is key to operating a PACE site at or above a break-even level. Five of the PACE sites we visited reported to us that they were operating above the break-even point. They reported margins of 3 percent to 11 percent. Management and IDT staff at these sites were very focused on cost management and on meeting enrollees' needs with cost-effective solutions. For example, staff at one PACE site closely monitored their hospital and nursing home utilization and other costs, such as durable medical equipment and home health services. At this site, IDT staff were trained to consider the costs of the services they recommend and try to find less expensive but effective options when possible. We were told anecdotally that some PACE sites use funds from the positive margins to improve the day care center facility, to hire additional staff, or to build up their financial reserves. However, we did not consistently ask staff at all the PACE sites how they spent funds from the positive margins.

We were told anecdotally that two sites not operating at a positive margin had not been closely managing every enrollee's costs and were beginning to introduce cost management measures at the time of our interviews. One of these sites has begun to receive pressure from its sponsoring organization to operate with a positive margin because the sponsor has been subsidizing the PACE centers' expenses. Management staff plan to introduce cost management measures with a focus on considering lower cost alternatives into the IDT care planning process.

PACE programs' quality of care

In the literature on the quality of care of PACE, evaluations found that the program performed better on measures of hospitalizations, nursing home use, and mortality relative to comparable beneficiaries in FFS Medicare. We were not able to conduct an independent analysis of PACE providers' quality of care. Although CMS collects quality data from PACE providers, these data are not publicly available.

Evidence from the literature that PACE results in improved quality of care

A number of research studies show that beneficiaries enrolled in PACE had fewer hospitalizations and nursing home admissions and lower mortality than similar beneficiaries who were not enrolled in PACE. In one CMS-sponsored evaluation, the study group consisted of beneficiaries who enrolled in 1 of 11 PACE sites and the comparison group consisted of beneficiaries who expressed interest in joining 1 of these PACE sites, had a home visit conducted by PACE staff, and decided not to enroll in the program (Chatterji et al. 1998). PACE enrollees were less likely to be high school graduates, own a home, or live with a spouse or sibling. They were also more likely to be female, widowed, in receipt of paid supportive care, and attending a senior day center. The authors tried to control for selection bias by adjusting for patient demographics at baseline (race, age over 85, less than 12 years of education, homeowner status, living alone), care arrangements (number of home visits in the past six months, receiving paid or informal care, and attending a senior day center), utilization of health services

(number of hospital days, ambulatory visits, and nursing home days), and health status (self-reported status, number of limitations with activities of daily living). However, the authors noted that the study results could still reflect some selection bias and not solely be attributable to the effect of PACE.

PACE enrollees in this study were 50 percent less likely than comparison group members to have had one or more hospital admissions at the six-month follow-up and 40 percent less likely at the 12-month follow-up. They also had fewer hospital days than the comparison group. At the six-month follow-up, the mean number of hospital days for PACE enrollees was 1.9 days, compared with 6.1 days for the comparison group. At 12 months, PACE enrollees had an average of 3 fewer days in the hospital than comparison group members had. Nursing home use was also lower for PACE enrollees 6 months and 12 months after baseline. At the six-month follow-up, 30 percent of comparison group members had one or more admissions to a nursing home compared with 10 percent for PACE enrollees. At the 12-month follow-up, PACE enrollees were 52 percent less likely than comparison group members to have a nursing home stay. Differences in number of hospital days and nursing home use between PACE enrollees and the comparison group decreased at the 18-month and 24-month follow-up.

PACE enrollees also had better self-reported health status and quality of life and lower mortality than the comparison group. At six months after baseline, 43 percent of PACE enrollees reported being in good or excellent health, compared with 37 percent of the comparison group, and 72 percent of the PACE enrollees reported their lives were "pretty satisfying," compared with 55 percent of the comparison group. Mortality was also lower among the PACE enrollees. Over the 2.5-year observation period, 19 percent of PACE enrollees died, compared with 25 percent of the comparison group. Regression results estimated a median life expectancy of 5.2 years for PACE enrollees and 3.9 years for comparison group members.

Other studies have also demonstrated positive outcomes of the PACE program. One study compared hospital and emergency room utilization between beneficiaries enrolled in PACE and the Wisconsin Partnership Program (WPP), a managed care–based integrated care program (Kane et al. 2006). WPP also integrates Medicare and Medicaid funding and is at financial risk for acute and long-term care benefits. WPP differs from PACE in that the program does not include a day care center and enrollees can keep their own physician. The interdisciplinary team (registered nurse, nurse practitioner, social worker or social services coordinator) includes fewer staff disciplines than the PACE IDT and the nurse practitioner liaises with the enrollee's physician, who does not participate in IDT meetings. The authors found that WPP enrollees had unadjusted mean monthly hospital admission rates of 52.8 per 1,000 enrollees compared with 35.7 for PACE enrollees. Preventable mean monthly hospital admission rates were also higher for WPP enrollees (13.3 per 1,000 enrollees compared with 8.6 for PACE enrollees) as were the mean number of monthly emergency room visits (82.3 per 1,000 enrollees compared with 62.2 for PACE enrollees).

Another evaluation found that PACE enrollees in one state had a lower risk of dying and greater stability in physical functioning than Medicaid beneficiaries receiving HCBS services in that state. However, the state spent more on PACE enrollees than on HCBS enrollees. This difference may have been because the PACE enrollees had similar acuity to the HCBS population but the state payment rates for PACE were higher than for the HCBS program (Mancuso et al. 2005). Another study compared five-year survival rates for enrollees in PACE with enrollees in a HCBS program and beneficiaries residing in nursing homes (Wieland et al. 2010). The study found that the median survival rate was longest for PACE enrollees at 4.2 years, compared with 3.5 years for enrollees in the waiver program and 2.3 years for beneficiaries in nursing homes.

One study analyzed mortality rates for African American and White beneficiaries enrolled in PACE between 1990 and 1996. Compared with White patients, African American patients were younger and had worse functional status, worse cognitive status, and higher dementia rates at baseline. The authors found that after controlling for medical, functional, and demographic characteristics, African American patients had lower mortality rates than White patients after the first year of enrollment in PACE (Tan et al. 2003).

Lack of available data on quality for PACE providers

CMS monitors PACE providers' quality of care. Outcome and performance measures that PACE sites track include hospitalizations, readmissions, emergency department visits, falls, mortality rates, and appeals and grievances. Some sites also collect rates of depression, satisfaction among enrollees' families, medication errors, and attendance at IDT meetings. However, because CMS does

not publicly report PACE outcome measures, we are not able to use these data to assess quality of care in PACE.

Medicare spending on PACE

We also analyzed the Medicare payment method for PACE sites. PPACA revised the county benchmarks for the MA payment system to try to ensure that Medicare payments are more closely aligned with FFS spending. However, PACE providers are still paid on the pre-PPACA benchmarks. The PACE benchmarks are on average 17 percent higher than FFS in the counties where PACE providers operate.

As we discuss in Chapter 4 of this report, the risk-adjustment system can be refined to improve its accuracy even though, on average across large populations, it is generally accurate on an aggregate basis. PACE providers enroll small numbers of complex patients; for some of those patients, the current system underpredicts costs while for other complex patients it overpredicts costs. If the risk-adjustment system underpredicts the costs of PACE enrollees in aggregate, then spending on PACE would exceed FFS by less than 17 percent. If the risk-adjustment system overpredicts the cost of PACE enrollees in aggregate, then spending on PACE would exceed FFS by more than 17 percent.

Two features of the PACE payment system help improve the accuracy of payments for PACE enrollees. First, payments to PACE providers are risk-adjusted using an HCC model that includes dementia as a factor. This model improves the prediction of costs for PACE enrollees. Second, PACE providers receive a frailty adjuster. For complex patients whose costs may be underpredicted, the frailty adjuster compensates for some of the underprediction. For complex patients whose costs are overpredicted, the frailty adjuster increases the amount of the overprediction.

Our analysis has found that for certain patients who are the types of patients PACE providers enroll, the HCC model that includes dementia overpredicts and the frailty adjuster increases the level of overprediction. Therefore, for certain PACE enrollees, the difference between PACE payments and spending for comparable beneficiaries in FFS would be greater than 17 percent. At the same time, the HCC model that includes dementia underpredicts for some types of patients who enroll in PACE, but the frailty adjuster compensates for some of this underprediction. Therefore, for other PACE enrollees, the difference between PACE payments and spending for comparable beneficiaries in FFS would be slightly less than 17 percent.

Considering all the factors that determine Medicare payments to PACE providers, 17 percent is a reasonable estimate for the amount by which Medicare spending on PACE enrollees in aggregate exceeds spending on comparable beneficiaries in FFS.

Improving PACE

Overall, evaluations of PACE demonstrate that relative to FFS, the PACE model performs better on hospitalization and mortality rates and on keeping beneficiaries in the community rather than in nursing homes. In addition, the PACE model includes the components most likely to improve care coordination for dual-eligible beneficiaries: full integration of Medicare and Medicaid benefits, capitated Medicare and Medicaid payments, and full financial risk assumed by providers (Medicare Payment Advisory Commission 2011b). PACE providers also have the advantage of furnishing services to enrollees who are not covered under traditional Medicare (such as physical therapy for functional maintenance) because the providers are permitted to use Medicare funds on any necessary medical, social, and nonclinical services, even if these services are not Medicare-covered services. Our research shows that the PACE model is able to function in urban and rural areas and that PACE providers are able to serve beneficiaries with a range of conditions, including those with multiple chronic conditions, multiple limitations in activities of daily living, severe mental illness, dementia, and neurologic conditions.

There remain areas for improvement in the PACE program—namely, Medicare's payment methodology, program enrollment, and data on quality. In light of these areas needing improvement, we are making recommendations to pay PACE providers and MA plans more accurately for the beneficiaries they enroll, support program growth, and more closely align the payment systems for PACE and integrated care programs operated by SNPs.

RECOMMENDATION 3-1

The Congress should direct the Secretary to improve the Medicare Advantage (MA) risk-adjustment system to more accurately predict risk across all MA enrollees. Using the revised risk-adjustment system, the Congress should direct the Secretary to pay Program of All-Inclusive Care for the Elderly providers based on the MA payment system for setting benchmarks and quality bonuses. These changes should occur no later than 2015.

RATIONALE 3-1

This recommendation corrects the MA risk-adjustment system's underprediction and overprediction of some complex patients' costs. When revising the risk-adjustment system, the Secretary could consider using factors such as multiple conditions and functional status. In addition, the amount of the frailty adjuster should be revised because improvements to the risk-adjustment system may reduce or eliminate the need for the frailty adjuster.

Second, by paying PACE providers based on the PPACA-revised county benchmarks, payments would be better aligned with FFS spending levels, which would reduce spending. In addition, PACE providers would be permitted to earn bonus payments through the quality bonus program. These changes would also promote equity among programs that coordinate care for dual-eligible beneficiaries by making the payment system for PACE more consistent with the payment systems of integrated care programs operated by SNPs.

IMPLICATIONS 3-1

Spending

- This recommendation would have no effect on federal spending on PACE relative to current law in the first year and would decrease spending by less than $1 billion over five years.

Beneficiary and provider

- We do not expect this recommendation to have adverse impacts on Medicare beneficiaries with respect to access to care. Although payments based on the PPACA-revised benchmarks would lower payments to PACE, this reduction would be offset by the improvements to the risk-adjustment system and participation in the quality bonus program, which could result in a net increase in payments to PACE providers. We do not expect these changes to reduce PACE providers' willingness and ability to care for Medicare beneficiaries.

Our second area for improvement relates to program enrollment and expansion. PACE serves a small segment of the dual-eligible population that is eligible for a nursing home level of care. Although nursing home–certifiable beneficiaries under the age of 55 could benefit from PACE services, they are not eligible because of the age limit. In addition, PACE providers lose potential enrollees because Medicare policies do not allow for prorated capitation payments for beneficiaries who are enrolled after the first of the month.

CMS and the Congress could take steps to encourage enrollment of more nursing home–certifiable beneficiaries in this program. Increasing monthly enrollment and reaching enrollment projections could help PACE providers achieve economies of scale. However, even if these steps were taken, PACE is likely to remain a small program and is not likely to serve large numbers of dual-eligible beneficiaries for various reasons. Reliance on a day care center constrains the capacity of PACE providers, beneficiaries will continue to be enrolled on an individual basis, and the PACE model may not appeal to beneficiaries who do not want to change their physician or attend a program focused on a day care center.

RECOMMENDATION 3-2

After the changes in Recommendation 3-1 take effect, the Congress should change the age eligibility criteria for the Program of All-Inclusive Care for the Elderly to allow nursing home–certifiable Medicare beneficiaries under the age of 55 to enroll.

RATIONALE 3-2

This recommendation would allow, but not require, PACE providers to enroll beneficiaries who are not currently eligible for PACE. This change would help PACE providers increase their enrollment, which could help them achieve economies of scale faster. The newly eligible population of under-55 dual-eligible beneficiaries tends to be severely mentally ill, developmentally disabled, or physically disabled. In our judgment, these beneficiaries would benefit from the services available through PACE providers. PACE providers might have to make some changes to their program to accommodate the newly eligible younger population, such as developing targeted activities for them or hiring staff with experience and competencies to serve this population.

Revising the age eligibility criteria in the PACE Medicare statute would permit PACE providers to begin enrolling and receiving Medicare payments for nursing home–certifiable beneficiaries under the age of 55. However, PACE is an optional Medicaid benefit, and states would retain discretion over whether to contract with PACE providers to enroll beneficiaries younger than age 55. Given that Medicare currently spends more on PACE services relative to FFS, this recommendation should take effect after the changes in our first recommendation are implemented. This timing would ensure that expanding access to PACE services to beneficiaries under the age of 55 would not increase Medicare spending.

IMPLICATIONS 3-2

Spending

- Any enrollment expansion in PACE under current law would increase Medicare spending because payments to PACE are higher than FFS spending levels. However, implementing this recommendation after the changes to the county benchmarks take effect would offset most of the increase in Medicare spending from expanding eligibility to the under-55 nursing home–certifiable Medicare beneficiaries. Assuming this recommendation is implemented after the recommended changes are made to use the PPACA-revised county benchmarks, it would have no impact on federal spending on PACE relative to current law in the first year and would increase spending by less than $1 billion over five years.

Beneficiary and provider

- We expect this recommendation to increase access to PACE services for nursing home–certifiable Medicare beneficiaries under the age of 55. This recommendation could also help PACE providers to increase their program enrollment.

RECOMMENDATION 3-3

After the changes in Recommendation 3-1 take effect, the Secretary should provide prorated Medicare capitation payments to Program of All-Inclusive Care for the Elderly providers for partial-month enrollees.

RATIONALE 3-3

PACE providers state that they have lost some potential enrollees because providers cannot receive prorated Medicare and Medicaid capitation payments for beneficiaries who enroll after the first of the month. This issue with partial-month enrollees applies to PACE providers and not MA plans in general for two reasons. First, MA plans can enroll beneficiaries after the first of the month and the beneficiaries still receive Medicare services through FFS until the MA plan receives the capitated payment on the first of the following month. However, PACE providers furnish certain services that are not covered in Medicare FFS, such as day care center services, therapy for maintenance purposes, and nonclinical services. Thus, enrollees in PACE plans after the first of the month would not be covered for the rest of the month for those services. Moreover, the types of beneficiaries PACE enrolls, particularly those being discharged from a hospital, are often in immediate need of services. If PACE cannot enroll these beneficiaries because of the timing problem, the beneficiaries would instead likely be admitted to nursing facilities or HCBS programs.

Prorating Medicare capitation payments for beneficiaries enrolled for a partial month would enable PACE providers to receive Medicare payments for partial-month new enrollees. It would also give some beneficiaries another care option to select when they are discharged from the hospital. Given that Medicare currently spends more on PACE services than it would for the same or comparable beneficiaries under FFS, this recommendation should take effect after the recommended changes to use the PPACA-revised county benchmarks are implemented. This timing would ensure that expanding access to PACE services to beneficiaries under the age of 55 did not increase Medicare spending.

IMPLICATIONS 3-3

Spending

- Any enrollment expansion in PACE under current law would increase Medicare spending because Medicare currently spends more on PACE services than it does for comparable beneficiaries under FFS. However, implementing this recommendation after the changes to the county benchmarks take effect would offset most of the increase in Medicare spending. Assuming this recommendation is implemented after the recommended changes to the PPACA-revised county benchmarks, it would have no impact on federal spending on PACE relative to current law in the first year and would increase spending by less than $1 billion over five years.

Beneficiary and provider

- We expect this recommendation to increase access to PACE services for some nursing home–certifiable Medicare beneficiaries. The recommendation could also help PACE providers to increase their program enrollment.

We are also concerned that new PACE providers—both urban and rural—could need outlier protection during the start-up of their program. New rural PACE sites participating in the demonstration had an outlier pool, and although most of the sites did not use the outlier protection, its availability helped persuade some of the sponsors to start PACE programs.

RECOMMENDATION 3-4

After the changes in Recommendation 3-1 take effect, the Secretary should establish an outlier protection policy for new Program of All-Inclusive Care for the Elderly sites to use during the first three years of their programs to help defray the exceptionally high acute care costs for Medicare beneficiaries.

The Secretary should establish the outlier payment caps so that the costs of all Chapter 3 recommendations do not exceed the savings achieved by the changes in Recommendation 3-1.

RATIONALE 3-4

Because of the very small scale of most PACE programs, even a few dually eligible beneficiaries who incur exceptional costs during the initial period of operation can jeopardize a program's fiscal solvency. This risk may be significant enough to dissuade sponsors from opening a PACE. An outlier protection could help PACE maintain a financially stable operation and prevent the insolvency that could occur from enrolling a few exceptionally high-cost beneficiaries. A mechanism that helps providers reach a break-even point over time would help ensure financial stability during the start-up period, providing an incentive for sponsors to open PACE programs.

To avoid increasing total Medicare spending, the outlier protection should be financed through the spending reductions that would result from basing PACE payments on the PPACA-revised county benchmarks (Recommendation 3-1). As under the rural PACE demonstration, the outlier protection would be available for the first three years of the program and could be used only to offset high acute care expenditures for Medicare beneficiaries. CMS could structure the outlier protection similar to the one available to the rural PACE sites, which included the following components: (1) outlier protection equaled 80 percent of costs that exceeded $50,000 for a PACE enrollee, (2) total outlier expenses for a given enrollee could not exceed $100,000 over a 12-month period, (3) PACE providers could not receive more than $500,000 in total outlier payments over a 12-month period, and (4) providers had to exhaust any risk reserves before receiving payment from the outlier fund. To avoid increasing total Medicare spending, the Secretary should determine the size and structure of the outlier pool so that the outlier protection, the expansion to enroll beneficiaries under the age of 55, and prorating capitation payments for partial-month enrollees can be completely financed from the changes to the PACE county benchmarks.

IMPLICATIONS 3-4

Spending

- This recommendation would not increase federal spending on PACE relative to current law because the outlier protection would be funded by the reduction in Medicare spending on PACE that occurs from basing PACE payments on the PPACA-revised county benchmarks.

Beneficiary and provider

- We do not expect this recommendation to have adverse impacts on Medicare beneficiaries with respect to access to care. This recommendation may be an incentive for sponsors to open new PACE sites.

Our third area of concern is the availability of quality data. The Commission recognizes the importance of collecting consistent outcomes and other quality data across integrated care programs to monitor the quality of the dual-eligible beneficiaries' care. In general, the Commission supports the collection of a small number of outcome measures in addition to patient satisfaction measures. While CMS closely monitors PACE providers through the collection of outcome data, this information is not available to the public.

RECOMMENDATION 3-5

The Congress should direct the Secretary to publish select quality measures on Program of All-Inclusive Care for the Elderly (PACE) providers and develop appropriate quality measures to enable PACE providers to participate in the Medicare Advantage quality bonus program by 2015.

RATIONALE 3-5

Publishing select quality measures would permit the policy community to evaluate PACE and would help beneficiaries and their families make more informed choices when deciding to join PACE. Before CMS could publish any quality data, the agency would need to determine how to accurately report measures given the small sample sizes of PACE providers (see Chapter 6 of our March 2010 report for a discussion of the issue of small sample sizes for quality reporting in general) (Medicare Payment Advisory Commission 2010b). For example, CMS could combine data from multiple years to achieve a large enough sample size to report the data. In addition, CMS would need to identify the measures to be used that would enable PACE providers to participate in the quality bonus program. The measures could be the same ones that MA plans report or CMS could develop PACE-specific measures.

IMPLICATIONS 3-5

Spending

- This recommendation would not affect federal spending on PACE relative to current law.

Beneficiary and provider

- We do not expect this recommendation to adversely affect Medicare beneficiaries' access to PACE services and it could enhance beneficiaries' ability to choose a program that meets their needs. This recommendation should have no adverse impacts on PACE providers.

Analyses of dual-eligible special needs plans

Our analysis of D–SNPs and FIDE–SNPs focused on quality-of-care measures and Medicare spending. With regard to quality, we were not able to determine whether D–SNPs or FIDE–SNPs improved quality of care relative to FFS or other MA plans because of limited available data. With regard to spending, we found that Medicare spending on D–SNPs and FIDE–SNPs exceeded FFS spending and that these plans' bids for Medicare Part A and Part B services were higher than FFS costs to cover these services. This raises the question of whether these plans can provide Part A and Part B services and care coordination to dual-eligible beneficiaries at a cost that is below FFS. We also explored options for extending to FIDE–SNPs the flexibility that PACE providers have to use Medicare funds to cover nonclinical services.

Background on SNPs

SNPs are MA plans that target enrollment to specific groups of beneficiaries. There are three types of SNPs: D–SNPs, chronic condition SNPs (C–SNPs), and institutional SNPs (I–SNPs). D–SNPs enroll only dual-eligible beneficiaries; C–SNPs enroll beneficiaries with 1 of 15 chronic conditions;[5] and I–SNPs enroll beneficiaries who reside in nursing facilities, intermediate care facilities, and inpatient psychiatric facilities and beneficiaries living in the community who have an institutional level of need. About 500 SNPs enroll 1.4 million Medicare beneficiaries (Centers for Medicare & Medicaid Services 2012). Most SNPs are D–SNPs. Slightly more than 320 D–SNPs enroll 1.16 million dual-eligible beneficiaries, or about 83 percent of all beneficiaries enrolled in SNPs. C–SNPs enroll almost 14 percent of beneficiaries enrolled in SNPs and I–SNPs enroll about 3 percent. SNPs are currently authorized through December 31, 2013.

Our analysis focuses on D–SNPs and a subset of those plans known as FIDE–SNPs. Dual-eligible beneficiaries can enroll in C–SNPs and I–SNPs, and those plans may be coordinating the Medicare benefits for them. However, we focus on D–SNPs because they are the current pathway under the Medicare program for dual-eligible beneficiaries to enroll in a managed care–based integrated care program.

Not all D–SNPs are integrated care programs; however, they can be if a D–SNP contracts with a state to cover Medicaid benefits. D–SNPs are required to have a state contract by 2013, but states are not required to enter into contracts with D–SNPs. Merely having a state contract does not guarantee that a D–SNP integrates Medicare and Medicaid benefits. To meet the 2013 requirements, the state contracts have to cover some (but not all) Medicaid services. Contracts can cover a range of Medicaid services for dual-eligible beneficiaries, from beneficiary cost-sharing and wrap-around services, such as vision and dental care, to some or all long-term care and behavioral health services.

D–SNPs with contracts to cover most or all Medicaid services are called FIDE–SNPs. CMS previously used a more restrictive definition of FIDE–SNPs in which plans had to cover all primary, acute, and long-term care services on a capitated basis. Our analysis of FIDE–SNPs included only the plans that met this definition in 2012. There were fewer than 20 of those plans with a total enrollment of 23,000 beneficiaries as of February 2012, or about 2 percent of all dual-eligible beneficiaries enrolled in SNPs.[6] CMS revised the definition of a FIDE–SNP in the April 2012 call letter to include plans that are at risk for substantially all services and are at risk for nursing facility services for a minimum of six months.

Characteristics of SNP enrollees

D–SNPs and I–SNPs have higher percentages of women (62 percent and 66 percent, respectively) than C–SNPs (55 percent). I–SNPs have the highest proportion of White enrollees (76 percent). More than two-thirds of enrollees in C-SNPs are White (67 percent) and one-quarter are African American. D–SNPs have the smallest proportion of White enrollees (57 percent). About 21 percent of beneficiaries enrolled in D–SNPs are African American and almost 14 percent are Hispanic.[7]

The average age of enrollees also varies across SNP type. I–SNPs' enrollees tend to be older—an average age of 79 compared with 71 for C–SNPs and 66 for D–SNPs. This

age difference is not surprising, given that I–SNPs generally enroll beneficiaries who reside in nursing facilities, while D–SNPs enroll dual-eligible beneficiaries, some of whom are younger than age 65. About 35 percent of beneficiaries in D–SNPs are younger than age 65, compared with 18 percent in C–SNPs and 4 percent in I–SNPs. About 31 percent and 28 percent of enrollees in C–SNPs and D–SNPs, respectively, are age 76 or older compared with 63 percent of beneficiaries enrolled in I–SNPs.

Quality measures

We used three sets of quality data to evaluate MA plans, but not all of the data were available at the SNP level. Some of the data are reported at the contract level, which combines data for an organization's MA plans and SNPs.

Healthcare Effectiveness Data and Information Set The Healthcare Effectiveness Data and Information Set (HEDIS®) measures plan performance on clinical processes and intermediate clinical outcomes. The measures are based on administrative data, such as claims and encounter data, supplemented with clinical data extracted from medical records for certain measures. There are 45 effectiveness-of-care HEDIS measures that all MA plans report to CMS. Separately from the reporting required of all MA plans, SNPs are required to report on 12 of the 45 effectiveness-of-care measures reported by all MA plans and an additional 5 measures that only SNPs report: advanced care planning, functional status assessment, medication review, pain screening, and medication reconciliation postdischarge. Some MA contracts consist only of SNP plans, in which case the MA plan reports the 45 measures for its enrollees as well as complying with the SNP-specific reporting requirement (meaning that potentially 12 measures are redundantly reported if an MA plan consists exclusively of a single SNP benefit package) (Centers for Medicare & Medicaid Services 2009).

Consumer Assessment of Healthcare Providers and Systems The Consumer Assessment of Healthcare Providers and Systems (CAHPS®) is a set of patient experience surveys administered to Medicare beneficiaries in MA and FFS. CAHPS provides information on respondents' personal experiences interacting with their health plan and health care providers. CAHPS results are used to measure quality from the patient's perspective across six domains: quick access to care of any type, access to needed care without delays, effectiveness of physician communication, health plan information and customer service, overall rating of health care quality, and overall rating of health plan quality. It is possible to identify from the CAHPS data whether a beneficiary is enrolled in a SNP.

Health Outcomes Survey The Health Outcomes Survey (HOS) is a longitudinal survey of self-reported health status for MA plan enrollees. It measures changes in beneficiaries' self-reported physical and mental health status over two years. For each MA plan, randomly selected enrollees are surveyed in a given year and resurveyed two years later about perceived changes in their physical and mental health. The beneficiaries' physical and mental health status is categorized as better, the same, or worse than expected, based on a predictive model that takes into account risk-adjustment factors to determine expected results. When results are reported, a plan is deemed to have better or poorer outcomes if the plan's results on physical or mental health measures differ significantly from the national average across all plans. The HOS data are reported at the MA contract level.

D–SNPs' and FIDE–SNPs' quality of care

We sought to determine whether D–SNPs and FIDE–SNPs offer better quality of care than beneficiaries can receive through alternative options—other MA plans that are not specialized or FFS Medicare—but our ability to make this assessment was limited (see Chapter 6 of our March 2010 report for a discussion of the limitations of comparing SNPs with FFS) (Medicare Payment Advisory Commission 2010b). MA plans report only a few measures at the SNP level, and we could not compare SNPs' performance with FFS for most of them. In general, in comparison with non-SNP MA plans, we found that D–SNPs' quality of care is mixed, while FIDE–SNPs perform better than other SNPs on the one HEDIS intermediate outcome measure that CMS publicly reports. We were not able to determine whether D–SNPs or FIDE–SNPs improve quality of care relative to FFS.

D–SNPs' quality of care is mixed

We analyzed HEDIS and CAHPS quality-of-care measures for D–SNPs (for more detailed analysis of SNP quality of care, see the online appendix to this chapter (http://www.medpac.gov)). The full set of 45 effectiveness-of-care HEDIS measures are not reported at the SNP level. Therefore, to analyze the broader set of HEDIS measures for D–SNPs, we used a proxy method. We identified contracts in which 75 percent or more of the enrollment was in D–SNP plans and compared those results with the results for contracts with D–SNP

enrollment of 10 percent or less. We found that D–SNPs' performance on HEDIS measures was mixed. They performed better than non-SNPs on five HEDIS measures: two measures related to fall risks (discussing and managing fall risks), advising patients on physical activity, managing urinary incontinence, and bronchodilator pharmacotherapy management of exacerbation of chronic obstructive pulmonary disease.

For 11 of the 45 HEDIS measures that we tracked, there were no statistically significant differences between D–SNPs and non-SNPs. These measures included blood pressure control among diabetics, four of five measures for monitoring persistently used drugs, recording body mass index in the medical record, the two measures of antidepressant medication management, and the treatment of urinary incontinence.

In contrast, D–SNPs performed worse than non-SNP MA plans on 29 measures. Measures with statistically significant differences included the intermediate outcomes of blood pressure control among enrollees with hypertension, blood glucose control among diabetics, and cholesterol control among diabetics and among those with cardiovascular conditions; breast cancer, colorectal cancer, and glaucoma screening; eye exams, lipid profiles, blood glucose measurement and monitoring nephropathy among diabetics; six measures of potentially harmful drug interactions or the use of high-risk drugs; and osteoporosis management among women with fractures. Although as a group, D–SNPs' quality performance was mixed, some D–SNPs performed better than non-SNPs on the HEDIS measures and had high star ratings in CMS's system for rating MA plans.

We also analyzed CAHPS data on influenza vaccination rates. We found that beneficiaries in D–SNPs received the influenza vaccination at lower rates than beneficiaries in non-SNP MA plans. When we limited the comparison to dual-eligible beneficiaries, we found that these beneficiaries in D–SNPs, FFS, and non-SNP MA plans received the influenza vaccination at the same rates. (Because of sampling issues, we are unable to calculate a similar person-level analysis to compare HEDIS results for dual-eligible beneficiaries enrolled in MA plans with dual-eligible beneficiaries in FFS.)

FIDE–SNPs perform better than other SNPs on a limited number of quality measures

To assess FIDE–SNPs' quality of care, we analyzed the small subset of HEDIS measures that SNPs report. We found that FIDE–SNPs perform very well on the SNP-level measures, to the extent that we can generalize from the small number of plans reporting. Eight FIDE–SNPs are HMOs that reported the blood pressure control measure for 2011, with rates ranging from 39 percent to 84 percent, with an average of 64 percent (compared with an average of 57 percent among other HMO D–SNPs). Four of the eight FIDE–SNPs have blood pressure control rates that placed them above the 90th percentile of rates for all reporting MA plans (which is 73 percent). FIDE–SNPs also perform very well on measures that only SNPs report: medication review, functional status assessment, pain screening, medication reconciliation postdischarge, and advanced care planning. The FIDE–SNP average rates for these measures are well above the average for all D–SNPs and above the average for non-D–SNPs.

Medicare spending on D–SNPs and FIDE–SNPs

Generally, Medicare spends more on beneficiaries who enroll in MA plans than it would have spent had they remained in FFS (although MA spending in some markets is below FFS spending). Consistent with higher MA spending in general, we found that in aggregate Medicare spending on beneficiaries in D–SNPs and FIDE–SNPs exceeds spending on comparable beneficiaries in FFS. On the basis of 2012 bid data, we estimate that, compared with FFS spending in 2012, Medicare payments to D–SNPs and FIDE–SNPs are expected to average 12 percent and 10 percent higher, respectively. The estimates are risk-adjusted weighted plan averages and are compared with risk-adjusted FFS.

To determine whether D–SNPs and FIDE–SNPs have the potential to reduce FFS spending, we analyzed 2012 D–SNP and FIDE–SNP bids containing plans' estimates of the cost of providing Part A and Part B services to their enrollees. A bid below FFS indicates that a plan is able to provide Medicare Part A and Part B services below what spending would have been for these beneficiaries if they remained in FFS. On a risk-adjusted basis, the Part A and Part B bids across all D–SNPs were an average of 4 percent higher than risk-adjusted FFS and the bids across all FIDE–SNPs were an average of 8 percent higher. These bids indicate that on average, these plans do not expect to provide Medicare Part A and Part B services to their enrollees at a cost that is below FFS spending. They also suggest that, under 2013 PPACA-revised payment levels for MA plans, D–SNPs, including FIDE–SNPs, may not be able to successfully bid in lower benchmark areas. The D–SNP and FIDE–SNP Part A and Part B bids are higher

than the Part A and Part B bids from all MA plans and from all SNPs. MA plans' 2012 bids are 2 percent lower than risk-adjusted FFS (98 percent of FFS spending) and all SNP plans' bids are 1 percent higher than risk-adjusted FFS spending (Medicare Payment Advisory Commission 2012).

Flexibility to use Medicare funds to cover nonclinical services

The Commission has discussed whether to extend PACE providers' flexibility to use Medicare funds to cover nonclinical services to FIDE–SNPs. PACE staff report that this flexibility helps them provide enrollees with services that will maintain or improve their health status and allow them to continue living in the community.

CMS has extended flexibility to use rebate dollars to cover nonclinical services to high-quality D–SNPs that are "highly integrated." CMS defines high integration as having a state contract to cover Medicaid benefits and long-term care services to the extent that state policy permits the SNP to capitate those services. This definition includes FIDE–SNPs and D–SNPs that cover long-term care but have limits from the state on the amount of long-term care services that are covered (such as limits on the number of nursing home days that are covered). The plans that meet this integration criterion and specified quality standards will have flexibility to offer supplemental benefits that are nonskilled in-home support services, such as assisting with activities of daily living (e.g., eating, drinking, bathing); in-home food delivery for beneficiaries who cannot prepare their own food; respite care, counseling, and training for caregivers; home assessments and modifications, such as installing hand rails; and adult day care services.

The flexibility to cover nonclinical services with rebate dollars raises the question of whether this flexibility could apply to the entire payment for Medicare Part A and Part B services, like the flexibility given to PACE providers. Under this arrangement, integrated plans would still have to track their spending on Medicare Part A and Part B benefits in order to submit bids for those services. While covering nonclinical services could lead to reductions in Part A and Part B services, it is not clear whether with this flexibility plans would change their bidding behavior. PACE providers receive payments based on the county benchmarks used to pay MA plans but do not submit bids, so this concern does not pertain to PACE.

Several questions remain if policymakers want to allow a subset of MA plans serving dual-eligible beneficiaries to cover nonclinical services. Should this flexibility apply to rebate dollars or to the entire Medicare payment for Part A and Part B services? Should flexibility be extended to all FIDE–SNPs, partially integrated D–SNPs that provide long-term care benefits, or only high-quality plans?

CMS demonstrations on integrated care programs

In 2011, the Medicare–Medicaid Coordination Office at CMS announced two demonstrations through which states can develop and implement integrated care programs for full-benefit dual-eligible beneficiaries (partial-benefit dual-eligible beneficiaries are not included in the demonstrations). Both demonstrations will be implemented through the Medicare-Medicaid Coordination Office in partnership with the Center for Medicare & Medicaid Innovation (Innovation Center). CMS is providing financial resources and technical assistance to states to develop the integrated care programs, and states are expected to involve stakeholder groups during the design of the programs and during the demonstrations. The demonstrations are a positive direction forward and there is potential to learn from them about improving quality of care and reducing Medicare spending. There are, however, a number of outstanding issues to address that could strengthen the structure and evaluation of the demonstrations.

Evaluation and expansion of the models tested under the demonstrations

The Medicare authority for the demonstrations is through the Innovation Center. States may request to make changes to their Medicaid program simultaneously with the demonstrations and will need to request existing Medicaid authorities (waivers, state plan amendments) to make those changes. The demonstrations are expected to last three years. Under Innovation Center requirements, the demonstrations must be evaluated on measures of quality of care—including patient-level outcome measures—and on measures of Medicare and Medicaid spending. CMS is still determining the quality and cost data that will be collected through the demonstrations but is considering a range of process and outcome measures, program costs, and measures of beneficiary experience. The models tested under the demonstration can be expanded more readily than previous demonstrations because, under the authority of the Innovation Center, the Secretary may expand the duration and scope of the models through rulemaking if she finds

that the expansion would reduce spending without reducing quality of care or would improve quality of care without reducing spending and if the chief actuary of CMS certifies that the expansion will not increase spending.

Financial alignment models

CMS is collaborating with states to test two types of integrated care programs that are intended to align Medicare and Medicaid financing: a capitated model and a managed FFS model. States can implement one or both models. As of April 2012, nine states released proposals for the capitated model for a 2013 start date, another nine states released proposals for the capitated model for a 2014 start date, and five states released proposals for the managed FFS model for a 2013 start date (Medicare-Medicaid Coordination Office 2012).

Under the capitated model, CMS signs a three-way contract with a state and a health plan, and the health plan will receive a blended Medicare and Medicaid capitation rate. CMS works with each state to develop the Medicare and Medicaid capitation rates for the health plans and the terms of the contracts. Within a state, a standard contract and rate-setting methodology apply to all health plans participating in that state's demonstration. CMS intends to set the rates at a level that provides for upfront savings to both CMS and the state.

CMS intends to use a Medicare spending baseline that consists of Medicare FFS and MA spending in each state and that is specific to the geographic area where the demonstration plan is operating. The payment system for the demonstration plans will therefore differ from the MA payment system that PACE and D–SNPs (including FIDE–SNPs) are paid under and companies operating a D–SNP, FIDE–SNP, or MA plan alongside a demonstration plan will be paid under different payment systems. The Medicaid portion of the capitation rate will also be developed according to baseline spending.

In addition to improved financial alignment, the capitated model demonstration will test better administrative alignment between Medicare and Medicaid, such as integrating these programs' separate appeals processes. CMS's preference is to use the MA network adequacy requirements for medical services and prescription drugs and state Medicaid standards for Medicaid-covered services. Enrollment flexibilities, such as opt-out enrollment for Medicare benefits, could also be tested and some states have expressed interest in using passive enrollment with an opt-out provision. It is likely that the state proposals will vary in the structure of opt-out enrollment. CMS may also test giving the plans the flexibility that PACE providers currently have to use Medicare funds to cover nonclinical services.

The managed FFS model does not involve capitation or having one entity (a health plan or a provider) integrate the Medicare and Medicaid benefits and maintains FFS for dual-eligible beneficiaries' Medicare benefits. Under this model, states finance a care coordination program for dual-eligible beneficiaries. CMS does not specify the type of care coordination model; however, it could include paying a per member per month fee to primary care physicians, a medical home, or an accountable care organization. States receive a retrospective performance payment if their managed FFS programs meet certain quality thresholds and if the programs result in Medicare savings net of the federal portion of any increased Medicaid costs. It is not clear how much of the Medicare savings are to be shared with the states through the performance payment.

State demonstrations to integrate care for dual-eligible individuals

CMS awarded 15 states contracts of up to $1 million each to design a program that covers primary, acute, long-term care, and behavioral health.[8] States were expected to submit their design proposals in the spring of 2012 and CMS will determine whether to approve the proposals for implementation. The contracts were awarded before announcement of the financial alignment models. It is likely that many of the 15 states will propose the capitated model or the managed FFS model from the state demonstrations, but the 15 states have the discretion to propose other models.

Outstanding issues with the CMS demonstrations

The Commission supports the goals of the demonstrations and believes they provide an opportunity to learn more about how to improve care management and quality of care for dual-eligible beneficiaries. As the Commission has previously reported, the current FFS Medicare and Medicaid systems for most dual-eligible beneficiaries have conflicting incentives, which can discourage care coordination and lead to poor quality of care and higher Medicare and Medicaid spending (Medicare Payment Advisory Commission 2010a). The demonstrations are an opportunity to test how to encourage care coordination, improve quality of care, and reduce spending by reducing

some of the conflicting financial incentives between Medicare and Medicaid.

The demonstrations are also an opportunity to test how to tailor capitated and FFS overlay models to different subgroups of dual-eligible beneficiaries. The Commission has stated that these two models hold promise to improve care coordination for dual-eligible beneficiaries. Capitated, risk-based programs that integrate financing and care delivery offer the most promise for improving care coordination. FFS overlays can also provide coordination of services and are a better fit for states that are not interested in capitated or managed care–based programs (Medicare Payment Advisory Commission 2011b). In addition, through the three-way contracts, the capitated model demonstration can test how to overcome some of the barriers to the development of integrated care programs, such as separate Medicare and Medicaid administrative rules and procedures, stakeholder resistance, and lack of experience with managed long-term care (Medicare Payment Advisory Commission 2010a).

However, we want to ensure that the dual-eligible beneficiaries who participate in the demonstrations are matched with care delivery organizations that can meet their needs and improve the quality of the care they receive. The dual-eligible population is very heterogeneous; it includes physically disabled individuals, relatively healthy individuals who are low income, frail individuals, those with multiple chronic diseases, individuals with severe mental illness, individuals with dementia, and developmentally disabled individuals. All of these subgroups of dual-eligible beneficiaries have varying care needs and different challenges accessing high-quality care. Dual-eligible beneficiaries also differ by the intensity of their care needs with the healthier individuals requiring less intense services and the most complex individuals, such as the nursing home certifiable, requiring near constant care. It is therefore important that the demonstrations be structured to test which care management models and financial incentives improve quality of care for subgroups of dual-eligible beneficiaries. It is also important that the demonstrations ensure that beneficiaries have alternative sources of care if the demonstration plans fail to meet their needs. There are a number of outstanding issues with the demonstrations, and there is a short time period for CMS and states working toward an implementation date of January 1, 2013, to resolve these issues.

Ensuring beneficiary protections during the demonstrations

Three characteristics of the demonstrations—the large proposed scope, the standards for the plans that are participating in the capitated model demonstrations, and passive enrollment with intelligent assignment—could have negative effects on dual-eligible beneficiaries' access to and quality of care.

Scope of the demonstrations We question whether the large scope of the demonstrations is in the best interest of the dual-eligible beneficiaries. Most states pursuing the capitated model are proposing to enroll most or all dual-eligible beneficiaries in a state or entire subgroups of beneficiaries (such as disabled individuals under the age of 65) in a state into a health plan. The demonstrations are an opportunity to test care management models for the different subgroups of dual-eligible beneficiaries. However, the varied and complex needs of many of these individuals leads us to question whether care management models should be tested on large numbers of dual-eligible beneficiaries or entire subgroups within a state.

The large scope makes the demonstrations appear to be large-scale program changes rather than true demonstrations. We are concerned in any given state whether large numbers of dual-eligible beneficiaries should be enrolled in programs whose effectiveness and quality of care are unproven. It is unlikely that all the health plans participating in the capitated model have experience managing and being at risk for all Medicare benefits and all Medicaid benefits, including long-term care. We also do not know whether the plans will have the capacity to serve large numbers of dual-eligible beneficiaries who will be enrolled in the program at the same time.

The large scope also makes it more difficult to transition large groups of beneficiaries with complex care needs out of the demonstration if plans fail to meet beneficiaries' needs or if beneficiaries choose to leave the demonstration. The transitions to the demonstration and then back to FFS or another plan could complicate beneficiaries' access to providers and care management plans.

Finally, the scope complicates the evaluation of the demonstrations. If most or all dual-eligible beneficiaries in one state are enrolled in the demonstration, there will not be a sufficient sample of comparable beneficiaries in FFS to be able to test whether the demonstrations improved quality of care and reduced Medicare and Medicaid

spending relative to FFS. CMS may instead use a research methodology that compares beneficiaries enrolled in a demonstration in one state with beneficiaries in FFS in another state. However, it will be difficult to find a comparable population in another state because Medicaid benefits, eligibility, and provider payments differ from state to state. Alternatively, CMS could use a pre–post demonstration study design. This study design would be limited by the availability of quality of care and spending measures before the demonstration was implemented. Also, the study design is not as strong as it would be with an intrastate control group.

Plan experience It is unclear how CMS and the states are going to ensure that dual-eligible beneficiaries are matched with the best care management models to meet their needs given the participating plans' lack of experience with this population. Our work suggests that about 20 health plans have experience being capitated and at risk for all Medicare and Medicaid benefits. These plans do not operate in every state that has proposed a demonstration, most do not operate state wide, and all of these plans do not serve every subgroup of dual-eligible beneficiaries. Therefore, many of the plans participating in the capitated program will lack experience being at risk under capitated payments for all Medicare and Medicaid services. They will also lack experience serving all or most of the subgroups of dual-eligible beneficiaries on a near state-wide basis. It is not clear that every plan that participates in the demonstration will be able to establish provider networks and provider payment rates that encourage high-quality care and care coordination for services with which they lack experience. When selecting plans for the demonstration, CMS and the states will have to balance having plans available to participate in the demonstration with selecting plans with enough related experience for there to be a reasonable expectation that the plans will succeed in serving the dual-eligible beneficiaries.

We also do not know the standards that plans participating in the capitated model will have to meet. CMS has documented a number of standards that are non-negotiable. However, there are also standards called "preferred requirement standards" that are CMS's starting points for negotiations with states, and it is unknown how much these standards will change during state negotiations. Areas that have some of these preferred requirements include the Medicare benefit package, plan participation in Part D, Medicare network adequacy, and administrative requirements such as the appeals process and marketing.

Plan selection is moving quickly in some states, and it is unclear how plans will be chosen to participate. Plans must meet both CMS and state requirements to participate in the capitated model demonstration. We do not know what role quality rankings will play in selecting plans in each state. Plan participation standards should be transparent and should at least consider quality ranking, provider networks, plan capacity, and experience with Medicaid and Medicare services for dual-eligible enrollees.

CMS and the states also need resources to monitor beneficiaries' experiences in the demonstration plans. It will be necessary to monitor access to and quality of care as close to real time as possible if beneficiaries will be passively enrolled in plans whose care management models and financial incentives have not been tested. It is not clear whether every state will have the resources and capacity to closely monitor the demonstration plans. It is also unclear how, and with what resources, CMS will collaborate with each state on oversight and monitoring.

Passive enrollment CMS and states propose to use passive enrollment with an opt-out provision for the capitated model demonstrations. Under this enrollment strategy, states will assign beneficiaries to a health plan through "intelligent assignment" unless the beneficiaries opt-out of the demonstration or select a health plan.

We have documented that low beneficiary enrollment is a barrier to the expansion of integrated care programs (Medicare Payment Advisory Commission 2010a). Passive enrollment with intelligent assignment can be used to increase enrollment into integrated care programs with proven experience providing high quality of care. However, passive enrollment with intelligent assignment needs to be appropriately executed in order to be effective. Dual-eligible beneficiaries' needs vary greatly across subgroups and many of these individuals have high levels of need. Some dual-eligible beneficiaries' access to care and quality of care could be negatively affected if they are not matched with appropriate care management models. We do not know whether every state has the resources and information on dual-eligible beneficiaries to make intelligent assignments that best match beneficiaries' needs to appropriate care management plans. Further, we question whether every health plan will offer high-quality care and appropriate care management models to make those assignments meaningful. We also do not know whether CMS and each state will require plans to meet certain quality or experience criteria to be eligible for passive enrollment.

The structure of the passive enrollment policy is an important beneficiary protection for ensuring access to care. CMS's plans for the structure of passive enrollment are inconsistent with some state proposals and these differences will need to be reconciled. CMS plans for beneficiaries to be notified of the passive enrollment and opt-out procedures beginning October 1, 2012, for states that intend to implement the demonstrations on January 1, 2013. However, some state proposals suggest that beneficiaries will first be enrolled in the demonstration and then given the opportunity to opt out. CMS has also stated that beneficiaries will be allowed to opt out on a month-to-month basis. However, some states have proposed a lock-in period when beneficiaries cannot disenroll from the demonstration or change plans within the demonstration.

CMS and the states will also have to ensure that beneficiaries are educated about their choice to opt out or enroll in the demonstration, that beneficiaries are matched to plans that can best meet their needs, and that beneficiaries' access to care is not disrupted during the enrollment transition. It may be difficult for some dual-eligible beneficiaries to be informed about their choices, particularly those who are cognitively impaired and may need help to understand their choices.

It may be necessary for some beneficiaries to have access to their existing provider networks, care management plans, and prescription drugs after enrollment, at least for some period of time. Some dual-eligible beneficiaries establish their own provider networks within FFS and have long-standing relationships with those providers. We do not know whether every state demonstration will provide beneficiaries with this access after enrollment. It will also be important for plans to locate and comprehensively assess beneficiaries soon after they are enrolled, and it is unclear whether the plans have the capacity and experience to accomplish this assessment. The Commission maintains the importance of integrated care programs contacting beneficiaries as soon as possible after enrollment to assess their needs and establish a plan of care.

