

REPORT TO THE CONGRESS

Increasing the Value of Medicare



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

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

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

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

REPORT TO THE CONGRESS

Increasing the Value of Medicare

MEDPAC Medicare
Payment Advisory
Commission

601 New Jersey Avenue, NW • Suite 9000 • Washington, DC 20001
(202) 220-3700 • Fax: (202) 220-3759 • www.medpac.gov



601 New Jersey Avenue, NW • Suite 9000
Washington, DC 20001
202-220-3700 • Fax: 202-220-3759
www.medpac.gov

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

June 15, 2006

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

Dear Mr. Vice President:

I am pleased to submit the Medicare Payment Advisory Commission's June 2006 *Report to the Congress: Increasing the Value of Medicare*. This report fulfills MedPAC's legislative mandate to examine issues affecting the Medicare program and to make specific recommendations to the Congress.

The Commission's goal is to recommend policies that increase the value of the Medicare program for beneficiaries and taxpayers. In this report, we:

- examine increasing accountability and care coordination by measuring physician resource use and by developing models of care coordination;
- describe ways to improve pricing accuracy in the hospice and physician payment systems;
- consider how information can be improved by adding quality measures in home health, gathering data on outpatient therapy, describing the array of offerings in Medicare Advantage and the new Part D prescription drug program, and determining the information beneficiaries are using when evaluating choices in Part D; and
- explore using cost-effectiveness analysis.

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

Sincerely,

A handwritten signature in black ink, appearing to read "Glenn M. Hackbarth".

Glenn Hackbarth, J.D.
Chairman

Enclosure



601 New Jersey Avenue, NW • Suite 9000
Washington, DC 20001
202-220-3700 • Fax: 202-220-3759
www.medpac.gov

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

June 15, 2006

The Honorable J. Dennis Hastert
Speaker of the House of Representatives
U.S. House of Representatives
H232 Capitol Building
Washington, DC 20515

Dear Mr. Speaker:

I am pleased to submit the Medicare Payment Advisory Commission's June 2006 *Report to the Congress: Increasing the Value of Medicare*. This report fulfills MedPAC's legislative mandate to examine issues affecting the Medicare program and to make specific recommendations to the Congress.

The Commission's goal is to recommend policies that increase the value of the Medicare program for beneficiaries and taxpayers. In this report, we:

- examine increasing accountability and care coordination by measuring physician resource use and by developing models of care coordination;
- describe ways to improve pricing accuracy in the hospice and physician payment systems;
- consider how information can be improved by adding quality measures in home health, gathering data on outpatient therapy, describing the array of offerings in Medicare Advantage and the new Part D prescription drug program, and determining the information beneficiaries are using when evaluating choices in Part D; and
- explore using cost-effectiveness analysis.

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

Sincerely,

A handwritten signature in black ink, appearing to read "Glenn M. Hackbarth".

Glenn Hackbarth, J.D.
Chairman

Enclosure

Acknowledgments

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

Despite a heavy workload, staff members of the Centers for Medicare & Medicaid Services were particularly helpful during preparation of the report. We thank Sandra Bastinelli, Christian Bauer, Pamela Cheetham, William Clark, Kent Clemens, Rich Coyle, Alissa Deboy, Terri Deutsch, Aaron Eaton, Kim Elmo, Michael Fiore, Debra Hattery, Jessica Herrera-Cancel, Barbara Hoffman, Anne Hornsby, Tim Love, Terrence Kay, Carol Kelly, Linda Magno, Tracey McCutcheon, Penny Mohr, Carolyn Mullen, Vikki Oates, Steve Phurrough, Theresa Pratt, Lori Robinson, Dorothy Shannon, Jennifer Shapiro, John Shatto, Paul Spitalnic, Cynthia Tudor, Tom Valuck, Dan Waldo, and Carlos Zarabozo.

The Commission also received valuable insights and assistance from others in government, industry, and the research community who generously offered their time and knowledge. They include Catherine Anderson, Stanley Aronovitch, Bruce Bagley, Melinda Beeuwkes Buntin, Mara Benner, Bob Berenson, Marc Berk, Martin Block, Richard Burke, Rhonda Byrnes, Judy Cahill, Stephanie Carter, Karen Cheung, Daniel Ciolek, Peter Clarkson, Joshua Cohen, Robb Cohen, Kathy Coltin, James Cosgrove, Hilary Dalin, Nancy Davenport-Ennis,

Bob Doherty, Elizabeth Eaton, Nancy Edwards, Elliott Fisher, Diane Flanders, Ron Fried, Dan Gaylin, Kurt Gillis, Kris Haltmeyer, Elizabeth Hargrave, Dennis Hart, Jack Hoadley, Sarah Hughes, Katharine Iritani, Alan Jette, John Jones, Jon Keyserling, Harriet Komisar, Alma Kuby, Theresa Lee, Tammie Lindquist, Karl Lorenz, Ingrida Lulis, Joanne Lynn, John Mach Jr., Penny Marshall, David Mason, Robert Master, Stephanie Maxwell, Scott McCracken, Beth McGlynn, Sharon McIlrath, Katie Merrell, Christina Metzler, Marilyn Moon, Judy Moore, Janet Neigh, Peter Neumann, Nancy Nicosia, Karen Pace, Elaine Reardon, Dawn Robinson, Marissa Schlaifer, Richard Segan, Jean Slutsky, Richard Smith, Sherry Smith, Terry Smith, Bruce Steinwald, Mary St. Pierre, Laura Summer, Janet Sutton, Bill Taylor, Bill Thomas, Jim Verdier, Diana Verrilli, Howard Weiss, Jack Weiss, Steve Wickstrom, Mary Worstell, and Grace Yang.

Once again, the programmers at Social and Scientific Systems provided highly capable assistance to Commission staff. In particular, we appreciate the hard work of Valerie Aschenbach, Valeriy Bakushin, Daksha Damera, Deborah Johnson, John May, Fred Rhode, Scott Roberts, Mary Beth Spittel, Charles Thomson, Susan Tian, and Arlene Turner.

Finally, the Commission wishes to thank Lynn Lewis and Oedipa Rice for their help in editing and producing this report. ■

Table of contents

Acknowledgments	v
Tables	ix
Figures	xi
Executive summary	xv

Chapters

1 Using episode groupers to assess physician resource use	3
Data and methods	8
Results	9
Attributing episodes to physicians	14
Comparison of resource use and quality across MSAs	18
Future work	24
2 Care coordination in fee-for-service Medicare	31
Why is care coordination needed?	35
Care coordination tools for patients with complex needs	37
Is there evidence that care coordination improves quality or saves costs?	41
Models of care coordination in the Medicare FFS program	43
3 Medicare’s hospice benefit: Recent trends and consideration of payment system refinements	59
Growth and change in Medicare’s hospice benefit	61
Consideration of payment system refinements	67
Medicare hospice payment: Directions for further investigation	71
4 Keeping physicians’ practice expense payment rates up to date	79
Medicare needs current data on each specialty’s total practice expenses	83
Accuracy and reliability of the direct resource data	87
Estimating accurate prices for clinical staff, supplies, and equipment	89
Conclusion	95
5 Adding quality measures in home health	103
Strengths and weaknesses of the current measure set	105
Gathering best practices	107
Translating best practices into process measures	109

- 6 Toward better value in purchasing outpatient therapy services 117**
 - Growth in Medicare spending since 2000 123
 - Variation in spending 126
 - Alternative ways to manage therapy service use 128
 - Information needed to evaluate Medicare’s therapy purchases 132
 - Next steps for CMS 135

- 7 Part D plan offerings 145**
 - Part D’s structure and initial levels of enrollment 149
 - Part D plan offerings for 2006 154
 - Part D formularies 167
 - Looking ahead 173

- 8 How beneficiaries learned about the drug benefit and made plan choices 181**
 - Studying how beneficiaries made choices 183
 - Choosing to enroll in the drug benefit 184
 - Choosing a plan 187
 - The beneficiary counselor perspective 190
 - Information and decision making 193

- 9 The Medicare Advantage program: Availability, benefits, and special needs plans 199**
 - Medicare Advantage plans available for 2006 203
 - Special needs plans 212

- 10 Medicare’s use of clinical and cost-effectiveness information 227**
 - Do cost-effectiveness ratios vary for colorectal cancer screening and ICDs? 232
 - Improving the comparability of cost-effectiveness analyses 234
 - Future issues 237

- Appendix**
- A Review of CMS’s preliminary estimate of the physician update for 2007 249**
 - Calculating the update 249
 - Reviewing CMS’s estimates 250

- Acronyms 257**

- More about MedPAC**
- Commission members 261**
- Commissioners’ biographies 263**
- Commission staff 267**

Tables

1	Using episode groupers to assess physician resource use	3
1-1	Medicare claims classified into MEGs compared with ETGs	11
1-2	Variation in number and distribution of selected episodes, 2002	12
1-3	Average episode costs rise with disease severity and overall patient complexity, 2002	14
1-4	Episode costs are driven by different mixes of services, 2002	15
1-5	Most episodes can be attributed to one physician, 2002	17
1-6	Most beneficiaries eligible for quality indicators can be attributed to one physician	18
1-7	Relative resource use ratios for selected MSAs, 2002	19
1-8	Comparison of resource use in Miami and Minneapolis MSAs, 2002	20
1-9	Relative resource use, by type of service, Miami and Minneapolis MSAs	21
1-10	Ratio of MSA to national quality scores on six conditions, 2002	23
2	Care coordination in fee-for-service Medicare	31
2-1	Beneficiaries with select chronic conditions see more physicians	36
2-2	Current strategies to coordinate care in Medicare	43
2-3	Components of two illustrative care coordination models	44
2-4	Examples of quality measures: The PGP demonstration	51
3	Medicare's hospice benefit: Recent trends and consideration of payment system refinements	59
3-1	Medicare hospice payment categories and rates, FY 2006	63
3-2	Recent trends in the number of hospices reaching the annual payment cap vary by region	65
3-3	Use of hospice among Medicare beneficiaries increased from 2000 to 2004	66
3-4	Total days of hospice care vary by disease category	68
3-5	Chain and all Medicare hospice patient demographics, 2002-2003	73
4	Keeping physicians' practice expense payment rates up to date	79
4-1	Hourly practice expenses increased for some specialties between 1995-1999 and 2001-2003	85
4-2	Alternative approaches to collect practice cost data raise many issues	86
4-3	Response rates to supplemental practice expense surveys are low	87
4-4	Direct resource data provide very specific estimates of clinical labor, medical equipment, and supplies	87
4-5	Distribution of direct costs of select MRI and CT services, 2006	91
4-6	Illustration of how changing equipment use and interest rate assumptions affects equipment price per service	94
5	Adding quality measures in home health	103
5-1	The current home health measure set	106
5-2	Fall prevention practices	108
5-3	Pressure wound care practices	109

6	Toward better value in purchasing outpatient therapy services	117
6-1	Outpatient therapy users and service intensity have increased since 2000	125
6-2	CMS does not collect much of the information useful for predicting and comparing beneficiaries' therapy care needs	132
7	Part D plan offerings	145
7-1	Part D enrollment and other sources of drug coverage in early 2006	153
7-2	Characteristics of PDPs in 2006	155
7-3	Premiums and cost-sharing requirements among PDPs in 2006	157
7-4	PDPs offered in 2006 by organizations with at least one nationwide plan	158
7-4	PDPs offered in 2006 by organizations with at least one nationwide plan (cont.)	159
7-5	"Near-national" organizations with 30 or more PDPs among the 34 regions	161
7-6	Geographic distribution of PDPs in 2006	162
7-7	Characteristics of MA-PD drug benefits in 2006	163
7-8	Premiums and cost-sharing requirements among MA-PD drug benefits in 2006	164
7-9	Most Part D plans distinguish between preferred and nonpreferred brands and include specialty tiers	169
7-10	The share of drugs listed in a therapeutic category depends on category size and regulation	172
7-11	Part D plans concentrate prior authorization in selected categories	173
8	How beneficiaries learned about the drug benefit and made plan choices	181
8-1	When you decided to sign up for the new program, how important were each of the following reasons?	187
8-2	Beneficiaries who use few drugs are less likely to enroll in a drug plan	188
8-3	How important are each of the following reasons in picking a plan?	191
8-4	Choosing a drug plan was time consuming but the majority of beneficiaries had enough information to make a decision	192
9	The Medicare Advantage program: Availability, benefits, and special needs plans	199
9-1	Percent of Medicare beneficiaries with access to MA plans, 2004-2006	206
9-2	HMOs most likely to bid below benchmark and have highest rebates	209
9-3	MA-PDs are widely available and enhanced cost-sharing protections are available in some areas	210
9-4	Differences in plan availability between urban and rural areas	212
9-5	Categories of dual eligibles	214
10	Medicare's use of clinical and cost-effectiveness information	227
10-1	Cost-effectiveness ratios for colorectal cancer screening compared with no screening vary across studies	233
A	Review of CMS's preliminary estimate of the physician update for 2007	249
A-1	Preliminary sustainable growth rate, 2007	250
A-2	Estimate of the update for physician services, 2007	250

Figures

3	Medicare’s hospice benefit: Recent trends and consideration of payment system refinements	59
3-1	Hospice use has grown for all Medicare decedents, but use remains higher among those in managed care	66
3-2	Long hospice stays are getting longer, but short stays persist	67
3-3	Average length of stay in hospice by state, 2004	69
3-4	An increase in freestanding agencies fueled growth in the number of hospice providers, 2001–2005	70
3-5	Potential case-mix adjusters explain little additional variation in visits and visit labor costs	71
3-6	More intensive care is delivered at beginning and end of hospice stays	71
4	Keeping physicians’ practice expense payment rates up to date	79
4-1	MRI and CT machines used most of the time providers were open for business	92
5	Adding quality measures in home health	103
5-1	Example: Translating fall prevention best practice into process measure	110
6	Toward better value in purchasing outpatient therapy services	117
6-1	Outpatient therapy is furnished by many different entities	121
6-2	Medicare spending on outpatient therapy services has almost doubled since 2000	125
6-3	Medicare spending on therapists in private practice grew faster than that for other providers, 2000–2004	126
6-4	Per user spending on outpatient therapy varied threefold across settings	127
7	Part D plan offerings	145
7-1	Distribution of PDP and MA–PD premiums for basic and enhanced plans in 2006	156
7-2	Distribution of Part D enrollees by organization	165
7-3	Part D plans typically list about 1,000 drugs	171
8	How beneficiaries learned about the drug benefit and made plan choices	181
8-1	Have you signed up for a drug plan or are you considering signing up for a drug plan?	187
8-2	What was the primary reason that you decided not to sign up for a drug plan?	189
8-3	If you had help, who was the main person who helped you make a decision about signing up for a drug plan?	190
8-4	How helpful was the information provided by...?	191
9	The Medicare Advantage program: Availability, benefits, and special needs plans	199
9-1	Most beneficiaries have access to 11 or more plans, 2006	207
9-2	Medicare Advantage plans used the largest share of rebate dollars to reduce cost sharing for Medicare services	208
9-3	Zero-premium plans are widely available	209
9-4	Most beneficiaries have access to an MA–PD with a premium of \$20 or less	211
9-5	Options for dual eligibles in 2006	215
9-6	Special needs plans available in 2006	217
9-7	Number of organizations offering special needs plans, by county, 2006	218

10 Medicare’s use of clinical and cost-effectiveness information	227
10-1 Selecting services for cost-effectiveness analysis based on differences in their costs and quality	239
A Review of CMS’s preliminary estimate of the physician update for 2007	249
A-1 Through 2005, actual spending for physician services exceeded target	251

Executive summary

Executive summary

Medicare fills a critical role in our society—ensuring that the elderly and disabled have access to medically necessary care. But along with that role comes a responsibility for policymakers to make sure that the resources entrusted to the program by beneficiaries and taxpayers are used wisely. Medicare must increase the quality and value of the care it purchases and control its spending.

Controlling spending is essential to assure the sustainability of the program. The longer action is delayed, the more draconian the remedies that will eventually be required. Since 1990, Medicare's program outlays per enrollee have been growing at about 6 percent a year, more than 2 percentage points faster than overall growth per person in the U.S. economy. The new outpatient prescription drug program and the arrival of the baby boom population as Medicare beneficiaries will lead to greater expenditures in the near future. Medicare is not alone in facing rapid increases in spending. Health care spending per person as a whole has been growing more than 2 percentage points faster than gross domestic product (GDP) and is projected to encompass even more of the U.S. economy—19 percent of GDP by 2014.

The same issues—lack of accountability and care coordination, rapid diffusion of technology that in some cases may not be cost effective, and poor incentives for efficiency—bedevil private payers as well as Medicare and other public payers. Encouraging efficiency through competition or price setting is difficult when markets have few suppliers and when purchasers focus on isolated services rather than on the totality of a patient's care. Because time is now short, Medicare should take the lead in addressing these issues, yet look for opportunities to learn from and work with other payers when possible.

Wise stewardship of the program goes beyond controlling its cost. The quality and safety of the care beneficiaries receive are not assured. Evidence shows that beneficiaries do not always receive the care they need, that too often the care they do get is not of high quality, and that in some places where they receive more care there are also poor outcomes. This variation in care does not help beneficiaries and is often costly to the program. Patient safety also continues to present a troubling picture. Moreover, paying providers the same regardless of the quality of their care perpetuates poor care for some

beneficiaries, misspends program resources, and is unfair to high-performing providers.

Within this broader picture, the Commission's goal is to recommend policies that increase the value of the Medicare program for beneficiaries and taxpayers. In this report, we examine some new directions to increase the value of the Medicare program. We examine increasing accountability and care coordination by measuring physician resource use and by developing models of care coordination. We consider how information can be improved by describing the array of offerings in the new Part D prescription drug program and determining the information beneficiaries are using when evaluating them. We also discuss ways to improve pricing accuracy in several sectors and explore using cost-effectiveness analysis. Both are potential ways to increase value for the program.