Additional issues to address

The Commission will be looking into additional issues to address with other aspects of the CMS demonstrations.

- ***Taking upfront savings from the capitation rates and allocating those savings***—CMS intends to achieve savings under the capitated model by setting the Medicare and Medicaid capitation rates to the demonstration plans below current spending on dual-eligible beneficiaries. CMS will allocate the savings to Medicare and the state based on the proportion that each program contributes to baseline spending. This raises two issues: whether savings should be taken out of the capitation rates upfront or whether CMS should test if and how capitated models can reduce Medicare and Medicaid spending and whether the savings should be allocated this way or through an alternative method.

- ***Risk-adjustment methodology and flexibility with Medicare funds***—CMS has not stated which methodology it intends to use to risk-adjust Medicare payments to the capitated plans, but the agency will have to make this decision over the next few months. CMS will also have to decide whether all or some demonstration plans will have flexibility to use Medicare funds to cover nonclinical services.

- ***Data collection and evaluation methodology***—CMS still has to determine which data it will collect to monitor and evaluate the demonstrations. It will be particularly important to collect data to monitor whether the plans are limiting access to care or producing poor quality of care and to evaluate whether the demonstration models improve quality of care and reduce costs relative to FFS.

The Commission's greatest concern is that all dual-eligible beneficiaries in a state will be enrolled in the demonstration, representing a program change rather than a demonstration. The Commission will continue to consider this and other concerns as we move forward. ■

Endnotes

1 MedPAC analysis of the 2010 Medicare Denominator File. The number includes full and partial dual-eligible beneficiaries. Beneficiaries were defined as dually eligible if they had dual-eligible status for at least one month when they were eligible.

2 The following states have at least one PACE: AL, AR, CA, CO, FL, IA, KS, LA, MA, MD, MI, MO, NJ, NM, NC, ND, NY, OH, OK, OR, PA, RI, SC, TN, TX, VA, VT, WA, and WI.

3 MedPAC analysis of 2009 data from the Medicare Beneficiary Database/CMS Medicare Entitlement file and the 2009 Medicare Denominator File.

4 The remaining enrollees were in the "other" race category (2.3 percent), Native American (0.4 percent), and the "don't know" category (0.2 percent).

5 The 15 conditions are chronic alcohol and other drug dependence, certain autoimmune disorders, cancer (excluding precancer conditions), certain cardiovascular disorders, chronic heart failure, dementia, diabetes mellitus, end-stage liver disease, end-stage renal disease requiring dialysis, certain hematologic disorders, HIV/AIDS, certain chronic lung disorders, certain mental health disorders, certain neurologic disorders, and stroke.

6 Commission estimates based on proprietary information from CMS.

7 Commission analysis of 2009 data from the Medicare Beneficiary Database/CMS Medicare Entitlement file and the 2009 Medicare Denominator File.

8 The 15 states are: CA, CO, CT, MA, MI, MN, NC, NY, OK, OR, SC, TN, VT, WA, WI.

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CHAPTER 4

Issues for risk adjustment in Medicare Advantage

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Chapter summary

Health plans that participate in the Medicare Advantage (MA) program receive monthly capitated payments for each Medicare enrollee. Each capitated payment is the product of two general parts: a base rate, which reflects the payment if an MA enrollee has the health status of the national average beneficiary, and a risk score, which indicates how costly the enrollee is expected to be relative to the national average beneficiary. The purpose of the risk scores is to adjust MA payments so that they accurately reflect how much each MA enrollee would be expected to cost. In this chapter, we examine the performance of the risk-adjustment system in the MA program and offer alternatives for improving it.

Improving payment accuracy of the CMS–hierarchical condition category model

Currently, CMS uses the CMS–hierarchical condition category (CMS–HCC) model to risk adjust each MA payment. This model uses enrollees' demographics and medical conditions collected into 70 HCCs to predict their costliness. It has been shown to be a much better predictor of a beneficiary's costliness than the demographic-based model that preceded it. Analysis of the CMS–HCC model and the demographic model indicates that the CMS–HCC model explains about 11 percent of the variation in costliness among individual beneficiaries, whereas the demographic model explains only about 1 percent (Pope et al. 2004).

In this chapter

- Evidence that MA enrollees tend to be lower cost than FFS beneficiaries
- Improving predictive accuracy of the CMS–HCC model
- Issues related to financial neutrality between FFS Medicare and the MA program

The demographic model did not include factors that are important for predicting beneficiaries' costliness—such as conditions. Consequently, it systematically overpredicted costs for healthy beneficiaries and systematically underpredicted costs for beneficiaries in poor health. Because the CMS–HCC model includes beneficiaries' conditions as well as their demographic information, it explains more of the variation in beneficiaries' costliness and predicts costs more accurately than the demographic model. However, systematic overpredictions and underpredictions may remain under the CMS–HCC model. For example, for all beneficiaries who have the same condition, the CMS–HCC model adjusts MA payments by the same proportion. But the severity of a condition varies across beneficiaries, and those with greater severity tend to be more costly. In addition, research suggests that a minimum of 20 percent to 25 percent of the variation in beneficiaries' costliness may be predictable, so the CMS–HCC may leave half or more of the predictable variation unexplained (Newhouse et al. 1997). Therefore, for a given condition it is possible that plans can be financially advantaged or disadvantaged based on the risk profile (overall health status) of their enrollees.

To the extent that systematic prediction errors occur under the CMS–HCC model, we explored several policy options for reducing these errors:

- Add measures of income and indicators for race to the model. If beneficiaries in certain income categories or racial groups tend to have greater severity for given conditions, these additional variables could reduce prediction errors.
- Include measures for the number of conditions in the model. The cost of treating a certain condition may increase as more comorbidities are present.
- Use two years of beneficiaries' diagnoses to determine their condition categories. CMS currently uses one year of beneficiaries' diagnoses to determine their conditions, but we have found that providers often do not consistently code conditions on claims from year to year. Using two years of diagnosis data (when available) would help to fully identify beneficiaries' conditions.

Our analysis indicates that including beneficiaries' race and measures of income would not improve predictive accuracy. However, including the number of conditions would improve predictive accuracy for beneficiaries who have many conditions. Using two years of diagnoses to identify beneficiaries' conditions also would improve predictive accuracy for beneficiaries who have many conditions but to a lesser extent than adding the number of conditions. In addition, using two years of diagnoses would reduce year-to-year fluctuations in beneficiaries' risk scores, which would result in more stable revenue streams for MA plans.

Because adding the number of conditions and using two years of diagnosis data both have beneficial effects, but in different ways, we also examined the effects of adding both features to the CMS–HCC model. It resulted in more accurate predictions for high-risk beneficiaries and smaller year-to-year fluctuations in beneficiaries' risk scores.

Other issues for MA risk adjustment

On several occasions, the Commission has taken a position that payments for MA enrollees should equal what they would be expected to cost in FFS Medicare (financial neutrality) (Medicare Payment Advisory Commission 2001, Medicare Payment Advisory Commission 2002, Medicare Payment Advisory Commission 2004, Medicare Payment Advisory Commission 2005). An underlying rationale for this policy is that it encourages beneficiaries to enroll in whichever sector (MA or FFS) is more efficient in their local health care market. Two recently published papers have implications for the interaction between risk adjustment and financial neutrality. One paper shows that in FFS Medicare, regions that have high per capita service use also have high average risk scores, and areas that have low per capita service use have low average risk scores (Song et al. 2010). At least some of the regional difference in risk scores is due to differences in service use that do not reflect differences in health status; that is, risk scores are high in some regions simply because beneficiaries get more health care, not because they are sicker. If these same regional differences in service use and risk scores occur in the MA program, they drive MA payments higher in high-use regions. Adjustments could be made to eliminate these differences.

A second paper shows there are differences between FFS Medicare and a large MA plan in the relative costliness of treating conditions (Newhouse et al. 2011). If these cost differences between FFS Medicare and MA plans are widespread, risk adjustment underpredicts MA costs for some conditions and overpredicts MA costs for other conditions. An issue to consider is whether it is more appropriate for CMS to estimate the CMS–HCC model by using cost and diagnosis data from MA enrollees rather than FFS beneficiaries.

Both papers have implications for equity in the MA program: Adjusting MA risk scores to reduce the effects of regional differences in risk scores would reduce regional variations in MA payments, and using data from MA enrollees to estimate the CMS–HCC model would reduce incentives for plans to attract beneficiaries who have some conditions and avoid beneficiaries who have other conditions. However, both issues are inconsistent with the concept of financial neutrality between MA and FFS Medicare. These issues will have to be discussed in the future.

A final issue regarding risk adjustment is that analyses by CMS and the Government Accountability Office (GAO) both indicate that risk scores have increased at a faster rate in the MA program than in FFS Medicare (Centers for Medicare & Medicaid Services 2009, Government Accountability Office 2012). The higher growth rate in MA has resulted in MA enrollees having higher risk scores than they would have in FFS Medicare. In an effort to bring MA risk scores in line with those in FFS Medicare, CMS has made adjustments to MA risk scores, but GAO believes that larger adjustments should be made. ■

Health plans that participate in the Medicare Advantage (MA) program receive monthly capitated payments for each Medicare enrollee. Each capitated payment is the product of two general parts: a base rate, which reflects the payment if an MA enrollee has the health status of the national average Medicare beneficiary, and a risk score, which indicates how costly the enrollee is expected to be relative to the national average beneficiary.

Over the years, CMS has employed various methods for determining MA enrollees' risk scores. Currently, CMS uses the CMS–hierarchical condition category (CMS–HCC) risk-adjustment model, which uses enrollees' demographics and condition categories (such as diabetes and stroke) to predict their costliness. The demographic variables include age, sex, Medicaid status, institutional status, eligibility based on being disabled, and eligibility based on age but originally eligible because of disability.

All demographic variables are from the year for which beneficiaries' costs are to be predicted (the prediction year). The condition categories are based on diagnoses recorded on physician, hospital outpatient, and hospital inpatient claims in the year before beneficiaries' costs are to be predicted (the base year). This makes the CMS–HCC a prospective model, as opposed to a concurrent model, which would use conditions from the prediction year. It is logical to use a prospective model in the MA program because the express purpose of MA plans is to provide care to manage their enrollees' conditions. If concurrent risk adjustment were used, MA plans would be reimbursed as their enrollees' conditions occur, rather than being paid to manage existing chronic conditions.

An underlying feature of a prospective risk-adjustment model for beneficiaries with a given set of conditions is that it underpredicts costs for some beneficiaries, overpredicts for others, but predicts accurately on average. However, when prediction inaccuracies occur systematically with identifiable beneficiary characteristics, plans can benefit if their enrollees have characteristics predictive of lower-than-average costs (favorable selection) or be disadvantaged if their enrollees have characteristics predictive of higher-than-average costs (adverse selection). An ideal risk-adjustment system would eliminate all opportunities for favorable selection, but a risk adjuster can be less than ideal and still be effective if it makes efforts by plans to identify favorable risks prohibitively costly.

To the extent that favorable selection occurs in the MA program, it could be caused by the behavior of plans or beneficiaries. Plans can attract favorable risks by structuring benefits that are attractive to relatively healthy beneficiaries or by marketing their products so that they attract healthy enrollees. Alternatively, relatively healthy beneficiaries may find the structure of managed care plans more attractive than do beneficiaries in poor health.

Selection problems can be reduced by improving risk adjustment to reduce the extent of systematic prediction errors. An alternative method for reducing selection problems is partial capitation, which would pay plans partly on the basis of capitated rates and partly on the actual costs of providing care. This would reduce the likelihood of plans experiencing large losses from very sick enrollees or large profits from healthy enrollees. However, it is not clear what fraction of the payments should be capitated and what fraction should be based on costs.

For each MA enrollee, CMS obtains from the enrollee's plan the condition codes from encounters with physicians, hospital outpatient departments, and hospital inpatient departments. CMS maps the condition codes into hierarchical condition categories (HCCs), which define broad condition categories, such as diabetes and congestive heart failure. All condition codes fall into one of the 189 CMS-defined HCCs. However, CMS uses only 70 HCCs in the CMS–HCC model, so many conditions have no effect on beneficiaries' risk scores.[1] Some conditions, such as diabetes and cancer, are actually represented by groups of several HCCs, which differ according to severity. CMS has determined that a beneficiary cannot have more than one HCC indicated in each of these condition groups. If CMS finds that a beneficiary has conditions that map into more than one HCC within a condition group, only the highest cost HCC is used in predicting the beneficiary's costliness. For example, the CMS–HCC model has five diabetes HCCs. If CMS finds that a beneficiary has condition codes that fit the HCC "diabetes with acute complications" and the HCC "diabetes without complications," CMS drops the HCC "diabetes without complications."

CMS calibrates the additional costliness associated with each demographic variable and each HCC in the model using cost, demographic, and diagnosis data from beneficiaries in fee-for-service (FFS) Medicare, but CMS has begun collecting data on MA beneficiaries and intends to use those data to calibrate the CMS–HCC model.[2] CMS applies linear regression methods to obtain coefficients on each variable in the model. If a beneficiary has a particular

variable represented in the CMS–HCC model, the coefficient on that variable indicates its marginal cost.

A model that CMS used before the CMS–HCC model included only beneficiaries' demographic data (demographic model). The demographic model does not include important observable characteristics of beneficiaries that affect their costliness, such as medical conditions. Consequently, the demographic model explains a small fraction of the variation in beneficiaries' Medicare costliness (about 1 percent) and, within a given demographic category, systematically overpredicts costs for relatively healthy beneficiaries and underpredicts costs for the sickest beneficiaries, leaving the potential for selection problems.

The CMS–HCC model has been shown to be a much better predictor of a beneficiary's costliness. For example, it explains about 11 percent of the variation in beneficiaries' costliness. Therefore, the CMS–HCC model likely mitigates selection problems in the MA program.

However, the CMS–HCC model has shortcomings such that it may not have fully eliminated systematic prediction inaccuracies:

- Research on variation in individual-level health care spending suggests that at least 20 percent to 25 percent of the variation in spending can be predicted, with the remaining being random and, hence, unpredictable (Newhouse et al. 1997). Because the CMS–HCC model explains about 11 percent of the variation in spending, it may leave half or more of the predictable variation unexplained.
- For all enrollees with a given health condition, the CMS–HCC model adjusts MA capitated payments by the same rate. For example, the CMS–HCC model increases capitated payments for all MA enrollees with acute myocardial infarction by 35.9 percent above the base rate. However, within condition categories, some beneficiaries are healthier and less costly than others, while some are sicker and more costly.

Because of these shortcomings of the CMS–HCC model, there is a potential for MA plans to benefit financially if they have a relatively healthy beneficiary profile or to be disadvantaged if they have a sicker beneficiary profile. This is especially relevant to plans that specialize in managing the care for the sickest beneficiaries, such as special needs plans (SNPs) and plans in the Program of All-Inclusive Care for the Elderly (PACE), because payments may not be adequately adjusted to effectively provide care.

We have done an analysis that suggests that MA enrollees are healthier and less costly than their FFS counterparts, meaning that favorable selection may be occurring in the MA program. In this chapter, we discuss this analysis as well as options for modifying the CMS–HCC model to mitigate systematic prediction errors.

This chapter discusses two other issues concerning risk adjustment in the MA program:

- Research indicates that geographic differences in per capita service use in FFS Medicare lead to geographic differences in risk scores that do not reflect differences in health status among FFS beneficiaries (Song et al. 2010). If regional differences in service use also lead to regional differences in risk scores in the MA program, then plans in regions where service use is high have higher risk scores, which drive capitated payments in those regions above the level in lower use regions.
- The coefficients on the conditions in the CMS–HCC model indicate the relative costliness of treating those conditions in FFS Medicare. However, the CMS–HCC model is used to risk-adjust payments in the MA program, where the relative costs of treating conditions may differ from costs in FFS Medicare (Newhouse et al. 2011). This raises questions of whether it is more appropriate to continue to calibrate the CMS–HCC model using data on FFS beneficiaries, or to switch to data on MA enrollees.

Evidence that MA enrollees tend to be lower cost than FFS beneficiaries

Recently, there has been renewed interest in examining the extent to which favorable selection occurs in the MA program. One study found a substantial amount of favorable selection (Brown et al. 2011). Another study used cost data from a large MA plan and found little correlation between how costly a condition is to treat in FFS Medicare and the extent to which beneficiaries with that condition are profitable to that plan (Newhouse et al. 2011). This gives the plan little incentive to try to select against the sickest, highest cost beneficiaries.

Within a given HCC, the severity of the condition and hence the cost of treating it can vary. For example, we examined FFS beneficiaries who were grouped into

the HCC for congestive heart failure (CHF) in 2008 and had no other HCCs. In 2008, the beneficiary at the 95th percentile of costliness had more than $37,000 in Medicare spending, while the beneficiary at the 5th percentile had $115 in Medicare spending. Despite these large cost differences for beneficiaries who have the same condition, the CMS–HCC model adjusts the payment rate for each beneficiary who has CHF by the same proportion (41 percent). Therefore, it is possible that, for beneficiaries in a given HCC, some will be profitable to MA plans because they are low-severity cases while others will not be profitable because they are high-severity cases.

If beneficiaries who have the same condition are randomly selected into MA plans in sufficiently large numbers, those who are profitable will be offset by those who are unprofitable, resulting in no financial gain or loss for the plan. However, if the selection of these beneficiaries is not random, it is possible that those who enroll in MA plans are on average profitable. This could occur either through the actions of plans—perhaps through benefits that are attractive to healthier beneficiaries or marketing techniques that target those beneficiaries—or because relatively healthy beneficiaries find the structure of MA plans more attractive than do sicker beneficiaries.

We conducted a study using two measures that may suggest, but not confirm, whether MA enrollees are, on average, lower risk than FFS beneficiaries. We divided the beneficiaries who were in FFS Medicare in 2007 into two groups: those who stayed in FFS Medicare in 2008 (stayers) and those who enrolled in MA plans in 2008 (joiners). For each group, we calculated the mean FFS costliness in 2007 in each HCC and used beneficiaries' risk scores to adjust for differences in health status. We reasoned that, for each HCC, if the risk-adjusted mean cost of the joiners was below that of the stayers, it indicates that lower cost beneficiaries are more likely to enroll in the MA program. We also identified the beneficiaries who were in FFS Medicare in 2008 and divided them into two groups: those who were in FFS Medicare throughout 2007 and those who left an MA plan in 2007. For both groups, we calculated the mean FFS costliness in 2008 of the beneficiaries who had conditions in each HCC and used beneficiaries' risk scores to adjust for differences in health status. We reasoned that, for each HCC, if the risk-adjusted mean cost of the beneficiaries who left an MA plan in 2007 was above that of beneficiaries who were in FFS Medicare throughout 2007 and 2008, it indicates that beneficiaries who stay in MA plans tend to be lower cost than those who leave MA for FFS Medicare.

Our results from both analyses suggest that MA enrollees are, on average, lower cost than FFS beneficiaries. In the first analysis, for 68 of the 70 HCCs, beneficiaries who joined an MA plan in 2008 had lower FFS costs in 2007 than the beneficiaries who stayed in FFS Medicare in 2008. On average, the joiners had costs that were 15 percent lower than the stayers. In the second analysis, beneficiaries who left an MA plan in 2007 had FFS costs in 2008 that averaged 16 percent higher than beneficiaries who were in FFS Medicare throughout 2007. Moreover, for 69 of the 70 HCCs, beneficiaries who disenrolled from MA in 2007 had higher average costs in 2008 than those who were in FFS Medicare throughout 2007.

Although these results suggest that MA enrollees are lower cost than FFS beneficiaries, we emphasize that they are not conclusive. It is possible that beneficiaries with relatively low costs are more likely to enroll in an MA plan but that their costs increase after enrollment. Possible reasons this may occur include that their costs regress to the mean over time, they lacked supplemental coverage while in FFS Medicare, or they have low incomes and the more comprehensive coverage that often occurs in MA plans encourages them to increase their service use.

Improving predictive accuracy of the CMS–HCC model

We have evaluated three alternatives for improving the predictive accuracy of the CMS–HCC model so that systematic prediction errors are reduced. All three options involve using more data than are currently used in the CMS–HCC model:

- Add socioeconomic variables such as race/ethnicity and income to the model. This model includes all variables in the current CMS–HCC model plus race/ethnicity indicators (African American, Hispanic, White, other race) and income level, which we approximated by the per capita income in the beneficiary's county of residence.
- Add indicators for the number of conditions beneficiaries have. This model includes all variables in the current CMS–HCC model plus indicators of whether beneficiaries have zero, one, two, three, four, or five or more HCCs.[3]
- Use two years of diagnosis data (when available) to determine each beneficiary's HCCs rather than one

TABLE 4–1

Adding indicators of race and measure of income has little effect on predictive accuracy of CMS–HCC model

Category	Predictive ratio: Standard model	Predictive ratio: Race/income model
Specific conditions		
Diabetes	1.00	1.00
COPD	1.01	1.01
CHF	0.99	0.99
Cancer	0.99	0.99
Mental illness	1.00	1.00
Schizophrenia	1.00	1.00
AMI	1.03	1.02
Unspecified stroke	1.01	1.00
All strokes	1.01	1.00
Number of conditions		
0	0.94	0.94
1	1.02	1.02
2	1.03	1.03
3	1.03	1.02
4	1.02	1.02
5 or more	0.98	0.98
8 or more	0.95	0.94

Note: CMS–HCC (CMS–hierarchical condition category), COPD (chronic obstructive pulmonary disease), CHF (congestive heart failure), AMI (acute myocardial infarction). We determined the number of conditions by counting the number of HCCs a beneficiary maps into. Both models use one year of diagnosis data to determine beneficiaries' conditions.

Source: MedPAC analysis of 5 percent standard analytic claims files and 5 percent Medicare denominator file.

year of diagnosis data, which CMS currently uses. Obviously, two years of diagnosis data would not be available for beneficiaries in their first or second year of Medicare eligibility. For those in the first year of Medicare eligibility, the demographic model that CMS currently uses for new enrollees is a viable option. For those in the second year of eligibility, we could use the current version of the CMS–HCC model.

Adding socioeconomic variables does not improve predictive accuracy of CMS–HCC model

We calibrated a model that has all the variables of the current version of the CMS–HCC model, which has 70 HCCs (standard model). We also calibrated a version that has the same variables as the standard model plus race/ethnicity indicators (African American, Hispanic, White, and other race) and income level, which we approximated by the per capita income in the beneficiary's county of residence (race/income model). For a description of the method we used to calibrate the models presented in this chapter, see the text box (pp. 106–107).

We evaluated the predictive accuracy of the standard and race/income versions using two measures:

- R^2, a statistical measure of how much of the variation in costliness among individuals is explained by the model: The closer the R^2 is to 1.0, the more of the variation the model has explained.
- Predictive ratio: For a group of beneficiaries, it is the total costliness predicted by the model divided by the total actual costliness of the group. The closer the predictive ratio is to 1.0, the better the model has predicted the actual costs. Predictive ratios less than 1.0 indicate the predicted costs are below the actual costs (underprediction); predictive ratios greater than 1.0 indicate the predicted costs are above actual costs (overprediction).

The R^2 gives a general sense of how well a model accounts for variations in costs across individuals. However, strategies to attract favorable risks are typically based on characteristics such as conditions that define groups of beneficiaries, not on specific individuals. Therefore, many analysts prefer to use predictive ratios to evaluate the predictive accuracy of risk-adjustment models (Frogner et al. 2011, Pope et al. 2004, Pope et al. 2011). For beneficiaries with a given attribute, the predictive ratio indicates (on average) the extent to which a model overpredicts or underpredicts the costliness of the beneficiaries with the attribute and by how much.

The addition of race and income variables to the standard model did very little to enhance its predictive accuracy. Using the standard CMS–HCC model, we obtained an R^2 of 0.1100. Adding race and income variables had no effect on the R^2.

We also used predictive ratios to examine how accurately these two models predict beneficiaries' costliness for nine condition categories. For most of these conditions, both models predict beneficiaries' costliness quite well, but they overpredict costs to some degree for acute myocardial infarction (AMI). Within each of these conditions—as well as all conditions represented in the CMS–HCC model—some beneficiaries are relatively healthy and have no other

conditions, while other beneficiaries are much sicker and have many other conditions. We analyzed categories of beneficiaries identified by number of conditions: zero, one, two, three, four, five or more, and eight or more. We found that both models underpredict costliness to some degree for beneficiaries who have five or more conditions and by a larger degree for those who have no conditions or eight or more conditions. Also, both models overpredict costliness to some degree for categories defined by one condition, two conditions, three conditions, and four conditions (Table 4-1).

These prediction errors can be seen when we parse the beneficiaries who have diabetes by how many other conditions they have. For diabetics who have one other condition (and would be in the two conditions group in Table 4-1), the predictive ratio is 1.03; for diabetics who have at least seven other conditions (and would be in the eight or more conditions group in Table 4-1), the predictive ratio is 0.93. However, these deviations from 1.0 are a concern only if there is systematic selection into MA plans of the beneficiaries who are in categories for which the predictive ratio is above 1.0.

The important points to take away from Table 4-1 are:

- The CMS–HCC model accurately predicts costs, on average, for most conditions that are represented in the model.
- However, among beneficiaries who have the same condition, some are relatively healthy and have no other conditions or only a few other conditions, while others are sicker and have many other conditions. For those who have only a few conditions, the CMS–HCC model slightly overpredicts costs, and for those who have many conditions, the model underpredicts costs, and the underprediction increases as the number of conditions increases. Consequently, SNPs and plans in PACE, which focus on the sickest beneficiaries, may be at a disadvantage, while plans that are able to attract the healthiest beneficiaries with a given condition may benefit.
- Adding race and income to the CMS–HCC model does little to improve the model's predictive accuracy.

Including number of conditions improves predictive accuracy

We used 2007 diagnosis data and 2008 demographic and program cost data to calibrate two versions of the CMS–HCC model. One is the standard model that CMS uses in the MA program and is the same standard model in Table 4-1. The other is the conditions model, which adds to the standard model six indicators for how many conditions each beneficiary has, as determined by the beneficiary's diagnoses: zero, one, two, three, four, and five or more conditions. We define number of conditions as the number of HCCs that each beneficiary's conditions map into.

This standard model has an R^2 of 0.1100, indicating that it explains 11 percent of the variation in beneficiaries' Medicare costs. When we add the six measures indicating the number of conditions, the improvement in the R^2 is nearly imperceptible, 0.1105.

We also calculated predictive ratios for nine condition categories using both the standard and conditions models. For all nine conditions, the predictive ratios show little or no change between the two models. For most conditions, both predict reasonably well, with the exception being AMI, where there is some degree of overprediction under both models. As we saw in Table 4-1, the standard model underpredicts for beneficiaries who have zero conditions, five or more conditions, and eight or more conditions and overpredicts for one, two, three, and four conditions. In contrast, the conditions model predicts quite accurately for each of those groups (Table 4-2, p. 104). Because the conditions model predicts accurately for the sickest beneficiaries (those who have many conditions), it may be beneficial for SNPs and PACE plans.

Using two years of diagnosis data stabilizes risk scores and improves predictive accuracy

Previous research indicates that in FFS Medicare, a beneficiary who has a chronic condition indicated on a claim in one year often will not have that condition appear on a claim in the following year (Frogner et al. 2011, Medicare Payment Advisory Commission 1998). If this inconsistent coding of beneficiaries' chronic conditions also occurs among MA plans, beneficiaries' risk scores will often have large year-to-year changes.

We evaluated the extent to which beneficiaries who were coded for the HCCs for kidney failure, stroke, quadriplegia or paraplegia, diabetes, CHF, and chronic obstructive pulmonary disease in 2007 also were coded for those HCCs in 2008. We did this for both FFS enrollees and MA enrollees.

Our results indicate that coding for all of these conditions was not consistent from year to year. The same was true for beneficiaries in both FFS Medicare and MA plans

TABLE 4–2

Adding number of conditions to CMS–HCC model improves predictive accuracy for beneficiaries who have many conditions

Category	Predictive ratio: Standard model	Predictive ratio: Conditions model
Specific conditions		
Diabetes	1.00	1.00
COPD	1.01	1.01
CHF	0.99	0.99
Cancer	0.99	0.99
Mental illness	1.00	1.00
Schizophrenia	1.00	1.00
AMI	1.03	1.03
Unspecified stroke	1.01	1.01
All strokes	1.01	1.00
Number of conditions		
0	0.94	1.00
1	1.02	1.00
2	1.03	1.00
3	1.03	1.00
4	1.02	1.00
5 or more	0.98	0.99
8 or more	0.95	1.00

Note: CMS–HCC (CMS–hierarchical condition category), COPD (chronic obstructive pulmonary disease), CHF (congestive heart failure), AMI (acute myocardial infarction). We determined the number of conditions by counting the number of HCCs a beneficiary maps into. Both models use one year of diagnosis data to determine beneficiaries' conditions.

Source: MedPAC analysis of 5 percent standard analytic claims files and 5 percent Medicare denominator file.

(Table 4-3). This lack of consistent coding over time presents two problems for risk adjustment. First, in a given year, many FFS beneficiaries who have a condition will not have that condition appear on a claim. Because CMS uses conditions recorded on claims for FFS beneficiaries to calibrate the CMS–HCC model, the model may not accurately reflect the true additional cost of a particular condition. Second, inconsistent coding of conditions in MA results in greater year-to-year fluctuations in enrollees' risk scores, which leads to less stable payments and revenue streams to MA plans.

These problems related to inconsistent coding of conditions would be mitigated if CMS used two years of beneficiaries' diagnosis data rather than one year to calibrate the CMS–HCC model and determine beneficiaries' risk scores. The Commission has recommended this position in the past (Medicare Payment Advisory Commission 2000).

We calibrated a version of the CMS–HCC model that is the same as the standard model, but we used two years of diagnosis data to assign beneficiaries to HCCs (two-year model). We found that this model produces risk scores that are more consistent over time than does the standard CMS–HCC model. For example, we found that the correlation coefficient between the 2008 and 2009 risk scores for more than 1 million beneficiaries was 0.62 using the standard model and 0.80 using the two-year model, where the correlation coefficient indicates how strongly one variable is correlated with another. The closer a correlation coefficient is to 1.0, the more closely two variables are correlated.

We also found that for specific conditions, there is little difference in predictive accuracy between the standard model and the two-year model, except for mental illness. However, the two-year model predicts more accurately for beneficiaries who have five or more conditions and for those who have eight or more conditions (Table 4-4). As we mentioned earlier, this means that for most conditions, both models pay accurately, on average, except for AMI, where there is some degree of overprediction of costs. However, for those who have five or more conditions and those who have eight or more conditions, the two-year model underpredicts by a lesser amount than does the

TABLE 4–3

Beneficiaries who had chronic condition on claim in 2007 often did not have same condition on claim in 2008

Condition category	Of those with condition coded in 2007, percent who did not have it coded again in 2008: FFS Medicare	MA program
Diabetes	12.9%	10.9%
COPD	33.8	29.9
CHF	37.9	34.4
Kidney failure	35.4	28.9
Stroke	56.7	59.0
Quadriplegia/paraplegia	58.7	62.3

Note: FFS (fee-for-service), MA (Medicare Advantage), COPD (chronic obstructive pulmonary disease), CHF (congestive heart failure).

Source: MedPAC analysis of 2007 and 2008 risk score files from Acumen, LLC, and 2006 and 2007 Medicare denominator files from Acumen, LLC.

TABLE 4–4

Using two years of diagnoses in CMS–HCC model improves predictive accuracy for beneficiaries who have many conditions

Category	Predictive ratio: Standard model	Predictive ratio: Two-year model
Specific conditions		
Diabetes	1.00	1.00
COPD	1.01	1.01
CHF	0.99	1.00
Cancer	0.99	0.99
Mental illness	1.00	0.96
Schizophrenia	1.00	1.00
AMI	1.03	1.02
Unspecified stroke	1.01	1.01
All strokes	1.01	1.01
Number of conditions		
0	0.94	0.92
1	1.02	1.00
2	1.03	1.02
3	1.03	1.03
4	1.02	1.03
5 or more	0.98	1.00
8 or more	0.95	0.97

Note: CMS–HCC (CMS–hierarchical condition category), COPD (chronic obstructive pulmonary disease), CHF (congestive heart failure), AMI (acute myocardial infarction). We determined the number of conditions by counting the number of HCCs a beneficiary maps into. The standard model uses one year of diagnosis data to determine beneficiaries' conditions, the two-year model uses two years of diagnosis data.

Source: MedPAC analysis of 5 percent standard analytic claims files and 5 percent Medicare denominator file.

standard model. In summary, the two-year model offers the advantages of smaller year-to-year fluctuations in risk scores and more accurate payments for the sickest beneficiaries.

Including number of conditions and using two years of diagnosis data have the benefits of both

We also analyzed the effects of a version of the CMS–HCC model that includes indicators for number of conditions and uses two years of diagnosis data to determine beneficiaries' HCCs (combined model). The combined model has the benefits of both the conditions model and the two-year model: It improves the predictive accuracy for beneficiaries who have many conditions and it reduces year-to-year fluctuations in beneficiaries' risk scores (Table 4-5). However, the combined model underpredicts costliness for mental illness, which also occurs under the two-year model.

Issues related to financial neutrality between FFS Medicare and the MA program

CMS estimates the CMS–HCC model using cost, demographic, and diagnosis data from FFS beneficiaries. Therefore, the coefficients for each HCC indicate the relative costliness of treating those conditions in FFS Medicare. On several occasions, the Commission has

TABLE 4–5

Adding measures for number of conditions and using two years of diagnoses in CMS–HCC model improves predictive accuracy for beneficiaries who have many conditions

Category	Predictive ratio: Standard model	Predictive ratio: Combined model
Specific conditions		
Diabetes	1.00	1.00
COPD	1.01	1.01
CHF	0.99	1.00
Cancer	0.99	0.99
Mental illness	1.00	0.95
Schizophrenia	1.00	1.00
AMI	1.03	1.02
Unspecified stroke	1.01	1.01
All strokes	1.01	1.01
Number of conditions		
0	0.94	1.01
1	1.02	1.00
2	1.03	1.00
3	1.03	1.01
4	1.02	0.99
5 or more	0.98	0.99
8 or more	0.95	1.00

Note: CMS–HCC (CMS–hierarchical condition category), COPD (chronic obstructive pulmonary disease), CHF (congestive heart failure), AMI (acute myocardial infarction). We determined the number of conditions by counting the number of HCCs a beneficiary maps into. The standard model uses one year of diagnosis data to determine beneficiaries' conditions, the combined model uses two years of diagnosis data.

Source: MedPAC analysis of 5 percent standard analytic claims files and 5 percent Medicare denominator file

Methods used in regression analysis

For this chapter, we estimated several versions of the CMS–hierarchical condition category (CMS–HCC) risk-adjustment model. We used the same general method to produce all of the regression-based results presented. The only differences between regressions are the explanatory variables. The results in all our regressions are based on a 5 percent sample of fee-for-service (FFS) beneficiaries.

In each regression, we used data from 2007 and 2008. The 2007 data are the HCCs based on diagnoses from hospital inpatient, hospital outpatient, and physician claims that we used to determine each beneficiary's condition categories for 2008, which are defined by 70 HCCs in the CMS–HCC model. Examples of conditions defined by the HCCs include diabetes with various degrees of severity, congestive heart failure (CHF), and chronic obstructive pulmonary disease (COPD). The 2008 data include the following for each beneficiary: total costliness to the Medicare program, age, sex, Medicaid status, whether institutionalized for three consecutive months, and whether eligible for Medicare on the basis of age but originally eligible because of disability.

To be included in the analysis, beneficiaries had to meet the following requirements: in both Part A and Part B of Medicare throughout 2007, in both Part A and Part B throughout their Medicare eligibility in 2008, no Medicare Advantage enrollment at any time in 2007 or 2008, no hospice care in 2008, not classified as having end-stage renal disease in 2008, lived within the United States for all of 2007 and 2008, no Medicare as a secondary payer in 2007 or 2008, and not long-term institutionalized in 2008. In addition, the results in Tables 4-4 and 4-5 include analyses of versions of the CMS–HCC model that use two years of diagnosis data to determine each beneficiary's HCCs. For this regression, we used diagnoses from 2006 and 2007 claims; when we used data from 2007 to exclude beneficiaries in the other regressions, we used data from 2006 and 2007 to exclude beneficiaries in the two-year regression.

In each regression, the dependent variable was each beneficiary's 2008 costliness to FFS Medicare that we annualized if the beneficiary was in FFS Medicare for only a fraction of 2008. That is, we divided each beneficiary's 2008 costliness to FFS Medicare by the fraction of the year the beneficiary was in FFS Medicare in 2008. Each regression included the following explanatory variables:

- 70 HCCs;
- 24 categories indicating age and sex;
- 4 variables indicating Medicaid status;

(continued next page)

stated that payments to MA plans should be equal to what MA enrollees would cost in FFS Medicare (financial neutrality) (Medicare Payment Advisory Commission 2001, Medicare Payment Advisory Commission 2002, Medicare Payment Advisory Commission 2004, Medicare Payment Advisory Commission 2005). The current method of using cost and diagnosis data from FFS Medicare to estimate the CMS–HCC model is consistent with the goal of financial neutrality.[4]

In light of two recently published papers, more discussion about financial neutrality between FFS Medicare and the MA program may be appropriate. One study found that large regional differences in service use among FFS beneficiaries lead to large regional differences in risk scores (Song et al. 2010). This study indicates that these regional differences in risk scores are due, at least in part, simply to differences in service use rather than differences in health status. It is not known if these regional differences in risk scores also occur in the MA program. If they do, higher risk scores in high-use regions will drive up MA payments not because MA enrollees are less healthy but simply because service use is higher.

A second study found that the relative cost of treating specific conditions differs widely between a large MA plan and FFS Medicare. For some conditions, the relative cost is

Methods used in regression analysis (continued)

- 2 variables indicating beneficiaries who are eligible because of age but were originally eligible because of disability;
- 5 categories indicating that beneficiaries are disabled and have 1 of 5 conditions: opportunistic infections, severe hematologic disorders, drug or alcohol psychosis, drug or alcohol dependence, and cystic fibrosis; and
- 6 disease interaction terms: diabetes and CHF, diabetes and cardiovascular disease, CHF and COPD, CHF with COPD and coronary artery disease, renal failure (RF) and CHF, and RF with CHF and diabetes.

These are the same dependent and explanatory variables that CMS includes in the version of the CMS–HCC model it currently uses.

We ran six weighted regressions to produce the results in Tables 4-1, 4-2, 4-4, and 4-5, where the weight is the fraction of the year each beneficiary was in FFS Medicare in 2008, which is the same fraction we used to annualize each beneficiary's costs. For Table 4-1, we ran a standard version of the CMS–HCC model, which includes all the variables listed above, and we ran a race/income version that includes the same variables plus indicators for each beneficiary's race (African American, Hispanic, White, or other) and income, which we approximated by the per capita income in each beneficiary's county of residence.

For Tables 4-2, 4-4, and 4-5, we ran the following regressions:

- a conditions version, which includes all the variables in the standard version plus indicators of whether each beneficiary has zero, one, two, three, four, or five or more HCCs (Table 4-2);
- a two-year version, which includes all the variables in the standard version, but HCCs for each beneficiary are based on two years of diagnosis data rather than the single year used in the standard version (Table 4-4); and
- a version that combines the conditions version and the two-year version and includes all the variables in the standard version, whether each beneficiary has zero, one, two, three, four, or five or more HCCs, and HCCs that are based on two years of diagnosis data (Table 4-5).

We developed the analytic samples for each of these regressions from 5 percent samples of all FFS beneficiaries in 2008. It resulted in analytic samples of about 1.2 million beneficiaries for the standard and conditions versions and about 1.1 million beneficiaries for the two-year version and the version that combines the conditions and two-year versions. ■

lower in the MA plan; for other conditions, the relative cost in the MA plan is higher (Newhouse et al. 2011).

Should MA risk scores be adjusted for regional differences in service use?

Risk adjustment affects payments to MA plans through two mechanisms. First, county-level benchmarks depend directly on each county's per capita FFS spending, divided by the county's average CMS–HCC risk score among FFS beneficiaries. Second, CMS uses the risk scores to adjust MA payments for each enrollee.

CMS–HCC risk scores depend heavily on beneficiaries' conditions that providers have coded on claims. Research indicates that among FFS beneficiaries, per capita service use is higher in some areas of the country than in others. Moreover, average risk scores among FFS beneficiaries are highest in regions where service use is highest and lowest in regions where service use is lowest (Song et al. 2010).

This correlation between regional differences in service use and regional differences in risk scores could occur for two reasons. First, it could occur because those in the high-use regions are sicker. In this case, the relatively high risk scores in the high-use regions accurately reflect regional differences in health status. Second, it could occur because beneficiaries in high-use areas simply use more

medical care without being sicker than beneficiaries in lower use areas. In this case, the relatively high risk scores in high-use areas do not reflect regional differences in health status. Research indicates that at least part of the regional differences in risk scores is due to beneficiaries in high-use regions using more medical care without actually being sicker. That is, beneficiaries in high-use areas would have lower risk scores if they lived in regions where service use was lower (Song et al. 2010).

To the extent that regional differences in service use cause differences in risk scores, there may be little effect on the county-level benchmarks. For example, if a county has a high level of service use, it is likely to be reflected in both high per capita FFS spending and a high average risk score among FFS beneficiaries. The high FFS spending and high average risk score should largely offset each other, so the county benchmark should be unaffected.

Regional differences in service use are more likely to have an effect on MA payments through the risk scores of MA enrollees. In regions with relatively high service use among MA enrollees, it is possible that providers' coding of conditions is more intensive than in other regions, leading to higher risk scores and MA payments in those regions. However, it is not clear whether the regional differences in service use and risk scores that occur in the FFS program also occur in the MA program because data are not available to make that determination. But, CMS has begun collecting beneficiary-level cost and diagnosis data from MA plans; after it has collected multiple years of these data, it may be possible to replicate the analysis by Song and colleagues for the MA population.

Addressing regional differences in risk scores due to differences in service use

The study by Song and colleagues (2010) divided the country into regions and determined per capita service use in FFS Medicare in each region. The regions were sorted into quintiles of per capita service use. The authors found that regional differences in service use led to regional differences in how intensively conditions are coded on claims, which resulted in average risk scores in the highest quintile of service use that were 15 percent higher than they would have been had the beneficiaries lived in a region in the lowest quintile.

If there are similar regional differences in the MA program, adjustments could be made to MA risk scores. Using the results from Song and colleagues as a hypothetical example, these adjustments could work as follows. Regions that are in the middle (third) quintile of service use could be used as the baseline. MA enrollees residing in a region that is in the third quintile would have no adjustment to their risk scores. Relative to the third quintile, Song and colleagues found that regional differences in service use result in risk scores that are 5.2 percent lower in the first quintile, 1.7 percent lower in the second quintile, 5.7 percent higher in the fourth quintile, and 8.8 percent higher in the fifth quintile. MA risk scores in these four regions could be adjusted by these percentages to account for differences in coding.

Adjusting risk scores for MA enrollees for the effects of regional differences in service use should be considered alongside the Commission's previously stated position on financial neutrality between the MA and FFS programs. On the one hand, making regional adjustments to MA risk scores is somewhat inconsistent with financial neutrality because one sector (FFS or MA) would have a financial advantage over another sector for treating the same patient or condition. On the other hand, to the extent that regional differences in service use that are independent of beneficiaries' health status result in regional differences in risk scores among MA enrollees, plans in high-use regions would have higher payments than plans in lower use regions simply because of regional differences in use rates. It may be appropriate to discuss the merits of each alternative.

Should CMS use FFS or MA data to estimate the CMS–HCC model?

If the large differences found by Newhouse and colleagues between the cost of treating conditions in a large MA plan and FFS Medicare also occur in most or all other MA plans, the CMS–HCC model underpredicts the costs in MA plans for some conditions and overpredicts the costs in MA plans for other conditions. Obviously, it is financially beneficial for plans to have beneficiaries who have conditions for which costs are overpredicted and avoid beneficiaries who have conditions for which costs are underpredicted.

In light of the Commission's stance on financial neutrality and the findings from Newhouse and colleagues, it may be appropriate to have a discussion about whether CMS should continue using data from FFS beneficiaries to calibrate the CMS–HCC model or switch to using data from MA enrollees. An argument for continued use of FFS data is that it is consistent with a policy of financial neutrality, and financial neutrality encourages care to be provided in the sector where it can be provided more

efficiently (MA or FFS). Under financial neutrality, when plans are able to provide care at a lower cost than FFS Medicare, they may be able to offer enhanced benefits that are more attractive to beneficiaries than FFS Medicare. Alternatively, if plans cannot provide care at a lower cost than FFS Medicare, they may not be able to offer benefits that are competitive with FFS Medicare. An argument for use of MA data is that costs incurred by MA plans may differ from costs for FFS Medicare—perhaps because of different risk profiles between sectors or because of different models of care. To the extent these cost deviations occur between sectors, MA payments that reflect the cost of efficient providers require risk adjustment calibrated on data from MA enrollees.

Differences in coding between FFS Medicare and the MA program

MA plans have an incentive for providers to code their enrollees' conditions as completely as possible because MA risk scores and payments strongly depend on each enrollee's conditions. The incentive to code conditions is present but not as strong in FFS Medicare because FFS payments often depend on the services provided rather than beneficiaries' conditions.

This discrepancy in incentives between the MA program and FFS Medicare may be reflected in analyses by CMS and the Government Accountability Office (GAO), which found differences in diagnostic coding intensity between the two sectors (Centers for Medicare & Medicaid Services 2009, Government Accountability Office 2012). In response to its finding, CMS has reduced risk scores of MA enrollees by 3.4 percent in 2010, 2011, and 2012. However, GAO asserts that CMS has underestimated the magnitude of the greater coding intensity in the MA program by at least 1.4 percentage points and by as much as 3.7 percentage points. Statutory adjustments in the Patient Protection and Affordable Care Act of 2010 (PPACA) are consistent with the findings of the GAO. Starting in 2014, PPACA requires CMS to reduce MA enrollees' risk scores by an amount greater than 3.4 percent in each year, unless CMS begins using diagnosis and cost data from MA enrollees to estimate the CMS–HCC model. ■

Endnotes

1 CMS arrived at which HCCs to retain and how many to retain by balancing several competing considerations, including data collection burden, predictive power, whether to retain rare high-cost conditions, and retaining only well-defined, clinically coherent conditions (Pope et al. 2004).

2 It is not clear when CMS intends to begin using the data from MA enrollees to estimate the CMS–HCC model.

3 When we estimated the model using regression analysis, we used zero conditions as the basis of comparison, so we excluded that variable from the regression.

4 Financial neutrality can be obtained only if coding of conditions is the same in FFS Medicare and the MA program. Research by CMS and the Government Accountability Office (GAO) indicates that differences in coding exist between these two sectors (Centers for Medicare & Medicaid Services 2009, Government Accountability Office 2012). CMS has made adjustments to account for these differences, but GAO believes the adjustments are too small.

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CHAPTER 5

Serving rural Medicare beneficiaries

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Chapter summary

In the Patient Protection and Affordable Care Act of 2010, the Congress required that the Commission report on:

- rural Medicare beneficiaries' access to care,
- rural providers' quality of care,
- special rural Medicare payments, and
- the adequacy of Medicare payments to rural providers.

In addition to the findings presented on each of the four topics, this report presents a set of principles designed to guide expectations and policies with respect to rural access, quality, and payments for all sectors. By consistently following this set of principles, Medicare policy can be refined to more efficiently provide access to high-quality care for rural beneficiaries.

In brief, with respect to access, we find large differences in health care service use across regions but little difference between rural and urban beneficiaries' service use within regions. Rural service use is high in regions where urban use is high, and it is low in regions where urban use is low. Beneficiary satisfaction with access is also similar in rural and urban areas. With respect to quality of care, quality is similar for most types of providers in rural and urban areas; however, rural hospitals tend to have below average rankings on mortality and some process measures. Beneficiaries' satisfaction with quality of care is similar in rural and urban areas. With respect to payment,

In this chapter

- Background information on rural Medicare beneficiaries
- Access to health services by rural Medicare beneficiaries
- Rural volumes of care are similar to urban volumes of care, but large regional differences exist
- Quality of care in rural areas
- Payment adequacy and special rural payment adjustments

rural Medicare payments are adequate, in part due to implementation of certain increases in rural hospital payments that followed from recommendations in the Commission's 2001 report on rural health care. Because of higher prospective payment rates and enactment of the critical access hospital (CAH) program, the number of rural hospital closures has declined dramatically in recent years. However, some rural special payments go beyond the Commission's recommendations and are not consistent with the set of payment principles we establish in this paper.

Gathering information from focus groups, surveys, and Medicare claims

Our evaluation of rural health care in America started with a multimethod approach to data collection. We made several site visits to gain the perspectives of Medicare beneficiaries and individuals who deliver health care in several rural areas. We examined information from a series of beneficiary surveys, including the Commission's national telephone survey of Medicare beneficiaries, the Medicare Current Beneficiary Survey, and the Hospital Consumer Assessment of Healthcare Providers and Systems. We used claims data to evaluate beneficiaries' use of services and certain outcomes, such as mortality and readmissions. We examined Medicare cost report data to evaluate rural providers' costs and the profitability of serving Medicare beneficiaries. The combination of these data sources provides a description of service use, access, quality, provider profitability, and rural beneficiaries' experience with the Medicare program across different types of rural areas.

We made the Medicare beneficiary the primary unit of analysis when evaluating access to care. This emphasis differs from some of the literature that focuses on physicians as the unit of analysis and uses counts of local providers per capita as a proxy for beneficiary access. For example, much of the research on physician access counts physicians per capita and discusses physicians' satisfaction with the lifestyle and income associated with rural practice (MacKinney et al. 2011, WWAMI Rural Health Research Center 2009). While these studies are valuable (and we also count physicians per capita), we focused on patient claims data to directly examine how rural beneficiaries' use rates compare with rates for urban beneficiaries, beneficiary survey data to see if rural patients are satisfied with access and quality, as well as beneficiary focus groups to gain a deeper understanding of beneficiaries' perspectives in different areas of the country. Likewise, published research on access to pharmacy services is often limited to examining the number of pharmacy closures or the number of communities without a pharmacy (Boyle et al. 2011, Klepser et al. 2008). In contrast, we examined claims data from 100 percent of rural Medicare beneficiaries, paying particular attention to isolated areas where most beneficiaries have to travel significant distances to a pharmacy. We

also analyzed whether those isolated beneficiaries fill their prescriptions at regional pharmacies or use mail order pharmacies.

Because rural areas in different regions are not always similar, we met with patients and providers in different regions of the country. We interviewed independent rural physicians, talked to leaders of integrated health care systems that serve rural and urban areas, visited isolated providers in frontier areas, and visited managers of freestanding CAHs and rural prospective payment system hospitals. We also spoke with associations representing rural providers and groups organized by the Office of Rural Health Policy. In addition, we met with leaders of rural physician training programs in medical schools who are working to meet the challenge of attracting medical school students who will serve rural areas. The objective was to get diverse perspectives from patients and providers. Because we could not speak to individuals in every rural community, we spent considerable effort gathering claims data from 100 percent of rural beneficiaries and analyzed the degree to which care varies across regions of the country, across different levels of rurality, and across different types of services. By having data from all beneficiaries, we are able to comment on the geographic diversity in the care rural beneficiaries receive.

Beneficiaries' use of services and satisfaction with access are similar in rural and urban areas

Utilization of ambulatory, inpatient, and post-acute services is similar for rural and urban beneficiaries. This finding is consistent with findings from the Commission's 2001 report on rural health care. Service volume for rural patients, who have fewer local physicians per capita, is maintained in part by patients traveling to urban areas for some of their care. In some cases, they travel because of the lack of local providers; in other cases, they choose to bypass local providers for urban providers (Buczko 1994, Liu et al. 2008, Radcliff et al. 2003).

We refer to rural and urban averages in this chapter but realize there is great diversity in rural America. To address this diversity within rural areas, we subdivided counties into four categories: urban, micropolitan counties with a city of 10,000 to 50,000 people, counties without a town of 10,000 or more people that are adjacent to urban areas, and more isolated counties that are not adjacent to an urban area and do not have a town of 10,000 or more people. We also examined frontier counties, with a population density of six or fewer people per square mile, as a second means of examining more remote rural areas. Even within these categories there is diversity, but to keep the analysis tractable, we limit most of our results to these four categories of rural areas. We realize there is also diversity in urban areas but kept that one category for this report because of the focus on rural providers. We found that:

- The volumes of ambulatory, inpatient, and post-acute service use per beneficiary in rural and frontier counties are similar to those in their state's urban areas.
- Not only is average service use similar between urban and rural areas, but the two distributions are similar. That is, similarities exist for the minimum and maximum levels of physician and other health care professional office visits per beneficiary (rural range, 7 to 13 visits; urban range, 7 to 14 visits) and hospital admissions per beneficiary (rural range, 0.19 to 0.46; urban range, 0.19 to 0.47).
- There are wide geographic differences in service use across regions, but within the same region, service use is similar between urban and rural beneficiaries. In Texas and Louisiana, for example, where service use is high for urban beneficiaries, it is also high for rural beneficiaries. Similarly, in Minnesota and Hawaii, where service use is low for urban beneficiaries, it is also low for rural beneficiaries.

In general, we find that the volume of care Medicare beneficiaries receive can vary significantly based on the region of the country in which they live. But within each region, beneficiaries in rural and urban areas generally receive similar volumes of care.

Even though volumes of care are comparable with and without adjustments for health status, there is a concern that rural populations may need more care if they have a significantly greater illness burden than urban populations that is not detected by Medicare claims data. Articles on rural health care often state that rural populations are older, sicker, and poorer than their urban counterparts. We find that this statement does not consistently hold. With respect to illness burden, the evidence is mixed. On average, rural beneficiaries report worse health status, but Medicare claims data suggest they have fewer comorbidities on average. In addition, national surveys of Medicare beneficiaries do not show a consistent pattern of disease burden that might indicate that rural beneficiaries are systematically worse off than their urban peers. With respect to income, the U.S. Department of Agriculture finds that rural areas have slightly higher rates of poverty on average but tend to have slightly lower rates of poverty than urban residents after adjusting for the cost of living (Jolliffe 2006). With respect to age, there is a mixed picture. A higher share of the rural population is over age 65 (Werner 2011). However, within the Medicare population, we find that urban areas have a higher share of beneficiaries over age 85.

Therefore, at least when focusing on Medicare beneficiaries, we see no clear evidence that rural beneficiaries are older, sicker, or consistently live in communities with greater poverty.

While on average we do not see large rural/urban differences, there are some poor rural areas (and some poor urban areas) where the beneficiary population has significant health care needs. For example, the data consistently show that rural and urban individuals age 65 or over in the south central states (AL, KY, MS, and TN) are sicker and poorer than rural and urban individuals in the north central states. They report worse health status, have worse health as indicated by Medicare claims, and have lower life expectancy than rural beneficiaries in north central states. For example, the 2005–2006 mortality rate per 100,000 White women age 65 to 75 in the rural areas of east south central states was 2,125 compared with 1,543 in rural areas of the west north central states (Centers for Disease Control and Prevention 2011). We can conclude that some rural areas tend to have poorer and sicker populations; however, as with service use, differences in health status and wealth appear to differ more among regions of the country than along the rural/urban continuum.

On a positive note, rural areas are adopting new ways to provide access to clinical expertise in small isolated rural communities. For example, mental health providers (who are in short supply in rural areas) are increasingly using telemedicine for consultations with rural Medicare patients. Further research is needed into the adequacy of mental health services in rural areas to determine if traveling and telemedicine could be sufficient to overcome the low numbers of local mental health professionals. In addition, tele-emergency services provide small rural hospitals with access to emergency medicine expertise and support. A third example is telepharmacy. In cases of rural populations being too small to support a traditional pharmacy, telepharmacies are being formed with much lower fixed costs. One pharmacist in a central location can supervise several retail telepharmacy sites and hospital-based pharmacies. The net result is that patients in small towns can benefit from pharmacist expertise without having the patient volume to support a full-time pharmacist.

Quality of care is similar in rural and urban areas for most services, though urban hospitals tend to have better outcomes

We do not find major differences in quality between urban and rural providers in most sectors. Patient satisfaction is similar, and quality measures for skilled nursing facilities, home health agencies, and outpatient dialysis facilities do not show major differences between urban and rural providers. Similarly, hospital readmission measures do not point to major differences based on rural or urban location. However, we find that rural hospitals continue to not perform as well as urban hospitals on most process measures and on condition-specific 30-day mortality rates. Our analysis of 2010 Medicare data is consistent with other findings in the literature over the past 20 years (Joynt et al. 2011a, Keeler et al. 1992, Medicare

Payment Advisory Commission 2006). We find that the higher mortality rates in rural areas are only partially explained by the lower volume of cases in rural hospitals. This finding should not be unexpected, given the limited resources some rural hospitals have to work with, especially in emergency situations. We are not saying that small CAHs cannot achieve good outcomes, only that it may be more difficult and less likely because of limited staff resources and fewer cases to learn from, as others have noted (Joynt et al. 2011a, Joynt et al. 2011b).

Rural payments are adequate and financial performance is similar in rural and urban areas

We examined the adequacy of Medicare payment rates for the various health care sectors and, in general, found Medicare payments to rural providers were adequate (Medicare Payment Advisory Commission 2012). On average, freestanding rural skilled nursing facilities and home health agencies have similar margins for Medicare patients, with some rural and urban home health agencies having relatively high margins. When we examined the adequacy of physician payments, we found similar service use rates, similar ability to obtain appointments with existing and new physicians, and similar satisfaction with access. In addition, the literature and our site visits indicate that physician incomes per hour are comparable in rural and urban areas (Reschovsky and Staiti 2005). These payment adequacy indicators suggest that payments to rural providers are as adequate as payments to urban providers. However, the Commission has raised concerns about the adequacy of primary care physician payments relative to subspecialist payments—concerns that apply to physicians in rural and urban areas (Medicare Payment Advisory Commission 2011b).

While the payment adequacy findings over time are consistent for skilled nursing facilities, home health agencies, and physician services, one area that has changed is the adequacy of rural hospital payments. In 2001, when rural hospitals' inpatient profit margins were below urban hospitals' profit margins, the Commission concluded that Medicare payment rules favored large urban hospitals (Medicare Payment Advisory Commission 2001). As a result, the Commission recommended increasing rural hospitals' base payment rates to the rates paid to large urban hospitals, increasing rural disproportionate share payments, and implementing a low-volume adjustment for isolated rural providers serving areas with low population density that lack economies of scale. The Congress enacted legislation consistent with the Commission's recommendations by 2004 and then endorsed a series of other changes that further increased rural hospital payments. These changes to the hospital prospective payment system, along with expansion of the CAH program, have improved rural hospitals' financial stability significantly, resulting in fewer rural closures.

In some cases special payments are warranted, but in others they are not well targeted

The primary objective of rural special payments is to ensure that Medicare does its part to support the financial viability of rural providers that are necessary for beneficiaries' access to care. Some form of special payments will be needed to maintain access in areas with low population density where providers inevitably have low patient volumes and lack economies of scale. However, some of the special payments are not well targeted. In some cases, they go to providers that compete with nearby neighbors that are also struggling with low patient volumes. Providing special payments to providers that may not need assistance or to low-volume providers that are not the sole providers in their community results in spending that is higher than warranted given the sustainability challenges of the Medicare program.

Programs directed toward rural providers increase Medicare payments by over $4 billion, or almost 10 percent of all rural payments. Roughly $3 billion of the additional costs are borne by the taxpayer and $1 billion is borne by beneficiaries through higher coinsurance at CAHs. Coninsurance is higher because beneficiaries (or in most cases their secondary insurers, such as medigap) pay coinsurance for outpatient services at CAHs equal to 20 percent of charges. Because CAH charges have risen, CAH coinsurance has risen to an average of 47 percent of outpatient payments at CAHs for services subject to coinsurance and varies widely from one CAH to another. The total payment to the hospital is fixed at 101 percent of costs; therefore, as charges increase, the share of that cost-based fee paid by the beneficiary increases. These higher costs at CAHs may not always be necessary, given that 16 percent of CAHs are within 15 miles of another hospital and may not be the appropriate target for special payments.

Guiding principles to evaluate rural access, quality, and special payments

Over several public meetings in 2011 and 2012, the Commission developed principles to guide expectations regarding rural patients' access to care, rural providers' quality of care, and the Medicare program's payments to rural providers. The principles can be used to guide Medicare payment policy, including special payments to rural providers.

Principles of access to care for rural Medicare beneficiaries

Our principle for access is that all beneficiaries, whether rural or urban, should have equitable access to health care services. However, equitable access does not necessarily mean equal travel times for all services. Small rural communities are expected to have fewer physicians per capita and longer travel times to specialists

because there are too few local residents to support some specialties. Whether access is equitable and results in beneficiaries receiving equal services can be evaluated by examining the volume of services received as well as beneficiaries' reported satisfaction with access to all services. Satisfaction can be met by ensuring that rural areas have adequate primary care networks and that rural patients receive referrals for appropriate specialty care when necessary.

Principles of quality of care in rural areas

Expectations for quality of care in rural and urban areas should be equal for nonemergency services rural providers choose to deliver. That is, if a provider has made a discretionary decision to provide a service, that provider should be held to a common standard of quality for that service, whether the service is provided in an urban or a rural location. Emergency services may be subject to different quality standards to account for different levels of staff, patient volume, and technology between urban and rural areas. For example, a patient may have a heart attack with a significant blockage where the standard of care is angioplasty and a stent in a catheterization lab. Urban areas all have catheterization labs. However, small rural hospitals, which may be too far from the nearest catheterization lab to safely transport heart attack patients (even by helicopter), may be forced to use a thrombolytic to treat the blockage. We would not expect equal outcomes in this emergency situation, and the relevant quality benchmark for emergency care should be either other small hospitals or the expected outcomes given additional transportation time if the small rural hospital no longer offered emergency care.

To improve quality at small rural hospitals and give patients quality information, quality data should be collected and reported by all hospitals (including CAHs). CAHs currently have the option of not collecting or reporting quality data. An example of quality metrics that could be especially important to rural patients of small hospitals include the share of medications that are reviewed by a pharmacist (in person or via telemedicine) before the first dose or at least within 24 hours of a drug being administered (Health Resources and Services Administration 2011, Peterson 2011a). A significant share of medication orders at the smallest hospitals do not receive such reviews (Cochran et al. 2008). Other measures that may have particular importance in rural areas include "timely emergency department transfer communication" and the elapsed time between a patient presenting at a rural emergency room and when the patient is "evaluated by a qualified medical professional" (Casey et al. 2012).

Principles of payment adequacy and special payments to rural providers

Providers in rural areas often have a low volume of patients. In some cases, this lack of scale increases costs per unit of service and puts the provider at risk of closure. To maintain access in these cases, Medicare may need to make higher payments to low-volume providers that cannot achieve the economies of scale available to urban providers. However, low volume alone is not a sufficient measure to assess whether higher payments are warranted. Medicare should not pay higher rates to two competing low-volume providers in close proximity. These payments may deter small neighboring providers from consolidating care in one facility, which results in poorly targeted payments and can contribute to poorer outcomes for the types of care where there is a volume–outcome relationship. To target special payments when warranted, Medicare should direct these payments to providers that are uniquely essential for maintaining access to care in a given community. The payments need to be structured in a way that encourages efficient delivery of health care services. We have developed three principles guiding special payments that will allow beneficiaries' needs to be met efficiently:

- Payments should be targeted toward low-volume isolated providers—that is, providers that have low patient volume and are at a distance from other providers. Distance is required because supporting two neighboring providers who both struggle with low volume can discourage mergers that could lead to lower cost and higher quality care.
- The magnitude of special rural payment adjustments should be empirically justified—that is, the payments should increase to the extent that factors beyond the providers' control increase their costs.
- Finally, rural payment adjustments should be designed in ways that encourage cost control on the part of providers. While all hospitals have some incentive for cost control (they must keep average costs below average revenue), fixed add-on payments generally have a greater incentive for cost control than cost-based payments. ■

TABLE 5–1

Rural groups, UICs, number of counties, and number of fee-for-service Medicare beneficiaries in each group

Rural/urban group	UICs	Number of counties	Number of beneficiaries (in millions)
Metropolitan (urban)	1 & 2	1,089	28.0
Rural micropolitan	3, 5, & 8	675	4.8
Rural adjacent	4, 6, & 7	666	2.1
Rural nonadjacent	9, 10, 11, & 12	711	1.5

Note: UIC (urban influence code). Metropolitan (urban) counties contain an urban cluster of 50,000 or more people, rural micropolitan counties contain a cluster of 10,000 to 50,000 people, rural adjacent counties are adjacent to urban areas and without a city of at least 10,000 people, and rural nonadjacent counties are not adjacent to an urban area and do not have a city with at least 10,000 people.

Source: 2009 Beneficiary Annual Summary File.

Background information on rural Medicare beneficiaries

This report focuses on access to, quality of, and payment for rural Medicare services. Because not all rural areas are alike, our analyses divide them into several categories. Because this report focuses on rural areas, we do not similarly categorize urban areas but instead use an urban average as a reference point.

Defining categories of rural counties

CMS defines rural as all counties outside metropolitan statistical areas with 50,000 people. This definition is relatively inclusive and is used for many of our ongoing analyses, but it does not adequately capture the diversity of rural America. Therefore, we further refined our definition of rural areas to acknowledge nuanced differences and the potential challenges faced by more remote and frontier areas.

Our analyses of rural areas are based on a rural/urban continuum developed by the U.S. Department of Agriculture (USDA) that has been used in previous studies (Bennett et al. 2008, Medicare Payment Advisory Commission 2001, Muelleman et al. 2010). Urban influence codes (UICs) divide 3,141 counties into 12 groups, which we consolidated in the following four groups (Table 5-1):

- Metropolitan (urban): urban cluster of 50,000 or more people,
- Rural micropolitan: cluster of 10,000 to 50,000 people,
- Rural adjacent: counties adjacent to urban areas and without a city of at least 10,000 people, and
- Rural nonadjacent: counties not adjacent to an urban area and without a city of at least 10,000 people.

We used another classification of rural counties to account for rural frontier areas. Counties were classified as frontier if the population density was six or fewer people per square mile within that county (Cordes 1989, Patton 1989). These areas are more sparsely populated than most rural nonadjacent counties and therefore merit careful consideration.

We used the USDA's county-based taxonomy to define rural and urban areas for two main reasons. First, county-based definitions facilitate the link of Medicare claims data with data on income, poverty, supply of health services (including providers and institutions), and geographic location, all of which are available at the county level. Policy discussions are typically conducted within the context of counties and our analyses inform that discourse. Second, UICs already account for several important factors, such as adjacency to metropolitan clusters and travel or commuting times, which are distinguishing factors in defining what is rural. Given that these codes were recently revised to account for population shifts and discriminate among counties based on key characteristics, we chose this taxonomy over others.

Description of the rural Medicare beneficiary population

Rural Medicare beneficiaries represent 23 percent of all fee-for-service (FFS) beneficiaries. They receive roughly 70 percent of their care from rural providers, who receive

over $50 billion in Medicare FFS payments. The remaining 30 percent of rural beneficiaries' care is provided in urban areas, with specialized services such as coronary artery bypass surgery and neurosurgery primarily provided in urban areas. Nevertheless, significant variation exists across rural areas in how much care is provided locally and how much is provided in urban areas.

To compare the characteristics of beneficiaries in urban counties, rural micropolitan counties, and more isolated counties that are not adjacent to urban areas, we relied on responses from Medicare beneficiaries in the 2008 Medicare Current Beneficiary Survey (MCBS).[1] There is a higher concentration of younger beneficiaries (65–74 years) and fewer older beneficiaries (age 85 or older) in rural counties compared with urban counties (Table 5-2). Overall, the concentration of racial and ethnic minorities is lower in rural counties than in urban counties. Rural areas tend to have lower college graduation rates and a larger proportion of individuals who did not complete high school. The proportions of beneficiaries who dually qualify for Medicaid and Medicare are similar in urban, rural micropolitan, and isolated rural counties. However, the proportion is higher in rural counties adjacent to urban areas, which are disproportionately in south central states where poverty is higher.

Our analysis of health needs or predisposing characteristics that might lead to necessary utilization of health services presents a mixed picture, without clear rural/urban differences. A greater percentage of beneficiaries in rural adjacent areas (33.6 percent) compared with urban areas rated their health as fair or poor. But the proportion of beneficiaries rating their health as fair or poor was essentially the same in rural nonadjacent areas (25.4 percent) as in urban areas (25.5 percent). The proportion of beneficiaries reporting at least one limitation in daily activities (i.e., bathing, dressing, feeding) was highest in rural micropolitan areas (35.4 percent) and lowest in rural adjacent areas (23.3 percent).[2] The rates for self-reported limitations in activities of daily living (ADLs) are somewhat incongruent with findings on self-rated overall health. When looking at specific conditions, we find arthritis is more common in the most rural areas, but we find mixed results for other health conditions such as depression and diabetes rates in this sample (Table 5-2). Hierarchical condition categories (HCCs), which are the basis of HCC risk scores, follow more of a gradient effect, with rural areas showing higher levels of health status than urban areas.

The health status of rural beneficiaries is mixed. Highlights include:

- Rural beneficiaries tend to be younger than beneficiaries who live in urban areas, and those differences are statistically significant for micropolitan and rural adjacent areas.
- Rural beneficiaries' self-reported indicators of health are not consistently lower or higher than those in urban counties, as indicated by ADL limitations, self-rated health, and several clinical conditions.
- Rural beneficiaries have lower HCC risk scores, which improve as the area becomes more rural, with medical records suggesting they are in better health than urban beneficiaries on average. This finding may reflect rural/urban differences in the coding of diagnoses rather than the relative health of beneficiaries. Critical access hospitals (which are paid costs) and rural health clinics (which are paid a fixed fee per visit) have less incentive to code comorbidities because they do not affect payment.
- The health of beneficiaries in the most isolated rural areas (rural nonadjacent counties) appears to be similar to the health of urban beneficiaries, and in some ways it appears to be better than in urban areas as reflected in ADL limitations and HCC scores.
- Rural adjacent areas present a mixed picture. Compared with urban areas, beneficiaries in rural adjacent areas have lower levels of education, are more likely to rate their health as fair or poor, and are less likely to have one or more problems with ADLs. Rural adjacent counties in the MCBS sample are mainly in south central and Appalachian states, such as Kentucky, Tennessee, and West Virginia, and in some cases have socioeconomic challenges such as low levels of education and high poverty rates.

Access to health services by rural Medicare beneficiaries

The Commission started its analysis of rural access to care by conducting focus groups to listen to the perspectives of rural beneficiaries in different types of rural communities and through site visits to rural providers to hear their perspectives.[3] We also conducted focus groups in neighboring urban areas and compared what we heard from rural beneficiaries with what we heard from urban beneficiaries in the same state about their perspectives on access to care and quality of care in their community.

TABLE 5–2

Health and demographic characteristics of Medicare beneficiaries, 2008

	Metropolitan (urban)	Rural micropolitan	Rural adjacent	Rural nonadjacent
Demographic (predisposing) characteristics				
Age				
Mean age (years)	71.8	70.7*	69.8*	72.3
64 or younger	16.7%	18.7%	22.2%*	14.4%
65–74	34.5	37.2	36.9	38.4
75–84	33.7	32.0	30.5	34.7
85 or older	15.1	12.1*	10.8*	12.6
Female	54.8%	52.4%	54.4%	55.2%
Race				
White	82.0%	87.6%*	89.2%*	94.7%*
African American	11.6	6.2*	8.0*	1.8*
Asian	1.9	0.4	0.2	0.2
Other	4.5	5.9	2.6	3.3
Hispanic**	7.5	2.8*	2.8*	2.1*
Education				
Less than high school	23.9%	31.5%*	42.4%*	29.6%*
High school graduate	57.9	55.7*	52.2*	59.2*
College graduate	10.7	7.5*	3.5*	7.0*
Postgraduate	7.4	5.3*	1.9*	4.2*
Number in household				
Live alone	32.1%	33.1%	32.4%	29.6%
One other person	49.3	50.5	51.5	55.0
Two or more other people	18.6	16.4	16.2	15.4
Served in armed forces	24.2%	24.8%	21.4%	22.8%
Enabling characteristics				
Medicaid (dual eligibles)	19.3%	20.6%	25.2%*	18.4%
Usual source of care	95.3%	94.5%	94.7%	96.0%
Currently working	12.3%	12.3%	8.0%*	12.7%
Health (need) characteristics				
Self-rated health				
Excellent	15.0%	13.7%*	9.8%*	14.6%
Very good	27.7	26.9*	23.7*	28.3
Good	31.9	31.1*	33.0*	31.8
Fair/poor	25.5	28.3*	33.6*	25.4
Any ADL limitations	31.4%	35.4%*	23.3%*	28.4%*
Arthritis	53.5	56.3	55.7	60.5*
Broken hip	3.8	4.1	3.6	3.0
Cancer	18.1	18.4	16.5	18.4
Dementia	2.7	2.4	2.7	2.3
Depression	15.9	18.9*	15.3	15.6
Diabetes	24.0	24.8	21.4	22.6
HCC risk score	1.01	0.97*	0.96*	0.95*

Note: ADL (activity of daily living), HCC (hierarchical condition category). States well represented in Medicare Current Beneficiary Survey sample of rural adjacent areas include: AL, KY, MI, TN, TX, WV, reflecting areas primarily in the southeastern region of the United States. Very few individuals were from CA, IL, MO, NV, OK, SC, WI. States represented in rural nonadjacent counties are: IA, MI, MO, OH, PA, TN, TX. Metropolitan (urban) counties (n=10,035) contain an urban cluster of 50,000 or more people, rural micropolitan counties (n=2,101) contain a cluster of 10,000 to 50,000 people, rural adjacent counties (n=686) are adjacent to urban areas and without a city of at least 10,000 people, and rural nonadjacent counties (n=571) are not adjacent to an urban area and do not have a city with at least 10,000 people. (N = 13,393.)

* The difference between that rural category and metropolitan areas is statistically significant at a 95 percent confidence level.

** Beneficiaries who identify their origin as Hispanic may be any race.

Source: Medicare Current Beneficiary Survey, 2008. HCC risk scores are from CMS.

TABLE 5–3

Rural areas have fewer physicians per capita

Type of region	Per 1,000 people: Primary care physicians	Specialists
Range:		
CBSA urban areas	0.3 to 3.5	0.3 to 10.7
State-wide rural	0.5 to 1.3	0.3 to 2.1
Mean:		
Metropolitan (urban)	1.1	1.6
Rural micropolitan	0.7	0.7
Rural adjacent	0.5	0.2
Rural nonadjacent	0.7	0.3
Frontier	0.6	0.3

Note: CBSA (core-based statistical area). Metropolitan (urban) counties contain an urban cluster of 50,000 or more people, rural micropolitan counties contain a cluster of 10,000 to 50,000 people, rural adjacent counties are adjacent to urban areas and without a city of at least 10,000 people, rural nonadjacent counties are not adjacent to an urban area and do not have a city with at least 10,000 people, and frontier counties have 6 or fewer people per square mile. CBSA urban areas (n=361); state-wide rural (n=48).

Source: MedPAC analysis of Area Resource File data from the AMA masterfile for 2008.

We also analyzed national survey data, as well as claims data from 100 percent of all rural FFS beneficiaries. We sought to answer three empirical and policy questions with respect to rural beneficiaries' access to care:

- Do rural beneficiaries use similar volumes of services compared with urban beneficiaries?
- Are rural beneficiaries satisfied with their access to care?
- What principles can guide our expectations with respect to the availability of care in rural communities?

Summary of findings on service use and satisfaction

On average, rural beneficiaries use health care services at rates similar to urban beneficiaries. Most beneficiaries report that access to care is largely adequate, and we find few distinctions in satisfaction between rural and urban areas. Lower levels of physician supply and economic challenges in rural areas do not appear to translate to reduced volume of care or lower levels of satisfaction in the Medicare population. Our current findings are similar to the Commission's findings using 1999 utilization data; we concluded that the frequency of getting needed care and satisfaction with care were "strikingly similar" in rural and urban areas (Medicare Payment Advisory Commission 2001). Our findings are not meant to suggest that no rural beneficiaries experience difficulties with access to needed care. In fact, survey data and our site visits confirm that travel times can be an obstacle for some rural beneficiaries. However, we are suggesting that most rural beneficiaries have overcome these obstacles and use levels of services comparable to beneficiaries in urban areas. The fact that relatively few beneficiaries report problems accessing care may in part be due to the success of federal, state, and local efforts to improve access to care for beneficiaries living in rural areas of the country.

Guiding principles for rural access to care

The Commission's principle for access to care is that rural beneficiaries should have equitable access to services. The Commission has discussed access to care over the past year and concluded that equity in access can be measured by beneficiaries' service use rates as well as beneficiaries' reports of their experience with the health system. Services used include physician visits, hospital admissions, post-acute care, and other Medicare-covered services.

The Commission recognizes that some rural beneficiaries may travel longer to get care than their urban counterparts. For example, the South Carolina Rural Health Research Center found that 41 percent of rural residents traveled more than 30 minutes for medical care compared with 25 percent of urban residents (South Carolina Rural Health Research Center 2007). This finding should not be unexpected. Some rural communities are too small to generate the patient volume needed to achieve high-quality outcomes for certain types of services. For these services, rural beneficiaries often drive or are transported for care. However, access may still be deemed equitable if rural beneficiaries receive the needed care and are satisfied with their access to care.

Analyses conducted to examine access

To assess access to care, we conducted several analyses examining Medicare beneficiaries' service utilization rates and satisfaction with access to care. For service use, we examined Part A, Part B, and Part D Medicare drug spending claims for 100 percent of FFS beneficiaries. To examine satisfaction, we focused on two patient surveys: the latest available (2008) MCBS and the Commission's 2011 Medicare beneficiary telephone survey.

Physician supply and economic challenges in rural areas

There are fewer primary care physicians, psychiatrists, and other specialists per capita in rural areas compared with urban areas (Institute of Medicine 2004). There is also a concern that the physician workforce is aging, with some states finding that rural physicians have an older average age than urban physicians (e.g., Missouri) and other states finding they have similar ages (e.g., Mississippi) (Colwill et al. 2008, Missouri Hospital Association 2011, Street et al. 2009). On average across the nation, the University of Washington found that 27.5 percent of primary care physicians are over age 55, compared with 25.5 percent of urban physicians (WWAMI Rural Health Research Center 2009). When we examined the numbers of physicians across rural areas, we found fewer physicians per capita in rural areas on average, but rural physician-to-population ratios vary widely across states (Table 5-3).

Nurse practitioners (NPs) and physician assistants (PAs) are important sources of care in rural areas, although their numbers in rural areas to date are roughly proportionate to the population and may not offset the smaller number of physicians (Everett et al. 2009, Hooker and Berlin 2002, Hooker and Cipher 2005). Variation in PA and nursing regulations exists across states that may limit PAs and advanced practice registered nurses' ability to practice to the full extent of their education and training. States that anticipate future physician shortages may consider reforming scope-of-practice regulations, as detailed in the recommendations by the Institute of Medicine, to facilitate NPs' and PAs' delivery of primary care in affected rural areas (Institute of Medicine 2010).

In addition to emphasizing the smaller number of health care providers, many in the literature cite economic challenges in rural communities, suggesting poverty rates are higher, making it more difficult to support health care providers (Bennett et al. 2008, Braden and Beauregard 1994, Kaiser Commission on Medicaid and the Uninsured 2003, McBride and Kemper 2009, Schur and Franco 1999, National Advisory Committee on Rural Health and Human Services 2008).

While rural poverty rates were twice urban poverty rates in the 1960s, with over 30 percent of rural Americans living in poverty, the gap has slowly been closing for 50 years; by 2011, the rate of poverty in rural areas was only 1.6 percentage points higher than in urban areas (16.5 percent rural vs. 14.9 percent urban for all citizens and 10.3 percent rural vs. 8.7 percent urban for senior citizens)

FIGURE 5–1

Share of the population in poverty varies by region

Note: Poverty levels are not adjusted for costs of living. Poverty rates are for all citizens, but U.S. Department of Agriculture research indicates a similar rural/urban poverty gap for senior citizens.

Source: Economic Research Service 2011, analysis of the Census Bureau's 2011 Current Population survey.

(Economic Research Service 2011, Jolliffe 2002). This 1.6 percentage point differential is due to higher poverty rates in southern states, and there are no consistent rural/urban differences across the country (Figure 5-1). It should also be noted that the standard definition of poverty does not adjust for the cost of living; adjusting poverty rates for the cost of living in each locale, the USDA found that the average rates were slightly lower in rural areas (Jolliffe 2006). The data suggest that, on average, rural and urban areas experience similar levels of economic stress.

While there is not a consistent difference in average poverty rates across rural and urban areas, certain rural and urban communities face persistently high levels of poverty and worse health status. For example, poverty levels tend to be persistently high in many rural counties in east south central states (AL, KY, MS, and TN) and the data consistently show that rural and urban individuals over age 65 in the east south central states are sicker and poorer than rural and urban individuals in north central states. For example, the 2005–2006 mortality rate per 100,000 White women aged 65 to 75 years in the rural areas of

TABLE 5–4

Physician supply and economic challenges

Characteristic	Rural compared with urban areas	Share of state-wide rural areas below the median urban area
Primary care physician supply	Lower	90%
Specialist supply	Lower	98
Income per capita*	Lower	79
Percent of population with a college degree	Lower	83
Percent of population above poverty line*	Similar	58
Percent of population with a high school or greater education	Similar	54
Rates of insurance for under 65	Similar	58
Share of FFS beneficiaries with supplemental coverage (e.g., medigap)	Similar	58

Note: Income per capita data are from 2006.
*Not adjusted for the cost of living.

Source: 2010 rates of supplemental Medicare insurance or Medicare Advantage plan membership are from CMS. Other data are from the 2008 Area Resource File. Data for physician supply and poverty rates are 2007 data, education is 2000 rates. Rates of insurance for under 65 population are from 2005 and reported in the Area Resource File.

east south central states was 2,125 compared with 1,543 in rural areas of west north central states (Centers for Disease Control and Prevention 2011). We conclude that some rural areas tend to have poorer and sicker populations than other rural areas; however, differences in health status and wealth appear to be greater among regions than along the rural/urban continuum.

A broader set of socioeconomic variables across rural areas presents a mixed picture. We find that the vast majority of rural areas have fewer physicians per capita than urban areas, but we fail to find consistent rural/urban differences when we examine income, education, and insurance status (Table 5-4). For example, in 90 percent of states, the median supply of primary care physicians in rural areas is below the urban median; in 98 percent of states, the median supply of specialist physicians in rural areas is below the urban median. In contrast, rural rates of insurance, poverty, and completion of a high school education are similar to urban rates. This finding does not suggest that some rural communities do not face difficult challenges—they exist in some rural areas and are real. It suggests that there are no consistent rural/urban differences in poverty and other socioeconomic variables. The socioeconomic differences we see are more of a regional phenomenon (i.e., in the south central United States) than an urban/rural phenomenon.

Similarly, we see bigger regional differences than rural/urban differences for rates of the uninsured among those

TABLE 5–5

Rates of private supplemental insurance among Medicare beneficiaries

	Total	Metropolitan (urban)	Rural micropolitan	Rural adjacent	Rural nonadjacent
Medicare only	10.2%	9.4%	11.2%	16.2%	9.7%
Dual eligibles	19.7	19.1	20.9	24.3	17.5
Employer-sponsored insurance	39.4	41.8	33.6	31.5	36.8
Medigap/other	30.8	29.7	34.4	28.1	36.0

Note: Metropolitan (urban) counties contain an urban cluster of 50,000 or more people, rural micropolitan counties contain a cluster of 10,000 to 50,000 people, rural adjacent counties are adjacent to urban areas and without a city of at least 10,000 people, and rural nonadjacent counties are not adjacent to an urban area and do not have a city with at least 10,000 people,

Source: Medicare Current Beneficiary Survey, Cost and Use Files, 2007.

less than 65 years old. While rural populations rely more on public insurance coverage, rural and urban areas have similar rates of uninsured people overall (rural, 16.2 percent; urban, 16.3 percent) and for the under-65 population (DeNavas-Walt et al. 2011, King and Holmes 2011, Ziller et al. 2008). In contrast, there are large regional variations in the rate of uninsured populations under age 65—for example, 13 percent in North Dakota compared with 31 percent in Texas (Kaiser Family Foundation 2011).

The distribution of Medicare beneficiaries with supplemental insurance reflects regional trends we see in poverty and health status. As shown in Table 5-5, beneficiaries in rural adjacent counties are more likely to have Medicare-only insurance, the highest rate of dual-eligible beneficiaries, the lowest rate of employer-sponsored insurance, and the lowest rate of medigap or other supplemental insurance. Further examination of the MCBS Cost and Use data, however, shows that most beneficiaries who resided in the counties classified as rural and adjacent to an urban area were concentrated in Alabama, Tennessee, Texas, and West Virginia. These states are in the southern and Appalachian regions of the country where poverty rates have been higher relative to the rest of the country. In contrast, the most isolated rural counties (rural nonadjacent) are more likely to be in the midwestern and northern states. In these rural counties, we see average levels of Medicare-only (9.7 percent) and lower levels of dual-eligible (17.5 percent) beneficiaries. The differences in Medicare-only status could reflect a regional phenomenon rather than an effect of being rural. We examined regional variation in service use to determine whether beneficiaries in the poorer rural regions of the country are receiving the same volume of care as those in wealthier rural regions where beneficiaries are more likely to have supplemental insurance.

TABLE 5–6

Regional variations are generally larger than rural/urban differences

Region	Per beneficiary per year: Visits to physician office or outpatient facility	Hospital admissions
Range:		
CBSA urban areas	7 to 14	0.19 to 0.46
State-wide rural	7 to 13	0.19 to 0.47
Mean:		
Metropolitan (urban)	10.1	0.33
Rural micropolitan	10.7	0.34
Rural adjacent	10.4	0.35
Rural nonadjacent	10.7	0.35
Frontier	9.8	0.31

Note: CBSA (core-based statistical area). Metropolitan (urban) counties contain an urban cluster of 50,000 or more people, rural micropolitan counties contain a cluster of 10,000 to 50,000 people, rural adjacent counties are adjacent to urban areas and without a city of at least 10,000 people, rural nonadjacent counties are not adjacent to an urban area and do not have a city with at least 10,000 people, and frontier counties have 6 or fewer people per square mile.

Source: MedPAC analysis of beneficiary-level Medicare spending from the 2008 Beneficiary Annual Summary File and Medicare inpatient claims for all beneficiaries with Part A or Part B coverage.

Rural volumes of care are similar to urban volumes of care, but large regional differences exist

Our analysis of claims data for 100 percent of Medicare beneficiaries from 2006 to 2008 finds that on average rural and urban beneficiaries receive similar levels of care, but there is a wide degree of regional variation (Table 5-6). The distribution of regional variation in ambulatory visits is similar for rural and urban areas (urban range, 7 to 14; rural range, 7 to 13), and the distribution of annual hospital admissions per beneficiary is also similar (urban range, 0.19 to 0.46; rural range, 0.19 to 0.47 rural). Even beneficiaries who live in more remote areas tend to have rates of ambulatory care (e.g., physician office visits) and inpatient hospital use similar to beneficiaries in urban areas. This finding contrasts with a study by Chan, which found that rural beneficiaries have fewer visits paid under the physician fee schedule than urban beneficiaries (Chan et al. 2006). However, the Chan study failed to include rural health clinic visits in its data, which our analysis includes. Our findings using 2008 data are consistent with what we found using 1999 data (Medicare Payment Advisory Commission 2001). Our findings are also consistent with a recent study showing that rural beneficiaries receive slightly more surgeries per capita than urban residents (Francis et al. 2009, Francis et al. 2011). The combination of far fewer specialists per beneficiary in rural areas and rural beneficiaries receiving more surgeries per capita than urban beneficiaries (at rural and urban locations) suggests that rural patients often travel to urban areas to receive care.

TABLE 5–7

Urban and rural service use rates are similar within states, but wide regional variation exists

	Urban service use/ national average	Rural service use in the state/ national average
National average	1.005	0.984
Low-use regions		
Honolulu, HI	0.76	0.75
Madison, WI	0.86	0.86
Billings, MT	0.96	0.90
High-use regions		
Monroe, LA	1.30	1.29
Oklahoma City, OK	1.16	1.15
Dallas, TX	1.19	1.14

Note: Service use is per capita of inpatient, outpatient, physician, post-acute, durable medical equipment, and hospice services among fee-for-service beneficiaries in each region adjusted for the patient's health status. Regions are defined as metropolitan statistical areas for urban counties and rest of state nonmetropolitan areas for nonurban counties.

Source: MedPAC analysis of beneficiary-level Medicare spending from the Beneficiary Annual Summary File and Medicare inpatient claims data, 2008.

In addition to hospital admissions and ambulatory care visits, we examined overall service use aggregating inpatient, outpatient, physician office, rural health clinic, home health care, skilled nursing care, hospice, and other sources of patient care (Table 5-7). Overall service use is adjusted for health status (Medicare Payment Advisory Commission 2011c). The average rural beneficiary's service use rate is 98.4 percent of the national average, compared with the average urban beneficiary's service use rate of 100.5 percent of the national average. In other words, average rural service use is 2 percent lower than average urban use. However, these averages mask wide regional variation.[4] In certain states, such as Louisiana and Oklahoma, use rates for both rural and urban beneficiaries are 15 percent or more above average. In other states, such as Hawaii and Wisconsin, use rates for both rural and urban beneficiaries are 14 or more points below average. Thus, while utilization varies across regions, it tends to be similar for rural and urban areas within a region. We also found that, despite reduced levels of medigap coverage, beneficiaries who have higher disease burdens in southeastern states appear to receive relatively high levels of health services.

We separately compared hospital inpatient and post-acute care use in rural and urban areas. As with ambulatory care, we found that patterns of post-acute care use were similar in urban and rural areas within a state but varied widely across regions (Table 5-8). In states with high levels of post-acute care, such as Texas, rural areas also had high levels of post-acute care, and the high level of post-acute care was not fully explained by more inpatient care. This finding was true for services that tend to be more entrepreneurial, such as home health care and durable medical equipment, where regional differences can be dramatically larger than rural/urban differences.[5] To be clear, we do not claim that average levels of care in any particular urban or rural area are the correct level of care; nor can we state the optimal level of care given available information. We note only that the volumes of inpatient and post-acute care services provided to rural beneficiaries and urban beneficiaries tended to be similar. However, in both rural and urban areas some individual communities may have difficulties accessing home health services. These individual situations may in part reflect decisions made by state and local governments about payments for non-Medicare patients.

Use of post-acute care varies by levels of rurality

While state-wide rural areas may have similar use of post-acute care, we also wanted to see if the use rates vary dramatically by type of rural area. For example, do frontier counties tend to have significantly fewer home health visits or days in skilled nursing facilities (SNFs)?

TABLE 5–8

Levels of acute inpatient and post-acute care use in rural areas are similar to urban, but wide regional variation exists

	Relative acute inpatient use		Relative post-acute care use	
	Urban	Rural*	Urban	Rural*
Urban and rural averages as a share of the national average	0.99	1.02	1.01	0.95
Range for urban MSAs and rural state-wide areas	0.8 to 1.2	0.8 to 1.2	0.3 to 3.2	0.5 to 2.2
Low-use regions				
Honolulu, HI	0.89	0.83	0.48	0.53
Madison, WI	0.94	0.98	0.77	0.67
Billings, MT	1.00	0.98	0.63	0.65
High-use regions				
Monroe, LA	1.11	1.16	2.20	2.19
Oklahoma City, OK	1.09	1.14	1.47	1.47
Dallas, TX	1.00	1.06	1.81	1.54

Note: MSA (metropolitan statistical area). Service use is per capita service use among fee-for-service beneficiaries in each region adjusted for the patient's health status. Regions are defined as MSAs for urban counties and rest of state nonmetropolitan areas for nonurban counties. Post-acute care includes skilled nursing facilities, swing bed, home health care, inpatient rehabilitation facilities, and long-term care hospitals.
*In the rural areas of the state.

Source: MedPAC analysis of beneficiary-level Medicare spending from the 2006–2008 Beneficiary Annual Summary File and Medicare inpatient claims.

We found that levels of SNF and home health care use are similar in nonfrontier rural counties and urban areas. However, beneficiaries in frontier areas tend to use fewer post-acute care services, averaging 1.4 SNF days per FFS beneficiary per year (Table 5-9). The frontier level of 1.4 SNF days per FFS beneficiary is lower than in 78 percent of the urban areas. A key question is whether this lower use in frontier counties is associated with their low population density or is primarily associated with the practice patterns of rural and urban areas in the western United States where most of these counties are located. To test this hypothesis, we examined SNF use in urban areas of five western states with significant frontier populations (Montana, North Dakota, Nevada, South Dakota, and Wyoming). The urban areas of these five states averaged 1.5 SNF days per FFS beneficiary, compared with 1.4 in the rural areas of these states. It appears that the lower use of SNF services in frontier counties is primarily due to the regional pattern of SNF use.

Use of home health care showed a similar pattern. Rates of home health use in most rural counties were similar to urban rates. However, the frontier counties average 0.08 home health episode per beneficiary, far lower than

TABLE 5–9

Skilled nursing facility and home health service volume in rural areas

	Per capita per year:	
Region	Skilled nursing facility days	Home health episodes
Range:		
CBSA urban areas	0.5 to 3.1	0.01 to 1.29
State-wide rural	0.8 to 2.8	0.03 to 0.52
Mean:		
Metropolitan (urban)	2.1	0.15
Rural micropolitan	1.9	0.14
Rural adjacent	1.9	0.16
Rural nonadjacent	1.8	0.15
Frontier counties	1.4	0.08

Note: CBSA (core-based statistical area). Skilled nursing facility days include skilled nursing days in hospital swing beds. Metropolitan (urban) counties contain an urban cluster of 50,000 or more people, rural micropolitan counties contain a cluster of 10,000 to 50,000 people, rural adjacent counties are adjacent to urban areas and without a city of at least 10,000 people, rural nonadjacent counties are not adjacent to an urban area and do not have a city with at least 10,000 people, and frontier counties have 6 or fewer people per square mile.

Source: MedPAC analysis of 2008 Beneficiary Annual Summary File data and home health claims data.

TABLE 5–10 **Medication use by region**

Region	Per Part D enrollee: Monthly spending	Monthly prescriptions
Range:		
CBSA urban areas	$149 to $297	3.0 to 4.9
State-wide rural	138 to $248	3.2 to 4.9
Mean:		
Metropolitan (urban)	215	4.0
Rural micropolitan	216	4.2
Rural adjacent	209	4.3
Rural nonadjacent	206	4.3
Frontier counties	175	3.8

Note: CBSA (core-based statistical area). Expenditures are based on ingredient costs and do not include dispensing fees or taxes. Metropolitan (urban) counties contain an urban cluster of 50,000 or more people, rural micropolitan counties contain a cluster of 10,000 to 50,000 people, rural adjacent counties are adjacent to urban areas and without a city of at least 10,000 people, rural nonadjacent counties are not adjacent to an urban area and do not have a city with at least 10,000 people, and frontier counties have 6 or fewer people per square mile. CBSA urban areas (n=361); state-wide rural (n=48).

Source: MedPAC analysis of 2008 prescription drug event claims.

the urban average. The question once again is the degree to which the lower use of home health care reflects something systematic about frontier areas and the degree to which it reflects something about the practice patterns in western states where the frontier counties are located. Urban areas in the five frontier states average 0.8 home health episode per beneficiary, again suggesting that most of the difference between frontier areas and urban areas reflects regional variation, with southern states having much higher use of home health care than western states where many frontier counties are located.

To be clear, we cannot conclude that there are no access issues for home health and skilled nursing care in rural and frontier areas. We are also not saying what the right level of home health care should be. We are simply saying that we are not able to see a systematic difference in the volume of services between categories of rural and urban areas that is not tied to the large regional differences in use of post-acute care.

Rural access to care for dialysis among fee-for-service beneficiaries

In our focus groups of rural beneficiaries, several individuals mentioned driving to larger communities for dialysis treatments. In 2009, about 22 percent of FFS beneficiaries with end-stage renal disease (ESRD) resided in rural areas while about one-quarter of all dialysis facilities were located in rural areas. During the past five years, the share of beneficiaries with ESRD residing in rural areas and the share of dialysis facilities located in rural areas has remained constant.

One measure of access is the distance that dialysis beneficiaries traveled to seek care. Longer travel time to the dialysis unit has been linked to decreased adherence to the dialysis prescription and increased mortality. We calculated the travel distances for new FFS dialysis beneficiaries in 2004, 2006, and 2008 based on the patients' street addresses (Medicare Payment Advisory Commission 2012). Dialysis beneficiaries who reside in rural areas traveled farther to obtain care than urban beneficiaries. In 2008, the median driving distance was 10.4 miles for rural beneficiaries compared with 5.5 miles for urban beneficiaries. The distances traveled by rural beneficiaries varied. For example, in 2008, one-quarter of rural beneficiaries traveled 3.2 miles or less to obtain care while one-quarter of them traveled 21.4 miles or more. Between 2004 and 2008, the median driving distance for rural beneficiaries declined slightly from 11.0 miles to 10.4 miles.

Another indicator of beneficiary access is the capacity of dialysis providers to furnish care, measured by changes in the number of hemodialysis treatment stations and the number of dialysis facilities. Dialysis providers' capacity has grown at a faster rate in rural areas than in urban areas. During the past five years, the number of hemodialysis treatment stations in rural areas grew by 4.3 percent per year, compared with 3.8 percent per year in urban areas. During the same period, the number of facilities in rural areas grew by 3.2 percent per year, compared with 3.7 percent per year in urban areas.