Many of these initiatives require more reliable and more current data than are now available. Making these data routinely available may require a significant investment, but the return may be substantial and an important step forward for policymakers, providers, and beneficiaries in the long run.

Improving accountability and care coordination

Providers must be held accountable for the quality of care they provide and the resources consumed in providing that care. But, perverse payment system incentives, lack of information, and fragmented delivery systems are barriers to full accountability. In a fee-for-service system, doing more pays more, regardless of the quality or efficacy of what is done. Most providers may wish to provide high-quality care to uphold professional standards and to satisfy patients. When payment for a service is fixed, they also may want to control their own costs for producing the service to improve their financial performance. But for a provider to be held accountable, the quality of the care a provider delivers and the cost to the system for that care must be measured and communicated. In addition, providers may refer patients to other parts of the delivery system dictating further resource use. To improve quality and efficiency, a provider's accountability could be extended to all of the resources used for a

particular patient during a specific episode of care. The autonomy that providers value must be accompanied by accountability to increase value in the Medicare program.

Fee-for-service payment systems also are barriers to care coordination among providers and to care management for beneficiaries with complex needs. Payment is directed to each provider separately and emphasizes treatment for acute conditions and face-to-face care. Overcoming those barriers will require a new model of care and payment.

Measuring physician resource use

A step toward improving accountability is measuring physician resource use. In March 2005, the Commission recommended CMS provide individual physicians with information on their resource use relative to their peers in a confidential manner. In Chapter 1, we examine one method to achieve this—episode groupers. An episode grouper links all the care a beneficiary receives that is related to a particular spell of illness or episode and adjusts for patient characteristics. We describe how these tools might work using Medicare data and give some examples of results thus far.

We applied two commercially available episode groupers to a 5 percent sample of Medicare claims and found:

- Although the groupers differ in their logic, for most conditions they generally agreed on the number of episodes created and the types of services in episodes, but the dollars allocated to episodes differ in some cases.
- The vast majority of episodes and quality indicators could be attributed to a physician. Whether that physician could or should be held accountable for episode resource use and quality is a more complicated question that we will address in future reports.
- Resource use and quality vary across the 13 metropolitan statistical areas tested, and resource use varies more than quality. It is important to use per capita expenditures alongside per episode costs to get a complete picture of variation in resource use because a provider could be efficient over an episode but provide many episodes per beneficiary.

We also describe how risk-adjustment techniques account for overall patient severity so that physicians who predominantly treat sicker patients are compared fairly to

physicians who treat healthier patients. Additional analyses at the individual physician level will further elucidate these results.

Care coordination

Care coordination has the potential to improve value in the Medicare program. Even if individual providers deliver care efficiently, overall care for a beneficiary may be inefficient if providers do not coordinate across settings or assist beneficiaries in managing their conditions between visits. Beneficiaries with multiple chronic conditions may benefit the most from care coordination as they do not always receive necessary care and are often high cost.

In Chapter 2, we explore strategies fee-for-service Medicare could use to better coordinate care. (Incentives for care coordination already exist under Medicare Advantage.) To inform our discussion, Commission staff interviewed a wide variety of experts and organizations involved in care coordination, including many participating in CMS pilot and demonstration programs. Successful programs include a care manager—usually a nurse—and an information system. Some involve the beneficiary’s primary physician. We also analyzed Medicare claims data to understand the prevalence, cost, and patterns of care for beneficiaries with a subset of chronic conditions.

We outline for discussion two illustrative models of integrating care coordination into fee-for-service Medicare for beneficiaries with chronic conditions. In the first, Medicare could contract with group practices to furnish care coordination services. Incentives for care coordination would only go to provider groups capable of integrating information technology and nurse care managers into patient clinical care. In the second, Medicare would contract with stand-alone care management organizations that have the requisite information technology and care manager capacities and can coordinate with the beneficiary’s physician. In both models, contracting organizations would agree initially to guarantee some level of cost savings as a condition of payment.

Additionally, to encourage physicians to work with care coordination programs, CMS could pay a beneficiary’s primary physician or the group for time spent with the care manager. This additional payment may be less necessary in the group model than in the second model. However, if these two models coexisted, providing the fee only to nongroup physicians could disadvantage those working

in groups. In both models, the payments would be added through the physician fee schedule which would entail some reallocation of payments among services.

In addition to these models, Medicare may consider ways to encourage care coordination through payments within the fee schedule's evaluation and management services. In previous reports to the Congress, the Commission has also recommended pay-for-performance initiatives for physicians, which could complement care coordination by improving quality.

Improving the accuracy of prices

The prices Medicare pays for individual products may not be accurate. Theoretically, a price matches the marginal cost of an efficient provider in furnishing a service. Truly competitive markets can identify such prices, but health care markets are imperfect because of asymmetric information, moral hazard, adverse selection, and limited supplier competition among other factors. Medicare generally sets the prices it will pay for services administratively.

Improving payment accuracy in the hospice payment system

In Chapter 3, we assess whether the hospice payment system could be modified to improve payment accuracy. Medicare's hospice benefit has grown dramatically, with the days of hospice care doubling between 2000 and 2004. As the number of users has grown, the population of hospice patients has become more diverse. The payment system was developed from a demonstration project that analyzed the costs of hospice care for patients with terminal cancer diagnoses who lived in the community. Today, more Medicare hospice patients have noncancer than cancer diagnoses and hospice patients live in nursing homes as well as in the community.

The growth in spending and use, together with changes in the hospice population, suggest that the hospice payment system may need refinement to improve payment accuracy. To test possible payment refinements in light of limited Medicare data, the Commission contracted with RAND to test the ability of case-mix adjusters to improve the predictive power of the hospice payment system. We used data from one large chain of hospices for this analysis because they contained detailed utilization information not available from Medicare administrative records. We found that adding case-mix adjusters to the number of days in the current payment categories did not improve the

ability to predict variation in labor costs associated with patient visits. We also found that payment accuracy might be improved by paying more for the first and last days of the stay than for the intervening days. However, this analysis is only suggestive, as it used only one chain's data and because patient-level data on all costs of care (such as drugs) were not available from this chain.

More detailed data from hospice agencies on the cost of services, the services provided, and the patients served are needed to assess the relationship between patient characteristics and hospice services. Analysis of those data, along with an analysis of payment adequacy such as the Commission undertakes for other sectors, could inform consideration of Medicare hospice payment policies.

Keeping physicians' practice expense rates up to date

Inaccurate payment rates can distort the market for physician services. Over time, if certain types of services become undervalued relative to others, the specialties that perform those services may become less financially attractive, potentially affecting the supply of physicians. At the same time, overvaluing services may stimulate overproduction of some services.

Chapter 4 reviews the data sources that CMS uses to derive practice expense payments—an important determinant of pricing accuracy in the physician fee schedule. One source, a multispecialty survey on the costs of operating physicians' practices, dates from the 1990s. Several specialties have submitted more recent data, but updating the physician fee schedule using newer data from some but not all specialties could introduce significant distortions in relative practice expense payments across specialties. Collecting new data would require deciding if Medicare or provider groups will sponsor the data collection, if participation would be voluntary or mandatory, and whether a nationally representative sample of providers would be sufficient.

We recognize that collecting and updating practice cost data will substantially increase demands on CMS. As it will improve the accuracy of Medicare's payments and achieve better value for Medicare spending, the Congress should provide CMS with the financial resources and administrative flexibility to undertake the effort.

In addition to estimating the type and quantity of direct inputs for each service, CMS also estimates prices for each of the inputs. To improve the accuracy of input prices,

CMS could revisit the assumptions it uses to estimate the per service cost of medical equipment, particularly the assumption that equipment is operated 50 percent of the time. If this is an underestimate, Medicare's per unit payment is too high. We conducted a survey of imaging providers in six markets and found that magnetic resonance imaging (MRI) machines in those markets are used more than 90 percent of the time a practice is open and computed tomography (CT) machines are used more than 70 percent. CMS also assumes that providers pay an interest rate of 11 percent per year when borrowing money to buy equipment, but more recent data suggest a lower interest rate may be more appropriate.

When CMS begins using direct inputs to value imaging services, changing the assumptions of equipment use and interest rates would reduce payment rates for MRI and CT services. Because changes to practice expense relative values must be budget neutral, these savings would be redistributed among other physician services.

Providing better information and the tools to use it

Medicare policymakers and administrators need better information both to formulate better policies and to create tools to give useful information to beneficiaries and providers. At the same time, providers need better information to provide quality care and to reduce or limit growth in resource use; beneficiaries need information to maintain a healthy lifestyle and to choose the highest quality care at lowest cost. Closing the gap between the information needed and the information available is a formidable challenge for the Medicare program, as it is for the health care system in general.

Process measures for home health agencies

In Chapter 5, we discuss improving the information available on the quality of care in home health agencies by adding process measures. In March 2005, the Commission suggested that additional measures should be developed to complement existing quality measures in home health.

As a step toward exploring new measures, we convened a panel of researchers, quality measurement experts, and home health providers to identify best practices. We asked the panel to focus on fall prevention and wound care. They gave us examples of best practices, such as determining whether patients' blood pressure changes significantly while the patient is standing to assess the risk of falling or developing a standard protocol to contact a physician when a wound fails to heal.

The next step is creating measures based on the practices. For example, a process measure for a blood pressure practice would include a precise description of who should receive this care, at what time and how often should it occur, a very specific definition of the practice itself, and rules for excluding patients who should not receive the care. Some additional data would have to be collected to support such measures. We urge CMS as part of its ongoing efforts to develop and test such measures and to add them to home health's measure set if they are valid and reliable.

Improving payment for outpatient therapy services

Spending for outpatient therapy services—physical therapy, occupational therapy, and speech-language pathology services—has almost doubled since 2000, reaching \$3.9 billion in 2004. Spending per beneficiary varies considerably, but there is no information on whether this reflects greater patient need or simply greater provision of services. In Chapter 6, we consider the key question arising for this rapid growth and large variation: How can Medicare allow beneficiaries to get the services they need without paying for services that are medically unnecessary?

CMS requires better information about the therapy needs of beneficiaries and their outcomes to consider alternative payment methods that will increase the value of the therapy services it purchases. CMS will need to develop patient assessment tools that gather risk factor information and outcomes measures. Pilot programs would be a good way for CMS to test alternative ways to collect this information. The data gathered from the pilot could be used to establish benchmarks for therapy practice and develop risk-adjustment factors for a new payment method. Options for a new payment method include paying for a bundle of therapy services that varies by patient condition or developing an incentive payment system that encourages therapists to both provide high quality care and be conservative in furnishing services. For either option, an effective risk-adjustment system would be necessary.

On January 1, 2006, the therapy caps that limit program spending per beneficiary were reinstated. As required by the Congress, CMS implemented an exceptions process so that beneficiaries can get approval for medically necessary services that exceed the limits. CMS will need to monitor

this process to ensure that the additional services beyond the caps are medically necessary.

What benefits are available in Part D?

The biggest change in Medicare in recent years is the advent of the prescription drug benefit (Part D). Chapter 7 presents information on the organizations that have entered the market and the benefits they offer. This information is essential for policymakers to understand how the benefit is becoming available to beneficiaries. Beneficiaries need to understand what drugs are covered under what conditions and their resulting cost sharing to make wise decisions about plan enrollment.

In Part D, prescription drug plans (PDPs) deliver Medicare prescription benefits and assume some risk for the drug spending of their enrollees. For 2006, nearly 80 organizations are offering 1,429 PDPs:

- 9 percent use the defined standard benefit, 48 percent have the same actuarial value as basic coverage but a different benefit design, and 43 percent include enhanced benefits (basic coverage plus some supplemental coverage).
- 15 percent include coverage in the defined standard benefit's coverage gap, typically for generic drugs.
- 66 percent have no deductible or a reduced deductible.
- Nearly 90 percent of the 1,429 PDPs are offered by 16 organizations and often use the same benefit structure, cost sharing, and formulary.

Medicare Advantage–Prescription Drug plans (MA–PDs) are also available, but access to specific plans varies depending on the county in which a beneficiary lives. Overall, there are 1,303 MA–PDs:

- 7 percent use the defined standard benefit, 29 percent have actuarially equivalent basic benefits, and 64 percent include enhanced benefits.
- 28 percent include coverage in the coverage gap, typically for generic drugs.
- 83 percent have no deductible or a reduced deductible.
- Nearly 40 percent of MA–PDs charge no additional premium for Part D coverage beyond what they charge for Parts A and B services.

Part D plans use formularies to manage the cost and use of prescription drugs. Most Part D plans have tiered copays with different copays for preferred drugs, nonpreferred brands, and a specialty tier for expensive drugs, biologicals, and injectables. Plans usually apply at least some drug utilization tools—such as prior authorization, step therapy, and quantity limits—to selected drugs. Plans use these tools for drugs that are expensive, potentially risky, subject to abuse, or to encourage use of lower cost therapies. The median plan applies prior authorization to 9 percent of the drugs on its formulary and uses step therapy for a very small but concentrated share of drugs. The median formulary covers about 1,000 drugs, but formulary size varies somewhat based on plan characteristics and the number of drugs listed does not necessarily reflect beneficiary access to needed medications. Off-formulary drugs may be covered through a plan's nonformulary exceptions process, and on-formulary drugs may not be covered if a plan does not approve a prior authorization request.

How are Medicare beneficiaries learning about Part D?

In Chapter 8, we describe results from a study of how Medicare beneficiaries learned about the Medicare drug benefit and made choices. The study consisted of a beneficiary survey, focus groups with beneficiaries and their family members, and structured interviews with beneficiary counselors.

Of those beneficiaries in our February/March survey who knew about the drug benefit and did not have employer-sponsored drug coverage, 30 percent reported that they had enrolled in Part D and 16 percent were considering doing so. Those who signed up for the benefit reported doing so to save money on current drug costs and protect themselves in case their drug costs went up in the future. Beneficiaries in our focus groups seemed less concerned about insuring themselves against future drug expenses. Instead they focused on whether Part D would cover their current drugs and save them money. When choosing a particular plan, beneficiaries considered drugs on the formulary, monthly premiums, overall savings, ability to use their local pharmacy, and the reputation of the company offering the plan.

Beneficiaries who have enrolled or are considering enrolling in a plan have spent considerable time studying their options. More than two-thirds of beneficiaries surveyed researched and made decisions about signing up

for Part D by themselves. However, those who had signed up were twice as likely to have had help than those who were not considering enrolling. Many beneficiaries have discussed their choices with family, friends, and insurance agents; fewer beneficiaries have used resources like the Medicare toll-free help line, the Medicare plan finder, or counselors. Beneficiaries found the large number of choices available to them confusing, but a majority in our survey said they had enough information to make a decision.

About 34 percent of survey respondents without employer-sponsored drug coverage said they did not plan to sign up for the benefit. They most frequently said it was because they had other sources of drug coverage or they had few current medical expenses—about half use two or fewer drugs on a regular basis. Other respondents were either auto-enrolled into plans or had not yet decided what to do.

Beneficiary advisors reported a strong demand for their services and that their offices were overwhelmed by the high volume of calls they received. Noting that they only tend to see beneficiaries with problems, counselors reported that beneficiaries were confused by the number of plan choices and the variation in benefit structure. Counselors said that their outreach efforts led to increased contacts with beneficiaries dually eligible for Medicare and Medicaid and disabled beneficiaries. However, they were less successful in reaching other individuals eligible for the low-income subsidy.

Changes in the Medicare Advantage program

In Chapter 9, we discuss three important changes for the Medicare Advantage (MA) program in 2006 and the resulting choices for beneficiaries. First, plans now submit formal bids and CMS compares the bids with benchmarks to determine payment. Second, the program has two new plan types: regional preferred provider organizations (PPOs) and special needs plans (SNPs). Third, the introduction of Medicare's Part D prescription drug benefit changes the competitive environment for MA plans.

Medicare beneficiaries have more MA plans to choose from in 2006. Many of those plans will have both low premiums and enhanced benefits. Specific findings for 2006 include:

- 99.6 percent of beneficiaries have MA plans available to them.
- 88 percent have regional plans available.

- Half of all beneficiaries can choose from among 16 or more MA plans, and 5 percent of beneficiaries can choose from over 40 plans.
- About 95 percent of bids were under the benchmark; thus almost all plans have funds to rebate to members.
- The higher the rebates, the more benefits plans can offer. Local HMOs and PPOs tend to have higher rebates. Because such plans are more common in urban areas, beneficiaries in those areas tend to have access to more benefits than beneficiaries in rural areas.
- Zero-premium MA plans will be available to 86 percent of Medicare beneficiaries in 2006.
- Almost three-quarters of beneficiaries will have access to zero-premium plans that also include the Part D benefit.

Chapter 9 also discusses SNPs, which provide a common framework for many of the existing plans for special needs beneficiaries and expand beneficiaries' access to and choice among MA plans. In 2004, there were just 11 SNPs; in 2005, 125 SNPs; and in 2006, the number doubled to 276.

SNPs offer the potential to improve care coordination for dual eligibles and other special needs beneficiaries through unique benefit design and delivery systems. However, there is cause for concern that many SNPs are not designed to better coordinate care for special needs beneficiaries. SNPs, even dual-eligible SNPs, are not required to contract with states to provide Medicaid benefits. It is unclear how SNPs that do not integrate Medicaid can fulfill the opportunity to better coordinate the two programs.

Better targeting of technology

A pressing issue for Medicare is that technology diffuses rapidly without sufficient analysis or guidelines that target its use to the patients who will benefit the most. Technologies like prescription drugs, surgeries, and devices are usually developed to focus on a specific problem and the evidence supporting their use is usually based on specified patient populations. However, technologies often expand into patient populations where the benefits of therapies are less clear.

Medicare's use of clinical and cost-effectiveness information

In Chapter 10, we consider how results from cost-effectiveness studies for the same service vary. We review methods and results from cost-effectiveness studies published in the medical literature for two Medicare-covered services—screening for colorectal cancer and implantable cardioverter defibrillators.