Use of prescription drugs

On average, beneficiaries in rural areas take about the same number of prescription drugs as, and have expenditures similar to, beneficiaries in urban areas (Table 5-10). Beneficiaries average 4 prescriptions per month in urban areas, compared with 4.3 in nonmicropolitan rural areas. Beneficiaries' average expenditures per month range from $215 in urban areas to $206 in rural nonadjacent areas. Beneficiaries living in frontier counties average slightly fewer drugs at 3.8 prescriptions per month. The small observed differences between rural and urban areas (0.3 difference in prescriptions) are considerably less than

the variation between urban areas and between state-wide rural areas in different regions. For example, in 2008, the average number of prescriptions per month across urban areas varied from 3.0 to 4.9, and monthly expenditures ranged from $149 to $297. Rural monthly per capita prescriptions varied across rural areas from 3.2 to 4.9, and expenditures ranged from $138 to $248 per month.

The frontier category of rural areas is the exception to the pattern of similar use between urban and rural areas. In frontier areas, beneficiaries on average used 0.2 fewer prescription per month and spent $40 per month less than the overall urban average. When we compare the number of prescriptions filled by frontier beneficiaries with those filled by urban beneficiaries in the same state, the differences in prescription use and expenditures drop to 0.1 prescription and $23 per month, respectively.

Access to prescription drugs in rural areas

Beneficiaries living in rural areas often have to travel to receive medical services, including prescription drugs. In the case of drugs, the number of retail pharmacies located in rural areas has declined over the past two years. We analyzed whether this decrease has affected beneficiary access to prescription medications. We found that rural beneficiaries displayed similar utilization levels as urban beneficiaries on average and that regional variance in utilization was similar for rural and urban beneficiaries. We did not find access problems, although some beneficiaries had to travel considerable distances to the nearest retail pharmacy. As a group, rural beneficiaries tended to use multiple pharmacies and chain stores; it was somewhat surprising that they were less likely to use mail order pharmacies than Part D beneficiaries as a whole.

Access to pharmacies in rural areas

About 1 in 15 pharmacies participating in Part D is located in a rural area. Recent trends show that between 2007 and 2009, the number of Part D pharmacies fell 4 percent in rural areas compared with a very slight increase nationwide. Pharmacy access in rural areas showed the following trends:

- Independent pharmacies represent about 60 percent of the rural retail market, in contrast to urban areas, where chain pharmacies predominate (Shambaugh-Miller et al. 2007);
- From 2007 through 2009, the number of independent pharmacies declined in rural and urban areas. In rural areas, independent pharmacies representing 6 percent of all rural pharmacies closed, and in urban areas, independent pharmacies representing 2 percent of urban pharmacies closed.
- Some of the decline in independent pharmacies represented pharmacies changing from independent to a chain or franchise.
- Chain pharmacies grew by 5 percent in rural areas and 4 percent in urban areas.
- Pharmacy closures most commonly occurred in areas with competing pharmacies. However, in roughly 30 percent of the closures, a community was left without a pharmacy in the town (Boyle et al. 2011, Klepser et al. 2008, Xu et al. 2009). Therefore, it is important to evaluate whether Medicare beneficiaries without a pharmacy in town fill prescriptions at other pharmacies in the region or use mail order to obtain medications.

Part D plans must establish pharmacy networks so that 70 percent of beneficiaries within their service area have access to a network pharmacy within 15 miles of their home. In 10 percent of rural counties (121 counties), representing 2 percent of rural beneficiaries (68,596 individuals), beneficiaries had to travel 15 miles or more, on average, to the nearest pharmacy, referred to here as low-access counties (Table 5-11, p. 136).[6] That is not to say there are no individuals in other counties who have to drive more than 15 miles to a pharmacy. However, these counties are the only ones where the driving distance for beneficiaries averages more than 15 miles. With a few exceptions, these low-access counties were located in the western United States, especially the Great Plains and Alaska (Figure 5-2). Despite the reduction in the number of retail pharmacies, we did not observe an increase in travel distances between 2007 and 2009 for beneficiaries in rural counties generally or in low-access counties in particular. The reason for this finding is that the pharmacies that closed tended to be low-volume pharmacies near other pharmacies.

Research showed a significant number of rural pharmacy closures through 2010 (Boyle et al. 2011, Klepser et al. 2008). While these studies raise serious concerns about access to pharmacy services, they do not examine whether beneficiaries in towns without a pharmacy are still filling their prescriptions at other pharmacies in their region. Because of concerns over these closures, we contracted with Acumen, LLC, to conduct a beneficiary-focused analysis to determine whether beneficiaries without a

TABLE 5–11

Average distance to a Part D pharmacy in rural areas

Distance to nearest Part D pharmacy	Rural counties		Rural beneficiaries	
	Number	Percent	Number	Percent
Less than 5 miles	193	16%	968,962	27%
5 miles to <10 miles	789	63	2,356,729	66
10 miles to <15 miles	145	12	201,270	6
15 miles or more	121	10	68,596	2
Total	1,248	100	3,595,557	100

Note: Distances are computed based on the pharmacies' addresses and the population distribution across the beneficiary's ZIP code.

Source: Acumen analysis of 2008 Part D denominator file, Pharmacy cost file, and National Council for Prescription Drug Programs (NCPDP) for MedPAC.

nearby pharmacy are still accessing medications. Acumen found that beneficiaries without a local pharmacy are still accessing medications via regional pharmacies without having to resort to mail order pharmacies.

To examine pharmacy use for beneficiaries without nearby pharmacies, Acumen analyzed Part D claims data for the 100 rural counties with the highest average distance to a participating Part D pharmacy. In 2008, 25,724 beneficiaries enrolled in Part D lived in these low-access counties where the average distance to a pharmacy was 18 or more miles. The purpose of this analysis was not to identify all rural beneficiaries with significant travel times but to identify 100 counties where the average travel time was the longest. Of the beneficiaries in these 100 counties, 89 percent (22,963 beneficiaries) had at least one prescription filled. They averaged 38 fills each for a total of about 874,000 total prescriptions filled during the year. On average, beneficiaries in low-access counties were older than Part D enrollees overall, less likely to be disabled, and more likely to be White or Hispanic. Ninety percent of beneficiaries in these counties who filled prescriptions used retail pharmacies to purchase their drugs.

TABLE 5–12

Fills dispensed by pharmacy type, 2008

	Beneficiaries in low-access counties	Total Part D
Number of fills	874,030	1,255 million
Share dispensed by a pharmacy classified as:		
Retail	84%	79%
Mail order	3	8
LTC	6	10
Other	7	3

Note: LTC (long-term care). Other includes physician offices, specialty pharmacies, home infusion, durable medical equipment, nuclear, federally qualified health centers, rural health clinics, Indian Health Service, and hospitals. *N*= 21,174 beneficiaries in low-access counties.

Source: Acumen and MedPAC analyses of 2008 Part D prescription drug event data from CMS.

Beneficiaries in these low-access counties tended to use multiple pharmacies (Table 5-12). In fact, beneficiaries living in low-access counties used about 5,600 different pharmacies in 2008. They received 84 percent of their prescriptions from retail pharmacies with the majority of beneficiaries (66 percent) getting at least one prescription from a chain pharmacy compared with 53 percent from independents. About 25 percent of beneficiaries purchased at least some drugs at Walmart, although only 14 percent of total prescriptions were purchased there. Three percent of fills were dispensed by mail order pharmacies, but these prescriptions tended to represent more days' supply than individual retail prescriptions. Beneficiaries using more than five prescriptions per month were no more likely to use mail order than other beneficiaries in low-access counties. Beneficiaries in low-access counties were somewhat more likely than average to get their medications from federally qualified health centers, rural health clinics, Indian Health Service, and hospitals.

Despite the large number of pharmacies used by beneficiaries from low-access counties, they received 51 percent of their prescriptions from 607 rural pharmacies (Table 5-13, p. 138). Almost half of their fills (49%) were obtained from nonrural pharmacies. Even more striking,

FIGURE 5–2

100 counties where most beneficiaries drive 18 miles or more to the nearest Part D pharmacy

Note: Beneficiaries in the shaded counties are 18 or more miles on average from the nearest pharmacy participating with a Part D plan. There are individuals with long driving distances in other counties such as in Wyoming, but we selected the highlighted counties because a majority of beneficiaries in these counties had long driving distances. In the unshaded counties, the average distance is less than 18 miles, though there still could be individual beneficiaries with more than an 18 mile travel to a pharmacy.

Source: Acumen analysis of 2008 Part D denominator file, Pharmacy cost file, and National Council for Prescription Drug Programs (NCPDP) for MedPAC.

of the more than 5,600 pharmacies used by beneficiaries in low-access counties, only 26 pharmacies located in rural, low-access counties dispensed 17 percent of all prescriptions for this population, representing an average of 5,590 fills per store. These rural, low-access county pharmacies' significant volume suggests that the Medicare beneficiaries who use those pharmacies fill a significant share of their prescriptions at them.

The data indicate that rural beneficiaries enrolled in Part D were able to get needed medications, despite sometimes having to travel long distances to use retail pharmacies. They used multiple pharmacies but detailed data analyses show that they relied primarily on relatively close pharmacies if such facilities were available. No beneficiaries in our rural focus groups mentioned having difficulty accessing prescription drugs.

While most rural pharmacy closures have been in communities with competing pharmacies, the loss of a pharmacy may affect pharmacy coverage at local hospitals

TABLE 5–13

Number of pharmacies used by beneficiaries in low-access counties by pharmacy type and location

Pharmacy location	Number of pharmacies	Percent of fills for beneficiaries who live in LACs	Average number of fills for beneficiaries who live in LACs per pharmacy
All pharmacies with fills for LAC beneficiaries	5,614	100%	155
Nonrural pharmacies	5,007	49	85
Rural pharmacies	607	51	739
Rural pharmacies in LACs	26	17	5,590

Note: LAC (low-access county). *N*=21,174 beneficiaries.

Source: Acumen analysis of 2008 prescription drug event data for MedPAC.

that do not employ full-time pharmacists. If the number of pharmacists at freestanding small-town pharmacies declines, or if the willingness of retail pharmacists to supervise pharmacies at hospitals declines, there may be a need to expand telepharmacy services where urban hospital pharmacists review pharmacy orders at rural hospitals that do not have in-house pharmacists. Recent experience with telepharmacy shows some promise. The Commonwealth Fund conducted a report on North Dakota's Telepharmacy Project and found that it extended access to patients in their rural communities and was economically sustainable (McCarthy et al. 2008). Initiated in 2002 and still in operation today, the Telepharmacy Project features live, interactive videoconferencing to enable pharmacists at central sites to supervise pharmacy technicians at remote sites; provide patient counseling; and order, verify, and approve prescriptions. When this study was conducted, there were more than 50 retail telepharmacy sites and 25 critical access hospital (CAH) sites that received pharmacist support via teleconferencing in North Dakota. In the case of the retail sites, the remote sites generated enough additional revenue through pharmaceutical sales to fund their costs and the time of the supervising pharmacist. All remote pharmacy sites became self-sustaining after their first year of operation, and over the course of the project, none of the remote sites closed (Peterson 2011b). This could be a promising way to give residents of small towns not only access to pharmaceuticals but also access to pharmacist expertise.

Satisfaction with access is reasonably high

We examined satisfaction with access to care to determine the extent to which beneficiaries report difficulties with any aspect of routine or urgent care with their physician or hospital when needed. Several questions that address access to care were posed to Medicare beneficiaries in the 2008 MCBS. For example, respondents were asked to evaluate their ability to obtain care during off hours on nights and weekends, the relative ease of getting to the doctor from their home, and the quality of the communication from their doctors about their health care. Rates of satisfaction with access from place of residence and communication with physicians (this addresses whether the health information being communicated is accessible to the patient) tended to be very high, regardless of where beneficiaries lived. Results are not shown, but more than 90 percent consistently reported satisfaction (response levels: satisfied and very satisfied) with these measures of access. Satisfaction with the ability to access services on nights and weekends tended to be more moderate, although most of the beneficiaries indicated that this question did not apply to them. Overall, rates of dissatisfaction (response level: dissatisfied and very dissatisfied) were low (Table 5-14). However, access to care during off hours (nights and weekends) was problematic for more rural beneficiaries, particularly those in rural micropolitan and nonadjacent counties. More beneficiaries in urban and rural micropolitan counties were dissatisfied with communication with their physician about their care. Dissatisfaction rates tended to be higher in micropolitan counties overall, but particularly with availability of care by specialists. It is noteworthy that dissatisfaction with communication was far lower in rural nonadjacent counties than in other counties, suggesting the success of the "high-touch" nature of care in these counties.

TABLE 5–14

Few beneficiaries are dissatisfied with measures of access to care

	Share dissatisfied with:			
	Available on nights and weekends	Ease of getting to the doctor from residence	Communication of information about health care	Availability of care by specialists
Metropolitan (urban)	3.6%	4.4%	5.0%	3.4%
Rural micropolitan	6.2	7.0	5.8	6.9
Rural adjacent	4.8	6.0	4.7	3.1
Rural nonadjacent	6.3	4.0	2.6	4.7

Note: Metropolitan (urban) counties contain an urban cluster of 50,000 or more people, rural micropolitan counties contain a cluster of 10,000 to 50,000 people, rural adjacent counties are adjacent to urban areas and without a city of at least 10,000 people, and rural nonadjacent counties are not adjacent to an urban area and do not have a city with at least 10,000 people. *N*=13,393.

Source: 2008 Medicare Current Beneficiary Survey.

The survey also asked beneficiaries whether they experienced any trouble getting health care. Only 4 percent (596 of 13,393 people) indicated that they had any difficulty. A few beneficiaries reported that they had trouble accessing health care because their services were not covered by insurance or because the physician would not treat them or would make them wait an unreasonable amount of time. The reported rates were too small to permit meaningful comparisons between subgroups of rural areas. But given the most common reasons for reduced access in rural areas—transportation and cost—we explored the differences between overall rural and urban reasons for reduced access. Among the 596 beneficiaries who reported any difficulty, 161 indicated that cost was a problem, while 112 said transportation was their main source of trouble. In a breakout of results for rural and urban beneficiaries, cost and transportation were identified as barriers in nearly identical proportions: 1.3 percent and 0.6 percent, respectively, for urban beneficiaries compared with 1.6 percent and 0.6 percent, respectively, for rural beneficiaries. Even among the 4 percent of beneficiaries who reported any difficulty with access, there did not appear to be meaningful differences between urban and rural residents.

Beneficiaries were asked in the MCBS whether they have a usual source of care available. An overwhelming majority responded that they do—approximately 95 percent—and there are no significant differences between urban areas and the three rural groups. This finding was confirmed in the Commission survey conducted in 2010 in which 93 percent of respondents indicated they do not need a new primary care physician. No significant differences were found between urban and rural areas.

The Commission conducts an annual telephone survey of current Medicare beneficiaries to assess their access to care. Much like the MCBS, the telephone survey reflects a random, nationally representative sample of beneficiaries. The rural–urban comparison for this sample is determined by the Office of Management and Budget's core-based statistical area designation, which is factored into the urban influence code taxonomy used by the USDA.[7] In our 2010 survey, Medicare beneficiaries reported similar satisfaction with wait times for routine and emergent doctor's appointments (Table 5-15, p. 140). Among rural beneficiaries, 72 percent reported that they never had to wait for an appointment for routine care, compared with 76 percent of urban beneficiaries. The difference is statistically significant, suggesting that rural residents were slightly more likely to encounter a problem with wait times. However, on every other measure, rural–urban comparisons showed either no difference or rural residents with slightly more positive perceptions of access. A similar share of rural and urban beneficiaries reported looking for a new physician (6 percent and 7 percent, respectively), and among these beneficiaries, a similar share reported some difficulty finding a physician who would treat them. Rural beneficiaries did not report any more difficulty finding a specialist than a primary care physician, suggesting that rural beneficiaries travel the necessary distance to seek and receive care for specialist services.

TABLE 5–15

Access to physician care reported by Medicare beneficiaries in urban and rural areas, 2010

Survey question	All	Rural	Urban
Unwanted delay in getting an appointment: Among those who needed an appointment in the past 12 months, "How often did you have to wait longer than you wanted to get a doctor's appointment?"			
For routine care			
Never	75%	72%*	76%*
Sometimes	17	19	17
Usually	3	4	3
Always	2	2	2
For illness or injury			
Never	83	83	83
Sometimes	13	14	12
Usually	2	1	2
Always	1	1	1
Looking for a new primary care physician: "In the past 12 months, have you tried to get a new primary care doctor?"			
Yes	7	6	7
No	93	94	93
Getting a new physician: Among those who tried to get an appointment with a new primary care physician or a specialist in the past 12 months, "How much of a problem was it finding a primary care doctor/specialist who would treat you? Was it…"			
Primary care physician			
No problem	79	83	78
Small problem	8	3	9
Big problem	12	13	12
Specialist			
No problem	87	85	88
Small problem	6	10	5
Big problem	5	5	5
Not accessing a doctor for medical problems: "During the past 12 months, did you have any health problem or condition about which you think you should have seen a doctor or other medical person, but did not?"			
(Percent answering "Yes")	8	8	8

Note: Numbers may not sum to 100 percent because missing responses ("Don't know" or "Refused") are not presented. Overall sample size for Medicare beneficiaries is 4,000. Sample sizes for individual questions varied. These results use the Census Bureau definitions of urban and rural.
*Statistically significant difference between urban and rural areas within Medicare at a 95 percent confidence level.

Source: MedPAC telephone survey conducted from May to September 2010.

Access to mental health services needs further research

It has been argued that rural areas are in greater need of mental health services (de Groot et al. 2010). Depression, for example, is prevalent among older adults, but incidence rates are reportedly higher in rural areas (Institute of Medicine 2004). Depression tends to exacerbate the effects of other comorbid conditions and therefore is important to address as an area for improvement for rural beneficiaries (de Groot et al. 2010). Yet, fewer mental health care providers (psychologists and psychiatrists, in particular) practice in rural areas than in urban areas. There are also concerns about travel distances to the nearest inpatient psychiatric facility, which can burden the local ambulance company transporting patients from rural communities to psychiatric hospitals.

Claims analysis shows that a comparable share of rural and urban beneficiaries receive some visits for which a mental health concern is the primary diagnosis. Further research is needed to determine whether the beneficiaries are receiving their care from local primary care providers such as nurse practitioners and primary care physicians, from mental health providers in urban areas, or via telemedicine. Research is also needed to determine the relative outcomes for patients who are treated by local primary care physicians compared with subspecialists in mental health. Until we know more about the volumes of mental health care services received and the quality of those services, mental health care in rural areas will remain a concern. One possibility for improving access is using telehealth for mental health services. The use of telehealth in rural areas, particularly the use of telehealth for services that do not require a physical examination such as mental health services, is discussed in the text box (pp. 142–143).

Quality of care in rural areas

In this section we examine the quality of care across different types of rural areas. Because of the inherent diversity among rural areas, we divide urban and rural counties into four categories based on UICs and include a group of frontier counties as we did when we examined access to care. Our data on quality reflect outcomes from services provided in 2009 and 2010. Because measuring quality in Medicare has often focused on hospital care, the preponderance of measures are for the hospital sector.

Summary of findings on quality

We find quality of care is similar for most types of providers in rural and urban areas; however, rural hospitals tend to have below-average performance on mortality and hospital process measures. Beneficiaries report similar levels of satisfaction with the quality of care they receive in rural and urban areas.

Guiding principles for rural quality of care

Over the past year, the Commission has developed two principles to guide our evaluation of the quality of rural health care. Before we present data on the quality of care in rural areas, we present these two principles, which can be used to put the rural quality data in perspective. The principles can also be used to set expectations for the quality of care in rural areas going forward.

Principle 1

Expectations for quality of care in rural and urban areas should be equal for the nonemergency services rural providers choose to deliver. This expectation reflects the belief that for nonemergency care, when there is a choice of whether to treat patients locally or transport them to a larger urban facility, the rural facility should be held to the same standards as the urban facility. The small rural facility should be as good as the alternative site of care.

However, emergency care is different. There may be no alternative, and small rural hospitals are obligated to treat emergent patients. In emergency situations, the expectations for outcomes at small rural hospitals may not be as high as they are for larger facilities. We could ask in these emergency situations if the care delivered was better than having no local emergency care or at least as good as care at similarly sized hospitals. Expectations for emergency services, therefore, should reflect the inherent limitations that exist in small rural hospitals compared with large urban hospitals.

Principle 2

All providers should be evaluated on the services they provide—emergency and nonemergency alike—and the quality of the services should be collected and reported publicly. Most hospitals are currently evaluated on the care they provide to Medicare beneficiaries and their performance is publicly reported on the Hospital Compare website. However, CAHs have the option of not collecting and reporting Hospital Compare data. As the Commission has stated, providers should be evaluated on all the services they provide. This includes measures common among rural and urban providers as well as measures that are specific to rural providers' scope of practice, such as timely communication of patient information after a transfer.

To allow equal access to information for rural and urban patients, all hospitals should be subject to public disclosure of their performance scores. Each small and low-volume provider could pool its data over a number of years to alleviate the concern of random variation in their performance scores. This is a step toward improving accountability and the quality of care delivered in small facilities.

Background on rural quality

The Institute of Medicine has defined quality as the degree to which services for individuals and populations increase

Use of telehealth is limited in rural areas other than for mental health services

Medicare covers telehealth services provided through live, interactive videoconferencing between a beneficiary located at a certified rural site and a distant practitioner. Despite increases in Medicare payment rates for telehealth services and federal grants to encourage telehealth, the number of telehealth services (although growing) remains small. Studies suggest that telehealth is most effective for specialties that rely on verbal discourse and not necessarily physical contact, such as mental health. In addition, there is promise for the use of telepharmacy, where consulting pharmacists supervise remote pharmacy technicians, and tele-emergency care, where central emergency room physicians consult with remote primary care providers treating patients in emergency rooms.

Payment for telehealth services increased in 2001

In January 1999, legislation allowed Medicare to begin paying for telehealth, with a single payment set to the physician fee schedule rate and split between the distant practitioner, who would receive 75 percent of the fee, and the practitioner at the "originating site" (i.e., the site where the patient is located), who would receive 25 percent. Originating sites were limited to practitioners' offices, hospitals, critical access hospitals, rural health clinics, and federally qualified health centers located in rural health professional shortage areas. Originating sites were required to have a practitioner (e.g., physician, nurse practitioner) present with the beneficiary during telehealth visits. The two practitioners (the distant site and the originating site) objected to having to split the single payment.

In 2001, the Medicare, Medicaid, and SCHIP Benefits Improvement and Protection Act of 2000 (BIPA) attempted to encourage telehealth by reducing regulations and increasing payments. First, BIPA removed the requirement that a practitioner be present at the originating site, so consulting providers no longer had to split the Medicare payment. Second, it required that Medicare pay distant practitioners the same amount for providing telehealth services that they would have received had they provided the service in person. Third, in addition to the fee paid to the distant provider, BIPA required that Medicare make a separate facility fee payment to originating sites. This payment is currently $24.[8] The net result is that the system shifted from requiring two providers and making a single payment to requiring one provider and making two payments.

Increased payments did not dramatically increase beneficiaries' use of telehealth

Despite the increase in payment rates, the volume of telehealth services received by Medicare beneficiaries, although growing, remains very low. Based on our examination of 2009 Medicare claims for telehealth services, we found that beneficiaries made about 38,000 telehealth visits in 2009. Fewer than 400 practitioners provided 10 or more telehealth services to beneficiaries in 2009. The claims data are consistent with information obtained from our site visits to rural communities over the years where providers often have telehealth capability but rarely use it.

The literature cites several reasons for the limited use of telehealth. Common explanations include lack of private payer coverage, thereby discouraging capital investment in telehealth; interstate licensure issues; nonuniform engineering standards; confidentiality and liability concerns; and, in some cases, a perceived lack of need for telehealth services (Abel et al. 2005,

(continued next page)

the likelihood of desired health outcomes (Institute of Medicine 1990). We examine three aspects of quality:

- patient satisfaction
- process measures
- outcome measures

Patient satisfaction is the degree to which patients believe their health care needs were addressed, their questions answered, and their voices heard during an encounter with the health care system. Patient satisfaction scores are metrics that patients and their families easily understand and care about. They reflect how patients feel about the care they received. Incorporating the patient's perspective

Use of telehealth is limited in rural areas other than for mental health services (cont.)

Institute of Medicine 2004, Johnston et al. 2000, Luo 2008, Whitten and Buis 2006). In addition, the would-be distant practitioners may consider providing telehealth services to be a poor investment of their time (Grigsby et al. 2007). Practitioners with a full workload may decide that telehealth requires more time and effort than they are willing to commit. In addition, telehealth disrupts usual practice patterns, and practitioners may not be interested in adjusting their routines to accommodate it. The cost of managing the daily operation of video networks; the cost of peripheral devices, such as dermatology cameras and digital stethoscopes; and prior adverse experiences in telehealth, such as scheduling issues, cancelations, and technical difficulties with videoconferencing, also may discourage the adoption of telehealth (Luo 2008). Providers may not want to deal with these administrative difficulties if they already have a sufficient population of local patients.

Of the relatively small number of telehealth services provided to beneficiaries, the most common are mental health services, including pharmacologic management. We found that beneficiaries had about 38,000 telehealth visits in 2009. Most of these visits (62 percent) were for mental health services—pharmacologic management (42 percent), individual psychotherapy (8 percent), and psychiatrist diagnostic interview examinations (7 percent). About one-third (31 percent) were office and other outpatient visits. Five percent were for end-stage renal disease services. The remaining 2 percent were for other services. Some of these services may represent improper billing.[9] Among the 369 distant practitioners that provided 10 or more telehealth services to beneficiaries in 2009, about half (49 percent) were mental health practitioners—psychiatrists (44 percent), clinical psychologists (3 percent), and licensed clinical social workers (2 percent). About one in five (19 percent) was some other health care professional, including nurse practitioners (13 percent), physician assistants (3 percent), and certified clinical nurse specialists (3 percent).

Evidence of impact of telehealth on health outcomes

The Agency for Healthcare Research and Quality assessed the body of literature on the efficacy of telehealth for the Medicare population and found that it was most effective for specialties that rely on verbal discourse and not necessarily physical contact, including mental health and neurology (Hersh et al. 2006). For such specialties, services provided via telehealth can probably achieve results comparable to in-person care. Evidence on the efficacy of telehealth in other specialties—including dermatology, ophthalmology, wound care, and gynecology—was mixed or limited.

Some rural emergency departments are using telehealth for rapid consultation with emergency care specialists at distant sites. While the literature on telehealth in emergency departments tends to be conducted by researchers associated with telehealth emergency care programs, the results from these studies are generally positive (Blanchet 2008, Doheny-Farina et al. 2003, Duchesne et al. 2008, Latifi et al. 2007, Ricci et al. 2003, Rogers et al. 2001, Sorondo et al. 2011). Results suggest that telehealth may improve the appropriateness of care through improving access to specialists at trauma centers and may also save money through avoiding expensive transports. Independent studies on the impact of telehealth in emergency departments on health outcomes and costs are needed. ■

as a measure of quality has gained momentum and CMS has begun to include patient satisfaction scores in new payment programs in its attempt to improve patient-centered care.

Process measures are indicators of providers' care practices. For example, the provision of a foot exam, an eye exam, and hemoglobin A1c level checks within the course of one year are measures of whether an acceptable standard for clinical practice was met for a patient with type II diabetes. Some maintain that for process measures to be good indicators of quality, they must have a causal link to outcomes. Many have found a weak association between outcomes and established process measures for specific conditions (Fonarow et al. 2007, Nicholas et al.

FIGURE 5–3

Share of beneficiaries who are satisfied or very satisfied with aspects of health care quality, 2008

Note: Metropolitan (urban) counties contain an urban cluster of 50,000 or more people, rural micropolitan counties contain a cluster of 10,000 to 50,000 people, rural adjacent counties are adjacent to urban areas and without a city of at least 10,000 people, and rural nonadjacent counties are not adjacent to an urban area and do not have a city with at least 10,000 people.

Source: Medicare Current Beneficiary Survey, 2008.

2009, Ryan et al. 2009, Werner and Bradlow 2006). Even when there are moderate correlations between process measures and outcomes, there has not been evidence of a strong predictive relationship between adherence to process measures and ideal outcome performance (Bradley et al. 2006). Another caution about process measures is that patients do not place great importance on these measures because they see them as the standard duties of their caregivers. Also, the importance of a specific component of care may simply elude most patients (Rubin et al. 2001). Patients care about outcomes—specifically, whether they get the results they expected upon seeking care.

Providers, on the other hand, favor process measures because the indicators are tied directly to the actions of the provider. Process measures are straightforward and easy to interpret and are a good method for providing feedback on quality improvement endeavors because it is easy for providers to identify what processes they followed or failed to follow. Process measures also have the advantage of often not requiring risk adjustment for patient severity (unlike outcome measures). In addition, they provide an opportunity to detect flaws in a timely fashion and hence make prompt adjustment. However, there is opportunity to improve the specificity of process measures currently collected on hospital performance. CMS could remove measures that can be answered from check boxes without documentation to confirm that they took place and remove measures that have too many intervening processes before the desired outcome is realized (Chassin et al. 2010). For example, discharge instructions that specify patient care once patients leave the hospital is sound medical practice, but the process measure to indicate whether patients received instructions does not distinguish if the instructions were clear, were easy to understand, or allowed patients to ask questions. Studies have found that simply providing discharge instructions, as opposed to the quality of the discharge instructions, is not correlated with hospital outcomes (Jha et al. 2009).

Outcomes are the end results of care or the effect of the process of care on an individual or population. An example of an outcome measure is whether the patient survived. Patients, and ultimately providers and policymakers, care

TABLE 5–16

Patient satisfaction measures from Hospital Compare

	Metropolitan (urban)	All Rural	Rural micropolitan	Rural adjacent	Rural nonadjacent	Frontier
Rate their hospital highly (9–10)	67%	67%	66%	68%	69%	67%
Rate their hospital poorly (0–6)*	9	8	9	8	8	8
Definitely recommend hospital*	70	67	67	68	69	68
Definitely would not recommend hospital*	6	5	5	5	4	4

Note: The location refers to the location of the hospital. Metropolitan (urban) counties contain an urban cluster of 50,000 or more people, rural micropolitan counties contain a cluster of 10,000 to 50,000 people, rural adjacent counties are adjacent to urban areas and without a city of at least 10,000 people, rural nonadjacent counties are not adjacent to an urban area and do not have a city with at least 10,000 people, and frontier counties have 6 or fewer people per square mile.
*Differences are small, though they are statistically significant.

Source: MedPAC analysis of Hospital Consumer Assessment of Healthcare Providers and Systems data. Accessed July 2011.

most about outcomes of care. However, an important consideration when using outcome measures is that outcomes are not entirely under the control of health care providers. Thus, outcome measures might not always reflect the quality of care received (Rubin et al. 2001). Global outcome measures, therefore, must include risk adjustment or case-mix adjustment techniques to adjust for the severity of the patient's illness before seeking care. However, risk adjustment should be limited to patient characteristics to avoid adjusting away differences in performance among providers with different characteristics. Done properly, risk adjustment can help outcome measures be a fairer assessment of the quality of care delivered and reduce bias.

Patient satisfaction in rural and urban areas is relatively equal

We examine patient satisfaction with physicians, the health care system, and hospitals. These indicators of satisfaction reflect patients' perspectives and do not always correlate with data on outcome measures.

Patient satisfaction with physicians and overall care is similar

On average, urban and rural beneficiaries were very satisfied with their physicians and their overall care according to results from the MCBS. Medicare beneficiaries were asked about their satisfaction with follow-up care after receiving treatment, their perceptions about the physician's overall concern about their health, the overall quality of their care during the past year, and their satisfaction with the information they received about their health in general. More than 95 percent of beneficiaries across all urban and rural groups were satisfied or very satisfied with each of the four aspects of quality of care they were asked about in the MCBS (Figure 5-3).

Beneficiary satisfaction with rural hospitals is mixed

Medicare's Hospital Compare website publicly reports rates of patient satisfaction across several domains for all hospitals. We present performance on the two summary measures of satisfaction with the hospital: how beneficiaries rate their hospital from 0 to 10 and whether they would recommend the hospital. The Hospital Consumer Assessment of Healthcare Providers and Systems survey asks patients to rate their hospital from 0 (poorest) to 10 (best). Most patients (about 67 percent) rated rural and urban hospitals highly. Far smaller similar shares of urban and rural patients (9 percent and 8 percent, respectively) gave their hospitals the lowest ratings (Table 5-16). A slightly higher share of patients from urban hospitals (70 percent) would "definitely recommend" their hospitals compared with patients from rural hospitals (67 percent). However, a slightly higher share of urban patients would also definitely not recommend their hospital (6 percent compared with 5 percent). These differences in Medicare beneficiary ratings are small and suggest similar levels of satisfaction.

Our findings present a paradox. On the one hand, a recent survey found that rural consumers and rural physicians both tend to rank the quality of their local hospitals slightly lower than urban individuals (UnitedHealth Center for Health Reform & Modernization 2011). Consistent with this finding, a 2003 study found that 20 percent of the rural

TABLE 5–17 **Performance on quality measures in skilled nursing, home health, and dialysis sectors**

	Metropolitan (urban)	Rural micropolitan	Rural adjacent	Rural nonadjacent	Frontier
Skilled nursing facilities					
Higher is better					
Share of SNF patients discharged to the community	42%	42%	40%	39%	43%
Lower is better					
Potentially avoidable hospitalizations	19%	18%	19%	18%	16%
Home health agencies					
Lower is better					
Discharge to hospital from home health	31%	31%	32%	32%	30%
End-stage renal disease outcomes					
Higher is better					
Dialysis adequacy for hemodialysis patients	94%	94%	94%	93%	*
Lower is better					
Number of hospitalizations per year	2.0	1.8	1.8	1.8	*
Have a catheter	81%	80%	81%	82%	*

Note: SNF (skilled nursing facility). The five conditions in the measure of potentially avoidable rehospitalization for SNF patients include congestive heart failure, respiratory infection, electrolyte imbalance, sepsis, and urinary tract infection. Higher rates of discharge to the community represent better outcomes. Metropolitan (urban) counties contain an urban cluster of 50,000 or more people, rural micropolitan counties contain a cluster of 10,000 to 50,000 people, rural adjacent counties are adjacent to urban areas and without a city of at least 10,000 people, rural nonadjacent counties are not adjacent to an urban area and do not have a city with at least 10,000 people, and frontier counties have 6 or fewer people per square mile.
*Indicates too few cases to report for adequate comparison for outcomes of end-stage renal disease.

Source: MedPAC analysis of Medicare claims data.

population bypass their local hospital for basic medical admissions, and a 2005 survey of residents near CAHs showed that an average of 32 percent chose to bypass local providers for "primary medical care" (Liu et al. 2008, Radcliff et al. 2003). On the other hand, when hospital patients (not the whole community) are surveyed about their satisfaction, they tend to report equal satisfaction and have reported higher satisfaction for some of the smallest hospitals (Casey et al. 2010a, Flex Monitoring Team 2011). There are at least two possible explanations for this paradox. First, it may be that rural hospital quality is better than the general perceptions of the community and that patients are satisfied when they actually use the hospital. A second possibility is that different patients have different preferences. Those who prefer high-touch over high-tech medicine and like their local physician may prefer the local hospital and be happy when treated there. Other members of the same community may prefer a higher tech approach to medicine or may dislike the local physicians and choose to go to distant hospitals. The result may be that people who use their local rural hospital tend to rate the rural hospital more highly than those who choose not to use it.

Process and outcome measures for post-acute care and dialysis providers

We examined quality for SNFs, home health providers, dialysis facilities, and hospitals, focusing on outcome measures where available. In general, we found similar levels of quality for rural and urban providers.

Skilled nursing facilities' outcomes do not differ for urban and rural providers

Two measures are used to gauge the quality of care beneficiaries receive in SNFs: the risk-adjusted rate of discharge back to the community and the risk-adjusted rate of rehospitalization for five potentially avoidable conditions (congestive heart failure, respiratory infection, urinary tract infection, sepsis, and electrolyte imbalance). These conditions are considered care sensitive—that is, with adequate monitoring and nursing care, most patients with these conditions can be treated in the SNF without being transferred to a hospital.

The quality of care that most rural beneficiaries received did not differ substantially from the care that urban

beneficiaries received. The rates of community discharge and rehospitalization were similar for rural micropolitan beneficiaries and urban beneficiaries. Beneficiaries living in rural adjacent and rural nonadjacent areas had lower rates of discharge to the community. The small share of beneficiaries living in frontier areas received slightly better care than both urban beneficiaries and beneficiaries living in other rural areas, with higher rates of community discharge and lower rehospitalization rates (Table 5-17).

Home health outcomes are similar for urban and rural home health agencies

The outcome measure we used for the home health sector was the share of patients discharged to a hospital after initiation of home health services (lower rates are better). Urban providers discharge about 31 percent of their patients to a hospital, and other rural areas discharge 30 percent to 32 percent. The differences between urban and different categories of rural areas are slight.

Similar quality of care among urban and rural dialysis facilities

For dialysis patients, process and outcome measures do not appear to differ among urban and rural locations. Rates of hospitalizations are slightly lower in rural areas but these differences are very small. The share of hemodialysis patients who receive adequate dialysis is virtually the same across rural and urban areas. For beneficiaries new to dialysis in 2009, the proportions who had a catheter (where lower rates are better) were similar across rural and urban areas, with rural micropolitan areas posting the best rates of all the groups.

Process and outcome measures for rural hospitals

Having examined patient satisfaction for rural and urban hospitals, we also compared the two groups on other process and outcome measures, focusing more on outcome measures because of potential concerns about differences in coding process measures and the importance of outcomes to patients. Small rural hospitals tended to have lower scores on process measures and higher risk-adjusted mortality.

Hospital process-of-care measures

We used process-of-care measures from the Hospital Compare data that are publicly posted on CMS's website.[10] All prospective payment system (PPS) hospitals are required to participate in Hospital Compare, and CAHs have the option of participating. Reported measures to evaluate hospital performance are acute myocardial infarction (AMI), congestive heart failure, pneumonia, and surgical care. CMS recently added outpatient measures to the list to capture quality in processes most salient in outpatient care settings. While process-of-care measures have improved for rural and urban hospitals, hospitals in more rural locations still have lower average performance on most process measures (Table 5-18, p. 148). For example, 92 percent of patients in urban hospitals suffering from pneumonia were assessed and given pneumococcal vaccine compared with an average 86 percent in rural hospitals. Among the rural categories, performance declined from 91 percent in micropolitan areas to 77 percent in frontier areas.

Differences in scores were largest for heart failure measures. For instance, the difference between urban and all rural hospitals in rates of heart failure patients who received evaluation of left-ventricular systolic function was 12 percentage points. The above measures include CAH and PPS hospitals. When we examined rural PPS hospitals and CAH performance separately, we generally found slightly lower performance at both rural PPS hospitals and CAHs when compared with urban hospitals. This result is consistent with the literature, which shows that while CAHs and other hospitals improved their process measures over time, a gap remains where CAHs tend to have worse performance scores on process measures than other rural PPS hospitals (Casey et al. 2010a).

Of the seven heart attack process measures on Hospital Compare, very few rural hospitals reported measures for fibrinolytic medication within 30 minutes or percutaneous coronary intervention within 90 minutes. In many cases, small rural hospitals stabilize and transport these patients to a larger hospital rather than admit them. Of the conditions listed in Table 5-19 (p. 149), CAHs posted the lowest response rates for the AMI measures (average response rate for 7 AMI measures was 24 percent). Average CAH response rates were highest for pneumonia (average 86 percent) followed by heart failure (75 percent).

CMS began publicly reporting process measures for surgical care for hospitals that voluntarily participated in 2008. Rural hospitals performed worse than urban hospitals for all the measures for which enough hospitals were reporting to draw conclusions. For the 201 hospitals located in frontier counties, scores on most process measures for AMI, pneumonia, and heart failure were worse than in urban areas and slightly worse than in other

TABLE 5–18

Selected hospital process measures

	Metropolitan (urban)	All rural	Rural micropolitan	Rural adjacent	Rural nonadjacent	Frontier
Pneumonia						
Assessed and given pneumococcal vaccine	92%	86%	91%	85%	80%	77%
Given most appropriate initial antibiotic	91	88	90	88	85	83
Initial ED blood culture before first hospital antibiotic	95	92	95	91	90	88
Heart failure						
Received discharge instructions	87	76	82	73	67	56
Evaluation of LVS function	97	85	93	81	74	65
ACE inhibitor or ARB for LVSD	94	86	90	83	81	79
Heart attack/AMI						
Given aspirin at arrival	97	93	95	93	88	91
Given ACE inhibitor or ARB for LVSD	95	89	92	84	86	*
Given fibrinolytic (blood clot) medication within 30 minutes of arrival	46	47	48	*	*	*
Surgical Care Improvement Project						
On beta blockers before or after surgery	91	86	89	79	80	73
Removal of catheters within a day or two	88	84	85	84	81	84
Physician ordered treatments to prevent blood clots	92	86	89	81	83	79

Note: ED (emergency department), LVS (left ventricular systolic), ACE (angiotensin-converting enzyme), ARB (angiotensin II receptor blocker), LVSD (left ventricular systolic dysfunction), AMI (acute myocardial infarction). The data shown include prospective payment system and critical access hospitals; if critical access hospitals are removed, process measures still trend toward lower scores as the gradation of rurality increases. Metropolitan (urban) counties (n=2,764) contain an urban cluster of 50,000 or more people, rural micropolitan counties (n=825) contain a cluster of 10,000 to 50,000 people, rural adjacent counties (n=534) are adjacent to urban areas and without a city of at least 10,000 people, rural nonadjacent counties (n=489) are not adjacent to an urban area and do not have a city with at least 10,000 people, and frontier counties (n=201) have 6 or fewer people per square mile.
*Fewer than 30 hospitals reported.

Source: Hospital Compare website, accessed July 2011.

rural areas. On some measures for pneumonia and heart failure, two common clinical conditions at all hospitals, frontier hospitals show significantly worse performance. This does not suggest that the average rates in urban hospitals are optimal but simply states that rural hospitals tend to perform worse than their urban counterparts on these process measures.

Process measures for outpatient care reflect practices delivered in outpatient settings for certain patients (i.e., chest pain, possible AMI, and surgery patients). Regarding the time elapsed between the patient's arrival and the provision of fibrinolytic (blood clot) medication, hospitals in rural areas as a group slightly outperformed urban hospitals, and the difference was statistically significant (Table 5-19). Hospitals in rural areas as a group also outperformed urban hospitals on the average number of minutes for chest pain patients to receive an electrocardiogram. Equal shares of chest pain patients in rural and urban areas received aspirin within 24 hours of arrival.

For mean minutes for chest pain patients to be transferred to another hospital, rural hospitals posted longer times than urban hospitals. This result was unexpected given that many rural hospitals transfer patients, once they are stabilized, to larger facilities. In some cases, attending physicians in rural hospitals are not on site and have to travel to the hospital after the patient arrives, possibly increasing the total time to transfer (Casey et al. 2008b).

The outpatient process measures primarily reflect the experience of PPS hospitals. CAH participation rates were very low for outpatient measures, with most of the measures showing only 12 percent or 13 percent of CAHs reporting. It is possible that CAHs may be better or worse than these rates suggest.

TABLE 5–19

Outpatient process measures for all hospitals

	Metropolitan (urban)	All rural	Rural micropolitan	Rural adjacent	Rural nonadjacent	Frontier
Lower numbers reflect better performance						
Mean:						
Minutes to fibrinolysis	41	37	34	40	38	44
Minutes for chest pain patients to be transferred	92	114	106	128	127	*
Minutes for chest pain patients to ECG	14	11	10	11	12	16
Higher numbers reflect better performance						
Chest pain: Aspirin within 24 hours of arrival	94%	94%	95%	93%	94%	96%
Antibiotic within 1 hour before surgery	90	84	87	76	78	82
Outpatient surgery patients who got correct antibiotic	93	91	92	87	88	*

Note: ECG (electrocardiogram). All rural/urban differences are statistically significant. Metropolitan (urban) counties (n=2,764) contain an urban cluster of 50,000 or more people, rural micropolitan counties (n=825) contain a cluster of 10,000 to 50,000 people, rural adjacent counties (n=534) are adjacent to urban areas and without a city of at least 10,000 people, rural nonadjacent counties (n=489) are not adjacent to an urban area and do not have a city with at least 10,000 people, and frontier counties (n=201) have 6 or fewer people per square mile.
*Fewer than 30 hospitals reported.

Source: Hospital Compare website, accessed July 2011.

As we stated earlier in this chapter, there is an inherent diversity among rural areas. They are not homogenous. For process measures in hospital inpatient and outpatient settings, we found that rural micropolitan hospital performance was on par or only slightly below urban hospitals for several measures. However, the rates for rural adjacent areas, rural nonadjacent areas, and frontier areas were lower than for rural micropolitan areas. While there may be some top performers in rural and frontier areas, frontier areas often do not match urban and micropolitan hospitals' adherence to process protocols.

Hospital outcome measures

We examined urban and rural hospital performance on two measures: readmissions and mortality. However, when making these comparisons it is important to understand the effect of hospital size (expressed as the volume of discharges or size of the medical staff) on each measure. The average size and volume of hospitals in each of the rural/urban areas vary, with size and volume getting increasingly smaller the more rural the location (Table 5-20). A long history of research shows a correlation between volume and outcomes (Durairaj et al. 2005,

TABLE 5–20

Hospital size across metropolitan and rural areas, 2009

	Metropolitan (urban)	Rural micropolitan	Rural adjacent	Rural nonadjacent	Frontier
Number of hospitals	2,764	825	534	486	201
Mean:					
Number of beds	264	105	39	35	23
Medicare discharges	3,453	1,540	495	458	200
Total discharges	11,052	3,595	1,023	932	430

Note: Metropolitan (urban) counties contain an urban cluster of 50,000 or more people, rural micropolitan counties contain a cluster of 10,000 to 50,000 people, rural adjacent counties are adjacent to urban areas and without a city of at least 10,000 people, rural nonadjacent counties are not adjacent to an urban area and do not have a city with at least 10,000 people, and frontier counties have 6 or fewer people per square mile.

Source: MedPAC analysis of provider of service file, Medicare cost reports and MedPAR files

TABLE 5–21

Risk-adjusted 30-day mortality is higher in rural hospitals

	Heart failure		Pneumonia	
Mortality measure	**Urban**	**Rural**	**Urban**	**Rural**
CMS Hospital Compare	10.8%	11.5%	11.2%	11.8%
AHRQ methods	10.7	12.5	10.2	12.2

Note: AHRQ (Agency for Healthcare Research and Quality). The AHRQ method examines mortality risk using 3M APR–DRG risk of mortality groups. Measures for the median hospital are presented to avoid the influence of outliers.

Source: CMS Hospital Compare of 2008 to 2010 claims and MedPAC analysis of 2010 claims files using AHRQ method for computing risk-adjusted 30-day mortality rates at prospective payment system hospitals.

Institute of Medicine 2000, Keeler et al. 1992, Silber et al. 2010) as we discuss below. For that reason, when evaluating hospital mortality, we divide hospitals into size categories to distinguish volume effects from a rural location effect.

Similar readmission rates among rural and urban PPS hospitals

Our comparison of rural and urban hospital readmission rates, which included PPS hospitals but not CAHs, showed similar rates for the two groups. The median urban hospital's readmission rate across all conditions, heart failure cases, and pneumonia cases was less than 1 percentage point lower than the rural average. Similarly, we did not see consistent differences across the major categories of hospital size, suggesting that there was not a large volume–outcomes relationship for readmissions. This finding on size and volume is consistent with earlier studies (Klug et al. 2010). However, as we discuss later, we see some difference in readmission rates for the CAHs with the smallest medical staffs.

Mortality rates somewhat higher in rural PPS hospitals than in urban hospitals

We focused our comparisons of mortality at PPS hospitals on pneumonia and congestive heart failure. We present these two measures because they are common conditions in even the smallest rural hospitals. Rural PPS hospitals had somewhat higher mortality rates for these two conditions than urban PPS hospitals (Table 5-21). We show two methods of measurement for each condition: The first row is from Hospital Compare, and the second uses the Agency for Healthcare Research and Quality (AHRQ) risk-adjustment method.

Under either method of measurement, rural hospitals have somewhat higher mortality rates than urban hospitals, although the effect is less pronounced in the CMS measure. The CMS measure is designed to avoid the risk of having random variation categorize an individual provider as a top performer or a poor performer. To accomplish this, CMS presents data that are a blend of the experience of the subject hospital and the average experience in the country. For a smaller hospital, less of its information is used and more of the national average is used. "In essence, the predicted mortality rate for a hospital with a small number of cases is moved toward the overall U.S. national mortality rate for all hospitals" (Centers for Medicare & Medicaid Services 2011). The net result of this method is to compress reported values toward the mean (Silber et al. 2010). The AHRQ method we used reports only data from the subject hospital, does not compress differences across classes of hospitals, and is more appropriate for comparing aggregate rural and urban quality. The CMS method may be less likely to mislabel a single hospital as a poor performer, but it understates differences across categories of hospitals, such as low-volume and high-volume hospitals or rural and urban hospitals.