The review illustrates that there are both opportunities and challenges in using cost-effectiveness studies in Medicare. For one service, despite differences in methodology, there is general agreement in the literature that the service is cost effective. By contrast, the literature for another service does not provide a clear indication of the service's cost effectiveness because the results vary substantially across studies. The two main factors contributing to this variation are differences in the clinical characteristics of the patients and the differing effectiveness of the services as measured in major clinical trials.

The Commission plans to explore ways to develop the infrastructure to consider information on both the clinical and cost effectiveness of a service. We will look at issues such as whether Medicare should solely sponsor and fund the research or whether a public-private partnership is appropriate. We also intend to explore other ways Medicare can use this information such as by:

- providing cost-effectiveness information to beneficiaries and health professionals;
- using cost-effectiveness analysis to prioritize pay-for-performance, screening, and disease management initiatives; and
- using cost-effectiveness information in Medicare's rate-setting process.

Review of CMS's preliminary estimate of the physician update for 2007

Appendix A fulfills the Commission's requirement to review CMS's estimate of next year's payment update for physician services. CMS's preliminary estimate is -4.6 percent, the maximum negative update permitted under a formula defined in statute. This is the third consecutive estimate of such a large negative update, though a negative update has not occurred since 2002 as the Congress has overridden the formula. We find CMS uses estimates in calculating the update that are consistent with recent trends. CMS's preliminary estimate is that the volume of physician services grew by 7.5 percent in 2005, following growth of 8.0 percent in 2004. Volume growth exceeding growth in the economy is an important factor leading to negative updates. The Commission is working on a mandated report for the Congress that will consider alternatives to the current update formula. The report is due in March 2007.

Conclusion

In this report, the Commission has started to develop several approaches toward increasing the value of the Medicare program. These approaches embody certain principles for evaluating policies: promoting accountability and care coordination, creating better information and tools to use it, and setting accurate prices. In addition, the Commission tries to further societal objectives and goals and assure that policies protect beneficiaries from the high cost of needed care. Solutions that add value to the program are our goal as we continue to address issues facing Medicare and start to address the problem of long-term sustainability. ■

CHAPTER

1

**Using episode groupers to
assess physician resource use**

Using episode groupers to assess physician resource use

Chapter summary

Physicians are central to the delivery of all types of health care. Research on variation in the use of services in Medicare implies that physicians and other providers may not always be directing resources efficiently. Some service use may not lead to higher quality care and could be unnecessary. As both expenditures and volume of services continue their steep climb, physicians are also central to efforts to use Medicare resources as efficiently as possible.

The Commission recommended in March 2005 that CMS use Medicare claims data to measure fee-for-service physicians' resource use and to provide individual physicians with confidential information on their resource use relative to their peers. Many private health plans already measure and compare physicians' resource use using episode groupers, which group claims into clinically distinct episodes adjusted for patient severity. Plans also share this information with physicians in their networks. The Commission is exploring the use of episode groupers on Medicare claims to better understand how these tools might work for Medicare. Because efficiency is defined both by resource use and

In this chapter

- Data and methods
- Results
- Attributing episodes to physicians
- Comparison of resource use and quality across MSAs
- Future work

quality, we are also examining quality indicators in our analyses. In this chapter, we describe our findings from applying two episode grouper tools to a nationally representative, randomly selected 5 percent sample of Medicare claims. In general, the analysis shows that it is possible to use these types of episode groupers as one tool to measure physician resource use at the aggregate metropolitan statistical area (MSA) level, but some technical and analytic issues will need to be addressed as Medicare considers using these groupers to understand physician resource use.

Differences between the groupers. The two groupers we used—Episode Treatment Groups (ETGs) and Medstat Episode Groups (MEGs)—differ in their logic but also have some similarities. Both groupers use diagnosis codes to begin episodes and to assign claims to those episodes. In addition, both acknowledge disease severity and complexity when creating episodes. ETGs use the presence of specific procedures or comorbidities to further classify episodes. MEGs allow a single episode type to be broken into three stages based on the progression of the condition. Regardless of their differences, the groupers agree on the number of episodes created for most conditions. The ETG grouper was able to assign 90 percent of claims to 24 million episodes. These claims accounted for 94 percent of total dollars. The MEG grouper was able to assign 80 percent of the same sample of claims to 30 million episodes. These claims accounted for 96 percent of total dollars.

Risk adjustment. We discuss how risk-adjustment techniques can be used to further adjust episodes for overall patient severity. Risk adjustment can be used to try to avoid characterizing physicians who predominantly treat sicker patients as high resource use physicians compared with those who treat healthier patients.

Attribution. To apply relative resource use tools at the individual physician level, one must identify a method for attributing episodes and performance on quality indicators to individual physicians. This is not necessarily the same as identifying the physician who was actually directing care, but

is instead a statistical analysis to identify the physician responsible for providing most of the services furnished to a given beneficiary. We found that the vast majority of episodes can be attributed to a physician using either evaluation and management (E&M) spending or visits. About 90 percent of our selected episodes could be assigned to one physician who billed Medicare for 30 percent of E&M spending in an episode. We also tested multiple attribution rules. We found that only 11 percent of episodes had multiple physicians providing at least 35 percent of care (measured by spending on E&M services).

The vast majority of quality indicators can also be attributed to one physician using attribution rules based on either E&M visits or dollars. About 93 percent of our quality indicators could be assigned to one physician who billed Medicare for 35 percent or more of E&M visits associated with an indicator. We also tested multiple attribution rules. We found that only 10 percent of quality indicators had multiple physicians providing at least 35 percent of care, as measured by E&M visits.

Variation across MSAs. To better understand variation among different units of analysis, we applied the groupers and the quality indicators to 13 MSAs. We found that beneficiaries' use of resources and the quality of their care vary across MSAs, but the variance is greater for resource use. Among our selected conditions, we saw MSAs where the care provided was 35 percent less costly than the national average and MSAs where it was 41 percent more costly than the national average on a per episode basis. Quality scores ranged from 16 percent lower than the national average to 18 percent higher than the national average. Interestingly, we found that certain MSAs known for high resource use have low per episode costs for certain types of episodes. However, these MSAs have higher resource use when calculated on a per capita basis, partly because they tend to have more episodes per patient.

Performance on the quality indicators shows room for improvement nationally. The scores generally clustered around the national average or a

little above in the MSAs we studied. Performance on different conditions also varies within MSAs. In addition, our quality analysis shows that some indicators may not be useful because of limited sample size or occurrence. Further, how indicators are weighted affects relative MSA scores and rankings. In summary, we find that using claims-based quality indicators is possible, but a broader set less related to process measures is desirable.

The second step of our analysis (using a 100 percent sample of Medicare claims in several geographic regions) will provide information on the feasibility of applying episode groupers and quality indicators at the individual physician level. Among the issues we will address in the upcoming research are the minimum number of episodes or quality indicators needed to evaluate a physician's performance and the application of risk-adjustment techniques. ■

Background

Physicians are central to the delivery of all types of health care. Medicare beneficiaries rely on them to diagnose their health conditions and to recommend the timing and type of services they need. As both expenditures and volume of services continue their steep climb, physicians are also central to efforts to use Medicare resources as efficiently as possible.

Research on variation in the use of services in Medicare implies that physicians and other providers may not always be directing resources efficiently. Fisher and colleagues (2003) found significant regional variation in the amount and type of services beneficiaries receive with no discernible difference in quality of care. Some service use may not lead to higher quality care and could be unnecessary.

Over the last few years, the Commission has sought a greater understanding of the interaction between resource use and quality of care, which together define efficiency. We have identified quality measures for various providers and have recommended their use to distinguish among providers for payment purposes (MedPAC 2005). We have also explored resource use and found that the private sector is using a variety of tools to assess resource use by physicians and other providers. Plans use this type of information to provide confidential feedback, build tiered networks (with lower copayments for patients who see more efficient physicians), and create payment incentives (with higher payments for more efficient physicians, and vice versa). At times, information on resource use is used along with information on quality. The goal is generally to decrease the costs of care, while maintaining or improving quality.

The Commission recommended in March 2005 that CMS use Medicare claims data to measure physician resource use and share the results with physicians confidentially to educate them about how they compare with their peers.

Episodes of care emerged as a concept in the mid-1980s in studies that observed that health care is typically provided in a series of separate but related services, and that all of these services should be included in a comprehensive analysis of health care delivery. An episode of care comprises a series of clinically related health care claims over a defined time period, such as all claims related to a patient's diabetes (Hornbrook et al. 1985). Episodes can comprise all types of health care claims: inpatient

admissions, physician visits, other outpatient services, and prescription drugs. Patients can have multiple episodes at any given time, such as concurrent diabetes and pneumonia episodes. In recent years, commercial software packages have emerged that comb through administrative claims data using clinical algorithms to create episodes of care.

We describe our findings from applying two of these grouper tools—Episode Treatment Groups (ETGs), developed by Symmetry Health Data Systems, and Medstat Episode Groups (MEGs), developed by Thomson Medstat—to a nationally representative, randomly selected 5 percent sample of Medicare claims.¹ We also examine a set of claims-based indicators developed by the Commission—the Medicare Ambulatory Care Indicators for the Elderly (MACIEs)—using the same 5 percent sample of claims (MedPAC 2006).

We applied the ETG and MEG groupers throughout the analysis to a 5 percent sample of Medicare claims. However, for simplicity some of the findings will be presented for MEGs only. We also describe our findings from the application of the MACIEs. Our discussion focuses on:

- **Broad findings**—The number of episodes created, the total and average resource use by episode, and variation in resource use for each of our selected episodes.
- **Addressing episode severity and complexity**—The grouping logic, risk-adjustment mechanisms that sort patients into episodes, and relative costs and types of services (e.g., inpatient, evaluation and management, and post-acute services).
- **Attribution**—The ability to attribute episodes and quality indicators to individual physicians using different assumptions and the type of specialists to which episodes and quality indicators are attributed.
- **Resource use and quality performance by region**—The variation in resource use and quality across selected MSAs and the drivers of that variation.

Future research will use the lessons learned from these analyses to measure and evaluate resource use for individual physicians using a 100 percent sample of Medicare claims in six selected metropolitan statistical areas (MSAs). Using all claims for an area will allow us to construct physician caseloads and to determine the

Construction of episodes

Not all episodes are suitable for further analysis. Both of the groupers we used—Episode Treatment Groups and Medstat Episode Groups—rely on the use of a clean period to determine when an episode is started and finished. If an individual does not have a claim related to a specific episode for a specific period of time, then the episode is closed and considered to have a clean finish. These clean periods can vary in length from 30 days for certain acute episodes to 365 days for chronic conditions.

Strictly speaking, chronic conditions by their very nature have no clean period, but for analytic purposes, both groupers close chronic episodes after 365 days.

Complete episodes are identified by looking both backwards and forwards around the window of the

claims under analysis. In this analysis, we look at claims six months prior and subsequent to our analysis window to identify complete episodes. If an episode did not have a clean start or a clean finish, it was deleted from our analysis.

It is also important to note that episodes for a specific beneficiary can overlap. For example, a beneficiary with a 365-day chronic episode of coronary artery disease can also have a shorter episode of sinusitis within that same time frame. However, the costs from any given claim can only be assigned to one episode. Clinical algorithms decide to which episode claims will be assigned, particularly for patients with multiple chronic conditions. ■

feasibility of developing overall physician-level indicators of resource use and quality of care.

Data and methods

We analyzed a 5 percent sample of Medicare claims data for calendar years 2001, 2002, and 2003 with both groupers. We used claims from the hospital inpatient, hospital outpatient, skilled nursing facility (SNF), home health, and physician/supplier (including laboratory claims) sectors.²

We do not have any prescription drug claims because this analysis is focused on a period prior to the 2006 implementation of Medicare's prescription drug benefit. Prescription drug costs are an important component of total costs for many episodes, and the lack of these data may limit our ability to see the whole picture of physician performance. However, recent research found that even without pharmacy claims, analysis can draw valid conclusions about performance for some conditions (Thomas 2006a).

Of the 204 million claims processed, the ETG grouper was able to assign 184 million (90 percent) of the claims to 24 million episodes. These claims accounted for 94 percent of Medicare payments for the sampled claims. By contrast,

the MEG grouper was able to assign 163 million (80 percent) of the same claims to 30 million episodes. These claims accounted for 96 percent of Medicare payments for the sampled claims. We saw no single identifiable pattern among the claims that were not grouped to episodes, although many of them were made up of ancillary services from the physician and outpatient files. Home health records were less likely to be grouped into episodes by either grouper.

We selected only clean episodes (the text box describes our methods in more detail) and deleted any outlier episodes with unusually high or low values to minimize any potential bias in our results. We tested a variety of approaches for trimming outliers. For this analysis we chose to delete the top and bottom percentile of each episode based on total payments—any episode for which total payments were greater than the 99th percentile or less than the 1st percentile. We also deleted any episode for which total payments were less than \$30.³ We chose this method because it removed extremely high and low outliers while not reducing sample size excessively.

Standardized payments

We standardized payments to help compare the resources in each episode. Standardizing excludes variation in resource costs due to geographic differences in input costs or policy considerations (e.g., teaching payments).

For example, Medicare will pay a community hospital in a rural area that is discharging a patient treated for a stroke less than a major teaching hospital in an urban area because of differences in the wage index, disproportionate share, and indirect and direct graduate medical education (IME/GME) payments. For this analysis, we want a hospital admission for stroke in all areas to have the same payment rate. We then can focus on the underlying differences in resource use due to utilization rates and practice patterns.

Payment rates in some settings were easier to standardize than in others. For inpatient prospective payment system (PPS) hospitals, it was a relatively straightforward task to link each diagnosis related group (DRG) to the appropriate standardized base payment and then multiply by the weight for that DRG. For physician claims, we matched the line item on the physician claim to the physician fee schedule relative value file and multiplied by a conversion factor.

We also developed ways of addressing differences in payment formulas that are more difficult to standardize. Among these are laboratory payments and payments under the SNF PPS. For a more detailed description of how payments were standardized, see the text box on page 25.

Selected conditions

Because each grouper classifies claims into more than 500 discrete episodes, assessing resource use using all episodes from both groupers would be overwhelming. For this exploratory analysis, we focused on a subset of conditions particularly relevant to the Medicare population, including both acute and chronic conditions. Using both groupers, we chose the subset of conditions based on their prevalence, total and per beneficiary resource use, variation in resource use within episodes, and the availability of MACIE quality indicators.

There is considerable agreement among ETGs and MEGs on the most prevalent and costly conditions among the Medicare population: coronary artery disease (CAD), hypertension, diabetes, chronic obstructive pulmonary disease, stroke, and congestive heart failure (CHF). Both groupers assign most of these conditions to the top decile for total resource use and prevalence. The results of the two groupers overlap less for conditions that occur less frequently. Though we have selected a mix of chronic and acute conditions, the labels chronic and acute can be misleading. Many patients with chronic conditions can

have acute events. Patients with CAD have heart attacks and patients with cerebral vascular disease have strokes. There is also overlap among episodes. Patients with year-long CHF episodes can have episodes for other conditions in the same time period.

We also determined whether the MACIEs include quality measures for these episode types. We often have quality measures for chronic conditions. The text box on p. 10 describes our quality measures in greater detail. Some episodes have no corresponding quality measures, and other episodes need to be combined to be compared to quality indicators for a specific condition. For example, the MACIEs make no distinction between type 1 and type 2 diabetes, yet the ETG and MEG groupers sort patients into different episodes on this basis.

Results

In this section, we describe the results of applying the groupers to the selected conditions for several analytic purposes. To provide a context for the results of the analysis, we first describe how the groupers differ in how they assign claims to episodes. We then describe how the groupers address patient severity and complexity. For simplicity we describe most findings solely from MEGs, but we did conduct parallel analyses using ETGs.

As we used two different groupers on the same set of claims, we could see whether they grouped claims in similar or different ways. This comparison allows us to begin to identify differences and similarities in grouper logic. Both groupers use diagnosis codes to begin episodes and assign claims to those episodes. Both groupers distinguish clinical conditions in terms of patient severity and complexity. ETGs use the presence of specific procedures or comorbidities to create distinct episodes. MEGs allow selected episodes to be broken into three stages based on the progression of the condition. In some cases, the types of episodes created by each grouper for the same disease differ. For example, MEGs have two diabetes episodes, one each for type 1 and type 2 diabetes. However, ETGs have six episodes for diabetes: types 1 and 2 diabetes with and without comorbidities and diabetic retinopathy with and without comorbidities. ETGs have up to 15 different episodes for CAD, depending on the progression of the disease and the procedures performed, whereas MEGs have a single episode. MEGs, however, address severity by stage of disease, such as breaking a

Medicare Ambulatory Care Indicators for the Elderly

For the physician resource use analysis, we used the Medicare Ambulatory Care Indicators for the Elderly (MACIEs) to measure quality. The MACIEs were developed to assist in analyzing Medicare quality and access using measures that were clinically meaningful and could feasibly be analyzed from claims data. In May 2004, the Commission convened an expert panel of physicians, clinicians, and researchers to review and update the original set. The experts reviewed clinical evidence from existing guidelines, other organizations' efforts using ambulatory indicators, and the limits of claims data. The indicators were revised to reflect this review.

The MACIEs are designed to reflect basic clinical standards of care for common medical diagnoses. They focus on two types of measures: the percentage of beneficiaries who 1) receive necessary services for their diagnoses and 2) have potentially avoidable hospitalizations directly related to their diagnoses.

Necessary services are defined as routine care that has benefits that outweigh risk, that has benefits that are likely and substantial, and that physicians have judged improper not to recommend. Measures of potentially avoidable hospitalizations include use of emergency department services and inpatient hospitalizations that might have been averted had patients received better ambulatory care.

For the MACIEs, we selected medical conditions that are prevalent among the elderly population, have effective medical treatment available, and are readily identifiable from diagnoses codes on Medicare claims.

Our physician resource use analysis used the MACIE set to measure the quality of care for beneficiaries with breast cancer, colon cancer, coronary artery disease, diabetes, congestive heart failure, depression, hypertension, chronic obstructive pulmonary disease, and stroke.

The MACIEs reflect minimum standards of acceptable care for certain diagnoses. For example, they include lipid testing for people with coronary artery disease. The MACIEs are not intended to show optimal care and can not account for reasons why patients do not receive necessary care. Needed services may not be provided for a number of reasons, including problems accessing the health care system, failure of providers to perform or recommend services, or failure of beneficiaries to follow provider recommendations.

The MACIE data analysis requires two years of claims data for each beneficiary cohort in order to check for service use within a specified amount of time (e.g., eye exam within a two-year period for diabetics). Therefore, the data set is restricted to the population of beneficiaries who were continuously in Medicare fee-for-service during the two-year study period. Beneficiaries were excluded from the data set if they died, were newly enrolled in Medicare, used hospice care, or were in managed care plans during the study period. Beneficiaries younger than age 65 were also excluded from the sample. For purposes of this chapter, we tracked these quality indicators at the national and the metropolitan statistical area levels. ■

CAD episode into three stages depending on the severity of the condition.⁴

For certain conditions the two groupers agree fairly well on the number of episodes created. For example, ETGs create 74,045 CHF episodes and MEGs create 78,124 CHF episodes with the sample of claims in our analysis (Table 1-1). Similarly, ETGs create 458,212 hypertension episodes compared with 415,151 created by MEGs. The largest difference among our selected conditions is for

urinary tract infections in which ETGs create 137,684 episodes, 29 percent more than the 106,900 created by MEGs.

The two groupers also vary on the number of dollars they allocate to these episodes. In general, ETGs have higher (sometimes substantially higher) average total payments per episode. Average per episode payments for CHF in ETGs (\$3,161) are more than twice those for MEGs (\$1,394). Similarly, average per episode payments for

**TABLE
1-1**

Medicare claims classified into MEGs compared with ETGs

Condition	MEGs			ETGs		
	Number of episodes	Total spending (in millions)	Average spending	Number of episodes	Total spending (in millions)	Average spending
Coronary artery disease	201,936	\$622	\$3,079	233,673	\$934	\$3,998
Bacterial pneumonia	74,890	332	4,427	68,704	210	3,054
Cerebrovascular disease	107,561	295	2,743	90,630	255	2,811
Essential hypertension	415,151	175	423	458,212	215	469
Congestive heart failure	78,124	109	1,394	74,045	234	3,161
Urinary tract infections	106,900	89	830	137,684	72	521
Diabetes:						
Type 1	34,196	28	833	54,348	98	1,798
Type 2	157,337	83	526	142,106	90	636
Cholecystitis and cholelithiasis	16,959	77	4,549	19,970	85	4,261
Cancer:						
Prostate	47,211	67	1,410	34,484	80	2,330
Breast	23,421	55	2,341	28,753	69	2,400
Peptic ulcer disease	19,896	34	1,724	23,870	53	2,216
Sinusitis	78,520	12	158	90,827	21	230

Note: MEG (Medstat Episode Group), ETG (Episode Treatment Group).

Source: MedPAC analysis of 5 percent sample of Medicare claims using ETG and MEG episode groupers.

type 1 diabetes in ETGs (\$1,798) are more than two times that for MEGs (\$833).

Other conditions have more similar average per episode payments. For example, there is relatively little difference in average per episode payments for breast cancer (\$2,400 for ETGs vs. \$2,341 for MEGs) and for cerebrovascular disease (\$2,811 for ETGs vs. \$2,743 for MEGs).

These differences warrant further investigation. We should expect some differences between the groupers as each uses proprietary clinical algorithms to assign claims to episodes. The clinical logic of the groupers often drives the differences. For example, the MEG grouper treats CHF not as a disease but as a symptom of many different diseases. The ETG grouper retains CHF in a distinct episode and does not distribute CHF services to other episodes. In the MEG grouper, CHF is classified as a comorbidity in 40 other episodes; about 20 percent of all patients with CHF were found in these other episodes. The fact that these costs are distributed among a variety of episode types by MEGs could be one of the reasons that payments for MEG CHF episodes are lower on average than those for ETG CHF episodes. Medstat has found that average costs for CHF patients in non-CHF episodes are higher than

for those in CHF episodes, and that these episodes tend to have higher proportions of hospital inpatient dollars than CHF episodes. We found a similar result when we examined costs by type of service within CHF episodes in the ETG and MEG groupers: ETG CHF episodes had a higher proportion of dollars attributable to hospital inpatient stays than MEG CHF episodes.

We will continue to examine differences between the two groupers in more detail for the 100 percent analysis. In addition, CMS is analyzing at least two of the available groupers to determine their characteristics when applied to the Medicare population. The focus of its analysis is on how the groupers work on this population, recognizing that many beneficiaries have multiple conditions that overlap in time. CMS will be analyzing, in detail, differences among the groupers in both output and clinical logic for selected important conditions.⁵

Addressing episode severity and overall patient complexity

An important question about episode groupers is whether they account for the underlying health status of beneficiaries. Some researchers and physicians are

**TABLE
1-2**

Variation in number and distribution of selected episodes, 2002

Episode group	Stage	Episodes		Payments			
		Number	Percent	Total (in millions)	Percent of total	Average	CV
Coronary artery disease	1	134,501	67%	\$140	22%	\$1,037	262
	2	28,354	14	152	24	5,361	143
	3	39,081	19	330	53	8,450	109
	Total	201,936	100	622	100	3,079	202
Essential hypertension	1	306,789	74	84	48	273	173
	2	55,757	13	24	14	426	154
	3	52,605	13	68	39	1,292	146
	Total	415,151	100	176	100	423	210
Colon cancer	0	1,764	13	1	1	648	247
	1	248	2	0	0	1,441	228
	2	9,714	70	47	57	4,874	155
	3	2,192	16	35	41	15,750	62
	Total	13,918	100	83	100	5,990	145
Type 1 diabetes	1	20,015	59	8	27	377	275
	2	11,883	35	14	48	1,140	219
	3	2,298	7	7	26	3,213	127
	Total	34,196	100	29	100	833	253
Type 2 diabetes	1	101,751	65	38	46	371	156
	2	48,374	31	33	40	691	150
	3	7,212	5	12	14	1,612	129
	Total	157,337	100	83	100	526	173
Peptic ulcer disease	1	10,859	55	6	17	532	229
	2	8,621	43	25	74	2,946	129
	3	416	2	3	9	7,541	74
	Total	19,896	100	34	100	1,724	182

Note: CV (coefficient of variation). Outlier episodes have been removed. All episodes in the table started in 2002. Values may not sum to total due to rounding.

Source: MedPAC analysis of 5 percent sample of Medicare claims using Medstat Episode Group grouper.

concerned that differences in health status among patients may influence treatment costs within episodes, and that the average health status of patients may differ among physicians (Thomas 2006b). Without adjusting for risk, physicians who care for less severely ill patients may look more efficient than those who care for more severely ill patients.

The groupers we used have two separate mechanisms for addressing patient severity. First, they use severity in the logic used to group claims. Second, each has developed a

method to risk adjust the episode information based on the overall health status of the beneficiary.

Grouping logic

The logic embedded in ETGs and MEGs is designed to create episodes that make it possible to compare similar patients. ETGs create separate types of episodes for patients with the same underlying condition by distinguishing among patients with procedures or comorbidities that might affect the costs of their care

for that specific episode. For example, prostate cancer episodes are divided into those with and without surgery (Symmetry 2005). MEGs generally use a single episode per condition but incorporate a concept known as disease staging that addresses the severity of that condition. The disease staging logic employed by the MEG grouper subdivides most episodes into three different disease severity categories.⁶ This allows us to examine the amount of resources directed toward treating a condition as it progresses. Not surprisingly, as a disease becomes more severe the treatment costs increase (except for the late stages of some diseases when reduced treatment options may result in decreased costs). This is consistent with other research showing that a small percentage of seriously ill patients account for a disproportionate percentage of Medicare spending (MedPAC 2004). For example, while stage 3 CAD episodes account for only 19 percent of all such episodes, they account for 53 percent of all CAD episode dollars (Table 1-2). Similarly, stage 3 colon cancer episodes account for only 16 percent of episodes, but 41 percent of episode dollars.

Examining the amount of variation within each stage of an episode can provide an indication of variation in practice patterns. Stage 3 episodes, while being more expensive on average, exhibit less variation than stage 1 and stage 2 episodes. The coefficient of variation (CV) for stage 3 CAD is 109 percent compared with 262 percent for stage 1 CAD. Similarly, the CV for stage 3 peptic ulcer disease is less than one-third of the variation of stage 1 (74 percent vs. 229 percent). This could be because care for sicker patients, while more resource intensive, is potentially more clearly defined than care for individuals with less severe manifestations of the condition. However, the difference in variation among episode stages is less pronounced for some chronic conditions, such as type 2 diabetes and hypertension.

Risk adjustment

Both the ETG grouper and the MEG grouper have additional capabilities that can be used to risk adjust episodes.⁷ Risk adjustment can account for differences in health status that go beyond a particular disease that the episode grouper is trying to capture. The ETG software uses a companion product known as episode risk groups, which employs the same underlying methodology as ETGs. The software classifies a patient by episode and then looks at a person's age, gender, and mix of episodes to create a clinical and demographic risk profile. Using this

risk profile, the software computes both a retrospective and prospective risk score for each person.

The MEG grouper employs the diagnostic cost group (DCG) method, which uses the conditions and diseases for which a person receives treatment over a specified period of time (usually one year), and the person's age and gender. The model estimates the level of expected cost in a given year as a function of medical problems treated in that year and creates a relative risk score (RRS) (Thomson Medstat 2005). Combined with the disease staging approach, researchers can segment episodes according to both episode severity and patient complexity (sample size permitting).

The DCG/RRS approach can further refine comparisons within and across episodes. Ultimately, it also allows for the construction of an overall risk score for a physician's caseload of patients. As described earlier, CAD episodes have overall average resource use of \$3,079 (Table 1-2). However, using the DCG/RRS risk-adjustment technique, each CAD episode stage can be further subdivided into five categories of overall patient complexity, ranging from 1 (low complexity) to 5 (high complexity). Average resource use increases as patient complexity increases. Average resource use for stage 1 CAD episodes with a relative risk score of 1 is \$564, while average resource use for stage 3 CAD episodes with a relative risk score of 5 is \$11,509 (Table 1-3, p. 14).

Types of services

To learn more about what drives the overall resource use in these episodes and how resource use may vary by the severity of the condition, we divided all payments associated with an episode into types of services (Table 1-4, p. 15).⁸ For example, 64 percent of total CAD episode dollars are spent in an inpatient setting compared with only 4 percent for sinusitis episodes and 35 percent for CHF episodes. For those with stage 1 CAD, dollars are far more concentrated in imaging than they are in the two higher stages of severity. Table 1-4 (p. 15) also shows how important evaluation and management (E&M) services are to beneficiaries with chronic conditions such as diabetes, hypertension, and sinusitis. For example, E&M services for beneficiaries with stage 1 diabetes (types 1 and 2) represent 52 and 62 percent of the spending for their episodes, respectively.⁹

**TABLE
1-3**

Average episode costs rise with disease severity and overall patient complexity, 2002

		Complexity level				
	Severity stage	1	2	3	4	5
Congestive heart failure	3	\$1,002	\$1,351	\$1,611	\$1,895	\$2,070
Coronary artery disease	1	564	1,312	1,833	1,944	1,944
	2	3,051	7,028	8,072	8,484	8,484
	3	5,067	7,860	10,596	11,509	11,509

Source: MedPAC analysis of 5 percent sample of Medicare claims using Medstat Episode Group grouper.

Attributing episodes to physicians

One of the main goals of grouping claims into episodes is to attribute episodes to physicians and to ultimately identify efficient physicians.¹⁰ In this analysis we do not have a full picture of any one physician’s patient panel; therefore, we can not assess any one individual physician’s resource use. Nonetheless, in preparation for future analyses that will measure individual physicians, we applied a variety of attribution rules to this database. We looked at how many episodes could be linked to physicians using various attribution methods. The goal is to identify a single physician who provides a significant portion of a beneficiary’s care for a given episode.

Some plans, such as health maintenance organizations (HMOs), formally assign patients to a provider so attribution is relatively straightforward. However, in other private plan arrangements and the Medicare fee-for-service (FFS) program, patients have greater freedom to see any physician. This makes attribution less straightforward. Identifying an individual physician who sees the patient for a significant portion of his or her care has to be determined by patterns in claims data. For a discussion of attribution issues, see text box on page 16.

Attribution to physicians is also necessary to determine performance on quality indicators. We determined quality scores using an attribution logic independent of the logic used to associate episodes to physicians. It is not always possible to attribute quality indicators with specific episodes of care. Separate attribution is also consistent with private sector efforts to measure resource use and

quality. Typically, resource use episodes are created and attributed to physicians, then physicians are compared to a peer group. At the same time, quality scores are created and attributed to physicians, then the scores are compared to a peer group. While we would expect overlap between the patients attributed to a physician for resource use and quality, the quality indicators are not generally tied to specific episodes.

We attributed episodes to physicians using E&M codes to avoid giving too much weight to procedures or hospitalizations. Through claims, we can identify the number of visits beneficiaries had with a physician and the amount of dollars associated with those visits. We also looked at how our results shifted if episodes could be assigned to more than one physician.

Our main focus was to evaluate how many episodes we could assign to physicians using different attribution methods and the type of specialty to which they were assigned. A broader question is the appropriateness of using the same attribution method across episodes and quality indicators that may differ significantly from each other (either clinically or in terms of resource use). A uniform attribution approach may not fit all episodes.

Our analysis found that the key factor in attributing episodes to physicians is the threshold for attribution. Less important was the choice of dollars versus visits or whether to use all E&M services or just those furnished outside of a hospital.

While this analysis is primarily focused on technical approaches to attribution, further discussion is needed on

**TABLE
1-4**

Episode costs are driven by different mixes of services, 2002

Percentage of episode costs, by type of service

Episode group	Stage	Average payment	Inpatient	E&M	Post-acute care	Procedures	Imaging	Tests	Other
Coronary artery disease	1	\$1,037	32%	20%	5%	8%	19%	7%	9%
	2	5,361	67	8	1	10	6	2	5
	3	8,450	76	7	3	7	3	1	2
	Total	3,079	64	10	3	8	8	3	4
Essential hypertension	1	273	8	68	4	2	5	13	1
	2	426	12	60	3	2	10	11	2
	3	1,292	60	24	4	2	4	4	3
	Total	423	28	50	4	2	5	9	2
Congestive heart failure	3	1,394	35	31	13	3	10	5	2
	Total	1,394	35	31	13	3	10	5	2
Type 1 diabetes	1	377	12	52	23	3	1	9	1
	2	1,140	55	21	8	9	1	4	3
	3	3,213	73	12	7	4	0	2	2
	Total	833	48	27	12	6	1	5	2
Type 2 diabetes	1	371	9	62	4	2	2	20	2
	2	691	21	48	3	8	1	15	5
	3	1,612	53	29	3	5	1	7	3
	Total	526	20	52	4	5	2	16	3
Sinusitis	1	153	4	64	0	15	9	5	3
	2	402	5	34	0	34	13	5	9
	3	428	15	36	0	26	15	4	4
	Total	158	4	62	0	16	10	5	3

Note: E&M (evaluation and management). Outlier episodes have been removed.

Source: MedPAC analysis of 5 percent sample of Medicare claims using Medstat Episode Group grouper.

the extent to which accountability should be derived from these types of attribution rules. In a payment system as fragmented as Medicare FFS, a physician with 30 percent of the E&M visits in a given episode may not necessarily be aware of the kind of care being provided in the other E&M visits. For some episodes, meaningful accountability might rest with a single physician, while accountability for other episodes might rest with a team of physicians. In some instances, the cooperation of a hospital and its physicians may be important for efficiency.

Resource use attribution

We found that more episodes can be attributed to a physician as the thresholds for attribution are lowered. We also found that as the thresholds are lowered, any differences between the use of E&M dollars versus E&M visits to determine attribution largely disappear. Seventy-five percent of the episodes we selected could be attributed to a physician when using a threshold of 50 percent of E&M visits to identify the physician versus 82 percent of the episodes when we use a threshold of 50 percent of

Attribution issues

Some issues involved in determining the appropriate approach for assigning episodes include:

- *Is the attribution method conceptually valid?* It must be defensible and accepted by payers, providers, and other users of the information.
- *What is the appropriate unit of measurement?* Using dollars may more accurately reflect the intensity of services provided, whereas the number of visits might better identify the physician who had the greatest involvement in managing a patient's care.
- *What type of dollars or visits should be counted in determining attribution?* Should all dollars be counted in determining attribution? An approach like this might result in certain specialists and surgeons being assigned episodes for which they had relatively little control, but were attributed a majority of dollars due to the need for surgery or some other resource intensive intervention. Dollars associated with evaluation and management (E&M) visits might be a better indicator of physician involvement in an episode. Even if E&M dollars are used, should all physician E&M claims be used, including E&M claims that occur while a beneficiary is hospitalized?
- *What is the appropriate threshold of dollars or visits to use?* The higher a threshold is set the less likely it is to be assigned to a physician. Using a lower threshold might result in an episode being attributed to a provider who had less involvement in a patient's care.
- *What is the best attribution method?* Multiple attribution recognizes that more than one physician may have been involved in managing the resources and quality of care. However, such an approach may work more effectively when physicians work within structured networks. Different attribution methods may be needed for different types of episodes. ■

E&M dollars to identify the physician. Using a threshold of 30 percent of E&M dollars or E&M visits allows 90 percent of our selected episodes to be assigned to a provider. The share of episodes that can be attributed using a 30 percent threshold varies by condition—it ranges from a low of 71 percent for cerebrovascular disease episodes to a high of 96 percent for sinusitis episodes (Table 1-5).