Because rural hospitals tend to be much smaller than urban hospitals, the difference in mortality rates could partially reflect a volume–outcomes relationship and not just a rural/urban effect. For that reason, we divided PPS hospitals into size categories (Table 5-22). Under the AHRQ method, the median rural hospital compared with the median urban hospital has a 2 percentage point higher risk-adjusted heart failure mortality rate (12.5 vs. 10.7) and pneumonia mortality rate (12.2 vs. 10.2). Much of this difference is due to differences in volume. The difference

TABLE 5–22

PPS hospital risk-adjusted mortality rates, by rural and urban status

	Heart failure				Pneumonia			
	AHRQ method		CMS method		AHRQ method		CMS method	
Discharges	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
1,001–2,000	11.8%	13.8%	11.0%	11.6%	12.3%	13.7%	11.6%	11.8%
2,000–4,000	11.8	12.8	11.3	11.5	10.9	12.4	11.5	11.9
4,000–8,000	10.9	12.0	11.0	11.4	10.7	11.3	11.4	11.9
Over 8,000	10.4	10.9	10.7	11.2	9.9	11.0	11.0	11.7
All sizes	10.7	12.5	10.8	11.5	10.2	12.2	11.2	11.8

Note: PPS (prospective payment system), AHRQ (Agency for Healthcare Research and Quality). Medians are presented to limit the influence of outliers. Results were similar in 2007, 2008, and 2009. The AHRQ method shows more variation based on size because the method used by CMS blends small hospital-specific performance with average performance by all hospitals, thus masking any differences in mortality that may be due to size (Silber et al. 2010). Thus, the CMS mortality data are not appropriate for comparing outcomes at rural and urban or small and large hospitals. We did not examine PPS hospitals with fewer than 1,000 discharges because of the small sample of hospitals. Differences in hospital size and rural status were found to both be statistically significant ($p<0.01$) when tested in a series of linear regression models where risk-adjusted mortality was the dependent variable and the independent variables were discharge volume, system membership, a rural indicator, and hospice use in the county.

Source: MedPAC analysis of 2010 claims files using AHRQ methodology for computing risk-adjusted morality rates.

in mortality rates shrinks to 1 percentage point or less when comparing the largest rural and urban hospitals (10.9 vs. 10.4 for heart failure and 11.0 vs. 9.9 for pneumonia). While much of the rural/urban difference is explained by the volume effect, rural providers still have slightly higher risk-adjusted mortality even after controlling for volume and hospice use. [11]

Outcomes among critical access hospitals

Given the volume–outcome relationships in our analysis and in the literature, we decided to examine the relationship between volume and outcomes in the smallest rural hospitals to see if there is a need for particular concern with respect to very low volumes. We compared CAHs of different sizes with the same AHRQ risk-adjusted mortality methods described earlier. The reason we compared CAHs with CAHs is because they have similar incentives for coding, which could avoid distortions that may occur when comparing risk-adjusted quality of a CAH with a PPS hospital that may have an incentive to more fully code comorbidities.

We divided CAHs with available data into three categories: those with fewer than 5 admitting providers (290 CAHs), those with 5 to 10 admitting providers (497 CAHs), and those with more than 10 admitting providers (200 CAHs). The CAHs with more than 10 admitters had an average of 1,250 admissions per year, compared with the smallest CAHs, which had fewer than 5 admitters and an average of 300 admissions per year. We categorized CAHs by the number of admitting providers rather than by the volume of cases because it indicates the number of colleagues a rural physician has to consult with and it also eliminates some statistical issues with respect to measuring the effect of size on readmissions.[12] We found that CAHs with more than 10 admitters had risk-adjusted mortality rates that were 1 to 2 percentage points lower than the CAHs with fewer than 5 admitting providers. Likewise, readmission rates were lower at the larger CAHs. Clinicians at CAHs with fewer than five admitters may be challenged by having few colleagues on the medical staff to share ideas with, and the staff of the hospital may simply have less practice treating particular conditions because of the small patient load. We do not contend that small CAHs cannot achieve good outcomes; we contend only that they may be less likely to achieve better than average mortality because of limited human resources and fewer cases to learn from as others have noted (Joynt et al. 2011a, Joynt et al. 2011b).

Volume effect has been observed for many years

Twenty years ago, Keeler and colleagues examined rural hospital quality from three angles: mortality, process measures, and subjective opinions of physicians engaged in chart reviews. Across all three dimensions, small

rural hospitals tended to have comparatively poorer performance (Keeler et al. 1992). The study was reported in the *Journal of the American Medical Association* and received substantial criticism from rural health care leaders (Behringer 1993, Buck 1993, Rosenblatt and Hart 1993). Critics argued that Keeler used data from the 1980s and that rural providers could have improved by 1992, the year the study was published. However, a Commission review of 2003 mortality rates showed higher mortality for low-volume rural hospitals compared with high-volume rural hospitals (Medicare Payment Advisory Commission 2005). While both rural and urban hospitals have improved their performance over the years, recent studies continue to show that rural hospitals continue to have slightly worse quality metrics on average, and small CAHs tend to have higher mortality than larger hospitals (Casey et al. 2010b, Joynt et al. 2011a, Silber et al. 2010). None of the studies suggests that there are no high-quality rural hospitals; they just suggest that, on average, outcomes tend to be better at higher volume hospitals, which are often in urban areas.

A key question raised in Keeler's 1992 article that remains unresolved is the extent to which patient volume is a choice for providers. For the most isolated small rural communities, volume is not a choice, as they will always face the difficulties of low patient volumes because of small patient populations in isolated areas. However, Keeler suggested that for some rural hospitals near other rural hospitals consolidation is a choice and could improve outcomes. Some may argue that not merging has impeded increasing volumes and improving outcomes, but others may argue against merging small hospitals and believe that a 15-mile or 20-mile drive is a considerable distance for areas without public transportation (Rosenblatt and Hart 1993). The fundamental choice is between preserving hospitals and increasing average volume per hospital. This choice is exactly the same one that policymakers faced 20 years ago when Keeler presented his findings. To date, Medicare payment policy has come down on the side of preserving most small rural hospitals by providing essentially all small rural hospitals with cost-based reimbursement.[13]

Increased participation of rural providers in quality reporting

To improve quality in the smallest hospitals, those hospitals could increase the measurement of quality indicators and participation in quality-reporting activities. CAHs, for example, are allowed to opt out from reporting quality measures currently posted on Hospital Compare and do not have to prepare the Minimum Data Sets for the skilled nursing care provided to post-acute patients that is mandatory for other hospitals and SNFs. Not collecting and reporting data may impede research on the quality of care delivered in CAHs and may weaken incentives to improve care. Policymakers will have to decide whether Medicare should facilitate and eventually require public reporting of quality measures for small, low-volume hospitals, perhaps tailoring some measures to fit their unique practice settings.

For all quality measures, there are some measurement and reporting options that CMS could pursue to compensate for the effect of low volume on statistical reliability. One method is to pool the data over a number of years on current measures for low-volume providers (Coburn et al. 2009). This option has the benefit of enabling broad-based comparisons across large and small providers with data that are more stable—that is, less prone to random variation. Another option is to examine groups of providers (e.g., a set of all CAHs in a system); this practice eliminates the issue of small numbers.

Reporting metrics most relevant for rural patients

The quality metrics tailored to small rural hospitals should focus on the unique needs and concerns of patients in those hospitals. The metrics reported may differ in rural and urban areas because the types of care provided in smaller rural hospitals may differ from the types of care in larger hospitals. For example, a hospital that provides care to pneumonia patients but does not admit AMI patients would be judged on how it performed on pneumonia care based on process and outcome measures, including mortality. Another option is to develop and adopt quality measures that are better suited for low-volume providers and small hospitals. Some of this work, funded by the Office of Rural Health Policy, is under way, and the National Quality Forum has endorsed the "timely communication of patient status once the patient is transferred measure," which addresses a core competency and scope of practice for small hospitals. Other measures, such as the availability of physicians and pharmacists in the hospital, represent concerns that are unique to patients in rural hospitals and could become rural-specific quality metrics.

Rural patients may have different concerns about staffing than patients at urban hospitals. For example, the smallest rural hospitals often lack 24-hour pharmacy coverage. This deficiency could contribute to medication errors due to lack of a pharmacist's review of medications

before drug administration (Casey et al. 2008a, Cochran et al. 2008). Rural hospitals, including CAHs, could be evaluated on the percentage of time that a pharmacist reviews medications before administration of the first dose of medication or within 24 hours of administration (Health Resources and Services Administration 2011, Peterson 2011a). In a 2005 study of evidence-based safe medication practices in hospitals with 50 or fewer beds, it was reported that 85 percent of hospitals with an average census over 5 had medication orders reviewed by a pharmacist within 24 hours, but only 49 percent of the hospitals with a lower census had pharmacist review within 24 hours (Cochran et al. 2008). Given the feasibility of telepharmacy, CMS could move toward requiring medications to be reviewed by pharmacists in the smallest rural hospitals, just as they are in larger facilities with 24-hour pharmacist coverage. An alternative would be to collect data on pharmacist review to determine whether small hospitals that generally have pharmacists review medications before they are administered have fewer medication errors and better outcomes than small hospitals that generally do not have pharmacist review of medications.

A second challenge that may be contributing to poorer outcomes at the smallest rural hospitals is the lack of a physician on site. While urban patients may be concerned about wait times at an emergency room because of overcrowding, a rural patient may be concerned about arriving at an emergency room without a physician present. While some CAHs choose to keep physicians on site 24 hours a day, CAH conditions of participation do not require a hospital to have a physician or registered nurse on site and allow CAHs to operate with a licensed practical nurse on site and a physician assistant or nurse practitioner available within 30 minutes. In a national survey of hospitals with fewer than 100 beds, 38 percent reported that a physician was not always present in the hospital when they were primarily responsible for emergency room coverage (Casey et al. 2008b). One rural-relevant measure could be the time between the patient entering the emergency room and the time the physician or other medical professional arrives at the hospital or the time the patient receives a diagnostic evaluation (Moscovice and Casey 2011). As we heard on our site visits, dealing with a trauma case or other emergency without a physician present can be stressful for the patient and the nurse at the emergency room as they wait for the physician to drive to the hospital. One potential source of assistance is a tele-emergency room connection to a larger hospital, an approach that has shown some success. In these cases, the nurse, physician assistant, or rural primary care physician in the emergency room could receive assistance from an emergency room specialist at a distant site who is monitoring the case via a teleconferencing monitor. This has the potential for improving care in rural areas and reducing the stress faced by rural practitioners who often have smaller teams and less specialized training than urban emergency room practitioners.

Payment adequacy and special rural payment adjustments

Rural payment adequacy

Each year, the Commission examines the adequacy of Medicare payments using a common framework across the various health care sectors that serve Medicare beneficiaries and reports its findings to the Congress. The congressional mandate for this rural study requires that we specifically examine the adequacy of payments to rural providers. In public meetings in December 2011 and January 2012, we discussed payment adequacy in general and rural payment adequacy specifically. We found that Medicare payments to rural providers were generally adequate. For a more detailed discussion of our findings on the adequacy of rural Medicare payments to hospitals and other health care sectors, see the Commission's March 2012 report (Medicare Payment Advisory Commission 2012).

Across sectors, we found that most payment adequacy indicators—such as access to care, quality of care, access to capital, and Medicare profit margins—were similar in rural and urban areas. For example, rural and urban freestanding home health agencies and SNFs tended to have similar margins on Medicare patients, with some having relatively high margins.[14] Volumes of SNF and home health services per capita were also similar. When we examined the adequacy of physician payments, we found that volumes of service, ability to obtain appointments with existing and new physicians, and satisfaction with access were similar in rural and urban areas. In addition, the literature and our site visits indicated that physician incomes are comparable in rural and urban areas, with rural primary care physicians earning roughly equal incomes per hour worked. Research by the Center for Studying Health System Change found that rural physicians have slightly higher incomes but work about 2 hours more per week on average, and some rural physicians have greater on-call burdens (Reschovsky and

Staiti 2005). Adjusting for hours worked, rural and urban primary care physician incomes were roughly equal, and adjusting for hours worked and the cost of living resulted in higher adjusted incomes in rural areas. Together, these findings suggest that rural physician payments are adequate relative to urban payments. We also found that hospice, inpatient rehabilitation facility, and dialysis payments appeared adequate. However, as we discuss in the March 2012 report, evaluation of the new low-volume adjustment provided to dialysis facilities is needed and there is potential for restructuring hospice payments for rural and urban providers.[15]

While payment adequacy findings over time are consistent for SNFs, home health agencies, physician services, and most other sectors, one area that has changed is the adequacy of rural hospital payments. In 2001, rural hospitals' inpatient profit margins were below urban hospital profit margins, suggesting that Medicare payment rules favored large urban providers (Medicare Payment Advisory Commission 2001). As a result, the Commission recommended increasing rural hospitals' base payment rates up to the rate paid to large urban hospitals, increasing rural disproportionate share hospital payments, and adding a low-volume adjustment for isolated rural providers that lacked economies of scale because they served an area with low population density. The Congress enacted legislation consistent with the Commission's recommendations and enacted a series of other changes that further increased rural payments. These changes to the PPS, along with the CAH program, have improved rural hospitals' financial stability.

Summary of special payments to rural providers

The mandate for this study requires that the Commission examine the adjustments in payment rates that have increased payments to rural providers. We discuss specific examples of special payments in this chapter, but more importantly we discuss a set of principles the Commission has developed over the past year that can be used to evaluate the appropriateness of special payments that exist for different health care sectors. After presenting the principles, we evaluate whether the special payments in each sector adhere to these principles. We then detail the four rural payment adjustments with the largest effect on rural provider payments: CAH payment; sole community hospital (SCH) adjustment; low-volume adjustments to hospitals and other providers; and limits on input price adjustments for physicians, hospitals, and others.

Some of the special payments could be better targeted. In some cases, these payments go to providers that compete with neighboring providers that are also struggling with low patient volumes. By providing special payments to providers that do not need assistance or to low-volume providers that are not the sole providers of access in their community, spending can be higher than warranted. We also find that the magnitude of the special payments is not always empirically justified, resulting in increased Medicare program costs. The cost of the special rural payments exceeds $4 billion, or almost 10 percent of all rural payments. Of this amount, roughly $3 billion is borne by the taxpayer and $1 billion is borne by the beneficiary, primarily through higher cost sharing for outpatient services at CAHs. Targeting the special adjustments as suggested in the Commission's principles may allow for savings for both the taxpayer and the beneficiary, making the program more sustainable and Part B premiums more affordable for beneficiaries. While this report focuses on special payments targeted at rural providers, the Commission has said in other reports that some of the special payments directed primarily toward urban providers (such as medical education payments) could also be better targeted (Medicare Payment Advisory Commission 2010).

Principles for evaluating special payments

A key objective of rural payment adjusters is to maintain access to care. Areas with low population density may have only one small, low-volume provider. In these cases, costs may be above traditional PPS rates because the low population density prevents economies of scale, and the low volume and high costs may be beyond the providers' control. Special payments by federal or local sources may be needed to maintain access to care in these communities. For example, there are special payments for isolated low-volume hospitals, low-volume dialysis facilities, rural psychiatric facilities, and rural health clinics.

However, the current mix of rural payment adjusters does not have an underlying set of principles that tie them together. The adjusters evolved separately, and there is not a clear common framework for how they are intended to work together to preserve access without duplicative overlapping adjustments to providers. In addition, they are not always targeted to the areas with the greatest concerns about access to care. The lack of targeting is associated with Medicare's definition of "rural." Medicare defines rural as all areas outside of metropolitan statistical areas, so many adjustments can apply to rural areas with a single

local provider and to rural areas with many competing local providers. The Commission has created a framework of principles for rationalizing rural special payments that includes targeting providers that are necessary for access, empirically justifying (and not duplicating) payments, and maintaining incentives for cost control.

Principle 1: Target payment adjusters to preserve access

Payment adjusters should be targeted to providers that are necessary to preserve beneficiaries' access to care. Without these providers, local access to care would be lost. Currently, special adjustments often go to all rural providers or to essentially all small providers. This practice ignores the wide variation in provider supply in different rural communities. A common guiding principle for payment adjusters could be to target isolated providers that are a certain distance from competitors and are necessary to maintain access to care. For example, it may be necessary to provide additional payments to a hospital in an isolated area 35 miles or more from other hospitals or a sole physician practice in an area with low population density.

Principle 2: Focus low-volume adjustments on isolated providers

Many of the current adjustments focus on increasing payments to low-volume providers. However, there are two types of low-volume providers. One type is isolated providers that have low volumes because of low population density in their markets. They will have difficulty covering their fixed costs given their low volume of cases. For these providers, low volumes are inevitable and beyond their control. A second type of provider has low volumes because neighboring competitors attract patients away from the low-volume provider. These providers are not necessary for access. It may not be appropriate to provide additional payments to give a low-volume adjustment to two competing low-volume hospitals that are 5 or 10 miles from each other. By focusing low-volume adjustments on isolated providers, rather than making the adjustment available to all providers with low volumes, Medicare can best use its limited resources to serve Medicare beneficiaries.

Principle 3: Empirically justify the magnitude of payment adjustments

The magnitude of the adjustment should be determined empirically. For example, for low-volume providers, there is a need to determine the degree to which the low volume of patients increases unit costs. When we measure patient volume, we should measure total patient volume rather than just Medicare patient volume because economies of scale depend on total volumes of patients.

The principle is to evaluate the unique characteristics of isolated providers that result in higher costs per unit of service. Payments would be increased by an adjustment that is equivalent to the additional costs. When a provider qualifies for more than one rural payment adjuster, the total additional payments should reflect the total additional costs of care associated with that provider's unique circumstances. Eventually, we should move away from providers receiving duplicative adjustments to overcome a single problem.

Principle 4: Maintain incentives for cost control

It matters not only how much money is paid to rural providers but how it is paid. For example, prospective payment rates put stronger pressure on providers to control their costs. Cost-based payments reduce this incentive. Therefore, cost-based reimbursement could be limited to the most isolated providers with very low case volume and highly variable costs that are hard to predict. For this small set of providers, it may be difficult to predict how much of a fixed adjustment to their Medicare rates is needed to preserve access. In contrast, most rural providers that are targeted for payment adjusters could receive a fixed adjustment to the base prospective payment rate. This adjustment could be based on a percentage add-on to their payment rate or it could be a provider-specific adjustment based on their historic costs. While all hospitals have some incentive to control their costs because they are not paid costs by all providers, these two types of fixed adjustments to Medicare payments maintain stronger incentives for cost control than cost-based reimbursement, because when providers' costs increase, these rural adjustments do not increase.

Characteristics of rural special payments

Table 5-23 (p. 156) provides an overview of rural payment adjusters and the degree to which they adhere to the Commission's principles for evaluating special payments. In general, most adjusters succeed in increasing payments to rural providers, which is important for keeping access to care in certain isolated areas (Medicare Payment Advisory Commission 2005). However, the programs are rarely targeted to isolated providers, and in some cases the magnitude of the payment is not empirically justified.

TABLE 5–23

Selected rural payment adjusters

Adjuster	Projected 2011 extra* payments (in millions)	Target isolated providers needed for access?	Empirically justified?	Maintains cost control incentives?
Permanent adjusters				
CAH cost-based reimbursement	$2,000[1]	No 16% of CAHs are within 15 miles of other hospitals	Weak yes[2] Cost-based payment	Some incentive, but lower incentive than in prospective payment
Sole community hospital: inpatient payments based on historic costs, outpatient 7% add-on	900	Initially, but now can be any distance from a CAH	Weak yes[2] Uses historic costs	Yes
Rural health clinic programs	200[3]	Initially[2]	Weak yes[3]	Weak yes[3]
Inpatient rehabilitation hospitals 18.4% add-on	100	No Received by all rural providers	Yes	Yes
Psychiatric hospital 17% add-on	70	No Received by all rural providers	Yes	Yes
ESRD low-volume adjustment (for rural and urban locations)	Starts in 2012	No Received by all low-volume providers	Yes	Yes
Frontier state hospital wage index floor	50	No Received by all providers in a state	No	Yes
Additional telehealth payments	1	No Received by all rural sites	Yes $24 payment	Yes
Temporary programs (ending between 2012 and 2016)				
Floor on work GPCI and practice expense limits	1,000	No Applies to urban and rural providers	No	Yes
Hospital low-volume adjustment[4]	400	No Can be next to CAHs	No	Yes
Medicare-dependent hospital	100	No Can be near other providers	Weak yes[2] Uses historic costs	Yes
Home health 3% add on	100	No Received by all rural providers	No	Yes
Outpatient hold harmless	80	No Received by all small rural and SCHs	Weak yes[5]	Yes

Note: CAH (critical access hospital), ESRD (end-stage renal disease), GPCI (geographic practice cost index). GPCI refers to adjustments to estimates of the cost of physician's time.
*"Extra" payments refers to payments above standard prospective payment system rates.
1 Of the roughly $2 billion in additional payments received by CAHs, roughly half of those payments are funded by the Medicare program (funded by taxpayers and Part B premiums), and half are funded by higher coinsurance (paid for by beneficiaries and their supplemental insurers), as is explained later in this chapter.
2 Basing rural payment adjusters on current costs or historic costs is empirically justified to the degree to which those costs represent the costs of an efficient provider operating in that hospital's situation.
3 Freestanding rural health clinics (RHCs) receive cost-based payments subject to a cap of $78 per visit. They are in areas that were once rural and underserved, though they can retain their RHC status if the area circumstances change (Office of Inspector General 2005). Hospital-based RHCs receive cost-based payments. Federally qualified health centers also exist in rural areas and receive a fixed payment of $109 per visit but were not included in this list because they are primarily located in urban areas. An analysis of urban special payments is outside the scope of this chapter.
4 There is also a separate, permanent low-volume adjustment. However, it applies only to hospitals with fewer than 200 discharges and has a minimal effect on spending.
5 Outpatient hold-harmless payments are based on historic payment rates, which were partially based on costs.

Source: MedPAC analysis of claims, cost report, and provider location data. Congressional Budget Office estimates on GPCI and practice expense limitations.

Given that they are not always consistent with our set of principles, they reflect a suboptimal targeting of Medicare payments.

The magnitude of the additional payments is based on an analysis of 2009 and 2010 Medicare claims data trended forward to 2011. For payments based on historic costs, we simulated the payments using the Medicare payment rules for 2011 and claims data from 2010. In the case of CAHs, we estimated that cost-based payments were $2 billion, or 25 percent, higher than they would have been under a PPS. This estimate was made by comparing the hospitals' cost-based payments with what the CAH would have received if it had been paid under the PPS including applicable SCH and Medicare-dependent hospital adjustments.

Examples of special payment policies

The special payments that have the largest effect on rural provider revenues (and overall Medicare spending) are the CAH program, the SCH program, low-volume adjustments, and adjustments to payments for input prices. All the programs have good intentions, but there may be ways to better target the special payments to address beneficiaries' needs.

Critical access hospitals

The CAH program was established in 1997 to preserve small rural hospitals that are critical to patients' access to care. CAHs must have 25 or fewer acute care beds and operate primarily in rural areas. Each CAH is paid 101 percent of its allowable Medicare costs for inpatient, outpatient, laboratory, and therapy services as well as post-acute skilled nursing care in the hospital's swing beds (acute care beds that can be used for post-acute nursing care). The program has grown from 41 hospitals in 1999 to more than 1,300 hospitals in 2011.

The CAH program keeps hospitals open One goal of the CAH program is to keep hospitals open (Medicare Payment Advisory Commission 2005). After the PPS was introduced, large numbers of rural hospitals closed, primarily among neighboring rural hospitals that did not have sufficient volume to contain costs below PPS rates (Office of Inspector General 2003). When the Office of Inspector General examined closures from 1990 to 2000, they found that 208 rural hospitals closed (8 percent of all rural hospitals) and 296 urban hospitals closed (11 percent of all urban hospitals). In the case of rural closures, the Office of Inspector General found that an alternative source of emergency care was available within 20 miles for 78 percent of the closures, but for some the nearest emergency room was 35 or more miles away. With expansion of the CAH program (from 41 hospitals in 1999 to more than 1,300 today) rural hospital closures have almost ceased. We are aware of five rural closures during 2010 and 2011 (three CAHs, one specialty hospital, and one general PPS hospital). In general, these five hospitals suffered from low volumes and financial losses, and all had neighboring competitors within 25 miles.

The CAH program is not targeted to isolated hospitals Originally, CAHs had to be 35 miles by primary road and 15 miles by secondary road from the nearest hospital or be deemed a "necessary provider" by the state. Because states waived the distance requirement and set up minimal "necessary provider" standards, the CAH program became an option for almost all small rural hospitals with low inpatient volume and therefore is not limited to helping isolated hospitals. The result is that most CAHs entered the program through the exception process (in which states could waive the distance requirement) rather than meeting the distance criteria. Currently, 17 percent of CAHs are 35 or more miles from another hospital, 67 percent are between 15 miles and 35 miles from the next hospital, and 16 percent of CAHs are less than 15 miles from the nearest hospital.

The robust growth of the program and moderate growth rates of outpatient and post-acute care in CAHs have resulted in total CAH payments of $8 billion in 2010, which were roughly $2 billion higher than PPS rates for the same services. Almost half of the difference between CAH payments and PPS payment rates was due to higher rates for post-acute care in swing beds, which are used for acute and post-acute care. In 2009, CAHs received an average of $1,315 per post-acute day compared with $390 at rural SNFs, resulting in more than $800 million in additional payments from Medicare in 2009. We expect this amount to grow to $900 million by 2011. Part of the high rates of payment for swing bed care may be due to overallocating costs to swing bed patients (Medicare Payment Advisory Commission 2005). If costs allocated to swing beds were reduced or capped, then a portion of the reduction in swing bed payments would result in reduced Medicare spending, but a portion of current costs would also be allocated to other Medicare inpatient services, which would increase payments for Medicare acute inpatient stays at CAHs.

Outpatient payments are close to $1 billion higher than PPS rates; however, at CAHs, most of the higher outpatient payments are paid by beneficiaries through

FIGURE 5–4

As CAHs raise charges, outpatient coinsurance goes up

Note: CAH (critical access hospital).

Source: RTI analysis of 2009 Medicare cost reports.

higher cost sharing on outpatient services. Differences between PPS rates and CAHs' cost-based payments for acute inpatient care were roughly $300 million. The differences for acute inpatient care tended to be relatively small for two reasons: First, many CAHs could receive SCH payments or low-volume adjustments if they were in the PPS. Second, cost accounting rules change when a hospital enters the CAH program, which causes costs to be allocated away from acute inpatient admissions and toward outpatient and post-acute care. This explains why most of the roughly $2 billion in projected additional payments was due to higher outpatient and post-acute care payment rates at CAHs (Medicare Payment Advisory Commission 2005).

Beneficiaries' outpatient cost sharing is higher at CAHs. While cost sharing for acute inpatient care and post-acute care are the same at CAHs and PPS hospitals, cost sharing for outpatient services is significantly higher in CAHs. Patients (or in most cases, their secondary insurers, such as medigap) pay coinsurance for outpatient services at CAHs equal to 20 percent of the charges. This was originally the coinsurance policy used for PPS hospitals, but after a 1995 recommendation by the Commission's predecessor, the Congress shifted the coinsurance policy used for PPS hospitals from coinsurance based on charges toward coinsurance equal to 20 percent of the prospective payment amount (Prospective Payment Assessment Commission 1995). CAH coinsurance has remained at 20 percent of charges.

In recent years, both CAHs and PPS hospitals have increased their charges faster than their rate of cost growth. From 2006 to 2009, CAH outpatient charges as a share of costs increased by 13 percentage points up to 235 percent of costs (PPS hospital charges are over 300 percent of costs on average). While charges do not affect the total payment received by the CAH, as the average CAH outpatient markup increases, the beneficiary's share of the total payment continues to increase over time. CAH Medicare patients' coinsurance rose from roughly 44 percent of payments in 2006 to 47 percent of payments in 2009 (Medicare Payment Advisory Commission 2011a). From the individual CAH patient's perspective, it is also

TABLE 5–24

Charges vary widely by critical access hospital, 2008

Type of service	Charge at: CAH A	Charge at: CAH B	Coinsurance at: CAH A	Coinsurance at: CAH B	Coinsurance at: PPS hospital
Level 3 ER visit (CPT 99283, reflects facility fee only)	$150	$421	$30.00	$84.20	$34.33
CT scan (head) (CPT 70470)	1,186	1,704	237.20	340.80	116.13

Note: CAH (critical access hospital), PPS (prospective payment system), ER (emergency room), CPT (Current Procedural Terminology), CT (computed tomography). The PPS payment for a CT scan (CPT 70470) was $334.24, less than the coinsurance alone at CAH B.

Source: *Critical Access Hospital Financial Analyses – 2008*. Draffin & Tucker, LLP. 2008. MedPAC computation of 2008 PPS payments and coinsurance.

important that the distribution of outpatient markups, to which a patient's coinsurance is linked, varies widely, from essentially no markup at some CAHs to more than a 300 percent markup at other CAHs; this difference reflects the hospital industry's wide variation in hospital charge-setting practices (Figure 5-4, Table 5-24). Because markups vary widely, coinsurance varies widely from one CAH to another. For example, a patient receiving a service where charges are 150 percent of costs pays 30 percent of costs as coinsurance, while at a hospital with a markup over 300 percent the patient pays more than 60 percent of costs as coinsurance.

At first, it may appear that hospitals would have been reluctant to increase their charges too high and shift the payment burden to the beneficiary, because the 15 percent of rural beneficiaries without supplemental insurance may be unwilling or unable to pay the coinsurance (Kaiser Family Foundation and Health Research and Educational Trust 2008). However, CAHs received 100 percent reimbursement of Medicare bad debt through 2012, unlike PPS hospitals, which received 70 percent reimbursement of bad debt. Therefore, CAHs received the coinsurance from either the beneficiaries' supplemental insurer (e.g., medigap plan), directly from the patient, or indirectly through Medicare bad debt reimbursement when patients or their supplemental insurers were unable or unwilling to pay the coinsurance. This practice will change starting in fiscal year 2013 when both PPS hospitals and CAHs will move toward receiving a smaller share (65 percent) of their bad debts paid by Medicare because of a provision in the Middle Class Tax Relief and Job Creation Act of 2012. At that time, hospitals will no longer be able to raise charges and associated beneficiary coinsurance and be assured that they will receive the full cost sharing due from the beneficiary. We will have to examine data from 2013 and later years to evaluate whether some hospitals with particularly high charges reduce their charge structure to reduce uncompensated bad debts from Medicare patients.

Sole community hospital payments

The SCH designation is available to hospitals that are 35 miles or more from the nearest PPS hospital or that meet other criteria indicating they are an area's sole source of inpatient care. While SCHs must be isolated from other PPS hospitals, they can be located any distance from CAHs. Therefore, with the shift of many small hospitals to CAH status, the SCH program targeting has weakened.

The primary benefit of SCH status is to have inpatient payments based on the provider's historic costs and updated for inflation. The SCH can pick among several years to set its historic costs, and it picks the highest cost year on which to base payments. Because the SCH program sets rates based on historic costs trended forward (rather than current costs), SCHs maintain a stronger incentive (relative to CAHs) to restrain current costs. The 420 SCHs received roughly $8 billion in Medicare payments in 2009. In 2011, the SCH program is expected to increase inpatient payments by approximately $800 million relative to what these hospitals would have been paid under standard PPS rates. In addition, SCHs receive a 7 percent increase in outpatient payments, resulting in roughly $100 million of additional payments. The net total increase in payments in 2011 will have been roughly $900 million.

Low-volume adjustments became much more generous in 2011

In our 2001 rural report, the Commission recommended that the Congress require the Secretary to create a low-volume adjustment for hospitals that are more than a specified distance from other facilities. The Congress

TABLE 5–25 **Low-volume policy favors hospitals with larger non-Medicare shares**

Type of hospital	Discharges: Medicare	Discharges: Private payer and other	Discharges: Total	Low-volume adjustment
Hospital A: high Medicare share (70%)	1,500	600	2,100	2% increase
Hospital B: low Medicare share (30%)	600	1,500	2,100	18% increase

Note: Data were rounded from two hospitals that would have qualified for the low-volume payment based on their 2009 Medicare volume.

Source: MedPAC analysis of CMS data.

enacted a low-volume adjustment in 2003 but left implementation up to the Secretary as the Commission recommended. The Secretary then determined that only hospitals with fewer than 200 total discharges that are more than 25 miles from another hospital warrant a low-volume adjustment. Because many of the smallest hospitals are CAHs, the low-volume adjustment applied to two PPS hospitals in 2010.

In 2010, the Congress enacted a new low-volume adjustment for hospitals that are 15 miles or more from another PPS hospital. The program is not focused on isolated hospitals because low-volume hospitals can be any distance from CAHs. Rather than leave the eligibility criteria up to the Secretary, the Congress mandated that inpatient payments increase for any hospital with fewer than 1,600 Medicare discharges. PPS payments are increased by 25 percent for hospitals with 200 or fewer Medicare discharges, with the adjustment declining linearly until it phases out for hospitals with 1,600 or more Medicare discharges. For example, a hospital with 200 Medicare discharges gets a 25 percent add-on, a hospital with 900 Medicare discharges gets a 12.5 percent add-on, and a hospital with 1,600 Medicare discharges receives no add-on. There were 529 hospitals that received the adjustment in 2011, representing roughly half of all rural PPS hospitals. There are several issues with this adjustment:

- The empirical support for the magnitude of the low-volume adjustment is unclear; the adjustment is larger than past estimates of the effect of volume on inpatient costs.
- The adjustment is added on top of SCH cost-based payments, which already increase payments based on a hospital's historic costs. Therefore, a hospital can be paid its historic costs, plus inflation, plus a low-volume adjustment of up to 25 percent.
- The adjustment is based on Medicare discharges rather than total discharges. Economies of scale depend on total discharges (not just Medicare discharges), so the adjustment has a weaker connection to a provider's problem with economies of scale than an adjustment based on total discharges. Basing the adjustment on Medicare discharges also discriminates in favor of hospitals with large numbers of private-payer patients and against hospitals with larger shares of Medicare discharges (Table 5-25).

Table 5-25 shows the rounded 2009 volumes of Medicare and total discharges for two hospitals and simulates how the low-volume adjustment would affect those hospitals in 2011. Hospital A, with a 70 percent Medicare share, receives only a 2 percent low-volume add-on due to having almost 1,600 Medicare discharges (the limit) out of 2,100 total discharges. Hospital B has the same problem with economies of scale due to having the same levels of total discharges (2,100), but it receives an 18 percent add-on because a small share of its patients are Medicare beneficiaries. Hospital B is unfairly advantaged under the current system, especially if a large share of its non-Medicare patients are highly profitable privately insured patients.

The current low-volume policy based on Medicare discharges expires at the end of 2012. At that point, there may be an opportunity to revisit how to appropriately structure a low-volume adjustment.

Modifications to input price adjustments

In general, Medicare pays higher rates in markets with high input prices (e.g., Boston) and lower rates in

markets with lower input prices (e.g., rural Mississippi). Providers in lower cost markets often object to being paid lower rates. They have succeeded in obtaining several modifications to input price adjustments. These adjustments often help rural areas, which tend to have lower input prices.

How do input price adjusters work? Some inputs have local prices (e.g., nurse labor, rent) that vary by market, while other inputs tend to have national prices (fuel, postage). CMS estimates the share of inputs that vary by region and adjusts Medicare prices accordingly.

What policies have been implemented to prevent downward adjustments? The simplest modification is to set a floor on the input price adjuster of 1. The floor allows for upward adjustment for high wages, for example, but prevents downward adjustments for low wages that fall below the established value of 1. As part of the Patient Protection and Affordable Care Act of 2010 (PPACA), six states with low population densities (frontier states) were given a floor input adjuster of 1 for hospitals (the wage index) and for physicians (the geographic practice cost indexes), which means their payments cannot be adjusted downward because of lower input prices in those states.

A second way to limit the downward adjustment is to reduce the share of expenses that are subject to the wage index adjustment. This reduction has happened for two sectors:

- For hospitals, CMS estimates the share of expenses that are affected by local wage rates. The current estimate is 68.8 percent. However, the Congress mandated that when the wage index is below 1, no more than 62 percent of the payment can be adjusted downward. This policy increases payments to providers in many rural areas where the wage index is below 1 by limiting the share of payment affected by the wage index.
- For physicians, PPACA temporarily limited the share of physician practice expenses that can be subject to the input price adjuster at 50 percent of the empirically estimated amount if the geographic practice cost adjuster is below 1. PPACA also temporarily limits the downward adjustments for estimated physician labor costs below 1. This provision increases payments by roughly $1 billion per year and expires in January 2012.

A third way to prevent downward readjustment is reclassification, a policy under which the provider is partially or fully paid based on input prices from another location. For example, a rural area in a state could be reclassified from a lower wage rural area to a higher wage urban area of that state via one of the current reclassification mechanisms.

In 2007, the Commission recommended a new way to adjust for input prices that does not rely on exceptions to the current wage index system (Medicare Payment Advisory Commission 2007). The Commission recommended a new wage index system that uses data from all employers to determine regional wage levels for different types of health care industry employees, adjusts for regional differences in benefits, and limits differences between adjacent counties. By smoothing differences between adjacent counties, the new wage index would ensure that competing providers do not have significantly different wage indexes from their competitors. This would eliminate the need for an exceptions process.

Input price adjusters to Medicare payment rates should only reflect differences in input prices. Other policy objectives, such as maintaining access to care in rural areas, should be addressed through other targeted payment adjusters. Better targeting would maintain access without creating distorted incentives that alter the relationship between input prices and Medicare payments. ■

Endnotes

1 States well represented in the MCBS sample of rural adjacent areas include: AL, KY, MI, TN, TX, and WV, reflecting areas primarily in the southeastern region of the United States. Very few individuals were from CA, IL, MO, NV, OK, SC, and WI. States represented in rural nonadjacent counties are: IA, MI, MO, OH, PA, TN, and TX.

2 The National Health Interview Survey shows that on average rural areas tend to have more individuals who have difficulties with complex activities of daily living. The Centers for Disease Control and Prevention reported that 36 percent of rural individuals reported a limitation with complex activities compared with 30.4 percent in urban areas in 2009 (National Center for Health Statistics 2011). The MCBS data have similar aggregate findings for rural areas. We focus on the MCBS data, which allowed us to examine how rates of difficulty with activities of daily living vary by category of rural area.

3 Each year the Commission staff conducts site visits to communities and convenes beneficiary focus groups. In 2010, the Commission conducted focus groups with Medicare beneficiaries in rural communities in Alabama, Kansas, and Montana. The objective was to hear from beneficiaries in areas with different degrees of isolation from urban areas and different local economic circumstances.

4 The wide range of service use for the 49 state-wide rural areas is similar to the wide range of service use for the metropolitan statistical areas. Only two urban areas have service use that is significantly higher than any state-wide rural average: Miami, FL, and McAllen, TX. Miami has had very high levels of durable medical equipment billing and McAllen has had very high levels of home health billing. However, this use may be due to higher levels of fraud and abuse in these two urban areas rather than to differences in access to care in these communities compared with other areas of the country.

5 For example, in lower cost states such as Minnesota we found that 2008 per capita spending on durable medical equipment in Minneapolis, Rochester, and rural parts of the state was 65 percent, 70 percent, and 70 percent of the national average, respectively. North Dakota, South Dakota, and Wisconson have similar values. Texas has much higher values in rural and urban areas. Spending on durable medical equipment in Dallas, Lubbock, and rural parts of the state was 113 percent, 147 percent, and 120 percent of the national average, respectively. Likewise, in Louisiana, spending on durable medical equipment in Baton Rouge, Monroe, and rural parts of the state was 118 percent, 122 percent, and 136 percent of the national average, respectively. While there are not consistent rural/urban differences for most types of durable medical equipment, one area in which rural beneficiaries tended to have higher average use was home oxygen. Further research is needed to determine the underlying causes for the differences in use of home oxygen.

6 Part D pharmacies were identified using the Pharmacy Cost Files for Part D submitted to CMS for use in the Medicare prescription drug plan finder. Pharmacy types and addresses were identified with information from the pharmacy database from the National Council for Prescription Drug Programs. Rural areas were identified using the 2003 UICs. For purposes of this analysis, rural is defined as nonurban and nonmicropolitan. In addition, we did not include noncore areas that were adjacent to larger urban areas. Of more than 3,000 counties in the United States, 1,248 were classified as rural (UIC 6–7 and 9–12). We calculated (by ZIP code) the share of beneficiaries by county living 15 miles or more from the nearest pharmacy.

7 For this survey, the Commission uses the Census Bureau definitions of urban and rural, which classify as urban all territory, population, and housing units located within an urbanized area (UA) or an urban cluster (UC). It delineates UA and UC boundaries to encompass densely settled territory, which consists of core census block groups or blocks with a population density of at least 1,000 people per square mile and surrounding census blocks with an overall density of at least 500 people per square mile. Under certain conditions, less densely settled territory may be part of each UA or UC. The Census Bureau's classification of rural consists of all territory, population, and housing units located outside of UAs and UCs.

8 The fee paid to originating sites continues to be adjusted annually for inflation and is not subject to any geographic payment adjustments.

9 We contacted two practices that were billing for significant volumes of telehealth services to urban beneficiaries, representing roughly 4 percent of all 2009 claims. Both were billing for video consultations with urban patients in their homes, which is not a covered service. Therefore, our count of distant practitioners may include some practitioners that billed erroneously for telehealth services. Among the 38,000 telehealth claims in 2009, about 16,000 claims do not have a bill from an originating site (e.g., rural hospital), as is allowed by Medicare. These claims could be errant billing by the consulting physician, as was the case for the physician practices we contacted, or cases in which the distant site chose not to bill for the $24.

10 A total of 4,612 hospitals made up our analytic sample from Hospital Compare: 3,495 were acute care hospitals and 1,053 were CAHs. (In total there are about 1,300 CAHs. There

may be selection bias—that is, the more successful CAHs may choose to participate, but we cannot evaluate how large that bias may be.) There are 2,764 urban hospitals, 825 rural micropolitan hospitals, 534 rural adjacent hospitals, and 486 rural nonadjacent hospitals. Separate analyses for frontier counties had 201 hospitals in that category. The data for process measures were collected quarterly from October 2009 through September 2010. In Table 5-3, we show the rates for selected process measures for urban rural micropolitan, rural adjacent, rural nonadjacent, and frontier areas. Measures with fewer than 30 hospitals reporting in each urban/rural category are marked with an asterisk.

11 There has been a long-standing concern that higher mortality in rural areas may reflect rural patients' greater likelihood of using a rural hospital as a substitute for hospice care at the end of life. For example, in response to Keeler's article (1992) showing higher mortality at smaller hospitals, some suggested that a larger share of patients at small hospitals may have do-not-resuscitate orders (Buck 1993). Keeler reviewed charts and found a smaller percentage of do-not-resuscitate orders in rural hospitals. Similarly, after the article by Joynt and colleagues (2011a) finding higher mortality in CAHs, it was suggested that there may be less use of hospice in rural areas. For this reason, we have added a control variable to our regressions that indicates the share of patients in a county using hospice. It did not significantly affect the volume–outcomes relationship or the statistical significance of the rural variable in our regression models. Therefore, we do not believe the volume–outcomes relationship simply reflects a lack of hospice use in rural areas.

12 We could have divided CAHs by the volume of admissions, but it would create a problem in arguing the direction of causality if we found a correlation between the volume of admissions and readmissions. Do readmissions affect volumes, or do volumes affect quality and readmission rates? By using the number of admitting physicians as the indicator of the CAH's size, we avoid the issue of patient volumes being endogenous.

13 If Medicare wanted to facilitate mergers of two neighboring CAHs, CMS may need to create new regulations allowing two merging CAHs to relocate to a common site in between the two neighboring CAHs. For example, two rural towns with CAHs 12 miles apart may want to consolidate their CAHs into a single building located at the edge of one town so travel can be made convenient for members of both communities. New regulations could allow the merging CAHs to pick a building site between two CAHs rather than continuing to use an existing site.

14 The services we examined included hospital, physician, skilled nursing, long-term care hospital, inpatient rehabilitation facility, home health agency, and dialysis facility. We focus on freestanding margins instead of including hospital-based facilities because of cost allocation issues and the potential for one department to affect the costs of another department. In the case of home health agencies, we are concerned about the allocation of hospital overhead onto hospital-based home health agencies. With respect to skilled nursing facilities, we do not look at hospital-based facilities in isolation because a hospital-based skilled nursing facility could affect the profitability of inpatient departments if it allows patients to be discharged sooner when a hospital-based facility or swing bed is available in the same facility.

15 In March 2009, the Commission recommended that the hospice payment system be reformed. Currently, long hospice stays are more profitable than short stays because Medicare makes a flat payment per day, while hospice service intensity is highest at the beginning and end of the episode. The Commission recommended increasing payment rates at the beginning and end of the episode and decreasing rates in the middle to better match service intensity patterns. In the context of such reforms, it may be worthwhile to explore whether a rural payment adjuster is appropriate. Our March 2012 report on hospice payment adequacy examined hospice use rates among rural beneficiaries and Medicare margins for hospices that serve them (Medicare Payment Advisory Commission 2012). This report found that while hospice use rates among Medicare decedents are lower in rural counties than in urban counties, hospice use has grown substantially across all types of counties over the past decade. Overall, rural hospices have slightly lower Medicare margins than urban hospices, but margins do not decrease as the degree of rurality increases and some hospices provide services to beneficiaries in remote areas with favorable margins. In light of this mixed picture, it is not clear that a rural payment adjustment for hospice is warranted, but it merits further exploration as part of broader hospice payment reform efforts.

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CHAPTER 6

Medicare coverage of and payment for home infusion therapy

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Medicare coverage of and payment for home infusion therapy

Chapter summary

The Congress requested that the Commission conduct a study on home infusion therapy and report its findings by June 2012. The Commission was asked to look at the benefits and costs associated with providing infusions in the home versus alternative settings, coverage and payment for home infusion therapy by commercial insurers and Medicare Advantage plans, potential abuse of a home infusion therapy benefit, and the possibility of achieving savings through avoided or shortened hospital or nursing home stays as a result of Medicare coverage of home infusion therapy.

Home infusion involves the intravenous administration of drugs to an individual at home. The components needed to perform a home infusion include the drug (e.g., antibiotics, immune globulin), equipment (e.g., a pump or a pole), and supplies (e.g., tubing and catheters). Visiting nurses may play a role in home infusion. For antibiotics, nurses typically train the patient or caregiver to administer the drug independently and visit periodically to provide catheter care. Some drugs require more nursing time.

The home infusion process requires coordination among multiple entities, including patients, physicians, hospital discharge planners, health plans, home infusion providers, and home health agencies. We found broad differences in how the process is managed, with possible consequences for patient care when coordination does not occur.

Traditional fee-for-service (FFS) Medicare generally covers some or all components of home infusion depending on the circumstances. Drugs are

In this chapter

- Provision of home infusion by private health plans, MA plans, and other payers
- Medicare beneficiary experience
- Potential for abuse of a Medicare home infusion benefit
- Assessment of cost data
- Cost implications of expanded home infusion coverage in Medicare
- Design considerations for expanded home infusion coverage in Medicare
- Conclusion

generally covered under Part B or Part D. Supplies, equipment, and nursing are covered in some circumstances through the Part B durable medical equipment benefit, the prosthetic benefit, the Medicare home health benefit, or some combination of these benefits. Infusion services are available to beneficiaries in several settings in addition to the home. FFS Medicare covers drugs and drug administration services in physician offices and hospital outpatient departments. Drugs and drug infusion services are generally included in the bundled payment made to inpatient hospitals and skilled nursing facilities under the prospective payment systems.

The specific questions the Congress asked the Commission to examine and the study's findings concerning these issues are:

1. An assessment of the literature relating to the benefits and costs of providing coverage for home infusion therapy under the Medicare program, including an assessment of the possibility of achieving savings through avoided or shortened hospital or nursing home stays as a result of Medicare coverage of home infusion therapy

Though there is some literature on the costs of home infusion, most studies are dated and do not estimate the costs of a home infusion program under Medicare's FFS payment systems. Based on our analysis, whether home infusion yields Medicare savings or costs for an individual beneficiary depends on the setting where the beneficiary otherwise would have received infusions, the payment rates established for home infusion and how they compare with the payment rates in that alternative setting, how frequently the drug is infused, and how often home nurse visits are needed. To the extent that some beneficiaries are admitted to skilled nursing facilities because of the out-of-pocket costs associated with home infusion, opportunities likely exist to achieve savings by providing care for these beneficiaries in their homes. Shifting infusions from hospital outpatient departments or physician offices to the home could yield net savings or costs depending on how frequently nurse visits are needed, how drug payment rates compare under Medicare Part B and Part D, and the payment rates established for home infusion. Savings from substituting home infusion for home health episodes may be possible in some circumstances. Inpatient hospital expenditures are not likely to be a significant source of savings because we do not anticipate substantial substitution of home infusion for hospital admissions. Some patients might be discharged earlier from the hospital as a result of broader coverage for home infusions, but the impact on Medicare expenditures for such patients would vary, with savings expected for a small subset and little change or increased expenditures expected for most.

For expanded coverage of home infusions to realize overall savings for Medicare, shifts in site of service would need to result in savings that exceed the additional costs associated with the crowd-out effect (i.e., Medicare assuming responsibility

for home infusion services that otherwise would have been paid by other insurers or beneficiaries) and the woodwork effect (i.e., coverage of home infusion leading to more beneficiaries using intravenous drugs who otherwise would have been treated with other therapies). The cost implications of broader coverage of home infusions vary by drug. As a result, a targeted expansion of home infusion coverage focusing on a subset of drugs would have more likelihood of savings than a broad expansion. However, a lack of data impairs our ability to determine whether net savings would result, even in the case of a targeted expansion (e.g., antibiotics, or intravenous immune globulin for primary immune deficiency). Although it is unsatisfactory to be unable to draw a conclusion about net savings or costs, it might be possible to collect additional information to fill in some of the data gaps, but it would be difficult to collect all the data needed.

2. An assessment of sources of data on the costs of home infusion therapy that might be used to construct payment mechanisms in the Medicare program

Data on the cost associated with providing home infusion services are very limited. An industry-sponsored study that estimated the per diem costs of home infusion has methodologic limitations that reduce its utility for rate setting. Data on Medicare payment rates for similar services, such as home health or durable medical equipment, might be a source of some benchmarks. Another avenue for obtaining cost information might be competitive bidding. Also, the feasibility of obtaining data on providers' acquisition costs or manufacturers' sales prices for equipment and supplies could be explored.

3. An assessment of private payment methodologies used by Medicare Advantage plans and private health plans for the provision of home infusion therapy and their applicability to the Medicare program, with reference to recent work by the Government Accountability Office

We found that the most common payment method used by private health plans and Medicare Advantage plans included a payment for drugs, a separate payment for nursing as needed, and a per diem amount covering supplies, equipment, pharmacy services, and additional services. The Government Accountability Office did not discuss the applicability of this payment method to Medicare. This payment method could be applicable to Medicare depending on the payment rate chosen. Providers we interviewed described a wide range of payment levels for per diem services. Other payment methods may be possible, including bundling (as part of an episode of care or bundling nursing along with supplies and equipment as part of a per diem payment) and competitive bidding.

Some technical issues would have to be resolved with any methodology selected. For example, some drugs are covered under Part B or Part D, using different

payment methods. Services covered under the Part D dispensing fee overlap with some of the services provided under the per diem paid by private plans. In designing a payment method, policymakers would also need to be cognizant of the potential for increased expenditures because of a crowd-out effect and a woodwork effect.

4. A discussion of any issues surrounding the potential abuse of a home infusion therapy benefit in Medicare

Private plan representatives did not report any evidence that fraud and abuse are more prevalent in the area of home infusion than in any other type of service. All plans apply utilization management techniques, particularly prior authorization, to ensure that home infusion is provided appropriately. Plans generally ask physicians to report the diagnosis, prescribed drug, dosage, and expected duration of therapy. They may also request information about the patient's age, sex, and weight. Some plans require separate approval for a schedule of nursing visits. One health plan described the need to look closely at home infusion utilization to ensure it is appropriate and noted that this kind of oversight would present a challenge for FFS Medicare. In general, Medicare has had less ability to monitor care provided in the home than in facility settings and it has been more difficult to create payment systems with incentives for appropriate utilization. While private payers have not found fraud to be a problem in the home infusion industry, a broad, unmanaged expansion of Medicare FFS coverage could lead to fraudulent actors entering the field.

Although we did not make any recommendations, we discussed two approaches for increasing access to home infusion: filling in the gaps in current coverage and setting up a demonstration project to test the effects of providing an integrated home infusion benefit for beneficiaries needing infused antibiotics. Each approach has advantages and drawbacks. We examined the gap-filling approach by considering policies for intravenous immune globulin under Part B and antibiotics under Part D. We examined the integrated benefit approach through a demonstration project that would test quality and efficiency under an integrated home infusion benefit for antibiotics.

To ensure appropriate utilization, a project testing provision of a home infusion therapy benefit would require management controls such as prior authorization. This project could test the ability of CMS to administer a targeted prior authorization policy designed to improve quality of care and reduce costs. Since prior authorization can be labor intensive and require considerable resources, it would be a challenge for CMS. However, targeted prior authorization could be a useful tool to improve quality and control inappropriate utilization not just in home infusion but in other areas as well. If CMS is able to administer a targeted prior authorization program, benefits would accrue to beneficiaries and the program as a whole. ■

Background

The Congress requested that the Commission conduct a study on home infusion therapy and report its findings by June 2012. The Commission was asked to look at issues such as the benefits and costs associated with providing infusions in the home versus alternative settings, how commercial insurers and private plans cover and pay for home infusion therapy, and potential issues surrounding fraud and abuse.

Scope of the study request

The Commission was asked to examine:

- literature relating to the benefits and costs of providing coverage for home infusion therapy under the Medicare program, including an assessment of the possibility of achieving savings through avoided or shortened hospital or nursing home stays as a result of Medicare coverage of home infusion therapy;
- sources of data on the costs of home infusion therapy that might be used to construct payment mechanisms in the Medicare program;
- payment methodologies used by Medicare Advantage (MA) plans and private health plans for the provision of home infusion therapy and their applicability to the Medicare program, with reference to recent work by the Government Accountability Office (GAO); and
- any issues surrounding the potential abuse of a home infusion therapy benefit in Medicare.

In addition, the Commission was asked to submit recommendations for Medicare's coverage of and payment for home infusion therapy if warranted by the Commission's research.

Study design

To perform our study, we contracted with Acumen, LLC, to analyze data on Medicare's current expenditures on home infusion; contracted with NORC to interview health plans, home infusion therapy providers, hospital discharge planners, state Medicaid programs, and physicians; and conducted additional interviews with physicians, home health agencies, and others with expertise in this area. We also conducted a literature review of studies looking at the benefits and costs of home infusion, developed a conceptual framework of the possible effects expanded coverage of home infusion could have on Medicare expenditures, and presented some illustrative scenarios in which broader Medicare coverage of home infusion may yield savings or additional expenditures compared with infusion in other settings. We also explored the advantages and disadvantages of policies designed to increase home infusion coverage, including filling in current coverage gaps and designing a demonstration project to test the quality and efficiency of providing an integrated home infusion benefit for antibiotics.

What is home infusion?

Home infusion involves the intravenous (IV) administration of drugs to individuals in their homes.[1] The components needed for home infusion include the drug (e.g., antibiotics, immune globulin), equipment (e.g., pump, pole), and supplies (e.g., tubing and catheters). Visiting nurses are often involved in home infusion. From our discussions with home infusion providers and health plans, we have heard that the nurse's role in home infusions in most situations is to train the patient or family to administer the infusion. Often a nurse is present at the initial or first few infusions until the patient or family member is properly trained; thereafter the nurse visits periodically to check the infusion site and provide catheter care. (Some drugs may require more nursing assistance.) Home infusion is often described as being more convenient for patients than traveling to a health care provider's office for infusions, particularly when infusions are needed every day or multiple times a day.

Medicare covers infusions in a number of settings in addition to the home. Traditional fee-for-service (FFS) Medicare covers drugs and drug administration services in physician offices and hospital outpatient departments (HOPDs). Infusion services are also covered in inpatient settings, such as acute care hospitals and skilled nursing facilities (SNFs), and are generally bundled into the payments these providers receive.[2]

Medicare's current coverage of home infusion

Medicare covers the various home infusion therapy components across several separate payment systems (Figure 6-1, p. 176). Drug coverage is the broadest component, falling under Medicare Part B and Part D. Supplies, equipment, and nursing services are covered in certain circumstances under FFS Medicare through the durable medical equipment (DME), prosthetic, and home health benefits. Some MA plans provide broad coverage of

FIGURE 6–1

Medicare fee-for-service coverage of home infusion

Note: A beneficiary who is homebound and who needs part-time or intermittent skilled nursing assistance with home infusion of intravenous drugs would generally meet the Medicare home health benefit eligibility criteria, in which case nursing and in some circumstances limited supplies would be covered. If the drug is not covered by Part B or Part D, a homebound beneficiary would potentially have coverage under the home health benefit for nursing and in some circumstances certain supplies, but not the drug or equipment.
*Intravenous immune globulin covered in the home under Part B follows different coverage rules than displayed above (only the drug is covered unless the beneficiary is homebound, in which case nursing and, in some circumstances, limited supplies are covered).

Source: MedPAC analysis of Medicare coverage rules.

home infusion, particularly those that bundle Part D home infusion drugs with equipment, supplies, and nursing under Part C as a mandatory supplemental benefit.

In some situations, FFS Medicare covers all home infusion components (drugs, equipment, supplies, and nursing), whereas in other situations it covers only some components. Coverage of home infusion components depends generally on whether the drug is covered under Part B or Part D and whether the beneficiary is homebound.[3] If the drug is covered under Part B (except in the case of IV immune globulin (IVIG)), the drugs, supplies, and equipment are generally also covered by Part B.[4] In contrast, Part D covers only the home infusion drug. For homebound beneficiaries, the home health benefit provides nursing services and limited supplies. If the beneficiary is not homebound, FFS Medicare does not cover nursing.

If Medicare does not cover a certain component of home infusion services, some beneficiaries have coverage through employer-sponsored supplemental insurance or Medicaid. Individually purchased medigap policies do not cover these services. Beneficiaries facing out-of-pocket costs for home infusion may choose to receive infusion services in another setting, such as a SNF, physician office, or HOPD, or they may decide to pay out of pocket for certain home infusion components.

Medicare Part B drug coverage

DME drugs Medicare Part B covers a small number of home infusion drugs through the DME benefit. To be covered under the Part B DME benefit, the drug must

require administration using a DME infusion pump and administration of the drug in the home must be medically reasonable and necessary. The DME Medicare administrative contractors limit this coverage to about 30 drugs specified in their local coverage policies (Centers for Medicare & Medicaid Services 2011). Examples include, among others, certain IV drugs for heart failure and pulmonary arterial hypertension, immune globulin for primary immune deficiency (PID), insulin, antifungals, antivirals, and chemotherapy in limited circumstances. Medicare pays for these drugs based on 95 percent of the October 1, 2003, average wholesale price (AWP) (or, for new drugs, 95 percent of the products' initial AWP) until these drugs come under competitive bidding.[5] These drugs have not been proposed for inclusion in competitive bidding thus far.

IVIG in the home By special statutory provision, Medicare Part B also covers IVIG administered in the home (which does not require a DME pump according to CMS policy) for patients with PID. Medicare pays for IVIG in this situation based on 106 percent of the average sales price (ASP).

Parenteral nutrition Through the prosthetic benefit, Medicare Part B also covers total parenteral nutrition (TPN, or more commonly, IV nutrition) for patients with a permanently nonfunctioning gastrointestinal tract. Medicare pays for TPN according to a fee schedule.

Medicare Part D drug coverage

Any infusion drug that is not covered under Part B is potentially a Part D drug subject to the plan's formulary and any medical necessity or prior authorization criteria. For example, Medicare Part B does not cover antibiotics for home infusion because CMS has determined they do not require a DME pump. Therefore, IV antibiotics may be covered under Part D. As another example, Part B covers home infusion of IVIG for beneficiaries with PID. Beneficiaries with a diagnosis other than PID could, depending on the plan, receive coverage for home infusion of IVIG under Part D.

Part D plans are required to contract with home infusion pharmacies to provide access to home infusion drugs to their enrollees. CMS has access requirements in terms of the number of home infusion pharmacies a plan must contract with in a state. Part D provides coverage only for the drug; it does not cover the equipment, supplies, and nursing services associated with home infusions. However, Part D plans are required to ensure that the network pharmacies they contract with verify that the necessary equipment, supplies, and services are present to support home infusion before dispensing a drug covered by Part D for home infusion. They must also provide the drug in a form that can be administered by a patient or caregiver.

Equipment and supplies

FFS Medicare covers equipment and supplies associated with home infusions in certain circumstances. For DME-covered drugs and TPN covered under the prosthetic benefit, Medicare Part B covers the associated equipment and supplies. For other home infusion drugs (i.e., drugs covered by Part D or IVIG covered by Part B), the Medicare home health benefit covers limited supplies, such as alcohol swabs, if the beneficiary meets the Medicare home health eligibility criteria and receives the infusion via the gravity method (not a pump).

Nursing

Nursing services for home infusion are covered only for FFS Medicare beneficiaries receiving the home health benefit. To qualify for home health care, a beneficiary must be homebound and need skilled care, such as part-time or intermittent skilled nursing care. Thus, beneficiaries meeting the homebound requirement who need nursing services related to home infusion generally qualify for the Medicare home health benefit.

Medicare Advantage coverage of home infusion

Some MA plans provide broad coverage for home infusion. MA plans have the option of bundling Part D home infusion drugs with equipment, supplies, and nursing services under Part C as a supplemental benefit. In this situation, the MA plan is not permitted to charge cost sharing for the bundled home infusion services. As of 2009, about 219 MA plans with enrollment of about 1.5 million beneficiaries (accounting for about 15 percent of MA enrollees) bundled home infusions under Part C. Less is known about the extent of home infusion coverage for the majority of MA plans that provide home infusion drugs through Part D. While these plans have broader flexibility to cover supplies, equipment, and nursing under Part C than what is covered under FFS Medicare, we do not have data on the extent to which they provide such services.

Medicare's current expenditures on home infusion

A relatively small number of Medicare beneficiaries—about 36,000 FFS beneficiaries under Part B and just

TABLE 6–1

Top three home infusion drugs covered by Part B and Part D, 2009

Home infusion drug or drug class	Part B/Part D drug spending (millions)	Percent of Part B/Part D home infusion spending	Number of users	Percent of Part B/Part D home infusion users	Average spending per user
Part B–covered drugs					
Parenteral nutrition	$159.0	35%	4,745	13%	$33,511
Treprostinil	123.6	27	977	3	126,490
Immune globulin	64.5	14	2,040	6	31,615
All Part B–covered drugs	453.2	100	36,314	100	12,479
Part D–covered drugs					
Immune globulin	139.6	33	2,007	2	69,541
Antibiotics	70.2	17	56,196	55	1,250
Alpha–1 proteinase inhibitor	68.8	16	843	1	81,607
All Part D–covered drugs	421.7	100	101,352	100	4,161

Note: Drug spending refers to program payments and beneficiary cost sharing for Part B and plan payments and beneficiary cost sharing for Part D. In the table, average spending per user does not precisely equal drug spending divided by number of users due to rounding.

Source: MedPAC analysis of results from Acumen, LLC, analysis.

over 100,000 Medicare beneficiaries under Part D—received home infusion drugs in 2009. Home infusion expenditures in Part B (including beneficiary cost sharing) for drugs, equipment, and supplies totaled about $602 million (about $453 million for drugs, $83 million for supplies, and $67 million for equipment). Part D plan payments and beneficiary cost sharing for IV drugs covered by Part D totaled about $422 million in 2009.[6] This amount does not include FFS spending for Medicare home health episodes that may have been triggered by a beneficiary's need for home infusion, nor does it reflect spending by MA plans other than drug costs incurred under Part D.

Medicare spending on home infusion drugs and the number of beneficiaries receiving those drugs has grown rapidly since 2006. Medicare Part D gross costs for home infusion drugs grew at an average annual rate of 47 percent between 2006 and 2009. During this period, the number of Part D enrollees receiving Part D–covered home infusion drugs grew an average of 21 percent per year, far outpacing growth in the overall Part D population (which averaged 5 percent per year). During the same period, Medicare FFS spending for Part B–covered home infusion drugs increased at an average rate of about 17 percent per year, compared with an average annual growth rate of 6 percent in the number of beneficiaries using Part B home infusion drugs. This growth in Part B home infusion drug use and expenditures occurred during a period when the Medicare FFS Part B population declined by about 1 percent per year.

Medicare expenditures on home infusion drugs are concentrated on a small number of products. IV antibiotics covered by Part D accounted for the largest number of users of Medicare-covered home infusion drugs. More than 56,000 beneficiaries used Part D–covered IV antibiotics in the home in 2009, with a gross drug cost of about $70 million and an average gross drug cost per user of about $1,250 (Table 6-1). (More detailed data on current Medicare expenditures for home infusion are available in an online appendix to this chapter (http://www.medpac.gov).) The remainder of Medicare spending on infusion drugs was largely concentrated on a few products with a very small number of users and a high cost per user. For example, under Part D, two drugs—immune globulin and alpha-1 proteinase inhibitor (with about 2,000 or fewer users each and annual gross drug costs per user averaging roughly $70,000 to $80,000)—accounted for half of Part D gross drug costs for IV drugs. In addition, several rheumatoid arthritis and antineoplastic drugs (infliximab, bevacizumab, and rituximab) with a high cost per user but a small number of users are among the top 10 IV drugs with the highest Medicare Part D expenditures (see online appendix to this chapter (http://www.medpac.gov)). (Part D data

do not include information on the diagnosis for which the drug is being prescribed.) About three-quarters of Medicare Part B spending on home infusion drugs was concentrated on three products (TPN, treprostinil, and immune globulin for PID) that had between just under 1,000 and 4,750 users each and Medicare drug expenditures per user averaging over $30,000 to more than $125,000.

Use of home infusion drugs varies by beneficiary and Part D plan characteristics. In 2009, the populations with the highest share of beneficiaries using Part D home infusion drugs were beneficiaries under age 65 or over age 85, those with end-stage renal disease, and minorities. Beneficiaries enrolled in the low-income subsidy and prescription drug plans (since these plans enroll a disproportionate share of low-income subsidy enrollees) were also more likely to use Part D home infusion drugs than their counterparts.[7] Beneficiaries who were younger or had end-stage renal disease were more likely to use Part B home infusion drugs than other beneficiaries.

The degree to which the Medicare home health benefit is a source of coverage for nursing services associated with home infusions varies by drug. There is a high rate of home health use among beneficiaries who received IV antibiotics covered by Part D. For example, for the two highest expenditure Part D antibiotics in 2009, a home health nurse visit occurred within 6 days of the prescription being filled for 76 percent and 63 percent of prescriptions. Home health visits occurred within 6 days of the prescription being filled for 15 percent to 21 percent of prescriptions for immune globulin, alpha-1 proteinase inhibitor, and parenteral nutrition additives.

Provision of home infusion by private health plans, MA plans, and other payers

To understand how private payers, MA plans, and Medicaid cover and pay for home infusion, we contracted with NORC to conduct semistructured interviews with health plans, home infusion providers, and hospital discharge planners. Interviews included 15 health plans, 10 home infusion providers, 10 discharge planners, and 4 state Medicaid programs. The Commission or NORC staff also interviewed physicians in several specialties (infectious disease, immunology, cardiology, and pulmonology). Staff interviewed home health providers and representatives from CMS and the Department of Veterans Affairs and met with stakeholders representing the industry and beneficiary advocates. In most cases, we could not independently validate the accuracy of their accounts or assess their generalizability.

In asking the Commission to assess how commercial insurers and MA plans cover and pay for home infusion therapy, and the applicability of those approaches to the Medicare program, the Congress asked us to build off a recent GAO study (Government Accountability Office 2010). Findings from the GAO study on home infusion are summarized in the text box (p. 180). Much of what we heard in interviews about how plans cover and pay for home infusion services and their utilization management and quality assurance approaches is similar to findings reported by GAO.

Clinical and administrative decisions regarding home infusion coverage

Patients who receive home infusion of antibiotics usually begin their spell of illness in the hospital. Under this scenario, the decision to prescribe home infusion generally begins with a conversation between a physician and a hospital discharge planner or case manager. In the case of antibiotics, patients with orthopedic joint infections, bone infections, cardiovascular endocarditis, and other postoperative infections are likely to require postdischarge antibiotics. If the physician determines that oral medications are not effective, the discharge planner—in consultation with the physician, patient, and patient's insurer—determines the most appropriate site of care for a treatment regimen involving infused drugs. For patients requiring antibiotics, physicians and insurers generally told us that the home would be the optimum setting. Discharge planners report that patients also prefer this setting.

However, home infusion is not always appropriate. The decision to use it depends on the nature of the medication, patient and family characteristics, and insurer coverage rules.

- ***Drug characteristics***—Interviewees' opinions about drugs suitable for home infusion fell on a continuum, with some insurers limiting coverage to a few products and others identifying home infusion as their first choice whenever possible. As is the case under Medicare Part D, antibiotics were cited as the most common type of drug covered by home infusion in the commercial market. Other common

Report on home infusion by the Government Accountability Office

The Congress requested that the Government Accountability Office (GAO) review home infusion therapy coverage policies in the private market in relation to Medicare policy. In its June 2010 report, GAO reviewed Medicare fee-for-service coverage of home infusion and conducted interviews with health insurers, home infusion associations, one home infusion provider, a utilization management organization, and three organizations that accredit home infusion providers (Government Accountability Office 2010). GAO also reviewed the benefit packages submitted to CMS by Medicare Advantage (MA) plans.

GAO reported that the health plans interviewed cover home infusion therapy comprehensively in all their commercial benefit packages; two out of five provide similar comprehensive coverage under their MA plans. The health insurers GAO interviewed believed that home infusion was cost-effective relative to inpatient settings. The cost savings were less clear when comparing infusion in the home with infusion in a physician office or an infusion clinic.

The insurers interviewed explained their methods for monitoring the utilization and quality of their home infusion benefit. GAO reported that most of the plans use prior authorization, postpayment claims review, or both to manage utilization of the benefit. The plans noted the importance of developing very specific reimbursement guidelines for providers. To ensure high quality, the plans interviewed used a limited provider network of infusion pharmacies and home health agencies, required accreditation, monitored patient complaints, and coordinated care among providers. The accrediting organizations further identified factors that indicate high-quality providers. GAO recommended further study of home infusion therapy to inform the development of a comprehensive benefit under Medicare. ■

products mentioned were TPN, hydration, antifungals, and IVIG. Interviewees rated drugs on the degree of risk they entailed. Factors mentioned as increasing risk included drugs requiring administration within a controlled and sterile environment, drugs with unpredictable adverse effect profiles, drugs with a short period of stability, drugs that must be given using a peripheral line, and regimens that include multiple drugs during the course of a day. Most insurers do not cover chemotherapy in the home because of the potential toxicity of the drugs, the need for multiple products, and unpredictable changes in therapy needs. At least one home infusion pharmacy mentioned that it will not cover products if reimbursement is below their costs. Accordingly, this agency no longer covers IVIG under Medicare Part B because they believe the payment rate (ASP plus 6 percent) does not cover their drug costs.

- ***Patient characteristics*****—**Interviewees mentioned a wide variety of factors that determine whether a patient is a candidate for home infusion. The patient or a caregiver should be able and willing to administer the medication after initial education. (One health plan requires a nurse to be present for all home infusions.) The patient's home must be clean and have reliable refrigeration, electricity, and water supply. The patient should be able to adhere to the medication regimen and not have a history of IV drug abuse. Some interviewees noted that patients in dysfunctional families may not be good candidates. If the patient has additional complex medical needs (e.g., multiple comorbidities), most interviewees did not consider home infusion appropriate.
- ***Insurer coverage rules*****—**All interviewees reported that private payers tend to have broader coverage for home infusion than FFS Medicare. They generally cover supplies, equipment, pharmacy services, and nursing as well as drugs. However, insurer coverage varies by drug. For example, a number of health plans told us they did not cover IVIG in the home (for safety and financial reasons) and most did not authorize home infusion for chemotherapy. Many interviewees said that insurers authorize nursing visits at the same time they approve a drug regimen. Additional nursing visits may require further authorization. One provider told us that in her region commercial insurers use the Medicare definition of homebound to determine whether nursing visits

are covered. Most interviewees told us that home infusion was covered by Medicaid in their state and beneficiaries dually eligible for Medicare and Medicaid had no difficulty getting coverage.

Managing home infusion

The home infusion process requires coordination among multiple entities. Patients, physicians, hospital discharge planners, health plans, home infusion providers, and home health agencies all have roles to play. We found broad differences in how the process is managed, with possible consequences for patient care.

Role of the physician

Home infusion begins with a physician order, which includes the drug, dosage, frequency of administration, and expected duration of treatment. The physician works with the hospital discharge planner to initiate a referral to a home infusion provider.[8] Although any physician may write the order, we noted multiple hospitals and health plans require input from an infectious disease specialist in the case of antibiotics. They are most likely to know if infused drugs are necessary and appropriate. One retrospective study examined the impact of infectious disease consults at the Cleveland Clinic over a three-month period in 2010. The most common diagnoses requiring consults were bone and joint infection, skin or soft tissue infection or rash, endocarditis or cardiac device infection, IV catheter or other endovascular infection, and urinary tract infection. The authors concluded that 27 percent of patients initially referred for community-based infusion of antibiotics before the consults did not require infused antibiotics. This number includes 16 percent of patients who did not require IV antibiotics and 11 percent of patients who did not require any antibiotic (Shrestha et al. 2011). Although the study was not designed to capture data on patients who would have benefited from IV antibiotics but did not receive them, it is possible that infused antibiotics are underused.

In some cases, the infectious disease physician continues to treat the patient after discharge and has primary responsibility for coordinating all patient care until the infection is controlled. When that does not happen, either because the patient lives too far away or because an infectious disease specialist was not involved, the treating physician may depend on the home infusion provider or home health agency to coordinate care for the infusion process. Some physicians were concerned that patient care suffered in those circumstances—for example, when the initial order was written by a hospitalist and another physician took over the case after the patient was discharged. A number stressed the difficulty of coordinating care for nursing home residents because the home's medical director is in charge of all care for the residents.

In several instances, interviewees reported that physician office–based care minimized the need for separate nursing visits for patients receiving IV antibiotics. In these cases, patients see the physician once a week. During the visit, office-based nurses monitor lab results and clean and flush lines as needed, while the physician evaluates the patient's progress. In at least one instance, an interviewee reported that the patient is given the medication to take home, eliminating the need for delivery by a home infusion provider.

Role of the patient

A patient who needs infusion therapy may receive it in a number of settings, including the home, ambulatory infusion suites, physician offices, HOPDs, and SNFs. Patient choice plays a large role in the decision. Since most home infusion benefits assume that the patient or caregiver is administering the drug most of the time, patients must feel confident that they can do it. The home infusion patient must also be able to recognize adverse events and have access to reliable transportation to a clinic or hospital if needed.

Most interviewees told us that patients generally prefer receiving infusions in their homes and providers report high patient satisfaction. Research generally supports this view (Paladino and Poretz 2010). Bernard and colleagues (2001) noted: "Patients may be more responsive and less depressed at home, and our study revealed that all the patients were satisfied with home treatment and the ability to maintain a normal life." However, interviewees also note that some patients, especially those with elderly caregivers, may not feel capable of self-administering.

In making their choice, patients also consider their out-of-pocket costs. Patient obligations vary by site of care and coverage rules. For FFS Medicare beneficiaries, we heard multiple interpretations of coverage rules by discharge planners, home infusion providers, and home health agencies.

Role of discharge planners

Hospital discharge planners have the primary responsibility for coordinating services when a patient

requires a continued course of infused medication. As soon as the physician indicates that a patient will need continuing infusions postdischarge, the discharge planner begins to arrange care. She must determine, in coordination with the physician, whether the patient is a candidate for home infusion, the treatment regimen can be given safely in the home, the patient's health plan has a home infusion benefit, and the plan has a preferred home infusion provider. She may work with the physician to see if an effective treatment can be found that calls for only one or two administrations per day to simplify the home infusion process. Some interviewees told us that a majority of patients receiving IV antibiotics can be placed on a once per day regimen. Finally, she contacts a home infusion provider or home health agency that will take responsibility for the patient. After the patient's release, the discharge planner has no further contact with the patient.

Role of home infusion provider

Although home infusion providers obtain most of their referrals from hospital discharge planners, they also receive referrals from physicians and home health agencies. A home infusion pharmacy must be a state-licensed pharmacy that meets standards for a compounding pharmacy including maintenance of a clean room. When a home infusion provider accepts a patient, it must obtain authorization from a patient's health plan to provide services. Some home infusion providers we spoke to employed home infusion nurses. If providers do not have their own nurses, they make a referral to a home health agency for necessary nursing services. (With Medicare patients, home infusion providers also make referrals to home health agencies if the providers' nurses are not part of a Medicare-certified home health agency.)

Home infusion providers prepare drugs for home administration and deliver the drugs, needed supplies, and equipment. Providers generally must have the ability to respond to patient needs 24 hours a day, 7 days a week. They share responsibility for patient education with visiting nurses, including teaching the patient how to use the equipment to self-administer the drug, how to clean it, and how to recognize side effects that require immediate attention. Ideally, they begin patient education in the hospital before discharge. They are often the point of contact for patients, physicians, and health plans. If they coordinate care, they send blood work and other lab results to physicians on at least a weekly basis. Interviewees reported that on an initial visit home infusion providers occasionally determine that patients are not capable of self-administration or that their homes are unsuitable.

While most health plans were satisfied with the services they received from contracted providers, a few expressed some concerns. One said that some companies simply drop off drugs without checking to ensure that someone is home to receive them. This practice presents a problem because many of these drugs require careful handling and refrigeration. Some physicians and health plans reported that providers differ in terms of the timeliness and reliability of their communication about patient conditions and lab results and tend to rely on providers who do the best job of communicating with the physician.

Role of the home health agency

Home health agencies receive referrals directly from discharge planners or from home infusion providers. The patient's health plan needs to authorize nursing visits. Interviewees noted that typically plans approve a standard number of visits based on diagnosis, although additional visits may be necessary if a patient has trouble self-administering or experiences adverse effects. Some plans authorize daily visits for elderly patients. The nurse must coordinate with the discharge planner and the home infusion provider to ensure that medication is delivered on time and that she is at the patient's home in time for the first scheduled infusion after discharge. Hospital discharge planners may not discharge a home infusion patient late in the day because it is not possible to arrange a nursing visit.

For antibiotics, the nurse typically visits twice during the first week of therapy to educate the patient and caregiver on how to use the equipment and to make sure they are able to do it. Typically, she visits once a week after the initial period. The nurse draws blood, monitors lines and catheters, and checks for medication errors. Some therapies require more nursing time. For example, several plans that cover IVIG at home require a nurse to be present at each infusion. In some cases, the nurse communicates lab results to the physician; in other cases, that is the responsibility of the home infusion provider.

The home health agency may provide services in addition to infusions for some patients. Wound care patients who need infusions also need services associated with wound care. Joint replacement patients receiving antibiotic infusions may also need physical therapy.

The nurse also provides continuing education. In some cases, a patient's medication is switched during the course of treatment because the prior drug was not working or the patient could not tolerate its side effects. The nurse is responsible for teaching the patient how and when to administer the new therapy.

Role of the health plan

Interviewees agreed that the goal of the health plan is to provide the least expensive, safest level of care. Oral drugs are preferable but are not always appropriate to treat the patient's condition. If home infusion is indicated, the health plan may have a preferred network of home infusion providers or home health agencies, and the hospital discharge planner refers the patient to one of them. Commercial plans generally cover home infusion under their medical benefit. The plan authorizes provision of home infusion, including the drug and number of nursing visits. If therapy is extended or changed, further authorization may be needed.

The plan's role in additional coordination of patient care varies, generally based upon health plan or delivery system integration. Integrated plans often have their own home infusion provider, home health agency, or both. A plan case manager coordinates services for the patient. Some integrated plans interviewed provide minimal home nursing care, preferring that patients come into their clinic once a week for monitoring if practical. In contrast, one integrated plan interviewed provides nursing for all home infusions, believing that it increases safety and is still more cost-effective than care in other settings. Interviewees from integrated systems also said that electronic health records played a crucial role in monitoring patient care, particularly as patients transitioned from the hospital to home.

Some plans actively encourage home infusion, reaching out to physicians and patients to let them know of its availability. Others more strictly limit circumstances in which home infusion is covered.

Plans that separate the pharmacy component from the medical benefit may do less patient coordination. One department monitors drug usage while another oversees coverage for medical care. This situation may create perverse incentives for overall cost and quality of care. For example, one interviewee reported that many health plans do not cover an expensive new oral antibiotic that can obviate the need for infusions. Within Medicare, a stand-alone drug plan may not find it advantageous to cover the product while an integrated MA plan may consider overall costs of care lower with the oral drug.

Utilization management techniques

Health plans use a number of techniques to ensure that home infusion is being provided appropriately. Plans generally require prior authorization before home infusion therapy can begin. All plans that we interviewed reported using prior authorization techniques, although not for all drugs. Plans also conduct retrospective reviews after therapy has been provided.

- ***Prior authorization*—**Before home infusion therapy begins, plans must approve coverage. They generally ask physicians to report the diagnosis, prescribed drug, dosage, and expected duration of therapy. They may also request information about the patient's age, sex, and overall health status. Some plans require separate approval for a schedule of nursing visits. For Medicare patients, plans also determine whether the drug is covered under Part B or Part D and whether the patient has reached the Part D coverage gap.[9] Physicians and providers told us that the prior authorization process is not burdensome and requests are approved quickly, although several reported that coverage overlap issues between Medicare Part B and Part D are administratively burdensome. One provider remarked that, unlike the uncertain outcome of postutilization review, prior authorization ensured that the agency would be paid for its services.

  Some plans do not require prior authorization for every drug. Rules differ based on drug cost and appropriateness criteria. Plans that limit prior authorization to expensive drugs may not require it for most antibiotics. On the other hand, some plans worry that inappropriate use of antibiotics is leading to increased bacterial resistance to existing antibiotics, and they screen antibiotic use for appropriateness. Some check to make sure that oral medications have been tried first. Others, particularly plans in an integrated delivery system, may require an infectious disease specialist to consult and approve an antibiotic therapy order. The emphasis is on the appropriateness of the drug, not the site of care.

  All plans we spoke with that cover IVIG in the home require prior authorization because of its high cost and its use for multiple off-label indications. Some plans do not consider IVIG safe for home infusion, although

others reported success with home use. One plan has a patient education program that teaches patients how to reduce use of IVIG. Additional drugs that some plans do not approve for home infusion include chemotherapy and infusions for rheumatoid arthritis.

- ***Retrospective reviews*—**All plans conduct retrospective reviews of home infusion therapy. The number and intensity of audits depend on the extent to which the plan emphasizes prior authorization. If prior authorization is limited, plans are more likely to rely on retrospective reviews. Auditors look for outliers, including excessive length of therapy and an abnormal number of nursing visits. For example, one physician noted that IV antibiotic therapy that lasts longer than eight weeks should "raise a red flag." Plans also examine use of high-cost therapies like IVIG and clotting factor. Some plans look at differences in dosing for certain drugs and reach out to providers if they find unwarranted variation.

Ensuring safety and quality in home infusion

Plans generally contract with home infusion providers that meet certain standards. All home infusion pharmacies must be licensed under applicable state boards of pharmacy. Some providers mentioned that they were also accredited by the Joint Commission on Accreditation of Healthcare Organizations or the Accreditation Commission for Home Care.

A number of interviewees mentioned their efforts to develop quality metrics and track them. One provider participates in a quality tracking group with 300 other home infusion pharmacies to submit data on a number of quality indicators. This organization, Strategic Healthcare Programs, LLC, collects data on a number of quality indicators including unscheduled hospitalizations, central line infections, adverse drug events, incidents of acute renal failure, and frequent hospitalizations by patients receiving TPN. A representative of this organization told us that reporting is voluntary and organizations may use different definitions of concepts like adverse drug events. In fact, some providers may score worse on some measures than other providers because of a greater commitment to identifying adverse events rather than a greater prevalence of such events. She stressed the importance of a uniform assessment instrument to obtain consistent data across providers.

With some caveats, the research literature indicates that home infusion is a safe option for elderly patients. A study in the Department of Veterans Affairs health system compared results from two cohorts of patients receiving home infusion: One group consisted of patients under age 60 years, the other group had patients age 60 or older. The study concluded that clinical outcomes and numbers of adverse events were similar in both groups, though the rate of nephrotoxicity was higher in the older group. Older patients also needed more support. They were "significantly more likely to require the assistance of family members to help with the infusion and were more likely to be seen in urgent care or to call the infectious diseases pharmacist or physicians with questions" (Cox et al. 2007).

Payment methodologies for home infusion

Interviewees indicated that most health plans provide a three-component payment for home infusion, but a few plans we spoke with pay with broader bundles or use a capitated approach. We did not independently verify information obtained from our interviews.

The three components of plans' payments for home infusion consist of a payment for the drug; a per diem payment for supplies, equipment, pharmacy services, and other non-nursing services; and a payment for each nurse visit.

- ***Drugs*—**The majority of health plans interviewed paid for the drugs based on a discount off the AWP. Interviewees mentioned discounts ranging from 9.5 percent to 16 percent. A few health plans based their drug payments on a percentage of the wholesale acquisition cost or ASP.

- ***Per diem for supplies, equipment, and other services*—**Plans typically make a per diem payment to home infusion providers to cover supplies, equipment, pharmacy services, and other non-nursing services, such as administrative and care coordination services.[10] The per diem rates vary depending on the drug being infused and the frequency of the infusion. In addition, the typical per diem payment for antibiotics varied across interviewees—ranging from $75 to $150. This range appeared to reflect variation in pricing across providers and insurers. Drugs that are provided intermittently (e.g., once per week or once per month) may receive a per treatment payment for supplies and other services instead of a per diem payment.

- ***Nursing*—**Most commercial plans pay for nursing on a per visit basis. A few interviewees provided estimates of the typical payment rate for a nurse visit, which ranged from $80 to $120.

While much less common than the three-component payment approach, some health plans make payments in broader bundles. For example, one large provider told us that some plans bundle nursing into the supply per diem, although this practice reportedly has become less common in recent years. One plan interviewed bundled the cost of certain relatively inexpensive antibiotics into the per diem for supplies. Another plan bundled nursing and supplies into the drug payment in some cases. Two plans interviewed used a capitated approach, making a per member per month payment to either a home infusion provider or a medical group to cover plan members' home infusion services.[11]

The amount of cost sharing for home infusion varies by health plan. Plans and providers interviewed indicated that commercial plans normally have some cost sharing for home infusion but characterized it as typically not large. A few plans interviewed charge no cost sharing for home infusion, while some plans reportedly have very high member liability for home infusion.

Medicare beneficiary experience

Interviews of discharge planners, providers, and physicians provide insight into Medicare beneficiaries' experience accessing home infusion services, given the program's assortment of coverage rules under various benefits. According to the accounts of interviewees, beneficiaries' use of infusion services at home and in other settings varies regionally and across providers. This variation in part may reflect the multiple interpretations of Medicare coverage rules that we heard from discharge planners, home infusion providers, and home health agencies. For example, when Medicare covers only the drug, some discharge planners and providers told us that some providers offer beneficiaries lower prices or payment plans for supplies and equipment. Other providers told us that they were not allowed to do that. Interviewees also differed in their understanding of Part B coverage for supplies and equipment, with some believing that supplies and equipment coverage under the Part B DME benefit and Medicare home health benefit was more expansive than others.

For FFS beneficiaries, interviewees reported that out-of-pocket costs for home infusion are sometimes prohibitive and influence the site of care for some beneficiaries. We heard this statement for drugs covered by Part D and for IVIG covered by Part B. We generally did not hear concerns about out-of-pocket costs for home infusion drugs covered by the Part B DME benefit and prosthetic benefit, which also cover supplies and equipment. FFS beneficiaries with Medicaid coverage or employer-sponsored supplemental insurance that covers all components of home infusion generally have the easiest access to home infusion. For FFS beneficiaries without such coverage, discharge planners and providers gave varied accounts of the type and amount of out-of-pocket costs and the extent to which they lead beneficiaries to receive care at alternative sites.

- ***Supplies and equipment*—**Some discharge planners and providers indicated that the out-of-pocket cost for the per diem supply fee (typically $75 to $150 per day) made home infusion not an option for some beneficiaries. For example, a home infusion provider told us that its patients never pay out of pocket for home infusion because the per diem is cost prohibitive and they are not permitted to selectively discount. In contrast, other discharge planners indicated that out-of-pocket costs for supplies did not typically influence the site of care because some providers offer patients reduced prices, charity care, or payment plans, or they find other ways to provide the supplies if the patient does not have insurance coverage for the per diem payment. For example, one discharge planner told us that area providers would offer a per diem of $30 to $60 (depending on whether the drug was given once per day or multiple times per day) for beneficiaries with only Part D drug coverage and that most patients' families would pay that amount to avoid a nursing home stay.

- ***Part D*—**For those home infusion drugs not covered by Part B, interviewees indicated that Part D coverage was essential for access to home infusion. However, some providers and discharge planners told us that drugs prescribed were sometimes not on Part D plan formularies and that affected whether beneficiaries received home infusion. Discharge planners and providers also had varied perspectives on the Medicare Part D coverage gap. Some discharge planners indicated that the Part D coverage gap was the most significant out-of-pocket cost associated with home infusion and affected whether some beneficiaries

received home infusion, while other discharge planners said they rarely encountered issues with the coverage gap.

- ***Nursing*—**Except for IVIG, out-of-pocket costs associated with nursing services were rarely mentioned as a barrier to access for home infusion. With regard to antibiotics, most discharge planners indicated that patients who have been hospitalized in almost all cases meet the homebound requirement and can receive coverage for nursing through the Medicare home health benefit.

According to discharge planners and infectious disease physicians, some beneficiaries who would be candidates for home infusion of antibiotics receive infusions in SNFs and outpatient clinics (e.g., HOPDs and physician offices) because of the out-of-pocket costs associated with home infusion. The proportion of these beneficiaries going to SNFs versus outpatient clinics varied substantially across interviewees. Some interviewees told us that beneficiaries mostly went to SNFs if they faced out-of-pocket costs for home infusion that they could not afford. Others said it was more mixed, with some of these patients going to outpatient clinics and some going to SNFs. Still others said that beneficiaries would be unlikely to go to a SNF solely because of the financial costs of home infusion and would mostly receive infusions in outpatient clinics if home infusion was not a financial option. Whether these patients received care in SNFs or in outpatient clinics seemed to be influenced by a variety of factors related to the local health care market and the patient's individual situation (e.g., travel time to outpatient clinics and hours of operation, infusion frequency, access to transportation and physical mobility, availability of SNF beds and willingness or unwillingness of SNF providers to admit patients needing infusions, complexity of the patient's other medical needs, and patient and family preferences for outpatient care versus SNF care). A few discharge planners told us that occasionally a patient would stay in the hospital longer for infusions if alternative sites were not options.

Access to home infusion services also varies across MA plans, according to interviewees. Some told us that MA plans in their area provide home infusion coverage very similar to commercial plans, while others told us that MA plans' coverage of home infusion was limited. A few interviewees noted that the Part D coverage gap can sometimes be a barrier to home infusion use by MA enrollees in plans that cover home infusion under Part D.

Potential for abuse of a Medicare home infusion benefit

We were asked to consider issues surrounding potential abuse of possibly broader home infusion coverage under Medicare. This issue is of interest because home infusion is at the crossroads of several areas of the Medicare program that have been vulnerable to fraud and abuse: home health, DME, and infusion drugs. In general, Medicare has had less ability to monitor care provided in the home than in facility settings and it has been more difficult to create payment systems with incentives for appropriate utilization.

Interviews with private health plans indicate that in their experience, fraud and abuse has not been more prevalent in the area of home infusion than in any other type of service. A few plans mentioned that contracting with a single home infusion provider helped facilitate oversight. In addition, plans' utilization review activities—prior authorization and postpayment review—help deter and prevent abuse. One health plan described the need to look at home infusion utilization on a case-by-case basis to ensure it is appropriate and stated that in Medicare this kind of oversight would be complicated, as the separate entities administering the various benefits that included one or more home infusion components would need to coordinate their efforts. A physician interviewed thought that concerns about potential abuse if Medicare broadened coverage of home infusion were legitimate but that they could be addressed through utilization management, such as prior authorization. A few physicians mentioned utilization patterns that might be flags for possible abuse, such as IV antibiotics prescribed for conditions without supporting clinical evidence or antibiotic prescriptions exceeding six or eight weeks. While private payers have not found fraud to be a problem in the home infusion industry, a broad, unmanaged expansion of Medicare FFS coverage could lead to fraudulent actors entering the field.

One health plan interviewed reported encountering small issues with inappropriate billing for home infusion. According to the plan, some providers were double billing for drugs under the pharmacy benefit and the medical benefit, which the plan said was the result of a lack of understanding of the billing processes in some cases and purposeful in other cases. The plan put in edits to eliminate the issue. Some providers billed for more expensive prepackaged drugs when they actually furnished drugs made with ingredients from a bulk vial.

Our analysis of Medicare claims data and Part D prescription drug data found instances of unusual billing patterns that may merit further investigation and illustrate some of the potential vulnerabilities in Medicare. We found Part D claims for IV drugs dispensed while beneficiaries were in a Part A SNF stay. Drugs provided in a Part A SNF stay are covered under the Part A payment or are billable in some cases to Part B, not Part D. Thus, these Part D claims may represent double billing and merit further examination. A separate analysis of the Part B claims data found roughly 50 percent more beneficiaries receiving Part B–covered external infusion pumps than Part B–covered home infusion drugs. Part B covers pumps only to be used in conjunction with Part B–covered home infusion drugs, thus raising questions about the appropriateness of coverage for the pumps and warranting further scrutiny.

Assessment of cost data

The Congress requested that the Commission assess sources of data on the costs of home infusion therapy that might be used to construct payment mechanisms in the Medicare program. Data on the cost associated with providing home infusion services are limited. A study sponsored by the National Home Infusion Association that estimated the per diem costs of home infusion has methodologic limitations that reduce its utility for rate setting. Data on Medicare payment rates for similar services, such as home health and DME, might be a source of benchmarks. For example, the Medicare home health benefit has a payment rate for individual nurse visits (when four or fewer visits are provided in a home health episode). The DME fee schedule has payment rates for infusion pump rental and supplies, although the DME fee schedule is generally perceived to be above the costs of an efficient provider. Another avenue for obtaining cost information might be competitive bidding, as discussed later in this chapter. Also, the feasibility of obtaining data on providers' acquisition costs or manufacturers' sales prices for equipment and supplies could be explored.

The National Home Infusion Association sponsored a study conducted by Abt Associates to estimate the per diem costs associated with home infusion services (National Home Infusion Association 2006). The per diem was defined to include supplies, equipment and "all other services (e.g., referral processing, intake qualification and documentation setup, care coordination, verifying physician order set, sterile compounding, packaging, delivery, patient education, clinical monitoring, insurance administration, etc.)" For the study, Abt obtained survey data from seven home infusion providers, five national companies, and two others. The home infusion providers submitted information on their aggregate per diem cost (combined for all types of patients, drugs, and frequencies of administration), share of patients by S-code (i.e., by drug and frequency of administration), supply costs by S-code, equipment costs by type of equipment, average salary and benefits by type of employee, and average delivery charges. Abt used this survey information, along with assumptions about the amount and type of labor and type of equipment involved with each S-code, to estimate per diem costs at the S-code level. The study reports average per diem costs by S-code based on its estimate of four components of cost: labor, supplies, equipment, and delivery. Costs for the four components are not reported separately. For antibiotics, the study reported an average per diem cost in 2004 ranging from $70 to $102, depending on the frequency of administration. For immunotherapy like IVIG, the study reported a cost per administration of $554 in 2004, not including the cost of the drug and nurse visits.

Some aspects of the study limit its utility as a source of cost data for rate setting. The study estimates per diem costs using mostly aggregate cost data extrapolated to the S-code level based on assumptions about the amount of labor and type of equipment involved in each S-code. Ideally, cost information for rate setting would be more granular, such as actual data on the cost or amount of labor and type of equipment involved in each S-code. The per diem cost definition used in the study overlaps with some services covered through Medicare Part D (Table 6-2, p. 188). To avoid duplicate payment, any cost data that might be used to price expanded home infusion coverage should reflect only the expanded services to be covered, not services that are covered under another Medicare payment system. Some of the cost estimates in the study are at levels that raise questions about whether they are accurate and reflect efficient provision of care. For example, the study estimates a cost of $554 per IVIG administration in 2004, not including the cost of the drug and nurse visits. Beyond the delivery and equipment pickup costs (estimated at $38 each), the study does not break out the roughly $500 in remaining costs. It is unclear to us what would explain costs at this level. Finally, the study is based on data from seven home infusion companies—ideally, cost information would come from a broader set of providers.