To understand how hospitalizations affect episode attribution, we also restricted the analysis to dollars and visits associated with noninpatient settings. Using this approach, 86 percent of all episodes could be attributed to a physician who had 30 percent or more of the noninpatient E&M visits or noninpatient E&M dollars in the episode, compared to 90 percent of episodes if dollars and visits were not restricted to those that occurred in a noninpatient setting. The decrease in the number of attributed episodes is most pronounced in episodes that have a high proportion of inpatient dollars, such as peptic ulcer disease, depression, and cholecystitis (data not

shown). The decrease is less pronounced for episodes that use a lower proportion of inpatient dollars, such as type 2 diabetes and essential hypertension (Table 1-5).

We also explored multiple attribution, or assigning an episode to more than one physician. We found that for most episodes a single physician tends to be dominant in the provision of care (Table 1-5). Using single attribution and a 35 percent threshold of all E&M visits, 88 percent of our selected episodes could be attributed to a physician. Using the same threshold but permitting an episode to be assigned to any physician meeting the threshold results in 78 percent of selected episodes still being assigned to a single physician. The remaining 10 percent of episodes could be assigned to more than one physician using a multiple attribution approach.¹¹ The proportion of episodes assigned to more than one physician ranged from a low of 7 percent for several conditions to a high of 11 percent for CAD episodes.

**TABLE
1-5**

Most episodes can be attributed to one physician, 2002

Attribution rule	Percentage of episodes						
	All selected episodes	CAD	Essential hypertension	Type 1 diabetes	Type 2 diabetes	Sinusitis	Cerebrovascular disease
Percentage of E&M visits:							
30%	90%	86%	94%	91%	95%	96%	71%
35%	88	83	93	90	93	95	68
40%	86	81	92	89	92	94	65
50%	75	69	85	81	81	88	53
Percentage of noninpatient E&M visits:							
30%	86	81	92	85	93	95	65
Percentage of E&M dollars:							
30%	90	86	94	91	96	96	71
35%	89	85	94	91	95	95	69
40%	87	82	93	90	93	95	66
50%	82	77	90	87	89	93	60
Multiple attribution based on visits:							
35%							
1 doctor	78	73	86	82	84	88	60
2 doctors	10	11	7	8	10	7	9
Total	88	84	93	90	94	95	69
Number of episodes	1,671,638	201,936	415,151	34,196	157,337	78,520	107,561

Note: E&M (evaluation and management), CAD (coronary artery disease).

Source: MedPAC analysis of 5 percent sample of Medicare claims using Medstat Episode Group grouper.

We examined the types of specialties to which the episodes were attributed. In general, episodes were attributed to specialties one would expect to be associated with care for that condition. For example, 38 percent of CAD and 20 percent of CHF episodes are attributed to cardiologists, 64 percent of prostate cancer episodes are attributed to urologists, 21 percent of peptic ulcer disease episodes are attributed to gastroenterologists, and 39 percent of breast cancer episodes are assigned to oncologists using a threshold of 35 percent of all E&M dollars (data not shown).

Quality indicator attribution

We attribute responsibility for performance on condition-specific quality indicators to the physician most likely to be managing the beneficiary’s care for that

condition. We used a year of claims for the condition for which the beneficiary was eligible for the indicator (the denominator). For example, attributing care for beneficiaries with diabetes using a 35 percent threshold of E&M dollars means that we identified a single physician who billed the Medicare program for 35 percent or more of the E&M dollars for care of that beneficiary’s diabetes.¹²

We find a similar ability to attribute quality indicators using these various methods as we do for resource use (Table 1-6, p. 18). The care on these quality indicators for the vast majority of beneficiaries can be attributed to a single physician. The lower the threshold, the more care can be attributed to one physician. We also find that using E&M visits instead of dollars results in a small increase in the ability to attribute care to a single physician.

**TABLE
1-6**

Most beneficiaries eligible for quality indicators can be attributed to one physician

Percentage of beneficiaries with condition

Attribution rule	All indicators	CHF	CAD	Diabetes	COPD	Stroke
Percentage of:						
E&M visits						
35%	93%	92%	92%	93%	95%	90%
50%	74	74	70	74	80	64
E&M dollars						
35%	89	89	88	89	92	85
50%	72	73	68	72	78	62

Note: CHF (congestive heart failure), CAD (coronary artery disease), COPD (chronic obstructive pulmonary disease), E&M (evaluation and management). The percentage of beneficiaries whose care was attributed for each condition is based on an average across all condition-specific indicators. The all indicators column is an average across all indicators, including several conditions not shown in the chart.

Source: MedPAC analysis using the Medicare Ambulatory Care Indicators for the Elderly on a 5 percent sample of 2002 Medicare claims.

As with the resource use analysis, shifting the percentage thresholds does shift the number of beneficiaries able to be attributed for each indicator. For example, we find that with a 35 percent threshold of visits, care for 93 percent of beneficiaries across the conditions can be attributed to a single physician. This percent decreases to 74 percent of beneficiaries when the threshold is raised to 50 percent of visits. The ability to identify a single physician who manages beneficiary care also varies within a set of condition-specific indicators. For example, across all eight CHF indicators the average percentage of beneficiaries able to be attributed to a single physician using 35 percent of E&M dollars is 89 percent. We are able to attribute six of eight indicators for CHF care to a single physician for 90 percent to 93 percent of the beneficiaries using 35 percent of E&M dollars (data not shown). However, we can only attribute 78 percent of the beneficiaries on the other two CHF indicators.

We examined whether using only noninpatient E&M visits would affect attribution. As was the case in our resource use analysis, we found that slightly fewer beneficiaries could be attributed to a single physician using noninpatient E&M claims (data not shown). We also explored multiple attribution and again found results similar to our resource use analysis. When we applied a multiple attribution rule of 35 percent of E&M visits across all quality indicators,

only 10 percent of beneficiaries were attributed to more than one physician across our selected conditions.

As was the case for resource use, we found that care for the quality indicators tends to be attributed to specialties one would associate with the specific condition. We also found that the same type of specialties tend to be responsible for both resource use and quality for the condition. For example, the top three types of specialties to which quality of care for beneficiaries with CAD is attributed are cardiology, internal medicine, and family practice. These are the same as the top three types of specialties to which CAD episodes in the resource use analysis are attributed (data not shown).

Comparison of resource use and quality across MSAs

To better understand how relative resource use and quality vary across different units of analysis, we applied the groupers and the quality indicators to our 5 percent sample in 13 MSAs. We chose 13 large MSAs to achieve the widest geographic distribution possible. We observed variations in both resource use and quality by MSA and identified technical issues that may need to be addressed before we apply episode grouping approaches or quality indicators to individual physicians.

**TABLE
1-7**

Relative resource use ratios for selected MSAs, 2002

	CHF	CAD	Type 1 Diabetes	Type 2 Diabetes	Breast cancer	Hypertension	Pneumonia
National average episode costs	\$1,394	\$3,079	\$833	\$526	\$2,341	\$423	\$4,427
MSA							
Boston	1.00	0.86	0.99	0.95	0.86	0.96	0.96
Chicago	1.05	1.04	1.13	1.17	1.06	1.14	1.11
Denver	0.91	1.03	1.04	0.96	1.24	0.92	1.04
Detroit	0.90	0.79	1.07	1.08	0.94	1.15	0.91
Greenville	0.91	1.24	1.21	0.91	1.02	0.87	0.80
Houston	1.16	1.04	1.13	1.16	1.02	1.20	1.11
Kansas	1.31	0.98	0.96	0.99	0.79	1.13	0.96
Miami	0.99	0.66	1.06	1.28	0.82	1.20	1.16
Minneapolis	1.00	1.28	0.72	0.88	1.14	0.87	0.76
New York	0.86	0.65	1.41	1.11	1.01	1.13	1.12
Orange County	1.01	0.76	1.17	1.31	0.98	1.00	1.03
Philadelphia	1.11	0.78	1.09	1.07	0.81	1.05	1.08
Phoenix	0.81	0.91	0.95	1.05	1.08	0.94	0.78

Note: MSA (metropolitan statistical area), CHF (congestive heart failure), CAD (coronary artery disease). Relative resource use scores for individual MSAs are calculated by dividing the MSA's average for a given episode by the national average for that episode. A score of more than 1.0 indicates higher-than-average episode costs and a score of less than 1.0 indicates lower-than-average episode costs.

Source: MedPAC analysis of 5 percent sample of Medicare claims using Medstat Episode Group grouper.

Variation in resource use by MSA

Research shows that the amount and type of services beneficiaries receive vary significantly from region to region (Fisher et al. 2003). Looking at resource use from the perspective of an episode of care, will areas that are high resource use on a per capita basis also be high resource use on a per episode basis? It is important to note that episode groupers have rarely, if ever, been used to measure relative resource use across different regions. Because of the fragmented nature of health insurance coverage for the nonelderly population, many different health insurance companies can insure the population of any given area. In using episode groupers, most plans try to assess the relative resource use of physicians in their network, not resource use relative to other physicians in the same market area or different markets.

We examined resource use for a subset of episodes by calculating average per episode costs for the providers in each MSA and nationally.¹³ We then calculated ratios of each MSA's average episode cost to the national average (Table 1-7). Resource use across episodes varied markedly with relative resource ratios ranging from 0.65 (lower than

average) to 1.41 (higher than average), depending on the type of episode. At first glance the results seem similar to previous studies that have focused on per capita spending. MSAs that other research has shown to use more resources than average (e.g., Miami, Detroit, and Houston) have resource use ratios of more than 1 for many episodes. Others that use fewer resources than average (e.g., Minneapolis and Denver) have resource use ratios of less than 1 on many episodes.

Miami has higher-than-average resource use ratios for type 1 and type 2 diabetes (1.06 and 1.28, respectively), while Minneapolis has lower-than-average ratios (0.72 and 0.88, respectively). Similarly, Miami's relative resource use ratio for hypertension is 1.20 compared to 0.87 for Minneapolis.

However, for certain conditions the results are more surprising. Miami has a relative resource use ratio of 0.66 for CAD, while Minneapolis has a ratio of 1.28.

We conducted several additional analyses to better understand what was driving such a large difference in per episode resource use costs for CAD between the

**TABLE
1-8****Comparison of resource use in
Miami and Minneapolis MSAs, 2002**

	Miami	Minneapolis
CAD per episode ratio	0.66	1.28
Total episodes per beneficiary with a CAD episode	11	8
Total episode dollars per beneficiary with a CAD episode	\$11,700	\$11,900
Per episode ratio (all episodes, all beneficiaries)	0.98	1.03
Per capita ratio (all episodes, all beneficiaries)	1.32	0.88

Note: MSA (metropolitan statistical area), CAD (coronary artery disease). Per episode ratios for individual MSAs are calculated by dividing the MSA's average for a given episode by the national average for that episode. Per episode ratios are calculated by dividing each MSA's average per episode amount by the national average per episode amount. Per capita ratios are calculated by dividing each MSA's average per capita amount by the national average per capita amount. A score of more than 1.0 indicates higher-than-average costs and a score of less than 1.0 indicates lower-than-average costs.

Source: MedPAC analysis of 5 percent sample of Medicare claims using Medstat Episode Group grouper.

Minneapolis and Miami MSAs. The results of the analyses indicate that it may be helpful to combine per episode approaches to resource use with per capita approaches.

While beneficiaries in Miami have significantly lower per episode costs than beneficiaries in Minneapolis for CAD, they are also more likely to have more total episodes (including non-CAD episodes) than beneficiaries in Minneapolis (11 vs. 8) (Table 1-8). In particular, beneficiaries in Miami were more likely to be diagnosed and coded with other cardiovascular episodes such as varicose veins or tibial, iliac, femoral, or popliteal artery disease. Some of the costs of care for these beneficiaries may be captured in these other episodes in Miami, therefore lowering the costs of their concurrent CAD episodes.

Additionally, when we look at total spending across all episodes for beneficiaries with a CAD episode in each MSA, the difference between the two areas all but disappears. Per beneficiary Medicare spending across all episodes for beneficiaries with CAD is \$11,700 in Miami compared to \$11,900 in Minneapolis. This suggests that regional differences in coding and utilization may lead to

situations where a beneficiary who might stay in the same CAD episode group in Minneapolis could be shifted to another heart-related episode group in Miami. Because of this, per episode relative resource use scores for CAD in Miami appear to show that physicians' care is very efficient, but care may not be as efficient when we look across all care for beneficiaries with CAD episodes.

Finally, when we compare the Miami and Minneapolis MSAs across all episodes both from a per episode and a per capita perspective, the results are dramatically different. On a per episode basis, Miami has a relative resource use score of 0.98 compared to 1.03 for Minneapolis across all episodes. However, on a per capita basis, Miami has a relative resource use score of 1.32 compared to 0.88 for Minneapolis (Table 1-8).

These results suggest that beneficiaries in Miami are being classified into more episodes of care than beneficiaries in Minneapolis. These variations in resource use scores also highlight that episode groupers can not judge the clinical appropriateness of any given service, just the efficiency of that service relative to similar services. Put another way, it is possible that in some areas with low resource use scores, beneficiaries are more likely to go to the doctor or receive certain services, whereas in other areas they might not go to the doctor at all. In addition, when a beneficiary sees a physician, the physician may be more likely to order more tests or treatment or to identify an additional diagnosis. This could lead to an MSA having a lower-than-average resource use score for a given condition if it has a large number of low-cost, low-intensity episodes that other areas might not have. Alternatively, physician coding practices may differ by region. To the extent that physicians code claims more extensively, patients may be classified into additional episodes.

Variation in type of service by MSA

The types of services that are used within episodes differ across MSAs. It is important to note that the overall composition of costs in any given episode will strongly influence any differences in relative resource use by type of service. For example, inpatient stays account for 64 percent of total CAD episode costs. Therefore any differences in inpatient resource use for CAD episodes will have a large impact on an MSA's overall relative resource use ratio (Table 1-4, p. 15). There are significant differences in the type of services used within each CAD episode in Miami and Minneapolis MSAs. Beneficiaries in Miami are significantly less likely to have hospital

inpatient costs, with a relative hospital inpatient resource use ratio of 0.51 compared to 1.46 for beneficiaries in Minneapolis. Conversely, Miami has an imaging relative resource use ratio of 1.62 compared to 0.76 for Minneapolis (Table 1-9).

Other episodes, such as hypertension and type 1 and type 2 diabetes, have a stronger E&M focus. Therefore, Miami, which has high relative resource use ratios for these episodes (1.20 for hypertension, 1.06 for type 1 diabetes, and 1.28 for type 2 diabetes) is above average for E&M resource use in all three episodes (1.37, 1.19, and 1.42, respectively).

MSA quality analysis

The Commission finds that MSA scores on quality tend to cluster around the national average or slightly above. However, the national averages are relatively low. The variation in the ratio of MSA quality scores to national quality scores across the MSAs is less than the variation on resource use. Further, we find that some MSAs did well on some indicators of necessary care but not others. No MSA is above average on all the conditions (Table 1-10, p. 23).

We also identify several important technical issues. Small sample size or low incidence rates make it difficult to use some indicators. We created composite scores in order to compare MSAs. The method for weighting each individual indicator when creating a composite condition score affects the relative rankings of the MSAs. The nature of the indicators, which rely on claims for services delivered, may limit their utility when trying to determine whether the resources used produce high-quality care.

Methods

Our quality measures consist of indicators of necessary care and potentially avoidable hospitalizations for certain conditions—the MACIE set. The text box on page 10 describes these indicators. For example, one indicator of necessary care for diabetics is whether the beneficiary received a hemoglobin A1C test. An indicator of a potentially avoidable hospitalization is whether the diabetic was admitted to a hospital for long-term complications related to diabetes.

We deleted from the analysis any indicators with a small sample size either across all MSAs or for a specific MSA. This step eliminated all the potentially avoidable hospitalizations from the composite condition scores. As

TABLE 1-9

Relative resource use, by type of service, Miami and Minneapolis MSAs

Episode group	National average	Miami	Minneapolis
CAD			
E&M	\$307	1.05	0.93
Imaging	234	1.62	0.76
Inpatient	1,968	0.51	1.46
Other	3	1.25	0.92
Post-acute care	97	0.99	0.82
Procedures	248	0.39	1.24
Tests	86	1.14	0.90
Unclassified	136	0.33	1.07
Total	3,079	0.66	1.28
Hypertension			
E&M	210	1.37	0.80
Imaging	21	1.01	0.47
Inpatient	120	0.99	0.88
Other	1	2.78	0.29
Post-acute care	17	1.14	1.56
Procedures	7	0.91	0.73
Tests	39	1.17	1.01
Unclassified	8	0.71	1.38
Total	423	1.20	0.87
Type 1 diabetes			
E&M	223	1.19	0.85
Imaging	6	0.54	2.25
Inpatient	401	1.13	0.64
Other	2	2.85	1.23
Post-acute care	96	0.70	0.45
Procedures	49	0.52	0.72
Tests	38	0.92	0.86
Unclassified	17	1.55	1.45
Total	833	1.06	0.72
Type 2 diabetes			
E&M	271	1.42	0.91
Imaging	8	0.84	0.99
Inpatient	105	1.33	0.49
Other	3	1.69	3.36
Post-acute care	19	1.16	1.31
Procedures	25	0.74	0.80
Tests	84	1.06	1.00
Unclassified	12	0.96	1.46
Total	526	1.28	0.88

Note: MSA (metropolitan statistical area), CAD (coronary artery disease), E&M (evaluation and management). Relative resource use scores for individual MSAs are calculated by dividing the MSA's average for a given episode by the national average for that episode. A score of more than 1.0 indicates higher-than-average episode costs and a score of less than 1.0 indicates lower-than-average episode costs.

Source: MedPAC analysis of 5 percent sample of Medicare claims using Medstat Episode Group grouper.

a result, the composite score for each condition reflects the average of all the necessary care indicators for each condition for each MSA. To create the ratios found in Table 1-10, we then compared each MSA condition composite with the national average.