TABLE 6–2 **Overlap between Part D dispensing fee and home infusion per diem**

Part D dispensing fee (42 CFR 423.10)	NHIA definition of per diem
Dispensing fees mean costs that (1) are incurred at the point of sale and pay for costs of a covered Part D drug each time a covered Part D drug is dispensed; (2) include only pharmacy costs associated with ensuring that possession of the appropriate covered Part D drug is transferred to a Part D enrollee. Pharmacy costs include, but are not limited to, any reasonable costs associated with a pharmacy's time in checking the computer for information about an individual's coverage, performing quality assurance activities consistent with 42 CFR 423.153(c)(2), measurement or mixing of the covered Part D drug, filling the container, physically providing the completed prescription to the Part D enrollee, delivery, special packaging, and overhead associated with maintaining the facility and equipment necessary to operate the pharmacy.	All other services (not including drugs and direct infusion nursing services)(e.g., referral processing, intake qualification and documentation setup, care coordination, verifying physician order set, sterile compounding, packaging, delivery, patient education, clinical monitoring, insurance administration), supplies, and equipment provided in conjunction with home infusion therapy.

Note: CFR (Code of Federal Regulations), NHIA (National Home Infusion Association).

Source: Code of Federal Regulations and National Home Infusion Association.

Cost implications of expanded home infusion coverage in Medicare

To examine the possibility that broader home infusion coverage under Medicare could save money by shortening or avoiding hospital or SNF stays, we conducted interviews with health plans, reviewed the relevant literature, developed a conceptual framework of the possible effects expanded home infusion coverage could have on Medicare expenditures, and constructed scenarios in which broader Medicare home infusion coverage may yield savings or additional expenditures compared with infusion in other settings.

Interviews

Health plans interviewed generally viewed home infusion as being cost-effective. Plans' perceptions of cost-effectiveness were based on their sense of the relative payment rates; most plans had not conducted quantitative analyses to examine the comparative cost of infusions in the different settings. Compared with inpatient hospital and SNF settings, almost all plans indicated that home infusion was less expensive. One plan, which generally covers home infusion nurse visits only for homebound individuals (but makes medical exceptions), indicated that it is still evaluating whether home infusion is cost-effective compared with a SNF. Several plans also indicated that the overall amount they paid for infusions in the home was less than the amount paid to HOPDs for infusions. A few also indicated that home infusion was less expensive than infusion in physician offices.

Some plans said they took cost-effectiveness into account when deciding whether to grant prior authorization. For example, some plans have a set number of nurse visits that they would expect for a particular drug regimen. If a home infusion provider requests more visits than the standard, the health plan may take into account the cost of the additional visits relative to the cost of receiving care in an alternative setting in deciding whether to approve the visits.

Caution must be exercised in extrapolating information on cost-effectiveness for private plans to Medicare. Medicare and private payers may have different payment structures or different relative payment levels across settings. For example, many private payers save money from shortened hospital stays because they pay hospitals on a per diem basis. Medicare makes a diagnosis related group (DRG) payment—that is, a fixed prospective payment—for a hospital stay and thus would not generally save as a result of a reduced hospital length of stay. Similarly, some plans interviewed indicated that their drug payment rates to HOPDs and physician offices were high relative to home infusion rates. In contrast, Commission analyses suggest that the rates paid for drugs by Part D plans

(which cover IV drugs in the home not covered under Part B) are generally higher than the rates paid by Medicare to physicians (ASP plus 6 percent) and by extension HOPDs (ASP plus 4 percent in 2012) (Medicare Payment Advisory Commission 2007).[12]

Literature on cost implications of home infusion

Though there is some literature on the costs of home infusion, most studies are old and do not estimate the costs of a home infusion program under Medicare's FFS payment systems. The key finding is that a day of home infusion therapy is less expensive on a per diem basis than a day of hospital or SNF care (Dalovisio et al. 2000, Nguyen 2010, Paladino and Poretz 2010, Poretz 1995, Tice 2000). One study pointed out that Medicare could end up making a "double payment" for patients discharged from the hospital with home infusion therapy (Medicare would pay the original DRG in addition to payments under a home infusion benefit) and suggested that Medicare would want to "reduce the possibility" of double payments if implementing a home infusion benefit (Poretz 1991).

Another study, conducted by infectious disease physicians, attempted to model the effect of a hypothetical new home infusion benefit on Medicare spending (Tice et al. 1998). The model assumed an unexpected increase in costs, or a "woodwork effect," resulting in increased use of the Medicare home infusion therapy benefit due to changes in prescribing behavior. The model also assumed a decrease in hospital admissions, expecting that some patients would be prescribed home infusion therapy in an outpatient setting rather than being admitted to a hospital. According to the study, the new benefit yielded Medicare savings, which were produced largely by eliminating hospital stays. The paper states, "if hospital admissions cannot be decreased to the level forecast in the model, Medicare savings will be significantly diminished." The model also includes a sensitivity analysis that shows—depending on assumptions about the extent of the woodwork effect, the per diem rate paid by Medicare, the number of avoided hospitalizations, and the hospital length of stay—a home infusion therapy benefit may lead to savings or increased costs for the Medicare program. This study predates changes in the Medicare payment system, such as the outpatient prospective payment system (PPS), the home health PPS, Medicare Part D, and Medicare's change in payment for Part B drugs from AWP to ASP, which lowered Part B drug spending substantially. Additionally, the study does not consider that costs would be shifted to Medicare from other payers who currently pay for home infusion, such as Medicaid and employer supplemental insurance plans.

Conceptual framework

Whether expanded Medicare coverage for home infusion would save money or cost additional money depends on several factors related to drug type and setting shift, potential changes in prescribing patterns, and a potential crowd out of spending by other payers. To examine these factors, we developed a conceptual framework unifying a discussion of potential effects under three key questions.

1. To what extent would expanded home infusion coverage shift infusion services from non-home settings (e.g., hospitals, SNFs, HOPDs, physician offices) to the home and would such shifts increase or decrease Medicare expenditures?

The idea that home infusion coverage may generate cost savings is based on the premise that home infusion would substitute for care in more costly settings. Whether that is the case depends on whether patients shift from alternative sites to the home for infusion services and how Medicare payment rates for infusions in those alternative sites compare with payment rates that Medicare would establish for home infusion services.

If Medicare home infusion coverage were expanded, it is likely that some beneficiaries would shift from alternative settings to the home for infusions but we do not have data to determine how large a group of beneficiaries would make such a shift. Data are limited in two ways. First, the availability of data on the number of beneficiaries currently receiving infusions of a specific drug varies by setting. In settings where drugs are separately paid (physician offices and for drugs with a cost greater than $75 per day in the HOPD), claims data are a good source of information on how many beneficiaries receive infusions of a particular drug in that setting. In settings where drugs are not separately payable, data are much more limited. For example, SNFs report administering an infusion drug through the Minimum Data Set but do not indicate the type of drug infused. Second, we would not expect all patients receiving infusions in a non-home setting to be candidates for home infusion and we do not have data to distinguish which beneficiaries would be capable of receiving infusions in the home.

Depending on the relative payment rates for infusions in the various settings, shifting beneficiaries from an

alternative setting to the home might increase or decrease Medicare expenditures for these beneficiaries. Table 6-3 shows the payment rates across non-home settings for drugs and drug administration in 2012. Settings vary in terms of whether drugs are paid separately or are included in the payment for another service. Whether a shift in site of care leads to an increase or decrease in expenditures depends on the effect on combined expenditures for the drug itself, any supplies and equipment, and administration services. The change in expenditures will depend on the payment rates Medicare establishes for home infusion services, the level at which cost sharing is set, and how that compares with payment rates and cost sharing in other settings. This calculus will also depend in part on the unit cost of the drug, the dosage, how frequently the drug is administered, and the length of time for each infusion. Consequently, cost implications may differ by drug and in some cases by drug and diagnosis (if dosage and administration frequency vary by diagnosis).

Possible savings from reduced SNF admissions for antibiotics—To the extent that some beneficiaries are candidates for home infusion but are admitted to SNFs for infusion services, opportunities likely exist to achieve savings on the costs of care for these beneficiaries by providing infusions in the home. Antibiotics seem to have the most potential for possible savings from reduced SNF admissions. A SNF stay must be preceded by a three-day hospital stay to be covered by Medicare. Consequently, SNFs are likely to be a potential site of care only for patients with acute illnesses needing time-limited infusion therapy, such as IV antibiotics for infections. For patients receiving IV drugs periodically for a chronic condition (e.g., IVIG or alpha-1 proteinase inhibitor), SNFs are unlikely to be a site of care for infusions and thus would not present an opportunity to shift care from nursing facilities to the home for these types of drugs. Medicare pays more than $200 per day for care in SNFs for patients receiving infusions ($223 to $451 per day).[13] Whether shifting a patient from a SNF to the home saves money on care for these beneficiaries depends on the cost of the drug (since drugs are separately payable in the home but are incorporated in the SNF prospective payment); Medicare payment rates for home infusion nursing, supplies, and equipment; and frequency of home nurse visits.

Significant savings from reduced length of hospital stay or reduced admissions are unlikely—Expanded coverage of home infusion may reduce hospital length of stay for some beneficiaries, but it is unlikely to yield significant reductions in Medicare spending for most of these beneficiaries and it could lead to additional spending for some of them. Because Medicare makes a DRG payment for a hospital stay, Medicare payments to hospitals are unaffected by a shorter length of stay except in certain circumstances.[14] Under the inpatient PPS post-acute care transfer policy, Medicare payment to a hospital is prorated on a per diem basis for certain DRGs when the length of stay is more than one day below the national average (geometric mean) length of stay for the DRG and the patient is transferred to a post-acute care site (e.g., SNF, home health care).[15,16] For some hospitalized patients who need IV antibiotics, broader home infusion coverage might lead to shorter lengths of stay, but Medicare inpatient hospital spending would be reduced only to the extent that these beneficiaries are in DRGs covered by the post-acute care transfer policy and their use of home infusion shortens their length of stay to more than one day below the average length of stay for the DRG. However, length of stay may not fall enough to trigger reduced DRG payments, especially if patients who need a course of IV antibiotics tend to have medical issues of higher acuity than the typical patient within the DRG. For beneficiaries whose length of stay is reduced but not to this point or who are in DRGs not covered by the transfer policy, hospital payments would not change, while Medicare home infusion expenditures would increase. Shorter hospital stays could result in lower Medicare expenditures for physician services, as patients typically see a physician each day in the hospital. In some cases, the lower physician costs might offset the additional expenditures on home infusion; in other cases, Medicare expenditures would increase.

Some stakeholders have suggested that expanded home infusion coverage would reduce hospital admissions because some patients could be referred directly to home infusion rather than admitted to the hospital for infusions. While we do not have data on which to assess this potential, physicians and hospital discharge planners we interviewed told us that patients admitted to the hospital who receive IV antibiotics typically have serious medical issues that require a hospital level of care. Thus, we would not generally expect home infusion to substitute for hospital admissions. While some home infusion providers indicate that some privately insured patients who need IV antibiotics are directly admitted to home infusion without a hospital stay, we do not believe that necessarily implies that hospital stays would be averted if Medicare expanded home infusion coverage. It is not clear that patients

TABLE 6–3

Medicare payment rates for intravenous drug infusions across settings, 2012

	Inpatient hospital	SNF	HOPD	Physician office	Home health care
Drug	Packaged in DRG payment to hospital	Packaged in SNF PPS payment*	ASP + 4%** for drugs with a cost per day greater than $75 Packaged in the drug administration payment for drugs with a cost per day of $75 or less	ASP + 6%	Paid separately to pharmacy: 95% AWP if DME covered drug ASP + 6% if IVIG for PID Part D negotiated rate for other drugs
Supplies and equipment	Packaged in DRG payment to hospital	Packaged in SNF PPS payment	Packaged in payment for administration	Packaged in payment for administration	Limited supply coverage for gravity infusions under home health benefit
Drug administration	Packaged in DRG payment to hospital Payment amount varies depending on patient diagnosis and is not affected by the provision of infusion drugs or in most cases by length of stay	Packaged in SNF PPS payment Per diem rate for relevant RUG groups: $223.19 or $261.74 per day (patient needing IV medication) $281.02 per day (patient with foot ulcers) $470.55 per day (patient requiring isolation)	$126.64 first hour $34.81 each additional hour	$72.50 first hour $21.44 each additional hour	Packaged in home health PPS payment $2,808 for 60-day episode on average if 5+ visits $112.88 per nurse visit if 4 or fewer visits
Cost sharing	Inpatient hospital deductible of $1,156	None for days 1–20 and $144.50 per day for days 21–100	20%	20%	None for home health Part D beneficiary cost sharing is actuarially equivalent to 25% but varies based on formulary tier; where the patient is relative to the deductible, standard benefit, coverage gap, and catastrophic limit; and whether the patient receives the low-income subsidy 20% for DME drugs and IVIG for PID

Note: SNF (skilled nursing facility), HOPD (hospital outpatient department), DRG (diagnosis related group), SNF PPS (skilled nursing facility prospective payment system), ASP (average sales price), DME (durable medical equipment), AWP (average wholesale price), IVIG (intravenous immune globulin), PID (primary immune deficiency), RUG (resource utilization group), IV (intravenous).
*While most drugs are packaged in the SNF PPS payment, certain chemotherapy drugs are paid separately.
**In the hospital outpatient prospective payment system, new drugs receive transitional pass-through status for two to three years during which time they are paid the average sales price plus 6 percent.

Source: MedPAC analysis of Medicare payment rates and cost sharing.

directly admitted to home infusion would have received care in a hospital rather than in an ambulatory setting absent coverage for home infusion. For example, one physician we interviewed indicated that patients directly admitted to home infusion tend to have less complex conditions, which may suggest they would otherwise be candidates for care in an ambulatory setting. With respect to immune-compromised patients, whether home infusion has the potential to reduce hospital admissions by reducing exposure to germs present in facilities is unknown. The literature has not compared infection rates among patients receiving infusions in the home versus other settings.

Shifting infusions from ambulatory clinics to the home may increase or decrease expenditures depending on relative payment rates—Whether home infusion would result in savings for patients currently receiving infusions in HOPDs and physician offices would depend on the payment rates that were established for home infusion supplies, equipment, and nursing. How would the rates compare with the drug administration payment rates in other ambulatory settings, and how much of a differential in drug payment rates exists across settings? Drug payment rates are slightly lower in HOPDs than in physician offices (ASP plus 4 percent in 2012 for HOPDs vs. ASP plus 6 percent for physician offices). Commission work at the beginning of the ASP system suggests that Part D drug payment rates are generally higher than ASP plus 6 percent, which would make drugs covered by Part D in the home higher cost than in the other settings (Medicare Payment Advisory Commission 2007). Differences in drug payment rates across Part B and Part D could influence whether overall Medicare saves or incurs additional costs from expanded coverage for home infusion, particularly for high-cost biologics for which modest percentage differences in payment rates can have a substantial impact in dollar terms. Drug administration payment rates are lower in physician offices than in HOPDs; however, these payment rates are not entirely comparable. The drug administration payment rate in HOPDs includes payment for low-cost drugs (with a cost of $75 dollars per day or less) while such drugs receive a separate payment over and above the drug administration payment when administered in physician offices. Payment rates and cost-sharing amounts for home infusion services would have to be established and how those rates compare with payment rates in other settings would in large part determine whether home infusion generated savings or costs. It would also depend on the frequency of nurse visits. If a visiting nurse is needed periodically, a possibility for savings may exist depending on the other factors discussed. In contrast, if a nurse is required for each drug administration in the home, shifting infusions from ambulatory settings to the home is likely to increase Medicare expenditures.

2. To what extent would broader coverage of home infusion services result in beneficiaries receiving IV medications in situations where they previously did not?

Often referred to as the woodwork effect, expanded coverage of home infusion may result in more beneficiaries receiving IV medications in situations where they previously received oral medications or other therapies. We do not anticipate this increase being driven by patient demand because IV drugs are not something that we generally expect patients to seek out.[17] Also, prescribing an IV medication has inherent risks (e.g., bloodstream infections) and we do not expect physicians to take these prescribing decisions lightly. Nevertheless, to the extent that several different drugs are available for a specific condition, some IV and some oral (or other forms), and these drugs are perceived to have different clinical advantages, expanded coverage of home infusion would likely lead to more beneficiaries receiving IV medications. In general, more beneficiaries using IV medications would be expected to increase Medicare expenditures (except when an inexpensive IV drug substitutes for an expensive oral drug or other type of drug). The extent of the woodwork effect would likely vary by drug. Drugs with a narrow indication and precise diagnostic criteria (e.g., IVIG for PID) would be less subject to a woodwork effect than drugs with broad uses or less precise diagnostic criteria (e.g., antibiotics, as discussed later in this chapter). Also, to the extent that fraud occurs, it could be another factor contributing to increased use of IV drugs.

3. To what extent are beneficiaries currently receiving infusions in the home funded by other payers for which Medicare would assume responsibility under expanded coverage?

More than 100,000 Medicare beneficiaries receive home infusion drugs paid by Part D as of 2009. For these beneficiaries, expanding Medicare coverage for home infusion would represent additional costs, not savings, to the federal government through a crowd-out effect. Medicare would be assuming responsibility for services (e.g., supplies, equipment, and nursing) that otherwise would have been paid by other payers or by beneficiaries.

For dual-eligible beneficiaries, the amount of expenditures shifted to the federal government would be lessened by the fact that the federal government pays more than half of Medicaid expenditures.

For expanded home infusion coverage to realize savings for Medicare, any shifts in site of service would need to result in savings that exceed additional costs associated with crowd-out and woodwork effects.

Illustrative scenarios

The cost implications for Medicare of expanded home infusion vary by drug. As a result, a targeted expansion of home infusion coverage focusing on a subset of drugs would have more likelihood of savings than a broad expansion for all drugs. Factors that increase the possibility of savings are:

- if home infusion substitutes for SNF admissions;
- if home infusion substitutes for infusions in HOPDs or physician offices, nurse visits are needed periodically but not for each administration, and drugs are inexpensive or drug payment rate differences between Medicare Part B and Part D are small; and
- if some beneficiaries currently receive the Medicare home health benefit only because they need assistance with home infusion, then nursing might be provided less expensively through separately paid nurse visits for home infusion.

To explore the implications of broader coverage for home infusion, we developed illustrative scenarios of how the cost of infusions might vary across sectors for hypothetical patients for two products: antibiotics covered by Part D and IVIG covered by Part B for patients with PID. We chose these products (and diagnoses in the case of IVIG) because we believe they may offer a possibility, although not a certainty, of savings that would merit further exploration.

To create these scenarios, we made assumptions about how much Medicare would pay for supplies, equipment, and nursing if coverage for home infusion were expanded. The assumptions are meant to illustrate possible financial effects only and do not reflect an appropriate price or the best way to structure payments. For supplies and equipment, we assume that Medicare would pay a per diem amount for each day of an infusion, similar to the most common approach in the private sector. For potential payment rates, we assume three hypothetical per diem rates—$30, $60, and $75—to illustrate how different payment levels affect overall expenditures. The $75 per diem is based on the lower end of the range that was typical for private payers we interviewed. The $60 per diem is based on the current DME fee schedule rates for infusion pump rental and supplies. This amount may be an inflated benchmark, as DME fees generally are thought to be higher than the costs incurred by an efficient provider. The $30 per diem is based on our interviews with discharge planners about the per diem rates offered by home infusion providers to their patients and reflects the low end of the range of those interviewed.

For simplicity, we assume Medicare would pay for each nurse visit on a FFS basis similar to the most common approach in the private sector. We assume a payment rate of $113 per visit, based on the rate Medicare pays for individual nurse visits under the Medicare home health benefit when four or fewer visits are provided. While our example is based on a per visit payment methodology for nursing, this approach would create financial incentives for providers to furnish many visits and our example is not intended to imply that payment for nursing would be best structured in this way. To blunt these incentives, one approach that could be considered is to pay a per diem for nurse visits regardless of the number of visits provided. An alternative way to interpret our illustrative examples is that they indicate the amount Medicare would pay if nurse visits were paid on a per diem basis with the per diem rate set based on an assumption of an average number of visits per week. For example, the illustrative example for vancomycin could be interpreted as estimating Medicare payment if nurse visits were paid on a FFS basis and two visits per week were provided or if Medicare paid a per diem amount for nursing with the per diem rate established assuming an average of two visits per week. For patients who are homebound and need nursing care for needs beyond infusions (e.g., wound care), we assume all nursing is provided through the Medicare home health benefit at an average rate of $2,808 per 60-day episode.[18]

Scenarios for antibiotics

Opportunities for savings might exist if Medicare expanded home infusion coverage to IV antibiotics for some beneficiaries. However, whether those savings would be large enough to offset the additional costs that expanded coverage would yield for other beneficiaries is unclear. We compared IV antibiotic infusion in the home with infusion in other settings:

- ***SNFs*—**For patients who need low-cost IV antibiotics like vancomycin, home infusion is likely to be substantially less expensive for Medicare than care in a SNF.[19] How much could be saved from avoided SNF care depends on how many patients are admitted to SNFs who are candidates for infusions at home. Data are not available on this subject.

- ***HOPDs*—**Providing antibiotic infusions at home instead of in an HOPD may yield savings or additional costs depending on several factors. Home infusion is likely to increase Medicare expenditures compared with an HOPD if a nurse is required to be present at each administration. Alternatively, home infusion may cost less than infusions in an HOPD if nurse visits are needed periodically and those nurse visits are paid separately rather than through the home health benefit.

- ***Home health care*—**Some savings on home health expenditures may be possible for beneficiaries who currently receive infusion nursing through home health care if expanded home infusion coverage meant that nurse visits for infusions were paid for separately and beneficiaries avoided a home health episode. For beneficiaries who receive home health care for more than just infusion services, expanded home infusion coverage would likely increase Medicare costs because Medicare would now make additional payments for supplies and equipment above and beyond expenditures on the home health benefit.

- ***Net savings or cost*—**Overall, whether Medicare would save or incur additional costs from expanded coverage for home infusion of antibiotics is uncertain. It depends on whether providing infusions at home instead of in a SNF and possibly other settings yields savings that exceed the added costs Medicare would likely incur due to the crowd-out effect and the woodwork effect.

To examine costs, we developed the hypothetical example of a patient receiving 28 days of IV vancomycin administered once per day in different settings including at home (Table 6-4). Under various payment scenarios, we estimate Medicare payments for providing vancomycin infusions at home to be less than payments for infusions in a SNF or an HOPD. (Estimated payments in physician offices are also shown in Table 6-4, although very few beneficiaries receive vancomycin in physician offices.) The largest potential savings are for patients admitted to a SNF solely for infusions in the scenario where they (or their family members) are trained to self-administer antibiotics at home and receive an average of two nurse visits per week. If such a patient received nursing through the Medicare home health benefit due to broader nursing needs beyond infusions, we estimate Medicare would still save relative to SNF care under our assumptions, although the savings would be smaller.

Under our assumptions, home infusion with two separately paid nurse visits per week is estimated to cost Medicare less than infusions provided through an HOPD. If we had assumed daily nurse visits instead of two nurse visits per week, Medicare payments for home infusion would have been higher than payments for infusions in an HOPD under a $60 or $75 per diem rate.[20,21] Home infusion with nursing provided through the Medicare home health benefit is estimated to cost more than infusions in an HOPD.[22] If infusions are needed more than once per day and home nurse visits are needed periodically, home infusion (regardless of whether the beneficiary receives the Medicare home health benefit) is estimated to be less expensive than infusions in an HOPD (not shown in Table 6-4).[23]

Table 6-4 also helps illustrate the additional Medicare expenditures that would result from Medicare assuming responsibility for services whose costs otherwise would have been borne by supplemental insurers, Medicaid, or beneficiaries. In 2009, more than 56,000 beneficiaries received IV antibiotics paid for by Part D. Most received Medicare home health simultaneously. In our hypothetical example, expanding Medicare coverage to include equipment and supplies for a beneficiary who receives nursing through home health care would increase Medicare expenditures by at least $672 ($3,751 minus $3,079). However, savings could accrue for a subset of beneficiaries currently receiving nursing for IV antibiotics through the home health benefit if expanded home infusion coverage meant they would no longer receive home health services and instead would receive separately paid nurse visits for infusions. In our hypothetical example, we estimate current spending for home health care at $3,079 and spending for home infusion with separately paid nurse visits between $1,666 and $2,674. For beneficiaries receiving Part D–covered IV vancomycin at home but not through the Medicare home health benefit, Medicare expenditures in our hypothetical example are estimated to increase by at least $1,395 ($1,666 minus $271) if Medicare-expanded coverage included supplies, equipment, and nursing.

TABLE 6–4

Hypothetical example of Medicare payments for vancomycin for a patient receiving four weeks of once daily infusions

					Home	
					3 scenarios for Medicare coverage of:	
	SNF	**HOPD**	**Physician office**	**Current policy**	**Supplies, equipment, and nursing at hypothetical rates**	**Supplies and equipment at hypothetical rates and nursing through the home health benefit**
Drug	Packaged	Packaged	$10.73 per day	$12.89 per day	$12.89 per day	$12.89 per day
Supplies and equipment	Packaged	Packaged	Packaged	$0	(i) $30* per day (ii) $60* per day (iii) $75* per day	(i) $30* per day (ii) $60* per day (iii) $75* per day
Drug administration	Packaged in SNF per diem $223.19–$470.55 per day	$161.45 per administration	$93.94 per administration	$0 or $2,808 if home health benefit	$113* per visit (assume 2 visits/week)	$2,808 per 60-day home health episode
Payment, 28 days, 1 administration per day	$6,249–$13,175	$4,521	$2,931	$361 or $3,169 if home health benefit	(i) $2,105* (ii) $2,945* (iii) $3,365*	(i) $4,009* (ii) $4,849* (iii) $5,269*
Medicare payments net of cost sharing	$5,093–$12,019	$3,616	$2,345	$271 or $3,079 if home health benefit	(i) $1,666* (ii) $2,338* (iii) $2,674*	(i) $3,751* (ii) $4,423* (iii) $4,759*

Note: SNF (skilled nursing facility), HOPD (hospital outpatient department). Estimates assume a patient receiving intravenous vancomycin for 28 days, 30 milligrams per kilogram (weight 70 kilograms), once per day. Cost sharing is assumed to be 25 percent for Part D drugs and 20 percent for home infusion equipment, supplies, and separately payable nurse visits. Cost sharing for physician office and outpatient services is 20 percent, for SNF services is $144.50 per day for days 21–28, and for the Medicare home health benefit is zero. Average Part D payment rate is not net of rebates, if any.
*Based on hypothetical payment rates for illustrative purposes.

Source: MedPAC analysis of Medicare fee schedules, and Part D data from Acumen, LLC.

We would also expect increased expenditures because of a woodwork effect. That is, we anticipate more Medicare patients would receive IV antibiotics than otherwise would be the case because of expanded coverage of home infusion. As noted previously, a study by infectious disease physicians that modeled the financial impact of expanded home infusion coverage for antibiotics assumed a woodwork effect to account for changes in prescribing patterns (Tice et al. 1998). Antibiotics may be particularly susceptible to a woodwork effect because research suggests they are sometimes prescribed by physicians without appropriate clinical indications. Analyses of antibiotic use have consistently shown that inappropriate use of antibiotics is a contributing factor to growing microbial resistance to antibiotics (Avorn and Solomon 2000, Cadieux et al. 2007, Colgan and Powers 2001). One meta-analysis of methods to improve antibiotic prescribing practices in hospitals noted that as much as one-half of antibiotic use in hospitals is inappropriate (e.g., used to treat viral infections) (Davey et al. 2009). As noted previously, one study specifically looking at prescribing patterns for IV antibiotics in one hospital

found that 27 percent of the time they were prescribed inappropriately when antibiotics were not indicated, when an equally effective oral product was available, or for other reasons. We also heard similar concerns from some interviewees. For example, one infectious disease specialist noted that he comes across cases in which infused antibiotics are prescribed for patients with infected devices or joint replacements. Unless the infected device is removed, antibiotics cannot fight the infection. One health plan reported that the plan always requires prior authorization for infused antibiotics even if the drugs are inexpensive. The goal is to prevent inappropriate antibiotic use leading to further development of drug-resistant bacteria. Given this fact, we would expect expanded coverage of home infusion for antibiotics to increase prescriptions for IV antibiotics, and that would increase program costs. Overall, whether Medicare costs increase or decrease with expanded home infusion coverage depends on the relative size of all the dynamics discussed. To make this determination, we need certain data that are currently lacking. We lack data on the number of beneficiaries who would shift from alternative settings to the home under broader coverage of home infusion and the amount of increased utilization that would occur due to a woodwork effect. Another source of uncertainty is that the amount of savings or additional costs that would occur for beneficiaries who shift to the home depends on many factors, including the payment rates that would be established for home infusion.

It may be possible to collect additional data to fill in some of the information gaps, although at least one gap would be very difficult to fill. We do not know how many beneficiaries in SNFs receive IV antibiotics, which antibiotics, and for how long. Potentially, SNFs could be required to report more detailed data on antibiotic infusions on claims or the Minimum Data Set. A second gap concerns how many patients currently receiving infusions in non-home settings would be candidates for home infusion. A survey of hospital discharge planners, who are likely best positioned to know placement options for patients, could be considered. Such a survey would need to be nationally representative and would likely be expensive. We also lack data to estimate the size of the woodwork effect and it is unlikely that data could be collected to predict what changes in prescribing patterns would occur under broader coverage.

IVIG for primary immune deficiency

In another hypothetical example, we examined the possible effects of expanded coverage for nursing, supplies, and equipment for patients receiving IVIG for PID in the home. While uncertain, our hypothetical example suggests savings might exist from expanded coverage for home infusion for the PID population because of potential substitution of IVIG for subcutaneous immune globulin. Currently, for beneficiaries with PID, Medicare covers IVIG in the home under Part B but does not cover supplies, equipment, and nursing. Interviewees told us that IVIG must be administered by a trained medical professional. A substitute product—subcutaneous immune globulin—is covered in the home, along with supplies and equipment, through the DME benefit. Nursing is not covered for subcutaneous immune globulin because it is considered self-administered. As of 2009, we estimate that about 2,000 beneficiaries with PID received immune globulin at home; two-thirds of them received the subcutaneous product and one-third received IVIG. This pattern of use differs from that in the private sector, where IVIG is reportedly more common than subcutaneous immune globulin in the home according to interviewees. As shown in Table 6-5, the subcutaneous product is much more expensive than IVIG. If beneficiaries shifted from using subcutaneous immune globulin to IVIG, savings to Medicare for those beneficiaries would be sizable (at least $882 per patient per 4-week period in our hypothetical example). The subcutaneous product is very expensive for two reasons: Medicare pays for subcutaneous immune globulin at 95 percent of AWP (the policy for drugs covered under the DME benefit), and the labeled dosage of the subcutaneous product is 37 percent to 53 percent higher than the IVIG dosage.

Our hypothetical example also shows that there would be increased costs for some beneficiaries if Medicare expanded coverage for home infusion services for patients with PID receiving IVIG. Home infusion is estimated to be more expensive for Medicare (i.e., additional cost ranging from just under $20 to $75 per patient per 4-week period) than infusions in HOPDs and physician offices. Also, for those beneficiaries currently receiving IVIG at home, if Medicare expanded coverage to include supplies and equipment, we estimate Medicare program expenditures would increase by at least $114 per patient per 4-week period ($1,785 – $1,671) due to the crowd-out effect. We anticipate that the woodwork effect would be minimal in the case of IVIG for PID. Physicians we spoke to indicate that the laboratory criteria for diagnosing PID are very specific and IVIG is the only treatment option for most patients diagnosed with PID.[24] Overall, whether expanded coverage of home infusion services for patients

TABLE 6–5

Hypothetical example of Medicare payments for immune globulin across settings for patient with primary immune deficiency per four-week period

				IVIG at home	
	IVIG HOPD	**IVIG physician office**	**Subcutaneous IG home**	**Current policy**	**3 illustrative scenarios if Medicare covered supplies, equipment, and nursing at hypothetical rates**
Drug	$2,049	$2,088	$3,304–$5,055	$2,088	$2,088
Supplies and equipment	Packaged	Packaged	$29	$0	(i) $30* (ii) $60* (iii) $75*
Drug administration	$161	$94	Not applicable	$0	$113* per visit (assume visit for each administration)
Total payment for a four-week period	$2,210	$2,182	$3,333–$5,084	$2,088	(i) $2,231* (ii) $2,261* (iii) $2,276*
Medicare payments net of cost sharing	$1,768	$1,746	$2,667– $4,068	$1,671	(i) $1,785* (ii) $1,809* (iii) $1,821*

Note: IVIG (intravenous immune globulin), IG (immune globulin), HOPD (hospital outpatient department). For IVIG, estimates assume 28 grams administered for 2 hours once every 4 weeks (based on a dosage of 400 milligrams/kilogram for person with weight of 70 kilograms). For subcutaneous IG, estimates assume a dose ranging from 100 percent to 153 percent of the IVIG 4-week dose divided by 4 and administered weekly. Payment rates reflect the first quarter of 2012. For drug payment rates, the median payment rate across available drug products is used. For the hospital outpatient department, we assume IVIG is paid average sales price plus 4 percent. *Based on hypothetical payment rates for illustrative purposes.

Source: MedPAC analysis.

with PID who use IVIG would increase or decrease Medicare program expenditures depends on whether the savings from patients shifting from subcutaneous immune globulin to IVIG would be enough to outweigh additional costs from patients potentially shifting from HOPDs and physician offices to home and from the crowd-out effect. Similar to the antibiotics example, we are unable to draw a conclusion about the potential net effect on Medicare expenditures because of a lack of data (e.g., we lack data on the share of beneficiaries with PID who would shift from subcutaneous immune globulin to IVIG and from infusions in ambulatory settings to the home).

Design considerations for expanded home infusion coverage in Medicare

Although Medicare beneficiaries have access to infusion therapy at multiple sites of care, they may have more difficulty receiving infusion therapy at home than privately insured individuals. Coverage gaps in FFS Medicare result from the way coverage is divided between Part A and Part B benefits and among separate payment systems, each with its own benefit design and coverage rules.

We examined two approaches for increasing access to home infusion: filling in the gaps in current coverage and setting up a demonstration project to test the effects of providing an integrated home infusion benefit for beneficiaries needing infused antibiotics. Each approach has advantages and drawbacks. We examined the gap-filling approach by considering policies for IVIG under Part B and antibiotics under Part D. We examined the integrated benefit approach through a project that would test quality and efficiency under an integrated home infusion benefit for antibiotics. The project could also test the ability of CMS to administer a targeted prior authorization policy.

Filling in the gaps

Medicare home infusion coverage is determined by the required medication, necessary equipment, and patient diagnosis. Coverage gaps exist for some of the elements needed to access home infusion, including supplies, equipment, and nursing. If the Congress wished to expand coverage for home infusion, it could fill in coverage gaps that prevent some beneficiaries from accessing home infusion therapy. Such changes could be incremental and limited or broader in scope.

A single policy may be inappropriate to cover all home infusions. Some products are more dangerous to infuse at home, require multiple daily infusions, or are provided as chronic periodic infusions. We focused our review on policies related to two products—immune globulin and antibiotics—as immune globulin accounts for a small number of users but entails a high cost per user and is covered under both Part B and Part D, whereas IV antibiotics covered under Part D account for the largest number of users of Medicare-covered home infusion drugs.

Coverage expansion for IVIG

Individuals with PID need immune globulin periodically on an ongoing basis. It can be provided intravenously (IVIG) or subcutaneously. By statute, beneficiaries with this diagnosis can receive IVIG under Part B at home. However, nursing and other supplies and services needed for this therapy are not covered. In general, a nurse must infuse IVIG directly into the patient's vein during each administration. Without access to nursing services, beneficiaries may be unable to use the home infusion benefit.

Beneficiaries sometimes substitute subcutaneous immune globulin for IVIG and self-administer. The pump needed to administer the therapy is covered by Medicare. However, this method is not appropriate for all patients. It is also more expensive as IVIG is paid at a rate of ASP plus 6 percent under Part B and subcutaneous immune globulin is paid at 95 percent of AWP under the DME benefit, a considerably higher rate. CMS has declined to include infusion drugs under its DME competitive bidding program. Further, subcutaneous administration currently requires more immune globulin per treatment.

Filling the gap in coverage for home infusion of IVIG for patients with PID could have the following advantages:

- It would apply to a small number of beneficiaries and its costs could be measured relative to beneficiaries receiving IVIG in other settings or subcutaneous immune globulin.
- Some physicians told us that home infusion is the safest setting for individuals with compromised immune systems. Others said it was more a matter of convenience. Studies on this issue are lacking.
- It could reduce the use of immune globulin as fewer beneficiaries would need to receive the product subcutaneously.

Potential disadvantages exist, namely:

- Adverse events can result from infusions of IVIG and therefore it must be administered by a trained nurse. There may be fewer resources in the home to treat complications. Some private plans do not cover IVIG at home because of concern about wastage of the product if it is not handled properly. (Other plans provide home coverage and think it is a more efficient method.)
- If rates for nursing services, supplies, and equipment were set too high or if more nursing hours were needed than anticipated, the coverage expansion would increase costs.

Coverage expansion for IV antibiotics

Gap filling could also apply to IV antibiotics, covering the broadest proportion of beneficiary infusion users. The drugs, mostly inexpensive, are covered under Part D but Medicare does not cover any of the supplies and equipment needed for this infusion. To self-infuse antibiotics, beneficiaries need an infusion set and other supplies required for the gravity method of infusion or disposable pumps. They also need someone to teach them how to infuse and check on their progress periodically, including the results of lab tests. Nursing services are also not covered under Part D.

If the Congress wished to expand home infusion coverage for antibiotics, Medicare could provide coverage for the necessary supplies, equipment, and services. Generally, the gaps are twofold: coverage for supplies and equipment and coverage for other services frequently paid by private payers as a per diem amount, including lab monitoring and care coordination. Our data indicate that most beneficiaries receiving IV antibiotics under Part D are also receiving home health benefits including skilled nursing services. The home health benefit includes limited coverage of infusion supplies for infusions using the gravity method.

However, CMS guidance is not specific, and it is not clear that all required supplies and equipment are covered. CMS could clarify explicitly what is and is not covered, and if there are gaps, coverage could be expanded to the supplies (and possibly equipment) covered under the home health benefit.

Beneficiaries who are not homebound can receive lab tests, catheter and line care, education, and monitoring services through their physician's office. Several integrated plans that we interviewed preferred this method to coordinate patient care. One infectious disease specialist that we spoke to said it was the best way to ensure quality care. Patients come weekly to his office where the staff provides all necessary services. No home-based nursing is required.

There is some ambiguity about the extent to which other services needed for home infusion are covered through Part D (see Table 6-2, p. 188). CMS guidance states that the dispensing fee for covered Part D drugs includes any reasonable costs associated with a pharmacy's costs for checking information about an individual's coverage, performing quality assurance activities, measuring or mixing of the covered drug, filling the container, delivery, special packaging, and overhead associated with maintaining the pharmacy. These activities are included in the National Home Infusion Association definition of services covered through the per diem they usually receive from private payers.

A second gap relates to Medicare's payment for dispensing fees. Some home infusion providers we interviewed told us that the dispensing fees paid by Part D plans did not cover their costs for drug delivery and other aspects of pharmacy dispensing and indicated that they agreed to participate in Part D networks only because beneficiaries with Medicaid and some employer supplements had additional coverage for supplies, equipment, and other services. Beneficiaries without this additional coverage may not be able to obtain home infusion drugs from pharmacies in their Part D plans. We are unable to determine whether the dispensing fees that Part D plans negotiate with home infusion pharmacies are high enough to cover the services listed as required under the Part D guidance. On average, our data show that infusion pharmacies are paid about $4 per drug, similar to the dispensing fee paid to retail pharmacies. Although CMS cannot require plans to negotiate dispensing fees that reflect the costs of providing mandated services, it can require plans to have adequate home infusion pharmacy networks that provide these required services without additional payments. Such a requirement would not include the costs of supplies, equipment, and ongoing lab monitoring.

There are several advantages to such a requirement:

- Coverage for these services is already required under Part D.
- Ensuring coverage for these services through Part D may be the most efficient coverage method because it builds on tools such as prior authorization that plans already have in place to manage infusion drugs.

Disadvantages to this requirement:

- Plan bids could rise for all beneficiaries to account for the extra cost of providing these services, although the number of beneficiaries receiving home infusion is comparatively small.
- This approach would not fill the gap in coverage for supplies and equipment.

A third coverage gap relates to necessary home infusion supplies and equipment that are not covered under the DME fee schedule. Supplies needed to use the gravity method and disposable pumps are not covered under DME and it is unclear to what extent they are covered for home health recipients. The Congress could extend the DME fee schedule to cover these supplies and equipment, including tubing, disposable pumps (specifically for home infusion of antibiotics), and infusion poles.

There are two advantages to covering supplies and equipment:

- Physicians told us that home infusion is the standard of care for infused antibiotics, although it is not appropriate for all patients. Some beneficiaries, particularly those not homebound, would have greater access if supplies were covered.
- Because the coverage of infusion supplies and equipment would foster greater use of the home setting, Medicare might be able to realize cost savings from those beneficiaries who otherwise would have been admitted to SNFs only for the purpose of receiving infusion therapy.

This approach has several potential disadvantages:

- Discussions among policymakers and the industry suggest that prices under the DME fee schedule

are not accurate. DME has been transitioning to a competitive bidding system but infusion drugs and associated equipment and supplies have not been included in the program up to this point.[25] Would policymakers want to increase the number of items paid for under a currently flawed payment system?

- Because DME has been implicated in a disproportionately large number of fraud cases, policymakers could be reluctant to increase the number of products covered through the benefit.
- It could be hard to ensure that all beneficiaries receiving these products required home infusion, as utilization management is difficult under a FFS payment system. There is greater potential for a woodwork effect in which individuals who could be taking oral drugs instead receive infusion therapy or receive infusion therapy for longer periods of time than appropriate in the absence of effective management of the benefit.

Home infusion antibiotic therapy demonstration

In its study of home infusion therapy, GAO recommended that the Secretary of Health and Human Services conduct a study of the advantages and disadvantages of including a comprehensive home infusion benefit under Medicare (Government Accountability Office 2010). Given the lack of data to analyze this issue, CMS could design a project under the Innovation Center to test the quality and efficiency of providing an integrated home infusion benefit for antibiotics. An integrated benefit has the potential to better coordinate patient care.

Such a project, if it could be properly designed, would allow an evaluation of whether a home infusion benefit improves quality and saves money compared with the current options beneficiaries face. The project would have to take into account the effects of crowding out current payers (e.g., retiree benefits) and the woodwork effect. It might also test multiple models to determine the most efficient way to deliver the benefit. Designing such a demonstration would require addressing several challenges.

The project would need management controls, including prior authorization, to ensure that antibiotics are being used properly. Plans we interviewed included prior authorization for some or all drugs used in home infusion. Physicians we interviewed did not find current plan prior authorization protocols overly burdensome or time-consuming. This management tool is most easily implemented in an MA plan and some MA plans already include an integrated home infusion benefit. Since the plans take financial risk for all their enrollees' medical costs, they have the incentive to account for the woodwork effect in their benefit design. Plans have the authority to provide an integrated home infusion benefit under current law and are not candidates for a demonstration project.

A project testing provision of a home infusion therapy benefit would have the added advantage of testing Medicare's ability to implement a targeted prior authorization program. Implementing management controls within FFS Medicare poses a challenge. CMS or its contractor could provide oversight but, given its limited resources, CMS will be challenged to implement prior authorization and other management tools. Although private plans have well-developed algorithms to determine appropriateness under prior authorization programs, these algorithms are proprietary so the agency would need to develop its own tools. By developing and publishing prior authorization policies according to evidence-based guidelines, the agency could improve the transparency of the process for beneficiaries and providers. Additionally, prior authorization can be labor intensive and require considerable resources. For CMS, savings resulting from management would accrue to the Medicare program but management costs would come from its administrative budget. However, targeted prior authorization could be a useful tool to control inappropriate utilization not just in home infusion but in other areas as well. If CMS is able to administer a targeted prior authorization program, benefits would accrue to the program as a whole.

Home infusion therapy could also be implemented through an accountable care organization, which might be appropriate to manage home infusion therapy, as it assumes broad accountability for care and expenditures for its patients. Whether accountable care organizations would be interested in participating in this type of project is uncertain, given that home infusion of IV antibiotics would likely be relevant to a small share of their patients. If accountable care organizations were interested in participating, details would have to be worked out on how they would be paid for home infusion services and how payment would factor into the shared savings calculations.

One of the biggest challenges to a project under the Innovation Center would be determining an appropriate control group. One option might be to select demonstration areas. An independent evaluator

could identify diagnoses that are associated with the use of IV antibiotics and measure Medicare payments for all beneficiaries in the area with these diagnoses. The evaluator could then compare these payments with Medicare payments in similar areas outside the project for beneficiaries with the same diagnoses. It could also look at changes in spending for the selected diagnoses over time in the project and control areas. Although not perfect, this design would take into account shifts in costs to Medicare, the woodwork effect, and the fact that not all beneficiaries who need antibiotic infusion therapy are candidates for home infusion. However, it may be difficult to disentangle the effect of the project from unrelated effects if IV infusions are a low-frequency event for beneficiaries with the selected diagnoses or infusion-related costs account for a small share of their overall expenditures. Focusing on episodes of care and expenditures and service use by type of service might help isolate the effects. The evaluator would have to address additional methodologic challenges as well.

Participants would have to report quality measures to ensure that beneficiaries are receiving appropriate care. Some home infusion providers told us that they report quality measures to a benchmarking group, while others depend on pharmacy certification standards in their state. CMS, perhaps with the help of the National Committee for Quality Assurance, would have to develop a set of measures to determine the quality of care participating beneficiaries receive. Measures could include adverse events, hospital readmissions for infections including catheter and line infections, and postutilization reviews of the appropriateness of the therapy. CMS or its contractor would also have to survey beneficiaries to determine their satisfaction with their care.

Some fundamental design issues would need to be addressed:

- **Who would participate in the project?** As we have discussed, home infusion requires coordination. Any project participant would have to coordinate among multiple providers—including physicians, home infusion providers, home health nurses, and hospital discharge planners—and some applicants might propose partnerships among eligible providers. Physicians with expertise in infectious diseases might take the lead in the demonstration, as they have the most expertise in determining which patients need infused antibiotics and which therapies are most appropriate. Alternatively, home infusion providers might have the most interest in participating in a demonstration. Unlike the other providers, home infusion is their core business and they have the most expertise in preparing medications and coordinating care for their patients.
- **What would the payment cover?** Payment could cover supplies and equipment, needed services including nursing, and drugs. If the payment included the cost of drugs, participants would have to coordinate with the beneficiary's Part D plan, which would be responsible for the beneficiary's other medications. Similarly, the relationship between the project participant and any home health agency providing additional care (e.g., wound care) would have to be determined.
- **How would payment be set?** Similar to the private market's payment method for home infusion therapy, Medicare could make a separate payment for drugs, nursing, and a per diem payment for supplies, equipment, and services. Medicare could also bundle payment as part of an episode of care or bundle nursing along with supplies and equipment as part of a per diem amount. Alternatively, Medicare could use competitive bidding by project applicants to determine payment rates. As with other competitive bidding demonstrations, the payment could be set by the average bid of successful applicants, or demonstration participants could be paid their bid. Depending on how the project is designed, Medicare could pay a capitated rate for supplies, equipment, nursing, and other services if accountable care organizations participated in the demonstration.
- **How would beneficiary out-of-pocket costs be determined?** Beneficiaries pay an average of 25 percent coinsurance during the initial coverage period for Part D drugs, although cost sharing varies by drug and plan and the benefit phase the beneficiary is in at the time of dispensing. Beneficiaries whose drug costs are above the catastrophic threshold face lower cost sharing. Under traditional Medicare, beneficiaries pay no cost sharing for the home health benefit and 20 percent for covered DME. CMS would have to determine appropriate cost sharing for a project.
- **How would the population eligible for the project be selected?** Policymakers would have to define the patient population eligible to take part in the project. A participant might propose a service area to provide

home infusion services. FFS beneficiaries within that area would have the opportunity to participate in the project or continue current options if they needed infusion therapy. Patients without alternative sources of coverage would be likely to participate in the demonstration.[26] Alternatively, a project approved under CMS's Innovation Center could allow an accountable care organization or other integrated delivery system to test an integrated home infusion benefit for its members.

- **Would the drug be included in the payment? If so, what would the payment rate be?** Currently, infused antibiotics are covered under Part D. Each drug plan negotiates its own price with manufacturers and home infusion pharmacies. The plan receives a capitated payment from Medicare and enrollees to cover all Part D drugs, including home infusion drugs. If the drugs are removed from Part D, participants may have to negotiate their own drug prices, an area in which some may not have expertise. Payment to Part D plans might also have to be adjusted. Also, beneficiaries with high out-of-pocket costs might not have the benefit of the Part D out-of-pocket cap. If the infusion drugs remained in Part D, project participants would have to abide by the formularies and management tools of their enrollees' plans. These requirements could conflict with the project participant's decisions about the best treatment for a patient.

Coordinated home infusion therapy is most applicable within a managed care environment. However, despite the many challenges of testing an integrated home infusion antibiotic project in FFS, the Medicare program and its beneficiaries could benefit if a well-designed project allows policymakers to determine whether increased beneficiary access to home infusion for antibiotics improves quality and saves money compared with the current situation. Testing the ability of CMS to implement a targeted prior authorization program could have broader utility.