In general, the national averages show room for improvement across all conditions. With the exception of chronic obstructive pulmonary disease, 20 percent to 40 percent of beneficiaries are not receiving necessary care on our selected conditions. Relative to these national benchmarks by condition, quality appears to vary less across the MSAs than resource use. Table 1-10 shows that no MSA is more than 16 percent lower (breast cancer composite in New York) than the national breast cancer average or more than 18 percent higher (stroke composite in Orange County) than the national average on stroke quality. In contrast, resource use ratios range from 35 percent to 41 percent higher.

Some MSAs did well on some indicators and poorly on others. No MSA was above average on all the conditions. For example, we found that beneficiaries in Phoenix received necessary care for CHF at a rate 8 percent higher than the national average, but 5 percent lower than the national average for stroke patients (Table 1-10).

Sample size and incidence

Before we grouped the indicators by condition, we considered whether the individual MSA scores were stable enough to be included in our analysis. We found two issues.

First, because of their low incidence, we did not use potentially avoidable hospitalizations in our composite scores for the MSAs. Potentially avoidable hospitalizations specific to each condition may provide useful information at the national level and for population-based analyses, but occur too rarely to be useful with a 5 percent sample of claims. We will continue to analyze these indicators to consider ways they could be grouped to increase their incidence and will also revisit the issue when we are using a 100 percent sample. Another issue with potentially avoidable hospitalizations is that other factors besides physician management may affect whether a patient is hospitalized, and that multiple physicians may also be involved.

Second, we found that for some indicators the number of beneficiaries eligible for specific quality indicators was too low to be used in our composite MSA scores. We

used a threshold of 30 eligible patients in any one MSA. That is, if fewer than 30 beneficiaries in any one MSA were eligible for the necessary service, we did not use the indicator in calculating the MSA score.

Composites and weighting

To use this list of quality indicators to compare MSAs, we grouped them into composite scores for each condition. Indicators of necessary ambulatory care are usually grouped by condition because they often apply to the same type of beneficiary. For some of the conditions, the denominators (those eligible for the service) are even the same.

To create composites, it is necessary to choose a method for combining the various indicators for each condition and to determine what weight to place on each. Different weighting methods place importance on different dimensions. Relative importance can be determined by the number of beneficiaries affected, or how important the indicator might be to the beneficiary. In addition, the level of evidence supporting the indicator and the precision of the measurement of the indicators are also factors to be considered. The cost-effectiveness of the intervention could also be considered (See Chapter 10 for discussion.)

We used two weighting methods when calculating composites. First, we created a straight average for each condition by adding the scores for each indicator in each condition and then dividing the sum by the number of indicators. This method, because it weights each indicator the same, does not account for the fact that some indicators affect more beneficiaries than others. For this reason, we also calculated the composites by weighting the indicators by the number of beneficiaries each affects. This “opportunity” model is based on the idea of measuring the number of opportunities that physicians have to provide necessary care; it is often used for quality indicators in the same condition (Nolan and Berwick 2006). For example, for beneficiaries with diabetes, we summed the number of beneficiaries that should receive certain necessary services (the denominators for all of the diabetes indicators) and the number of beneficiaries who actually received the necessary services (the numerator for all of the diabetes indicators) and then divided the sum of the numerators by the sum of the denominators.

When we use the opportunity approach to weighting, the national average scores for the conditions shift the most for breast cancer and stroke. This is because those

**TABLE
1-10**

Ratio of MSA to national quality scores on six conditions, 2002

	Breast cancer	CHF	CAD	Diabetes	COPD	Stroke
National average quality score	57%	73%	78%	71%	93%	68%
MSA						
Boston	0.97	1.04	0.97	1.01	1.02	0.93
Chicago	0.95	1.00	1.01	0.95	1.01	1.02
Denver	0.85	0.97	0.99	1.08	0.97	N/A
Detroit	1.01	1.05	1.06	0.98	1.02	1.01
Greenville	1.10	1.00	0.99	0.98	1.03	1.06
Houston	1.03	1.01	1.03	1.00	1.04	1.05
Kansas	0.93	1.07	1.01	1.02	1.02	0.99
Miami	0.93	1.07	1.10	1.05	1.05	1.00
Minneapolis	1.01	1.02	0.97	1.02	0.99	1.05
New York	0.84	1.01	1.08	1.02	1.03	1.07
Orange County	0.99	1.04	1.06	1.09	1.00	1.18
Philadelphia	0.97	1.07	1.01	1.02	1.00	0.96
Phoenix	1.14	1.08	1.05	1.06	1.01	0.95

Note: MSA (metropolitan statistical area), CHF (congestive heart failure), CAD (coronary artery disease), COPD (chronic obstructive pulmonary disease). National scores indicate the percentage of Medicare beneficiaries nationwide who are receiving necessary care for their conditions. MSA ratios are calculated by dividing the average MSA quality score for each condition by the national average for that condition. If the MSA ratio is above 1.0, the MSA score is above the national average. If the MSA ratio is below 1.0, the MSA score is below the national average.

Source: MedPAC analysis using the Medicare Ambulatory Care Indicators for the Elderly on a 5 percent sample of Medicare claims.

two conditions have at least one indicator with a very large denominator, indicating that a large number of beneficiaries should receive that service. Thus, the scores on those indicators dominate the analysis.¹⁴ For the other four conditions, the numbers of eligible beneficiaries are similar so the national scores are less sensitive to the weighting method used.

However, using different weighting strategies changes some of the relative rankings of the various MSAs for all conditions to some degree. As would be expected, the greatest shift was for the two that moved the most at the national level. However, relative rankings of the MSAs also shifted for the other conditions, even when little change occurred at the national level.

Using a broader set of quality measures important

When looking at these MSA quality scores together with resource use scores, it is important to consider the types of quality measures used. Because both our analyses (resource use and quality) measure the services provided, it is difficult to assess quality independent of resource use.

Further, as discussed in our March 2005 report, claims-based process measures, especially without lab values or prescription drug data, represent a limited picture of quality (MedPAC 2005).

Because our scores clustered so closely around the national average, it was hard to assess whether MSAs that used more resources also had higher quality scores—the relationship we would expect if our resource use and quality measures moved together. The vast majority of quality scores were very close to the national average, and MSA scores on resource use and quality varied based on the condition measured. We found that quality scores could be slightly better than the national average both when resource use was lower than the national average and also when it was higher, depending on the condition.

However, we did test another measure of quality to determine whether MSA scores would change if another type of quality measure were introduced. We found that MSA quality rankings by condition did vary depending on the measure type. The other quality measures we used were the potentially avoidable hospitalizations. We did

not include these in our initial MSA composite scores because of their low incidence. However, for this analysis we combined all potentially avoidable hospitalization indicators into one score for each MSA.

Potentially avoidable admissions are also related to the amount of resources used. In this case if more resources were used (hospitalizations), the MSA would look worse on quality and worse on resource use relative to other MSAs. We found that using a measure that could have a different relationship with resource use did shift MSA quality rankings.¹⁵ For example, Miami's overall score relative to the national average on necessary care indicators was 1.02, or 2 percent higher than the national average. However, this shifted to 19 percent lower than the national average when quality was measured using potentially avoidable hospitalizations.

To put this in context, in a region where beneficiaries generally use more resources, if quality is assessed solely on claims-based indicators of the provision of clinically necessary services, then an area with higher resource use could look better on quality. However, if measured on whether potentially avoidable hospitalizations were avoided, they would look worse. Both types of indicators are linked with measuring resource use, but provide different pictures of quality. If Medicare measures physician quality along with resource use, it would be important to have a broader set of clinical indicators less linked with resource use. Measures of the use of quality-enhancing tools, such as information systems to track patient care and outcomes, would also be important, as the Commission recommended in its pay-for-performance recommendations.

Future work

The analysis shows that it is possible to use these types of episode groupers as one tool to measure physician resource use at the aggregate MSA level. We found that both groupers assign a large proportion of claims and dollars to episodes, and that episodes can be analyzed for variation in resource use and the types of services within an episode. We also found that the vast majority of episodes could be attributed to a provider, and that even when we allowed episodes to be assigned to more than one provider, most episodes were still assigned to a single provider.

However, the analysis also raised several technical and analytic issues that will need to be addressed as Medicare considers using these groupers to understand physician resource use. Additional research is needed to better understand how the clinical logic underpinning the groupers affects the construction of episodes and whether differences in coding patterns can affect per episode comparisons of resource use both within and across regions. We also found that using claims-based quality indicators is possible, but that a broader set of indicators less related to service delivery will be important.

The second step of our analysis (with a 100 percent sample in several geographic regions) will provide more information on the feasibility of applying these tools at the individual physician level. Among the issues we will address in the upcoming research are:

- What is the minimum number of individual episodes or quality indicators a physician must have in order to qualify for those episodes to be included in a resource use or quality analysis?
- What is the minimum number of total episodes physicians must have in order to be compared to their peers?
- What proportion of a physician's practice is captured after removing episodes without a clean start or finish, outlier episodes, and episodes that do not meet the minimum threshold for inclusion in resource use comparisons?
- How large is the distribution of physician resource use and quality scores?
- How should risk-adjustment techniques be implemented?
- Are there differences in practice patterns within more defined geographic areas that could lead to bias in per episode comparisons? ■

Standardized payments

We used the following methods to standardize payments.

Hospital inpatient services—We applied the standardized amount for each diagnosis related group (DRG) for each year to all records uniformly. Cases involving transfers were adjusted according to the payment rules laid out in regulation.

Skilled nursing facility (SNF) services—We merged the SNF Medicare Provider Analysis and Review records to the DataPro SNF Stay file, which contains linked claims, Minimum Data Set data, and Online Survey, Certification, and Reporting system data for SNF stays nationwide. This information was combined with specific standardized amounts of resource utilization groups from CMS to create standardized payment amounts.

Long-term care hospital services—For discharges that occurred on or after October 1, 2002, we applied the standardized amount for each DRG. For discharges prior to this date, we backed out local area wage-index adjustments from each hospital's payment, assuming local area wage indexes acted as a proxy for underlying costs.

Rehabilitation/psychiatric hospital services—Total Medicare payments and total length of stay were calculated for each DRG. We then created a DRG-level per diem amount, which was multiplied by the length of stay for each record.

Home health—We identified the home health case-mix weight on each claim and multiplied the weight by the base payment rate for the appropriate fiscal year.

Physician services—We identified the relative value unit (RVU) for each record by matching the Healthcare Common Procedure Coding System (HCPCS) and modifier on the record to the physician fee schedule

RVU file. We then multiplied the RVU by the units of volume for each record by the conversion factor for the appropriate year and reduced the standardized payment for multiple surgical procedures on the same claim and for services provided by physician assistants and assistants at surgery.

Ambulatory surgical center (ASC) services—We used the HCPCS code on the ASC facility records to match records to ASC payment rate files. We then assigned the ASC payment rate to each record based on the HCPCS and reduced the payment rate for multiple surgical procedures on the same claim (the payment for second and subsequent procedures was reduced by 50 percent, consistent with Medicare payment rules).

Clinical laboratory services—A record was classified as a clinical lab service if the HCPCS for a record on the carrier file matched a HCPCS on the clinical lab fee schedule. Each service on the lab fee schedule has a separate payment for each carrier, as well as the national limitation amount (NLA). The NLA is based on the median of the carrier rates and represents an upper payment limit for each service. In practice, most lab services are paid the NLA rate. The standardized payment rate for each lab record is the NLA for the service.

Anesthesia services—We summed the base units and the time units for each anesthesia record, and multiplied the sum by the anesthesia conversion factor for the appropriate year. Certified registered nurse anesthetists were assigned an amount that was half of the full amount, consistent with Medicare payment rules.

Hospital outpatient services—We used the HCPCS code to match outpatient records to an outpatient prospective payment system payment rate file. We then assigned a standardized payment amount to each record based on that payment rate. ■

Endnotes

- 1 Three groupers are primarily used by the private sector—ETGs, MEGs, and the Cave Grouper. Our choice of ETGs and MEGs was not based on any analysis of the utility of applying them to Medicare. Several large private plans use the Cave Grouper and it is being considered by CMS for testing, alongside the other two, as part of the agency’s study on episode groupers.
- 2 Information on inpatient hospital and SNF stays was taken from a 5 percent sample of the Medicare Provider Analysis and Review file.
- 3 We will continue to evaluate different outlier approaches in our analysis of 100 percent of Medicare claims in selected geographic areas. We will also evaluate whether deleting outlier episodes versus truncating outlier episodes has a measurable impact on physician rankings.
- 4 The MEG grouper employs two different approaches to staging, integer staging and substages, which further categorize within each integer stage.
- 5 Additionally, the Ambulatory Quality Alliance is developing standard methodologies that would apply to all three major groupers.
- 6 Not all episodes have three stages, and some episodes have four stages. For example, all CHF episodes are assumed to be stage 3 episodes and prostate and colon cancers have four stages running from stage 0 (significant predisposing risk factor for the disease, but no current pathology) to stage 3.
- 7 We intend to use both types of risk adjusters in the second step of our physician resource use analysis.
- 8 Using Berenson-Eggers Type of Service codes, we divided total episode payments into seven categories: inpatient, E&M services performed in both physician offices and hospital outpatient departments, post-acute care (including SNF, long-term care hospital, and home health services), procedures, imaging, tests, and other.
- 9 Analyzing ETG episodes by type of service produced broadly similar results.
- 10 In this context, efficiency does not necessarily mean cost of care only. To the extent that quality of care can be measured, it should be incorporated into any analysis of physician efficiency.
- 11 Using E&M dollars, 11 percent of episodes were attributed to more than one physician.
- 12 We used 35 percent instead of 30 percent, which we used for resource use.
- 13 These results have not been risk adjusted.
- 14 One condition where this is well illustrated is breast cancer. Women who need mammographies in our sample number 237,081. The other indicators for breast cancer have 30,000 or fewer beneficiaries eligible because they require that women have a diagnosis of breast cancer.
- 15 In this case, the quality would be lower if resource use were higher (more hospitalizations).

References

- Fisher, E. S., D. E. Wennberg, T. A. Stukel, et al. 2003. The implications of regional variations in Medicare spending. Part 1: The content, quality, and accessibility of care. *Annals of Internal Medicine* 138, no. 4 (February 18): 273–287.
- Hornbrook, M. C., A. V. Hurtado, and R. E. Johnson. 1985. Health care episodes: Definition, measurement, and use. *Medical Care Review* 42, no. 2 (Fall): 163–218.
- Medicare Payment Advisory Commission. 2006. *Medicare Ambulatory Care Indicators for the Elderly: Refinement of the Access to Care for the Elderly Project indicators*. Contractor report by Magnacare Health Services Improvement, Inc. www.medpac.gov.
- Medicare Payment Advisory Commission. 2005. *Report to the Congress: Medicare payment policy*. Washington, DC: MedPAC.
- Medicare Payment Advisory Commission. 2004. *Report to the Congress: New approaches in Medicare*. Washington, DC: MedPAC.
- Thomson Medstat. 2005. *Medstat Episode Grouper white paper*. Ann Arbor, MI: Thomson Medstat.
- Nolan, T., and D. Berwick. 2006. All-or-none measurement raises the bar on performance. *Journal of the American Medical Association* 295, no. 10: 1168–1170.
- Symmetry Health Data Systems, Inc. 2005. Users guide, Episode Treatment Groups™, version 5.2.
- Thomas, J. W. 2006a. Economic profiling of physicians: Does omission of pharmacy claims bias cost efficiency measurement? *American Journal of Managed Care*. Forthcoming.
- Thomas, J. W. 2006b. Should episode-based economic profiles be risk-adjusted to account for differences in patients' health risks? *Health Services Research* 41, no. 2 (April): 581–598.

CHAPTER

2

**Care coordination in
fee-for-service Medicare**

Care coordination in fee-for-service Medicare

Chapter summary

Care coordination has the potential to improve value in the Medicare program. Care coordination can connote a variety of activities for patients. But in this chapter, the Commission focuses on integrating the use of nurse care managers and information technology into the clinical care of patients with high-cost, complex needs. These services may improve patients' understanding of their conditions and compliance with medical advice and, in turn, reduce the use of high-cost settings such as emergency rooms and inpatient care. Ideally, care coordination will also improve communication among providers, eliminating redundancy and improving quality.

Fee-for-service payment mechanisms are barriers to coordination among providers and to care management for beneficiaries with complex care needs. Payment is directed to each provider separately and emphasizes treatment for acute conditions and face-to-face care.

In this chapter, we explore strategies for Medicare to coordinate care for complex beneficiaries. Commission staff interviewed a wide variety

In this chapter

- Why is care coordination needed?
- Care coordination tools for patients with complex needs
- Is there evidence that care coordination improves quality or saves costs?
- Models of care coordination in the Medicare FFS program

of experts and organizations involved in care coordination (35 interviews in total) and analyzed Medicare claims for beneficiaries with a subset of chronic conditions. Interview findings include:

- Many different tools are used to coordinate care. The two functions considered essential are: 1) a care manager (usually a nurse) to assist the patient in self-management and monitor patient progress, and 2) an information system to identify eligible patients, store and retrieve patient information, and share information with those who need it.
- Interviewees believe programs are more effective when the beneficiary's primary physician is involved.
- Care coordination programs are often required to show savings as a condition of payment. Therefore, to be cost effective, most programs focus on complex beneficiaries (e.g., those with multiple chronic conditions, such as congestive heart failure or diabetes, or users of many health care services).
- Care coordination services appear to improve quality. Published research on cost savings is less clear.

To stimulate discussion, we outline two illustrative models for complex patients in the fee-for-service program. Medicare could contract with providers in large or small groups that are capable of integrating the information technology (IT) and nurse care manager infrastructure into patient clinical care. In the other model, CMS would contract with stand-alone care management organizations that would work with individual physicians. The care management organization would have the IT and care manager capacity.

In either of these models, payment for care coordination services would be contingent on negotiated levels of performance on cost savings and quality improvements. Given that Medicare faces long-term sustainability problems and needs to learn more about the most cost-effective interventions, the entities furnishing the care managers and information systems should

initially produce some savings as a condition of payment. Demonstrating continued savings may not be necessary or feasible once care coordination strategies are broadly used.

Additionally, to encourage individual physicians to work with care coordination programs, CMS could pay a monthly fee to a beneficiary's primary physician or the group for time spent coordinating with the program. This may be less necessary if the physician is already part of a group practice with a care coordination program. If these two models coexisted, however, providing the fee only to nongroup practitioners could disadvantage physicians who practice in groups. As with other fee schedule services, these expenditures would be accommodated by re-allocating dollars among all services in the fee schedule. In either model, patients would volunteer to see a specific physician for their care related to the complex condition that qualifies them to receive care coordination.

These models do not represent the Commission's view of the only way care coordination might work in Medicare. Other strategies, such as pay for performance, complement this model by focusing on improving care. Also, adjusting Medicare's compensation to physicians for the longer time spent caring for patients with complex issues may be warranted if the current fees do not compensate for this extra time. ■

Over the last two years the Commission has explored multiple strategies to provide incentives for high-quality, low-cost care, and thus improve value in the Medicare program.¹ However, even if individual providers are efficient, the care for the beneficiary may still be less than optimal if they do not communicate well with other providers or monitor patient progress over time. To address this problem, we have been exploring ways to introduce care coordination by creating incentives for providers to share clinical information with other providers, monitor patient status between visits, and fully communicate with patients about how to take care of their disease.

While all patients could benefit from better coordination, the patients who most need the services described in this chapter are those with multiple chronic conditions and other complex needs. These patients represent a significant proportion of Medicare spending, yet many do not receive necessary care. More than 75 percent of high-cost beneficiaries were diagnosed with one or more of seven major chronic conditions in 2001 (CBO 2005). Beneficiaries with chronic conditions receive recommended care only 56 percent of the time and many experience potentially avoidable admissions (McGlynn et al. 2003, MedPAC 2004).

Other types of care coordination include improving transitions among providers, assisting all patients in understanding medical advice, and knowing when medical services are necessary. Providing these services to all types of patients is not directly addressed in this chapter.

The payment mechanisms in the fee-for-service (FFS) program are barriers to coordination among providers and to care management for beneficiaries with complex care needs. Payment goes to each provider separately and emphasizes treatment for acute conditions and face-to-face care.

These payment incentives reflect health care's historic orientation toward responding to acute illness and injury. In the past, the focus was on defining the problem and initiating short-term treatment, with the patient as a passive participant (Wagner et al. 2001). Because the episode usually resolved itself within weeks or days, little emphasis was placed on patient self-management or tracking. The Institute of Medicine's (2001) *Crossing the Quality Chasm* report described this underlying system failure, noting that the poorly organized delivery system, including the constraints of modern information

technology, was not capable of meeting the needs of the growing numbers of patients with chronic disease.

Payment methods reinforce this historical orientation. In a fee-for-service system, individual providers are paid based on what they do in a visit or in a setting without regard to the quality of those services, much less on coordinating the patient's care. Many of the services required by individuals with chronic conditions or other complex needs, such as ongoing monitoring and education for self-management, are not performed within the typical face-to-face office visit and often not by physicians. As two researchers put it, ensuring that beneficiaries receive these services within the context of our current payment and delivery system is like trying to fit a round peg into a square hole (Wolff and Boulton 2005).

The Congress acknowledged this problem by initiating a pilot program to address care coordination through the voluntary Chronic Care Improvement Program (now termed Medicare Health Support (MHS)). CMS launched eight pilot sites beginning in the summer of 2005 and is also testing other models. In June 2004, the Commission discussed the challenges of this new program, particularly applying a private sector disease management model to the Medicare population (MedPAC 2004). At this time, CMS has not yet evaluated the effectiveness of its various care coordination models.

We conducted interviews with physician organizations, other provider-based practices, health plans, various CMS demonstration sites, researchers, and quality experts to learn more about the key attributes of care coordination services. Those we interviewed agreed that care managers and information systems are critical for effective care coordination and that physician involvement improves the effectiveness of these programs. We outline two illustrative models for implementing care coordination in the Medicare program to stimulate further discussion on the topic. We also discuss how changes to the fee schedule may be warranted to increase payment for physicians caring for complex patients.

Why is care coordination needed?

Evidence continues to mount that beneficiaries with chronic conditions do not receive recommended care and may have hospitalizations that could have been avoided with better primary care. Researchers attribute

**TABLE
2-1**

Beneficiaries with select chronic conditions see more physicians

Percent of beneficiaries with claims billed by:

Beneficiaries	1 physician	2-5 physicians	6-9 physicians	10+ physicians
All	16%	51%	21%	12%
Without CAD, CHF, or diabetes	20	56	18	6
With CAD, CHF, or diabetes:	7	41	27	26
Three conditions	1	14	23	61
Two conditions	3	28	29	40
One condition	8	47	27	18

Note: CAD (coronary artery disease), CHF (congestive heart failure). Rows may not sum to 100 percent due to rounding. This table relies on Unique Physician Identification Numbers (UPINs) to identify unique physicians or practitioners. Our count of unique physicians may be affected by some physicians' usage of more than one UPIN.

Source: MedPAC analysis of a 5 percent sample of 2003 inpatient, outpatient, and physician/supplier file claims.

this problem to poor monitoring of treatment—especially between visits—and the lack of good communication among providers. Physician offices, on their own, struggle to find time to provide this type of care and few practices have invested in the necessary tools—namely clinical information technology (IT) systems and nurse manager staff.

In a 2003 report, researchers found that patients with chronic conditions received recommended care only 56 percent of the time (McGlynn et al. 2003). MedPAC analysis of claims-based ambulatory measures (primarily for chronic conditions) found that only two-thirds of beneficiaries received necessary care for 20 out of 32 indicators in 2004. Even fewer received necessary care for the other indicators. Our analysis of potentially avoidable hospitalizations found that congestive heart failure (CHF), chronic obstructive pulmonary disease (COPD), hypertension, and three forms of complications due to uncontrolled diabetes are among the top 12 reasons for hospitalization in the Medicare program. CHF is the most prevalent reason for a potentially avoidable admission and has high rates of readmissions (Rich et al. 1995).

Partly because of these hospitalizations, beneficiaries with multiple chronic conditions are responsible for a disproportionate share of Medicare spending. A recent analysis found that more than 75 percent of high-cost beneficiaries were diagnosed with one or more of seven major chronic conditions in 2001 (CBO 2005). Five

percent of Medicare beneficiaries account for nearly half of total FFS program spending (MedPAC 2004). A recent Commission analysis found that 70 percent of inpatient spending was for beneficiaries with three chronic conditions—coronary artery disease (CAD), CHF, and diabetes.

All beneficiaries, not just those with chronic conditions, suffer from the lack of coordination across settings. A recent study found that 34 percent of patients, regardless of payer, reported medical mistakes, medication errors, or lab errors. That number rose to 48 percent for those with four or more doctors involved in their care (Schoen et al. 2005). Thirty-three percent of survey respondents reported poor coordination at discharge. The respondents reported that they did not receive clear instructions about symptoms and were unclear whom to contact for questions. Many also said that the hospital made no arrangements for follow-up visits. Another study found that 19 percent of patients experienced an adverse event within three weeks of hospital discharge (Forster et al. 2003). Sixty-six percent of the adverse events were drug-related.

The lack of coordination could also be due to beneficiaries seeing multiple physicians over the course of a year, which would be particularly true for patients with chronic conditions. Our analysis shows that an average Medicare beneficiary sees five physicians per year. The more conditions a beneficiary has, the more physicians

he or she tends to see (Table 2-1). Sixty-one percent of beneficiaries with all three of the conditions we studied (CAD, CHF, and diabetes) saw 10 or more physicians in a single year. One of the reasons for this level of physician involvement is that multiple physicians care for a patient during a hospital stay. In a related analysis, we found that the percentage of beneficiaries seeing fewer than five physicians per year was 88 percent when no hospitalization occurred compared with 35 percent when a hospitalization did occur.²

Another analysis (not shown) shows that despite the number of physicians involved, one physician accounts for much of a beneficiary's care. Forty-seven percent of those with chronic conditions see one physician for 50 percent or more of their care, as measured by dollars. An even larger proportion of beneficiaries (65 percent) with none of the above three conditions see one physician for 50 percent or more of their care, as measured by dollars.

However, research suggests that physicians alone can only do so much to improve care coordination, especially for patients with chronic illness. Individual physicians may not have the time or be well suited to provide all the necessary evaluation, education, and coordination that benefit beneficiaries with multiple chronic conditions (Grumbach and Bodenheimer 2002, Rothman and Wagner 2003). One study found physicians would have to spend a full seven hours of their day just to ensure that all of their patients received recommended preventive services (Yarnall et al. 2003). Another study found that older patients with select conditions that require time-consuming processes, such as history taking and counseling, are at risk for worse quality of care (Min et al. 2005). Further, physicians are not trained to educate patients about caring for their conditions or to set up systems for monitoring between visits.

Physicians' use of basic care management tools is low, even in group practices where building the infrastructure, including the use of clinical IT, for care coordination may be more feasible. In a study of physician groups larger than 20, physicians scored, on average, 5.1 out of 16 possible points when asked if they used one or more of five key care management processes. The five processes were case management, physician feedback, disease registry, clinical practice guidelines, and self-management skills education (Casalino et al. 2003).

Care coordination tools for patients with complex needs

Experts agree care coordination is most needed and effective for beneficiaries with complex cases, often with multiple chronic conditions. Care coordination programs for those with complex needs use a variety of tools. Many are borrowed from disease management or case management but are applied more broadly across conditions or for a longer time frame.³ The Commission also found that the programs discussed by our interviewees shared many of the six essential elements (noted below) outlined in the well-known chronic care model (CCM). We identified through our interviews two tools that are central to all programs: care managers and information technology.

Care coordination services are described as the “glue” that holds the beneficiaries' care together. Providing this glue may improve quality of care and reduce costs. Because these services are often delivered when patients move from one setting to another, such as from the hospital to home, the same services designed for patients with complex needs may improve transitions for all patients (see text box on page 38).

In the literature on care coordination, the most cited model for chronic conditions is the CCM. In this model, programs must 1) have the support of the purchasers or insurers, 2) maximize other community resources to the extent possible, 3) support patient self-management, 4) support clinical decisions, 5) clarify delivery system roles for physicians and nonphysician team members, and 6) rely on clinical information systems to track patient progress and make information available to those involved in patient care (Bodenheimer et al. 2002).

To understand more about models of care coordination, the Commission interviewed physicians and their representatives, health plans that provide care coordination services to members, researchers, and quality experts. Because CMS is experimenting with a variety of care coordination models, we also included many of its project participants and staff in our interviews. (The text box on page 39 provides a description of the features of three relevant examples of CMS care coordination models.) Our interviewees described programs that encompassed many of the goals described in the CCM, but our primary conclusion was that two tools, in addition to physicians'

Improving care transitions

People with complex care needs, often older patients, are particularly vulnerable to fragmented health care (Coleman 2003).

Potential problems include a lack of understanding of self-management techniques or which symptoms to look for, confusing medication instructions, and inadequate preparation (Forster 2003). These problems often lead to increased hospitalization and emergency department visits.

Often the patient and the family caregiver are the only connection between the sites of care. Therefore, one approach to improving care transitions is to focus directly on encouraging patients and their caregivers to be active advocates for themselves. Researchers at the University of Colorado found that patients who were educated about medication self-management and “red-flag” warning symptoms and had a patient-centered record and primary and specialist follow-up were less likely than patients without such care to have a subsequent emergency department visit or rehospitalization for their condition (Coleman et al. 2005). This research also found that scores were higher

for patients in systems with a high degree of integration between hospitals and physicians.

These researchers have created a set of Care Transitions Measures which could be used to assess whether patient care involves these processes. The Patients’ Evaluation of Performance in California survey, designed by the California HealthCare Foundation for its pay-for-performance initiative, also includes several questions pertaining to transitions.

Other strategies involve developing and using information-sharing tools among patients, families, and providers. One example of such a tool is the continuity-of-care record. A group of physician organizations, along with experts in standard development, has defined the most relevant and timely core health information that should pass from one provider to another. Supporters say it can be created, read, and interpreted by various electronic health records, and printed in PDF or Microsoft Word documents. Another tool provides patients with a personal health record, which they use with all of their providers. ■

clinical management, were essential for effectively managing complex cases.

- **Information systems**—Care coordination programs use information systems to identify eligible beneficiaries. Care managers use the systems to track patients’ care and provide caregivers with information about the patient.
- **Care managers**—A care manager, usually a nurse, checks on and responds to questions from patients and their families at home and in interactions with multiple providers.

These two tools—information systems and care managers—were described as direct support for the patients. This support for the patient was most effective when the patient’s physician provided clinical information to the program and responded to the patient’s needs identified by the program, such as changing a medication order.

How are information systems used? Our interviewees described a wide variety of types and functions of information systems.⁴ Information systems enable care coordination programs to use predictive modeling programs to identify patients with the highest need for care coordination. Information systems are also used to track the patient’s condition; the care manager can pull up the patient’s history and risk-assessment notes to document the patient’s status over time. Sometimes the information system takes the form of an electronic health record, but patient information can also be stored and made accessible with web-based registries.

Care managers use the information in the system (including some built-in decision support, such as protocols regarding weight fluctuation) to determine whether the patient’s condition is stabilizing or improving, and whether they may need to contact a physician. If the patient is improving, the care manager may call the patient once a month instead of once every few days.

Illustrative CMS care coordination projects

Medicare Health Support pilot (Chronic Care Improvement Program in fee-for-service Medicare)

The Congress authorized this pilot in 2003 to test the application of disease management and other relevant models to the Medicare population. CMS has cooperative agreements with eight organizations to provide support for beneficiaries with congestive heart failure or diabetes among their chronic conditions. These Medicare Health Support organizations (MHSOs) are working with physicians and beneficiaries to improve the health of the targeted population (20,000 per site) and reduce Medicare expenditures. Quality and cost improvements are anticipated from preventing debilitating complications that often result in hospitalizations and emergency room visits.

CMS pays the MHSOs a fee up front. However, the MHSOs will need to pay back part or all of the fees if they fail to reach the target threshold of 5 percent net savings (Medicare claims cost and MHSO fee) and realize quality improvement goals as compared to a comparison group. As of January 2006, 110,000 beneficiaries had agreed to participate in the program in 8 sites. Congress authorized the Secretary of Health and Human Services to expand successful programs or program components.

Physician group practice

The Congress mandated this demonstration in 2000 to encourage coordination of care and investment in administrative structures and processes, and to reward physicians for improving health outcomes. In January 2005, CMS announced it had chosen 10 physician

multispecialty group practices (each with a minimum of 200 physicians) to begin the demonstration in April 2005. It will run for three years. This demonstration tests whether sharing savings that result from more effective care lowers program expenditures or improves quality. CMS assigns beneficiaries to the group practice based on how often they use physicians in the practice. If actual annual Part A and B expenditures for the assigned population are less than the expected expenditures and certain quality targets are met, the physician group practice can share a portion of the Medicare savings. CMS still pays individual physicians in the group using fee-for-service payment.

Care management for high-cost beneficiaries

CMS developed this demonstration to test models of care management in a Medicare fee-for-service population for beneficiaries who are both high cost and high risk. These beneficiaries will receive clinical support beyond that typically provided in traditional fee-for-service settings to manage their conditions. Eligible organizations include physician groups, hospitals, or integrated delivery systems. CMS pays the organization a care management fee, but the fee is contingent on certain targeted levels of savings. CMS hopes to test such care coordination strategies as intensive case management, increased provider availability, structured chronic care programs, restructured physician practices, and expanded flexibility in care settings to address needs specific to this population. The organizations must assume financial risk for their fees if they fail to meet savings targets. If savings go beyond the targeted level, the organization may also be eligible to share in them. ■

Care managers are often nurses, but some programs use specially trained educators or physicians along with nurse case managers.⁵ After the beneficiary enters the program, the care manager (either by phone or in person):

- Does an initial assessment. The care manager, often along with other practitioners, develops a plan for tracking the patient's status. Depending on the needs

of the patient, this could involve a once-a-week phone call or more intensive services, such as face-to-face visits or once-a-day calls.

- Helps the patient understand how to take medications, what symptoms to look for, and how to best manage his or her conditions (e.g., proper diet and exercise).

- Teaches the patient how to interact with the health system effectively (e.g., what questions to ask his or her physician).
- Communicates with the patient's providers regarding any problems the patient may have.
- Adjusts the care management plan, as necessary.

The care manager checks on the patient at regular intervals and is also available by phone to the patient or the patient's family. In some cases, care managers make appointments and even provide or pay for transportation.

Role of physician offices

All interviewees maintained that care coordination is most effective when patients' physicians are part of the care coordination team. Patients with multiple chronic conditions, in particular, require continuous clinical coordination to manage comorbidities effectively. While physician involvement is critical for clinical management, nonphysician practitioners, such as nurses and social workers, conduct many of the care management activities.

Those we interviewed described the following key roles for physician offices:

- provide referral and clinical information, including initial diagnoses, to the care management program;
- develop patient's clinical care plan;
- respond to feedback on the patient from the care management program (e.g., revising clinical care plan);
- write orders and administer necessary clinical services; and
- provide clinical information to the patient's database on an ongoing basis.

The care management program is administered in-house in practices where physician offices have enough patients and staff to justify the cost of performing care coordination activities.

However, smaller physician offices may not have enough patients at high complexity levels to warrant hiring care managers or developing patient education programs. Several reported that in these cases physician offices may provide some limited management through staff nurses, but the offices may need to team up with external care

management programs to provide the full set of care coordination services.

Several representatives of the CMS demonstration sites we interviewed stated that because physician involvement was critical, they intended to share a portion of their care management fee with physician offices. One interviewee stated that initially the fee would be designed as payment for professional services. However, over time the organization wanted to tie any payment to physicians to performance on quality and resource use measures. Several interviewees noted that because the goals of care coordination and quality improvement sometimes overlap, provider-level pay-for-performance incentives could encourage providers to initiate or collaborate with care management programs.