If an antibiotic demonstration results in improved quality and lower costs, Medicare might consider extending the project to other products, but caution would be essential. Each product requires different supplies, equipment, and nursing services. Thus, potential costs or savings would differ. Although the most likely source of savings with home infusion of antibiotics would be avoided SNF stays, SNFs are not an alternative for many other kinds of infused therapies. Additionally, multiple studies have been done of home infusion for antibiotics, while less is known about trade-offs for other therapies using home infusion compared with other sites of care. The potential for a greater woodwork effect, leading to inappropriate use of home infusion therapy, would have to be evaluated.

Administrative issues

In the course of our study, we found a number of instances in which CMS coverage policies and guidance are subject to conflicting interpretations. For example, when Medicare covers only the drug, some discharge planners and providers told us that some providers offer beneficiaries lower prices or payment plans for supplies and equipment while others said that they were not allowed to do so. Interviewees also differed in their understanding of Part B coverage for supplies and equipment, with some believing that coverage for supplies and equipment under the Part B DME benefit and Medicare home health benefit was more expansive than others. CMS should consider the need to clarify coverage policies for home infusion as well as other services to ensure that the program is administered consistently across the country. Additionally, CMS can require Part D plans to have adequate home infusion pharmacy networks that provide all required dispensing and delivery services (excluding supplies, equipment, and nursing) without additional payment.

Conclusion

A lack of data impairs our ability to determine whether net savings would result from broader home infusion coverage, even in the case of a targeted expansion (e.g., antibiotics, or IVIG for PID). Although it is unsatisfactory to be unable to draw a conclusion about net savings or costs, collection of additional data might be possible to fill in some of the data gaps, but it would be difficult to collect all the data needed. Given the lack of necessary cost and utilization data, the Commission has not made any recommendations.

The specific questions the Congress asked the Commission to examine and the study's findings concerning these issues are:

1. An assessment of the literature relating to the benefits and costs of providing coverage for home infusion therapy under the Medicare program, including an assessment of the possibility of

achieving savings through avoided or shortened hospital or nursing home stays as a result of Medicare coverage of home infusion therapy

Though there is some literature on the costs of home infusion, most studies are dated and do not estimate the costs of a home infusion program under Medicare's FFS payment systems. According to our analysis, whether home infusion yields Medicare savings or costs for an individual beneficiary depends on the setting where the beneficiary otherwise would have received infusions, the payment rates established for home infusion and how they compare with the payment rates in that alternative setting, how frequently the drug is infused, and how often home nurse visits are needed. To the extent that some beneficiaries are admitted to SNFs because of the out-of-pocket costs associated with home infusion, opportunities likely exist to achieve savings by providing care for these beneficiaries at home. Shifting infusions from HOPDs or physician offices to the home could yield net savings or costs depending on how frequently nurse visits are needed, how drug payment rates compare under Medicare Part B and Part D, and the payment rates established for home infusion. Savings from substituting home infusion for home health episodes may be possible in some circumstances. Inpatient hospital expenditures are not likely to be a significant source of savings because we do not anticipate substantial substitution of home infusion for hospital admissions. Some patients might be discharged earlier from the hospital as a result of broader home infusion coverage, but the impact on Medicare expenditures for such patients would vary, with savings expected for a small subset and little change or increased expenditures expected for most.

For expanded home infusion coverage to realize overall savings for Medicare, shifts in site of service would need to result in savings that exceed the additional costs associated with the crowd-out effect (i.e., Medicare assuming responsibility for home infusion services that otherwise would have been paid by other insurers or beneficiaries) and the woodwork effect (i.e., coverage of home infusion leading to more beneficiaries using IV drugs when they otherwise would have been treated with other therapies). The cost implications of broader home infusion coverage vary by drug. As a result, a targeted expansion of home infusion coverage focusing on a subset of drugs would have more likelihood of savings than a broad expansion. However, a lack of data impairs our ability to determine whether net savings would result, even in the case of a targeted expansion (e.g., antibiotics, or IVIG for PID). Although it is unsatisfactory to be unable to draw a conclusion about net savings or costs, it might be possible to collect additional information to fill in some of the data gaps, but it would be difficult to collect all the data needed.

2. An assessment of sources of data on the costs of home infusion therapy that might be used to construct payment mechanisms in the Medicare program

Data on the costs associated with providing home infusion services are limited. An industry-sponsored study that estimated the per diem costs of home infusion has methodologic limitations that reduce its utility for rate setting. Data on Medicare payment rates for similar services such as home health care and DME might be a source of some benchmarks. Another avenue for obtaining cost information might be competitive bidding. Also, the feasibility of obtaining data on providers' acquisition costs or manufacturers' sales prices for equipment and supplies could be explored.

3. An assessment of private payment methodologies used by Medicare Advantage plans and private health plans for the provision of home infusion therapy and their applicability to the Medicare program, with reference to recent work by the Government Accountability Office

We found that the most common payment method used by private health plans and MA plans included a payment for drugs, a separate payment for nursing as needed, and a per diem payment covering supplies, equipment, pharmacy services, and additional services. GAO did not discuss the applicability of this payment method to Medicare. This payment method could be applicable to Medicare depending on the payment rate chosen. Providers we interviewed described a wide range of payment levels for per diem services. Other payment methods may also be possible, including bundling (as part of an episode of care or bundling nursing along with supplies and equipment as part of a per diem rate) and competitive bidding.

Some technical issues would have to be resolved with any methodology selected. For example, some drugs are currently covered under Part B or Part D, using different payment methods. Services covered under the Part D dispensing fee overlap with some of the services provided under the per diem paid by private plans. In designing a payment method, policymakers would also need to be cognizant of the potential for increased expenditures because of the crowd-out effect and the woodwork effect.

4. A discussion of any issues surrounding the potential abuse of a home infusion therapy benefit in Medicare

Private plan representatives did not report any evidence that fraud and abuse are more prevalent in the area of home infusion than in any other type of service. All plans use utilization management techniques, particularly prior authorization, to ensure that home infusion is provided appropriately. Plans generally ask physicians to report the diagnosis, prescribed drug, dosage, and expected duration of therapy. They may also request information about the patient's age, sex, and weight. Some plans require separate approval for a schedule of nursing visits. One health plan described the need to look closely at utilization of home infusion to ensure it is appropriate and noted this kind of oversight would present a challenge for FFS Medicare. In general, Medicare has had less ability to monitor care provided in the home than in facility settings and it has been more difficult to create payment systems with incentives for appropriate utilization. While private payers have not found fraud to be a problem in the home infusion industry, a broad, unmanaged expansion of Medicare FFS coverage could lead to fraudulent actors entering the field.

Although we did not make any recommendations, we discussed two approaches for increasing access to home infusion: filling in the gaps in current coverage and setting up a demonstration project to test the effects of providing an integrated home infusion benefit for beneficiaries needing infused antibiotics. Each approach has advantages and drawbacks. We examined the gap-filling approach by considering policies for IVIG under Part B and antibiotics under Part D. We examined the integrated benefit approach through a demonstration project that would test quality and efficiency under an integrated home infusion benefit for antibiotics.

To ensure appropriate utilization, a project testing provision of a home infusion therapy benefit would require management controls such as prior authorization. This project could test the ability of CMS to administer a targeted prior authorization policy designed to improve quality of care and reduce costs. Since prior authorization can be labor intensive and require considerable resources, it would be a challenge for CMS. However, targeted prior authorization could be a useful tool to improve quality and control inappropriate utilization not just in home infusion but in other areas as well. If CMS is able to administer a targeted prior authorization program, benefits would accrue to beneficiaries and the program as a whole. ■

Endnotes

1 While home infusion typically involves IV infusions, some home infusion drugs are infused in other ways (e.g., subcutaneous infusion of insulin or immune globulin via a pump).

2 Drug administration services and drugs are generally bundled into the SNF prospective payment system payment, with the exception of some drugs (primarily chemotherapy) that are separately billable under Part B.

3 Whether a drug is covered by Medicare Part B or Part D depends on several factors, such as how the drug is administered, the location where it is administered, who procures the drug, and in some cases the patient diagnosis. Infusion drugs that are considered not usually self-administered are covered by Part B when procured by a physician or HOPD and furnished in an office or facility. Part B also covers certain drugs infused in the home, including drugs that require a DME pump and for which home infusion has been determined reasonable and necessary; IV immune globulin for primary immune deficiency; and total parenteral nutrition for a permanently nonfunctioning gastrointestinal tract. Drugs not covered by Part B in a particular circumstance are potentially covered by Part D subject to the Part D plan's formulary and any prior authorization criteria.

4 Coverage of IVIG for home infusion under Part B works differently than other home infusion drugs covered under Part B. Part B covers only the IVIG, not the supplies or equipment. For beneficiaries who are homebound, the home health benefit covers nursing and, in some circumstances, limited supplies.

5 For DME drugs that did not exist as of October 1, 2003, Medicare pays 95 percent of the AWP at the product's launch. Since AWP is not a market-based price, this approach has the potential to lead to high payment rates for new products to the extent that they are developed and meet DME coverage criteria.

6 The net cost to Part D for these drugs would be lower than our $422 million estimate because it is not reduced to reflect any rebates Part D plans may receive from drug manufacturers. This estimate reflects IV drugs paid by Part D for beneficiaries who did not reside in a long-term care facility when the prescription was filled. We assume these IV drugs were administered in the home, although we cannot rule out the possibility that some drugs may have been transported ("brown bagged") by beneficiaries to physician offices or HOPDs for administration.

7 It is uncertain whether lower Part D cost sharing for low-income subsidy enrollees, Medicaid coverage for home infusion supplies and other services, differences in patient characteristics, or other factors contribute to the higher use of Part D infusion drugs among low-income subsidy enrollees overall and within prescription drug plans.

8 Sometimes the referral goes to a home health agency, which coordinates with a home infusion provider.

9 Some Part D plans require physicians to submit a Part B claim and have it denied before they will cover the drug under Part D.

10 According to the National Home Infusion Association the per diem payment is intended to cover a broad range of services and costs such as dispensing (e.g., checking drug interactions, compounding, maintaining a "clean room"); clinical monitoring (e.g., reviewing test results and recommending medication changes); care coordination (e.g., coordinating with physician, home health agency, other providers; 24-hour/7-day phone availability of nurse and pharmacist for questions and issues); supplies and equipment; and administrative costs (e.g., verifying insurance, obtaining prior authorization, coordinating benefits, training staff, quality assessment, accreditation). Some of the services included in this definition of the per diem are services Medicare would consider covered under the Part D drug benefit (e.g., operational and administrative costs associated with dispensing a drug).

11 Both plans had a reconciliation process that took place periodically if actual costs were far off the expected amount. The plan that provided the capitation to a home infusion provider carved out certain low-frequency and high-cost drugs from the capitation.

12 Under the hospital outpatient prospective payment system, most drugs with a cost per day greater than $75 are paid the ASP plus 4 percent in 2012. An exception is new drugs and biologicals that receive pass-through status and are paid the ASP plus 6 percent during the first two to three years after their launch.

13 The four resource utilization groups that seem to be most relevant to patients admitted to a SNF solely for home infusion have payment rates in 2012 of approximately $223, $262, $281, and $471. Data specific to patients receiving infusions are not available, but overall the percentage of SNF patients is highest in the lower paying case-mix groups.

14 One way Medicare inpatient hospital payments can be affected by length of stay is if the cost of a case becomes so high it reaches high-cost outlier status and Medicare provides outlier payments. In such a case, if length of stay

were reduced because of broader home infusion coverage, Medicare outlier payments to the hospital might be reduced. However, savings from a reduction in outlier payments have only a short-term effect (two years) because once Medicare has data showing the unexpectedly lower outlier payments, Medicare recalibrates the outlier threshold for future years to result in outlier payments being a projected 5.1 percent of total DRG payments. Our interviews suggest that it is rare for a Medicare patient to receive multiweek infusions in the hospital when home care would be appropriate, so reductions in outlier payments are not likely to generate significant short-term savings.

15 When payments are prorated, hospitals are generally paid two times the per diem for the first day and the per diem for each subsequent day, with payment capped by the full DRG payment. Because of the higher payment on the first day, the average amount saved each day below the geometric mean length of stay is less than the per diem.

16 It is unclear if under existing regulations the post-acute transfer policy applies to a patient discharged home to receive infusions but not provided through the Medicare home health benefit. If home infusion coverage were expanded, steps could be taken to ensure that the post-acute care transfer policy applies to patients discharged home for infusion therapy.

17 For most IV drugs, we would not expect patient-driven demand to increase use, but for some drugs that may not be the case (e.g., pain medications and IVIG for off-label uses).

18 The home health 60-day episode payment amount cited reflects the average home health payment based on claims analysis. The 60-day episode payment rate under the home health PPS is not reduced for episodes less than 60 days. As long as more than four visits are provided, the entire episode payment is made.

19 Our hypothetical example focuses on vancomycin, the most common IV antibiotic covered by Part D and a very low-cost product. Cost difference across settings would likely differ for a drug with a higher cost. For example, daptomycin typically costs more than $200 per day. In SNFs, nonchemotherapy drugs like daptomycin are not paid separately. Thus, depending on the beneficiary's case-mix group (the most relevant for these patients have 2012 payment rates of about $223, $262, $281, and $471), the Medicare payment to a SNF could be less than payments for home infusion, particularly if the beneficiary received assistance with infusion services through the Medicare home health benefit. Whether Medicare beneficiaries are receiving daptomycin in SNFs is unknown. We heard anecdotally in a few interviews about SNFs' reluctance to accept patients who need high-cost drugs.

20 In our hypothetical example, if we had assumed five nurse visits per week instead of two nurse visits per week, home infusion would have been more expensive than the HOPD under the scenario with a $75 per diem amount.

21 From interviews, we heard that it was not typical to have daily nurse visits for antibiotics, but some plans indicated they would authorize daily visits if a patient needed them while others indicated they might consider such a patient better suited for receiving infusions in an alternative setting. It is unknown how much nursing would typically be needed among Medicare beneficiaries, who are older and may have more functional limitations than the working age population.

22 When comparing costs in an HOPD with home infusion with nursing provided through the Medicare home health benefit, it is important to note that our estimate of costs associated with care in an HOPD includes only the costs related to infusions. If a patient was getting assistance with infusions and wound care through home health care, the relevant comparison point for the HOPD would be our estimate of infusion costs plus an estimate of the costs of wound care provided by an HOPD.

23 Changing other aspects of our hypothetical scenario would also change the savings estimates. A shorter course of treatment would increase the payment differential between SNFs and home infusion because there would be fewer days with beneficiary cost sharing of $144.50 per day (days 21 and onward in SNFs). Similarly, a longer course of treatment would decrease the differential between SNFs and home infusion. If we assume more nurse visits per week or a higher payment rate for nurse visits or home infusion supplies and equipment, the cost of home infusion increases.

24 Our assumption of a minimal woodwork effect for IVIG is due to the focus on a specific diagnosis: PID covered by Part B. Part D covers IVIG used for other purposes, including a number of off-label uses with varied levels of evidence supporting its use. If we were analyzing the cost implications of expanded home infusion coverage for Part D–covered IVIG, we would expect a substantial woodwork effect.

25 In April 2012, CMS announced that it planned to include infusion pumps and supplies in an upcoming round of the competitive bidding program.

26 If beneficiaries who have existing coverage choose to opt out, the demonstration would understate the extent of the crowd-out effect that would occur if these services were permanently added to the Medicare benefits package and an evaluation of a demonstration would likely need to make an adjustment to take this factor into account.

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APPENDIX

A

Review of CMS's preliminary estimate of the 2013 update for physician and other professional services

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Review of CMS's preliminary estimate of the 2013 update for physician and other professional services

In CMS's annual letter to the Commission on the update for physician and other professional services, the agency's preliminary estimate of the 2013 update is –27.0 percent (Blum 2012). The prescribed reduction is due to a series of temporary increases enacted over several years that—under current law—expire at the end of 2012. Those increases prevented a series of negative updates under the sustainable growth rate (SGR) formula—the statutory formula for annually updating Medicare's payment rates for physician and other health professional services. If the temporary increases expire, the physician fee schedule's conversion factor must decrease by 27.5 percent. The result of this reduction and the 2013 update would be the SGR formula's update—specific to 2013—of 0.7 percent. This increase would be applied to the conversion factor after it had been reduced by 27.5 percent.[1]

This appendix provides the Commission's mandated technical review of CMS's estimate. We find that CMS's calculations are correct and that—absent a change in law—the expiration of the temporary increases and the formula's update for 2013 are very unlikely to produce an update that differs substantially from –27.0 percent. The temporary increases—by far, the largest factor influencing the payment reduction—were specified in law. The estimate of the SGR formula update of 0.7 percent for 2013 could change between now and when CMS would implement the update in January, but any such changes are likely to be small compared with the total reduction prescribed by law.

While this appendix is limited to technical issues, the Commission has concerns about the SGR formula as a payment policy. The SGR formula may have resulted in lower updates, but it has failed to restrain volume growth; in fact, for some specialties it may have exacerbated volume growth. In addition, the temporary increases, or "fixes," to override the SGR formula are undermining the credibility of Medicare by engendering uncertainty and frustration among providers, which may be causing anxiety among beneficiaries. In an October 2011 letter to the Congress, the Commission recommended repealing the SGR formula and replacing it with specified updates that would no longer be based on an expenditure-control formula (Medicare Payment Advisory Commission 2011). These updates would include a 10-year freeze in current payment levels for primary care where potential access problems are most readily apparent and, for all other services, annual payment reductions of 5.9 percent for three years, followed by a freeze for the remainder of the 10-year window.

How temporary increases and other legislative provisions have affected payments for physician and other professional services

The SGR formula is intended to limit growth in Medicare spending for physician and other professional services. If actual aggregate spending—accumulated since 1996—

FIGURE A–1

Temporary increases prevented the SGR formula's negative updates

Note: Note: SGR (sustainable growth rate). The 27.5 percentage point difference is the ratio of the cumulative SGR formula updates to the cumulative temporary bonuses (0.753/1.038 = 0.725 or –27.5 percent).

Source: Blum 2012 and Office of the Actuary 2011.

exceeds the specified target spending accumulated in the same time period, the formula calls for a downward adjustment in the physician fee schedule's conversion factor.

From 2001 to 2009, spending exceeded the target, and updates calculated with the formula would have been negative. However, except for the negative update implemented in 2002, the Congress has passed specific legislation overriding the negative updates called for by the SGR formula.

Initially, the legislative overrides prescribed a positive update for a given year—resulting in higher spending—but did not allow the corresponding spending target to rise. The result was a growing gap between spending and the target. The formula could have recouped the difference, but the process would have required many years of negative updates. In response, the Congress instituted a new method of specifying the legislated updates. Starting with the update for 2007, legislation prescribed temporary increases. When the increases expire, updates are calculated—with the formula—as if the increases had never been applied.

From 2007 through 2012, the temporary increases totaled a cumulative increase in payment rates of 3.8 percent (Figure A-1).[2] Meanwhile, the accumulated updates—called for by the formula but legislatively overridden—totaled –24.7 percent. The result is a 27.5 percent reduction in payment rates required when the temporary increases expire.

In addition to the temporary increases, recent legislation has made further changes—some raising payments and some lowering payments—for services furnished by physicians and other health professionals.

- Starting in 2011 and ending in 2016, primary care practitioners who meet certain criteria receive a 10 percent increase in payments for selected fee schedule services, as will general surgeons practicing in health professional shortage areas.
- Through 2012, there is a floor on the fee schedule's geographic practice cost index (GPCI) for the work of physicians and other health professionals. This GPCI adjusts payments up or down to account for differences in the earnings of professionals among each of 89 payment localities. The floor prevents GPCI adjustments that are less than 1.0.
- Under the Physician Quality Reporting System (PQRS), qualifying physicians and other health professionals received a 1 percent bonus on all Medicare payments received in 2011 and will receive a 0.5 percent bonus in 2012 through 2014. Starting in 2015, those who do not satisfactorily report PQRS measures will be subject to a financial penalty starting at 1.5 percent of their Medicare payments.
- The electronic health record (EHR) incentive program provides payments to physicians when they adopt EHRs and demonstrate their use in specified ways to improve quality, safety, and effectiveness of care. Physicians may receive up to $44,000 over five years, starting with $18,000 in 2011. EHR bonuses for physicians in health professional shortage areas are 10 percent higher. Starting in 2015, eligible physicians who do not satisfy the EHR criteria will be subject to a financial penalty starting at 1 percent of their Medicare payments.
- Prescribing physicians and health professionals who do not participate in the EHR incentive program are eligible for an electronic prescribing (eRx) bonus of 1 percent on all their Medicare services if they use a

qualified eRx system. This program began in 2009. Starting in 2012, eligible professionals who have not yet satisfied the eRx criteria and cannot demonstrate "hardship" exemptions will be subject to a financial penalty starting at 1 percent of their Medicare payments.

How CMS estimated the SGR formula's update for 2013

Calculating the update for practitioner services is a two-step process. CMS first estimates the SGR—the target growth rate for spending on these services—for the coming year. The agency then computes the update using that SGR and historic information on actual and target spending.

SGR for 2013

The SGR is a function of projected changes in:

- input prices for practitioner services—an allowance for inflation,[3]
- real gross domestic product (GDP) per capita—an allowance for growth in the volume and intensity 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 practitioner services.

Allowing for these four factors, CMS's preliminary estimate of the SGR for 2013 is –18.9 percent (Table A-1).

Measured by the Medicare Economic Index (MEI), CMS's estimate of the change in input prices of 0.5 percent is within the range during the past decade—though it is at the low end of the range.[5] In light of economic conditions, the agency projects relatively modest increases in practitioner compensation, staff earnings, rent, and the prices of other inputs.

The next factor in the 2013 SGR—growth in real GDP per capita—is a 10-year moving average. It includes a 10-year moving average of economic growth based on estimates from the Department of Commerce—for 2004 through 2011—and projections from the President's budget—for 2012 and 2013. This growth rate is just 0.3 percentage point more than the rate we calculate when we use Congressional Budget Office (CBO) projections for 2012 and 2013 instead of projections from the President's budget (Congressional Budget Office 2012a).

TABLE A–1

Preliminary estimate of the sustainable growth rate, 2013

Factor	Percent
2013 change in:	
Input prices*	0.5%
Real GDP per capita	0.7
Fee-for-service enrollment	5.1
Change due to law or regulation	–23.8
Sustainable growth rate	–18.9

Note: GDP (gross domestic product). Percentages are converted to ratios and multiplied, not added, to produce the sustainable growth rate. Estimates shown are preliminary.
*The change in input prices includes inflation measures for services furnished by a physician or other health professional or furnished in the office of a physician or other health professional. As defined for the sustainable growth rate, those services include services billable under the physician fee schedule and laboratory services.

Source: Blum 2012.

Changes in FFS enrollment are determined by the number of new Medicare beneficiaries who enroll in FFS, by the number of decedents, and by the number of current beneficiaries who choose to either leave FFS and enroll in Medicare Advantage (MA) or leave MA and enroll in FFS. For the 2013 SGR, CMS projects a net increase in FFS enrollment of 5.1 percent. This percentage is higher than the projected increase in the number of new Part B beneficiaries and includes a shift in enrollment from MA to FFS. CMS anticipates that MA enrollment will decline in 2013 as payments to MA plans are reduced. However, CBO is not projecting such a decline (Congressional Budget Office 2012b).

The remaining factor in the 2013 SGR is a –23.8 percent change in spending due to law and regulation. For this factor, expiration of the temporary increases would be the primary source of the spending decrease. Other decreases in spending due to law and regulation—such as expiration of the floor on the work GPCI, the start of automatic reductions (or a "sequester") under the Budget Control Act of 2011, and a reduction in laboratory fee schedule payments—would be relatively small compared with

TABLE A–2

Preliminary estimate of the SGR formula's update specific to 2013

Factor	Percent
Change in MEI*	0.6%
Update adjustment factor	0.1
Update	0.7

Note: SGR (sustainable growth rate), MEI (Medicare Economic Index). Percentages are converted to ratios and multiplied, not added, to produce the update. Estimates shown are preliminary.
*For the SGR formula update, physician services include only those services billable under the physician fee schedule.

Source: Blum 2012.

expiration of the temporary increases. EHR bonuses would have a small positive effect on spending.

Why is the change in spending due to law and regulation a smaller reduction than the 27.5 percent reduction in payments that would occur when the temporary increases expire? The most important reason for the difference is that the law and regulation factor in the SGR is not an estimate of a change in payment rates; it is an estimate of a change in spending. A change in payment rates would not necessarily equal a change in spending if the change in payment rates were accompanied by a change in the volume of services. Indeed, when projecting a decrease in payment rates, CMS offsets the decrease by almost a third to account for a volume increase, consistent with the agency's research (Codespote et al. 1998).[6]

FIGURE A–2

From 2001 to 2009, actual spending exceeded the target

Note: Estimates are preliminary. Data for 1997 and 1998 are for the last three quarters of each of those years and the first quarter of the following year.

Source: Centers for Medicare & Medicaid Services 2011.

Calculating the SGR formula's update specific to 2013

After estimating the SGR, CMS calculates the SGR formula's annual update specific to the given year. It is a function of:

- the change in productivity-adjusted input prices for physician and other professional services, as measured by the MEI;[7] 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.

The estimate of the change in input prices for use in the 2013 update is 0.6 percent (Table A-2). This factor could change by November 2012 when CMS finalizes the update for 2013. By then, the MEI could be somewhat higher or lower than 0.6 percent as further data become available on changes in input prices for physician and other professional services.

For 2012, CMS estimates a UAF of 0.1 percent. This adjustment and the estimated change in input prices result in an update estimate of 0.7 percent. The UAF is positive even though actual spending—cumulated since the SGR was instituted—exceeds target spending (Figure A-2).[8] CMS's current estimate is that the excess is about $8.7 billion (Blum 2012). The reason for the seeming contradiction is that the formula for calculating the UAF does not account for all differences between actual spending and the target equally. Instead, it assigns more weight to the most recent difference—estimated for 2012—than to the historic difference since baseline (Office of the Actuary 2011). This differential weighting of recent and historic experience results in a small positive UAF for the 2013 update.

Like the MEI, the UAF could change by November. The UAF is partly a function of actual spending for physician and other professional services. When calculating the preliminary estimate of the 2013 update, CMS had data on actual spending that were nearly complete for the first

three quarters of 2011 but less so for the last quarter of that year. As more data become available, the estimate of actual spending in 2011 may change somewhat before CMS issues a final rule on the update in November. The estimate of actual spending for 2012 could also change. Nonetheless, changes in the UAF are not likely to have a large impact on the update calculations. For instance, if spending in 2012 were 1 percent higher than CMS projects, the update adjustment for 2013 would be –0.2 percent instead of 0.1 percent. In turn, the SGR formula's update specific to 2013 would go from 0.7 percent to 0.4 percent. However, such changes do not appear large when we remember that the formula's 2013 update would be applied after the conversion factor had been reduced by a prescribed 27.5 percent. ■

Endnotes

1 For the update calculations discussed in this appendix, percentages are not added. Instead, they are converted to ratios and multiplied. For instance, the decrease in payment rates of 27.0 percent is the arithmetic product of the 2013 update (0.7 percent, or 1.007) and the expiration of the temporary increases (–27.5 percent, or 0.725). The multiplication is $1.007 \times 0.725 = 0.730$, or –27.0 percent.

2 For 2007, the Tax Relief and Health Care Act of 2006 maintained payment rates at 2006 levels. For the first six months of 2008, the Medicare, Medicaid, and SCHIP Extension Act of 2007 raised payment rates by 0.5 percent. For the second six months of 2008, the Medicare Improvements for Patients and Providers Act of 2008 (MIPPA) maintained payment rates at the levels for the first six months of that year. For 2009, MIPPA raised payment rates by 1.1 percent. For January and February of 2010, the Department of Defense Appropriations Act of 2010 maintained payment rates at their 2009 levels. For March 2010, the Temporary Extension Act of 2010 maintained payment rates at the levels for the first two months of the year. For April and May of 2010, the Continuing Extension Act maintained payment rates at the levels for the first three months of the year. For June through November of 2010, the Preservation of Access to Care for Medicare Beneficiaries and Pension Relief Act of 2010 raised payment rates by 2.2 percent. For December 2010, the Physician Payment and Therapy Relief Act of 2010 maintained payment rates at the levels for June through November of 2010. For all of 2011, the Medicare and Medicaid Extenders Act of 2010 maintained payment rates at the levels for June through December of 2010. For January and February of 2012, the Temporary Payroll Tax Cut Continuation Act of 2011 maintained payment rates at the 2011 level. The Middle Class Tax Relief and Job Creation Act of 2012 continued the payment freeze through the remainder of 2012.

3 For calculating the SGR, practitioner services are services commonly performed by a physician or in a physician's office. In addition to services in the physician fee schedule, these services include diagnostic laboratory tests.

4 As required by the Medicare Prescription Drug, Improvement, and Modernization Act of 2003, the real GDP per capita factor in the SGR is a 10-year moving average.

5 Since 2003, the MEI has ranged from 0.4 percent to 3.1 percent.

6 The maximum volume offset is 4.5 percent (a 30 percent offset of a payment reduction of up to 15 percent). The 15 percent limit was established because that was the largest reduction seen in CMS's volume offset study.

7 For the update, the services of physicians and other health professionals include only those services billable under the physician fee schedule.

8 Starting with the update for 2010, CMS removed physician-administered drugs from the SGR definition of services subject to the SGR. This change narrowed the gap between actual spending and the target.

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APPENDIX

B

Commissioners' voting on recommendations

APPENDIX B

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: Reforming Medicare's benefit design

The Congress should direct the Secretary to develop and implement a fee-for-service benefit design that would replace the current design and would include:

- an out-of-pocket maximum;
- deductible(s) for Part A and Part B services;
- replacing coinsurance with copayments that may vary by type of service and provider;
- secretarial authority to alter or eliminate cost sharing based on the evidence of the value of services, including cost sharing after the beneficiary has reached the out-of-pocket maximum;
- no change in beneficiaries' aggregate cost-sharing liability; and
- an additional charge on supplemental insurance.

Yes: *Armstrong, Baicker, Behroozi, Berenson, Borman, Butler, Castellanos, Chernew, Dean, Gradison, Hackbarth, Hall, Kuhn, Miller, Naylor, Stuart, Uccello*

Chapter 2: Care coordination in fee-for-service Medicare

No recommendations

Chapter 3: Care coordination programs for dual-eligible beneficiaries

3-1 The Congress should direct the Secretary to improve the Medicare Advantage (MA) risk-adjustment system to more accurately predict risk across all MA enrollees. Using the revised risk-adjustment system, the Congress should direct the Secretary to pay Program of All-Inclusive Care for the Elderly providers based on the MA payment system for setting benchmarks and quality bonuses. These changes should occur no later than 2015.

Yes: *Armstrong, Baicker, Behroozi, Berenson, Borman, Butler, Castellanos, Chernew, Gradison, Hackbarth, Hall, Kuhn, Miller, Naylor, Stuart, Uccello*
Absent: *Dean*

3-2 After the changes in Recommendation 3-1 take effect, the Congress should change the age eligibility criteria for the Program of All-Inclusive Care for the Elderly to allow nursing home–certifiable Medicare beneficiaries under the age of 55 to enroll.

Yes: *Armstrong, Baicker, Behroozi, Berenson, Borman, Butler, Castellanos, Chernew, Gradison, Hackbarth, Hall, Kuhn, Miller, Naylor, Stuart, Uccello*
Absent: *Dean*

3-3 After the changes in Recommendation 3-1 take effect, the Secretary should provide prorated Medicare capitation payments to Program of All-Inclusive Care for the Elderly providers for partial-month enrollees.

Yes: *Armstrong, Baicker, Behroozi, Berenson, Borman, Butler, Castellanos, Chernew, Gradison, Hackbarth, Hall, Kuhn, Miller, Naylor, Stuart, Uccello*
Absent: *Dean*

3-4 After the changes in Recommendation 3-1 take effect, the Secretary should establish an outlier protection policy for new Program of All-Inclusive Care for the Elderly sites to use during the first three years of their programs to help defray the exceptionally high acute care costs for Medicare beneficiaries.

The Secretary should establish the outlier payment caps so that the costs of all Chapter 3 recommendations do not exceed the savings achieved by the changes in Recommendation 3-1.

Yes: *Armstrong, Baicker, Behroozi, Berenson, Borman, Butler, Castellanos, Chernew, Gradison, Hackbarth, Hall, Kuhn, Miller, Naylor, Stuart, Uccello*
Absent: *Dean*

3-5 The Congress should direct the Secretary to publish select quality measures on Program of All-Inclusive Care for the Elderly (PACE) providers and develop appropriate quality measures to enable PACE providers to participate in the Medicare Advantage quality bonus program by 2015.

Yes: *Armstrong, Baicker, Behroozi, Berenson, Borman, Butler, Castellanos, Chernew, Gradison, Hackbarth, Hall, Kuhn, Miller, Naylor, Stuart, Uccello*
Absent: *Dean*

Chapter 4: Issues for risk adjustment in Medicare Advantage

No recommendations

Chapter 5: Serving rural Medicare beneficiaries

No recommendations

Chapter 6: Medicare coverage of and payment for home infusion therapy

No recommendations

Appendix A: Review of CMS's preliminary estimate of the 2013 update for physician and other professional services

No recommendations

Acronyms

Acronyms

ACE	angiotensin-converting enzyme
ACO	accountable care organization
ADL	activity of daily living
AHCPR	Agency for Health Care Policy and Research
AHIP	America's Health Insurance Plans
AHRQ	Agency for Healthcare Research and Quality
AMI	acute myocardial infarction
ARB	angiotensin II receptor blocker
ASP	average sales price
AWP	average wholesale price
BIPA	Medicare, Medicaid, and SCHIP Benefits Improvement and Protection Act of 2000
CAH	critical access hospital
CAHPS®	Consumer Assessment of Healthcare Providers and Systems
CBO	Congressional Budget Office
CBSA	core-based statistical area
CFR	Code of Federal Regulations
CHF	congestive heart failure
CLM	Care Level Management [program]
CMHCB	Care Management for High-Cost Beneficiaries
CMMI	Center for Medicare & Medicaid Innovation
CMP	Care Management Program
CMS	Centers for Medicare & Medicaid Services
CMS–HCC	CMS–hierarchical condition category
COPD	chronic obstructive pulmonary disease
CPT	Current Procedural Terminology
C–SNP	chronic condition special needs plan
DME	durable medical equipment
DRA	Deficit Reduction Act of 2005
DRG	diagnosis related group
D–SNP	dual-eligible special needs plan
E&M	evaluation and management
ECG	electrocardiogram
ED	emergency department
EHR	electronic health record
eRx	electronic prescribing
FFS	fee-for-service
FIDE–SNP	fully integrated dual-eligible special needs plan
FMAP	federal medical assistance percentage
FQHC	federally qualified health center
GAO	Government Accountability Office
GDP	gross domestic product
GPCI	geographic practice cost index
HBC	Health Buddy Consortium
H–CAHPS®	Hospital Consumer Assessment of Healthcare Providers and Systems
HCBS	home- and community-based services
HCC	hierarchical condition category
HEDIS®	Healthcare Effectiveness Data and Information Set
HIE	health insurance experiment
HMO	health maintenance organization
HOPD	hospital outpatient department
HOS	Health Outcomes Survey
HQP	Health Quality Partners
HRET	Health Research and Educational Trust
IDT	interdisciplinary team
IG	immune globulin
I–SNP	institutional special needs plan
IOM	Institute of Medicine
IV	intravenous
IVIG	intravenous immune globulin
KFF	Kaiser Family Foundation
LTC	long-term care
LVS	left ventricular systolic
LVSD	left ventricular systolic dysfunction
MA	Medicare Advantage
MCBS	Medicare Current Beneficiary Survey
MCCD	Medicare Coordinated Care Demonstration
MDS	Minimum Data Set
MedPAC	Medicare Payment Advisory Commission
MEI	Medicare Economic Index
MGH	Massachusetts General Hospital
MHA	Missouri Hospital Association
MHS	Medicare Health Support
MIPPA	Medicare Improvements for Patients and Providers Act of 2008
NACRHHS	The National Advisory Committee on Rural Health and Human Services
NAIC	National Association of Insurance Commissioners
NBER	National Bureau of Economic Research
NCHS	National Center for Health Statistics
NCPDP	National Council for Prescription Drug Programs
NHIA	National Home Infusion Association

NHPF	National Health Policy Forum
NORC	(formerly) National Opinion Research Center
NP	nurse practitioner
OIG	Office of Inspector General
OOP	out-of-pocket
PA	physician assistant
PACE	Program of All-Inclusive Care for the Elderly
PCP	primary care physician
PID	primary immune deficiency
PPACA	Patient Protection and Affordable Care Act of 2010
PPRC	Physician Payment Review Commission
PPS	prospective payment system
PQRS	Physician Quality Reporting System
ProPAC	Prospective Payment Assessment Commission
RF	renal failure
RHC	rural health clinic
RHRC	Rural Health Research Center
RUG	resource utilization group
SCH	sole community hospital
SCHIP	State Children's Health Insurance Program
SGR	sustainable growth rate
SNF	skilled nursing facility
SNP	special needs plan
TPN	total parenteral nutrition
UA	urbanized area
UAF	update adjustment factor
UC	urban cluster
UIC	urban influence code
USDA	U.S. Department of Agriculture
WPP	Wisconsin Partnership Program

More about MedPAC

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Commissioners' biographies

Scott Armstrong, M.B.A., F.A.C.H.E., is president and chief executive officer (CEO) of Group Health Cooperative, a consumer-governed health system serving 650,000 enrollees through coordinated care plans for groups and individuals and for Medicare, Medicaid, and SCHIP beneficiaries. He has worked at Group Health since 1986, serving in positions ranging from assistant hospital administrator to chief operating officer; he became president and CEO in 2005. Before joining Group Health, Mr. Armstrong was assistant vice president for hospital operations at Miami Valley Hospital in Dayton, OH. Mr. Armstrong is chair of the board of the Alliance of Community Health Plans and board member of America's Health Insurance Plans and the Seattle Chamber of Commerce. He is also immediate past-chair of the Board of the Pacific Science Center and a fellow of the American College of Healthcare Executives. He received his bachelor's degree from Hamilton College in New York and a master's degree in business with a concentration in hospital administration from the University of Wisconsin–Madison.

Katherine Baicker, Ph.D., is professor of health economics in the Department of Health Policy and Management at the Harvard School of Public Health, where her research focuses on health insurance finance and the effect of reforms on the distribution and quality of care. Dr. Baicker has served on the faculty of the Department of Public Policy in the School of Public Affairs at the University of California, Los Angeles; the Economics Department at Dartmouth College; and the Center for the Evaluative Clinical Sciences and the Department of Community and Family Medicine at Dartmouth Medical School. From 2005 to 2007, Professor Baicker served as a Senate-confirmed member of the President's Council of Economic Advisers. She is a research associate at the National Bureau of Economic Research, is on the Congressional Budget Office's Panel of Health Advisers, and is an elected member of the Institute of Medicine. She also served as a commissioner of the Robert Wood Johnson Foundation's Commission to Build a Healthier America and was a member of the Institute of Medicine's Committee on Health Insurance Status and its Consequences. She received her B.A. in economics from Yale University and her Ph.D. in economics from Harvard University.

Mitra Behroozi, J.D., is executive director of the 1199SEIU Benefit and Pension Funds. Ms. Behroozi oversees eight major health and pension funds for health care workers. Collectively, these self-administered and self-insured health funds are among the largest in the nation. Under her leadership, the funds have implemented a series of plan design and innovative cost containment programs, which are protecting benefits for members and retirees. Previously, Ms. Behroozi was a partner with Levy, Ratner & Behroozi, PC, representing New York City unions in collective bargaining negotiations and proceedings. While at the law firm, she also served as union counsel to Taft-Hartley benefit and pension funds. She serves on the National Advisory Council of the Agency for Healthcare Research and Quality, the board of the Brooklyn Health Information Exchange, and the steering committee of the Campaign for Better Care. Ms. Behroozi has a law degree from New York University and an undergraduate degree in sociology from Brown University.

Robert A. Berenson, M.D., F.A.C.P., is an Institute Fellow at the Urban Institute. From 1998 to 2000, he served as director of the Center for Health Plans and Providers in the Centers for Medicare & Medicaid Services overseeing provider payment policy and managed care contracting. Dr. Berenson was founder and medical director of the National Capital Preferred Provider Organization from 1986 to 1996. He served as an assistant director of the White House Domestic Policy staff in the Carter Administration. Dr. Berenson has authored many articles in nationally recognized journals and several books, and he most recently coauthored *Medicare Payment Policy and the Shaping of U.S. Health Care*. Dr. Berenson is a board-certified internist who practiced for 20 years. He received his B.A. from Brandeis University and his M.D. from the Mount Sinai School of Medicine.

Karen R. Borman, M.D., F.A.C.S., is senior associate program director of the General Surgery Residency Program and an attending physician at Abington Memorial Hospital, Abington, PA. She holds clinical faculty appointments at Temple University and Drexel University Schools of Medicine. She is board certified in surgery and in surgical critical care. Her clinical focus is on endocrine surgery, and her research focus is on surgical education. She is a member of the General Surgery CPT/RUC Committee of the American College of Surgeons. She is a

senior member of the American Board of Surgery. She is a past-president of the Association of Program Directors in Surgery. She has worked with the Centers for Medicare & Medicaid Services on issues related to physician payment and service coverage. Dr. Borman was a member of the executive committee and vice-chair of the American Medical Association's Current Procedural Terminology Editorial Panel. She also served on the American Medical Association Diagnostic and Therapeutic Technology Assessment Panel. Dr. Borman earned her medical degree from Tulane University. Her undergraduate degree in chemistry is from the Georgia Institute of Technology.

Peter W. Butler, M.H.S.A., is a nationally recognized health care executive with more than 30 years of experience in academic medical centers and health care systems. In addition to being president and chief operating officer of Rush University Medical Center in Chicago, IL, Mr. Butler is an associate professor and chairman of the Department of Health Systems Management at Rush University. Before joining Rush, he served as president and chief executive officer at the Methodist Hospital System in Houston and senior vice president and chief administrative officer at the Henry Ford Health System in Detroit. He currently serves as chairman of the board of University HealthSystem Consortium. He also serves as chairman of the board of the National Center for Healthcare Leadership. Mr. Butler holds an undergraduate degree in psychology from Amherst College and a master's degree in health services administration from the University of Michigan.

Ronald D. Castellanos, M.D., has practiced urology for more than 30 years. For the past four years Dr. Castellanos has been a member, and for the past year the chair, of the Practicing Physicians Advisory Council on issues related to physician payment. Dr. Castellanos was president of the Florida Urologic Society and has worked with several other organizations on health policy, including the American Urologic Association and the American Lithotripsy Society. Dr. Castellanos earned his medical degree from Hahnemann Medical College. His undergraduate degree is from Pennsylvania State University.

Michael Chernew, Ph.D., is a professor in the Department of Health Care Policy at Harvard Medical School. Dr. Chernew's research activities focus on several areas, most notably the causes and consequences of growth in health care expenditures, geographic variation in medical spending and use, and value-based insurance design. He is a member of the Congressional Budget Office's Panel of Health Advisors and Commonwealth Foundation's Commission on a High Performance Health System. In 2000, 2004, and 2011, he served on technical advisory panels for the Centers for Medicare & Medicaid Services that reviewed the assumptions used by the Medicare actuaries to assess the financial status of the Medicare trust funds. Dr. Chernew is a Faculty Research Fellow of the National Bureau of Economic Research. He coedits the *American Journal of Managed Care* and is a senior associate editor of *Health Services Research*. In 2010, Dr. Chernew was elected to the Institute of Medicine (IOM) of the National Academy of Sciences and serves on the IOM Committee on Determination of Essential Health Benefits. Dr. Chernew earned his undergraduate degree from the University of Pennsylvania and a doctorate in economics from Stanford University.

Thomas M. Dean, M.D., is a board-certified family physician who has practiced in Wessington Springs, SD, since 1978. He is chief of staff at Avera Weskota Memorial Medical Center. Dr. Dean is on the Board of Directors of Avera Health Plan and is president of the South Dakota Academy of Family Physicians. He was president of the National Rural Health Association, and he published articles and presented on health care in rural areas. Dr. Dean received the Dr. Robert Hayes Memorial Award for outstanding rural health provider, received the Pioneer Award from the South Dakota Perinatal Association, and was awarded a Bush Foundation Medical Fellowship to study leadership and health policy. He was also named the 2009 National Rural Health Association's Practitioner of the Year. Dr. Dean earned his medical degree from the University of Rochester School of Medicine and Dentistry. His undergraduate degree is from Carleton College.

Bill Gradison, Jr., M.B.A., D.C.S., is a scholar in residence in the Health Sector Management Program at Duke's Fuqua School of Business. He was a member of the U.S. Congress (1975–1993) where he served on the House Budget Committee and the Health Subcommittee of the Committee on Ways and Means. Mr. Gradison was a founding board member of the Public Company Accounting Oversight Board and was vice chairman of the U.S. Bipartisan Commission on Comprehensive Health Care ("Pepper Commission"). Prior positions also include assistant to the Secretary of Health, Education, and Welfare; president of the Health Insurance Association of America; and vice chair of the Commonwealth Fund Task Force on Academic Health Centers. Mr. Gradison

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Glenn M. Hackbarth, J.D., M.A., chairman of the Commission, lives in Bend, OR. 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 and president of its Health Centers Division as well as Washington counsel of Intermountain Health Care. He has held various positions at the U.S. Department of Health and Human Services, including deputy administrator of the Health Care Financing Administration (now known as CMS). He currently serves as chairman of the board of the Foundation of the American Board of Internal Medicine. He is also a board member at the Commonwealth Fund and a member of the Commonwealth Fund's Commission on a High Performance Health System. Mr. Hackbarth received his B.A. from Pennsylvania State University and his J.D. and M.A. from Duke University.

William J. Hall, M.D., M.A.C.P., is a geriatrician and professor of medicine at the University of Rochester School of Medicine where he directs the Highland Hospital Center for Healthy Aging. He currently serves as a member of the Board of Directors of AARP. His career has focused on systems of health care for older adults. He was instrumental in establishing a Program of All-Inclusive Care for the Elderly and developing many senior prevention and wellness programs. Dr. Hall's prior service and positions include president of the American College of Physicians and leadership positions in the American Geriatrics Society. He received his bachelor's degree from the College of the Holy Cross and his medical degree from the University of Michigan Medical School and pursued postdoctoral training at Yale University School of Medicine.

Herb B. Kuhn is current president and chief executive officer of the Missouri Hospital Association (MHA), the trade association serving the state's 176 hospitals and health systems. Before joining MHA, Mr. Kuhn served in multiple roles at the Centers for Medicare & Medicaid Services, including as deputy administrator from 2006 to 2009 and as director of the Center for Medicare Management from 2004 to 2006. From 2000 to 2004, Mr. Kuhn served as corporate vice president for the Premier Hospital Alliance, serving 1,600 institutional members. From 1987 through 2000, Mr. Kuhn worked in federal relations with the American Hospital Association. Mr. Kuhn received his bachelor of science in business from Emporia State University.

George N. Miller, Jr., M.H.S.A., has, over the past two decades, managed a series of hospitals, leading financial turnarounds at four of them. Mr. Miller is the chief executive officer of Okmulgee Memorial Hospital in Okmulgee, OK. Previously, he was the president and chief executive officer of First Diversity Healthcare Group, a national health care consulting firm helping health care organizations improve their operations, and the regional president and chief executive officer of Community Mercy Health Partners and senior vice president of Catholic Health Partners, a hospital chain in the Springfield, OH, area. He has run hospitals in Illinois, Texas, and Virginia and is the immediate past-president of the National Rural Health Association. Mr. Miller has been an adjunct professor for the Master's of Health Care Services Administration for Central Michigan University since 1998. He has an undergraduate degree in business administration from Bowling Green State University and a master of science in health services administration from Central Michigan University.

Mary Naylor, Ph.D., R.N., F.A.A.N., is the Marian S. Ware professor in gerontology and director of the NewCourtland Center for Transitions and Health at the University of Pennsylvania School of Nursing. Since 1989, Dr. Naylor has led an interdisciplinary program of research designed to improve the quality of care, decrease unnecessary hospitalizations, and reduce health care costs for vulnerable community-based elders. Dr. Naylor is also the national program director for the Robert Wood Johnson Foundation program, Interdisciplinary Nursing Quality Research Initiative, aimed at generating, disseminating, and translating research to understand how nurses contribute to quality patient care. She was elected to the National Academy of Sciences Institute of Medicine in 2005. She also is a member of the RAND Health Board and the National Quality Forum Board of Directors and chairs the Board of the Long Term Quality Alliance. Dr. Naylor received her M.S.N. and Ph.D. from the University of Pennsylvania and her B.S. in nursing from Villanova University.

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