Role of the beneficiary

Although care management programs and the patient's physician are critical for care coordination programs to work, the central actor is still the beneficiary. These programs will not be effective without engaged beneficiaries.

Our interviewees said that two types of engagement were important. First, beneficiaries needed to agree to participate in the care coordination program. In the Medicare Health Support pilot, CMS provides the organization a list of eligible beneficiaries, including contact information, and the organization must contact the beneficiary.⁶ This information is also available to physician groups in the physician group practice (PGP) demonstration, but the practice can identify eligible patients as well.

Second, and most important, once beneficiaries are in the care coordination program, they are responsible for adhering to their care plan and properly monitoring their condition. Beneficiaries must be willing to accept phone calls or visits and act on the advice of the care manager or physician to weigh themselves, check blood pressures, take their medications, and make difficult lifestyle changes to improve their health status.

Most programs found beneficiaries were grateful that someone was paying attention and appreciated the phone calls. Interviewees responded positively that beneficiaries used the various electronic monitoring tools, and that care managers prompted noncompliant beneficiaries to do so.

We do not know yet whether beneficiaries in the variety of programs Medicare is testing will comply with the advice from the care coordinators or engage in healthier behaviors.

How are members with care coordination needs identified and who generally qualifies for those services?

Care coordination programs use administrative data and referrals from providers to identify beneficiaries most able to benefit from their services. Because most of these programs are expected to produce cost savings, targeting the right services to the right group of beneficiaries is essential. Who is the right group? In these programs, the right groups are patients whose future high expenditures can be prevented, including beneficiaries with multiple comorbidities or those taking multiple medications and using many services.

No two programs target exactly the same beneficiaries; which beneficiaries receive care depends on the type of organization and the type of program. If hospitals are involved, the program may target those at risk for readmissions. Without a hospital, the program may be more broadly targeted at patients with certain diagnoses.

Although the complexity of beneficiaries' conditions indicates a need for these services, it may be difficult to prevent higher costs if patients are very sick. Further, high users of services today may not be high users in the future. Commission research has found that while many high-cost beneficiaries in one year do have high costs in subsequent years, many do not (MedPAC 2004). We found that only 38 percent of beneficiaries ranked among the top 5 percent by FFS program spending in the base year of 1996 were among the top 5 percent the next year.⁷

Care coordination programs target patients through claims analysis—including lab and prescription data—or through referrals from physicians, hospitals, or post-acute settings. As might be expected, when the organization sponsoring the program is provider-based, it can rely more heavily on referrals from physicians or hospitals than those that are not. The ability to analyze claims in a timely fashion is important for all types of programs to identify eligible beneficiaries and shift the level of interventions over time.

Patients with CHF are often targeted by care coordination programs. CHF affects outcomes and costs and is a condition for which good ambulatory care, including better adherence to medication regimes, could prevent

hospitalizations. One interviewee also noted that hospitals have difficulty covering the costs for some patients with CHF, thus hospitals may want to reduce readmissions for these types of patients. Our analysis finds that Medicare beneficiaries with CHF (whether it is the primary diagnosis of the hospitalization or not) have high rates of readmission: 40 percent of all types of admissions are readmissions for any cause within 90 days.

Preventing readmissions for those with a variety of chronic conditions may be a useful way to target care coordination services. Our analysis also shows that rates of readmission within 90 days for any cause in beneficiaries with diabetes (34 percent), CAD (32 percent), and COPD (36 percent) are a relatively high proportion of all of their admissions.⁸

Many programs expand their focus beyond the presence of chronic conditions. Interviewees noted that age, multiple admissions, trips to the emergency department, or seeing numerous physicians were often signs of a need for care coordination. Risk factors also help determine eligibility, such as hypertension, high cholesterol levels, and symptoms such as dementia, depression, or low levels of functioning. The Program of All-Inclusive Care for the Elderly (PACE), which provides many types of care coordination services, targets its services to beneficiaries who might otherwise be in nursing homes.

Is there evidence that care coordination improves quality or saves costs?

Evidence shows that the various types of care coordination programs described in the previous section improve quality, particularly as measured by the provision of necessary care. Evidence on cost savings is less clear.

Quality improvement

Our interviewees find that care coordination services can improve beneficiaries' care. They found such programs reduced hospitalizations, including readmissions and emergency department use, and improved adherence to evidence-based guidelines. This was particularly true for beneficiaries with diabetes or CHF. Published research on the impact of care coordination corroborates the experience of our interviewees. Self-management programs for older adults have been found to improve care for hypertension and diabetes (Chodosh et al. 2005). Other interventions have been effective for coronary artery

disease, diabetes, heart failure, and asthma (Fireman et al. 2004).

In addition to improving performance on measures of whether patients received necessary care, several studies documented the impact of care coordination on outcomes, such as readmissions. Researchers found rates of readmissions fell when older patients with chronic illness were given a personal health record and a transition coach to help them manage their medications and symptoms (Coleman et al. 2004). Patients in the intervention group were approximately half as likely as those in the control group to return to the hospital at 30, 90, or 180 days.

Another study found reduced readmissions for at-risk elders when a care manager (an advanced practice nurse) managed the discharge process in the hospital and followed the patient into the next care setting. This study found readmissions were reduced by 45 percent (37.1 percent for the control group vs. 20 percent for the intervention group) at six months (Naylor et al. 1999).

Cost savings

Evidence on cost savings is less clear and savings may depend on how well the target population is chosen. When cost savings are shown, they are often limited to a specific type of patient, the intervention used, or the time frame for the intervention. Our interviewees said that the savings potential depended on the balance between targeting the right beneficiaries and finding the most effective interventions. Patients with CHF were seen as the most promising in terms of the opportunity for short-term cost savings and quality improvement. However, longer term savings could come from improved management of conditions such as diabetes because poor glucose control in diabetics can lead to worse cardiovascular health in the longer term. Interviewees pointed out that savings from better care coordination might come from both the diagnoses that led to patients' enrollment and from other conditions these patients often have.

In a review of the literature on disease management (services similar to care coordination), the Congressional Budget Office (CBO) concluded more evidence was needed to prove cost savings due to a lack of standardization of analysis and faulty research design (CBO 2004). Evaluations often did not include the cost of the interventions in their calculations, did not address the fact that many patients would have had decreased costs without the intervention, and were often based on one specific condition or intervention.

Another review of the literature found that research on programs emphasizing self-care shows promise for cost savings, especially for patients with CHF (Goetzel et al. 2005). Four randomized controlled trial studies that calculated net savings for CHF found that, on average, programs saved \$3.66 for every dollar spent. While significant, three of the studies were based on interventions performed when patients were at risk for readmissions, which could limit their generalizability. Further, the range of returns on investment across the studies was broad, from a loss of \$2.77 for every dollar spent to a gain of \$14.18 for every dollar spent.

Goetzel and colleagues (2005) found the evidence on savings to be less clear when programs were directed at asthma, diabetes, and depression. Similar to the CBO report, these researchers also discuss the difficulty of trying to assess the cost-savings of these types of programs.

A study on the use of care coordination tools at discharge from the hospital found that preventing readmissions also saved Medicare dollars. Six months after discharge, total Medicare payments for the intervention group of 186 patients were \$600,000 less (including the cost of the intervention) than those for the control group of 177 (Naylor et al. 1999).

The time frame used for these analyses is critical. Often the savings are documented in a relatively short period. Greater savings might be realized if measured over a longer time frame or vice versa. Obtaining a return on investment for controlling diabetes is said to take longer than for other conditions, perhaps five years. Researchers looking at the lifetime burden of chronic disease among the elderly concluded that beneficiaries with chronic conditions cost \$1,000 to \$2,000 more per year than those without them, but may cost less over their life time because they die sooner (Joyce et al. 2005). If care coordination programs work, annual spending may decrease, but beneficiaries may live longer with a higher quality of life. This would be a positive outcome for Medicare beneficiaries, but over the beneficiaries' lives the Medicare program may not spend less than it otherwise would have.

Some analysts question whether Medicare should require care coordination services to show savings. If these services are needed, effective, and improve the value beneficiaries receive, why should they be held to a different standard than other medical services? An analysis

**TABLE
2-2**

Current strategies to coordinate care in Medicare

	MA plans	PGP demonstration	MHS pilot	Physician P4P
Accountable entity	Health plan	Provider system	Care management organization	Physician office
Payment method	Capitation	Shared savings	At-risk care management fee	Bonus payments

Note: MA (Medicare Advantage), PGP (physician group practice), MHS (Medicare Health Support), P4P (pay for performance).

Source: MedPAC analysis.

of one care coordination program in northern California concluded that a program for those with chronic illness “must rest on its effectiveness and value regardless of whether it saves money” (Fireman et al. 2004). This may argue for assessing programs on the basis of whether they provide the interventions known to be effective or achieve certain quality improvements rather than on their cost savings. Further, if care coordination services become widespread, over time it will become increasingly difficult to demonstrate savings because of a lack of a comparison group.

Models of care coordination in the Medicare FFS program

The strongest incentives in the Medicare program to coordinate care are through the Medicare Advantage (MA) program. Because CMS pays MA plans a capitated amount for all of the enrollees’ care, the plan has an incentive to ensure that beneficiaries with complex needs are well managed across settings and over time. The Commission does not know how effectively MA plans coordinate care for their complex patients, but at least the payment mechanisms provide the appropriate incentives.

Care coordination is more difficult to do in the FFS program because it requires managing patients across settings and over time, neither of which is supported by current payment methods or organizational structures. Further, because patients have the freedom to go to any physician or other provider, it is more difficult to identify the practitioner most responsible for the patient’s care and the patient may choose to see multiple providers. The challenge is to find ways to create incentives in the FFS system to better coordinate care.

The models currently used in the private sector and those CMS is testing for the FFS program are reimbursed very differently than the typical fee-for-service transaction. They also require different organizational structures capable of operating across settings and interacting with the patient at home.

Table 2-2 shows the variety of approaches currently in use or being contemplated for care coordination in the Medicare program. The continuum moves from the plan-level incentives where the plan is at risk for the costs of all services (medical care and care management) to pay-for-performance incentives for physician offices to provide appropriate care to all patients. In between these two approaches are the two types of models from which we draw for our discussion of potential new approaches.

In the MA program, the plan is at risk for any costs of care that go beyond the capitated payment, but can attract beneficiaries with more generous benefits if it is able to spend less on beneficiary services than that amount. This payment can act as an incentive for MA plans to better coordinate care. MA plans, similar to health plans serving commercial clients, can hire care management services to interact directly with patients and physicians or integrate care management into any provider networks. CMS also provides incentives for care coordination through capitated payments to PACE program contractors and special needs plans. We discuss these plans in more detail in Chapter 9.

While not yet implemented, physician-level pay for performance also provides an opportunity to improve care for those with chronic conditions. In discussing measures of pay-for-performance incentives, the Commission recommended indicators of chronic care clinical management, including physicians’ ability to identify patients with chronic conditions, monitor their progress, and provide self-management education. However, these

**TABLE
2-3**

Components of two illustrative care coordination models

	Model one: Provider group	Model two: Care management organization plus physician office
Accountable entity	Group practice or integrated delivery network provides care coordination and clinical care.	External care management organization provides care coordination and physician office provides referral and clinical care.
Payment method	Shared savings or at-risk fee to group. A potential additional monthly fee for physician interaction with program.	Shared savings or at-risk fee to care management organization. Monthly fees to designated physicians of enrolled beneficiaries.
Enrollment and eligibility	CMS identifies eligible beneficiaries in region. Provider group targets services. Patients designate a physician as primary.	CMS identifies eligible beneficiaries in region. Care management organization targets services. Patients designate a physician as primary.
Accountability	Provider group accountable for savings targets (expected vs. actual Parts A&B spending) and quality measures (process and outcomes). If a physician fee is paid, group accountable for documentation.	Care management organization accountable for savings targets (expected vs. actual Parts A&B spending) and quality measures. Physicians accountable for documentation and quality measures.

pay-for-performance incentives do not ensure that a care manager is available to the patient, nor that patient care is tracked across settings.

The physician group practice demonstration and the Medicare Health Support pilot are currently being evaluated by CMS for use in FFS Medicare and are briefly

described in the text box on page 39. We draw heavily from these two models in our thinking about models for care coordination in the FFS program. However, further evaluation is necessary to identify which aspects of the current CMS initiatives are most effective. We present these models not as Commission recommendations, but to illustrate key attributes of an effective care coordination program and stimulate further discussion on the topic.

New approaches to care coordination in FFS Medicare: Two illustrative models

We present two models for delivering care coordination. In the first model, the patient’s primary physician is part of a group of providers with an internal care management program. In the second model, the patient’s primary physician is in a solo practice or small office with limited resources for care management, and the physician’s office works with an external organization to deliver the care management services between office visits (Table 2-3).

These programs would target high complexity patients because these patients are the ones for whom improved outcomes and lower costs are most likely. Any program to coordinate care for patients with complex illness will need information systems to identify and track patients and provide decision support and a care manager (usually a nurse) to help the patients navigate the health system and manage their own care. These care management functions will need to complement and build on the care provided by the patient’s physician. This may be best achieved by integrating the care management functions of information technology and a care manager directly into a physician practice. However, not all practices have a sufficient number of complex patients or the resources to provide the necessary care management services.

For reasons we describe below, we assume that the care coordination entities, whether provider groups or external care management organizations, would have some portion of their payment at risk for the outcomes they achieved, both in cost savings and quality improvement. Further, CMS may also pay a fee for individual physician time to interact with the care management program to encourage physicians to refer beneficiaries and to cooperate with the beneficiary’s program.

In the following sections, we discuss the accountable entities, payment methods, enrollment and eligibility, and accountability mechanisms for the two models.

Accountable entity

The accountable entity in the two models is perhaps the largest difference between them. The financial incentives, accountability mechanisms, and determination of beneficiary eligibility are all similar. These models are not mutually exclusive. They could coexist and provide different options for care coordination that would recognize that beneficiaries receive services from different types of delivery systems.

Provider group In the first model, the accountable entity would be a provider group and Medicare would contract with groups of providers, either group practices or integrated systems that also include hospitals and other types of providers, to furnish care coordination services. This would target payments for care coordination to organizations capable of investing in the IT and nurse care manager infrastructure.

It is unclear how large a provider organization should be to effectively deliver care coordination services or to take on some risk for cost savings as a condition of payment. While a single physician practice may not be able to deliver all of the services, a small geriatric physician practice may have a sufficient population of complex Medicare beneficiaries to find it worthwhile to invest in the necessary information systems and hire nurse care managers. The PGP demonstration limits participation to groups of 200 or more physicians, but other CMS demonstrations allow much smaller provider groups to participate. One of the CMS demonstration sites is run by an independent practice association (IPA) that coordinates across its member physicians, so IPAs could also potentially qualify as a provider group under this model.

Hospital-based systems choosing to be a part of the program may also vary in size. One of the PGP sites is centered around a single hospital with its affiliated physicians, while another includes multiple hospitals and physician groups. The program would be voluntary, so a physician practice or hospital-based organization would need to determine whether it was capable of delivering the necessary services.

In the provider group model, care coordination programs would be integrated directly into the provider's clinical care, either in a physician office practice, hospital, or home health practice. The nurse care manager might share office space with physicians. As such, beneficiaries may be more accepting of the program and involved in their own care management than if the coordination

were performed by an external entity. If a hospital is in the network, these programs could be initiated at discharge and encourage more seamless transitions for the beneficiary and better coordination between the hospital and physicians.

The type of group a physician is in may also guide decisions regarding provider participation in the program. A study of physician practices in California found that the more integrated the practice, the more likely it was to use disease management techniques. Sixty-seven percent of physicians formally affiliated with Permanente groups reported referring patients to disease management programs compared to 39 percent for those contracting through independent practice associations, and 17 percent among physicians in practices with 1 to 10 independent physicians (Rittenhouse et al. 2004).

Care management organization plus physician

office Under the second model, the accountable entity is a care management organization working with a physician office. This model acknowledges that limiting care coordination incentives to provider groups capable of investing in the necessary infrastructure on an at-risk basis would limit the number of beneficiaries that could benefit from the services. This model recognizes the central role physicians and their staffs can play in managing the care of complex cases, but acknowledges that additional professionals and information systems are needed for patient education and monitoring across settings and over time.

About 35 percent of office-based physicians are in solo or two-physician practices (Hing et al. 2005). These smaller practices, if grouped with others, might be able to participate in the first model and furnish all of the care coordination services themselves. However, on their own, these practices may not be likely to offer a broad spectrum of care management activities within their practice, and would not meet the specified criteria for participation outlined in our first potential model (e.g., patient panel size, information systems, and care managers).

The second model also recognizes that a number of care management organizations outside of provider settings have developed programs that could benefit beneficiaries with complex needs. For example, in the MHS pilot, CMS contracts with care management organizations willing to take responsibility for relatively large populations. These organizations are generally not a part of physician offices or integrated health systems. The patient is the primary

focus for these organizations. But, because the patient's clinical care is critical, the external organization also has strong incentives to coordinate its activities with the patient's physicians. In these situations, Medicare could allow stand-alone care management organizations, such as those contracting with the MHS pilot, to provide the necessary care managers and information systems.

These external care management organizations would employ the nurse care managers and information systems to assess patient severity levels and target interventions. The physician office would refer complex patients to the care management organization and agree to collaborate with it to coordinate the beneficiaries' care.

The Advanced Medical Home model outlined by the American College of Physicians provides useful design suggestions for either model (ACP 2006). Physicians would need to choose which type of model best suited their practice. The Advanced Medical Home model envisions that beneficiaries would identify a physician who they would commit to see for care related to their complex needs. This feature is a part of both models. Further, physician practices that meet criteria outlined in the group model (including ongoing monitoring of patients with care managers and information technology) could become accountable entities. Other physicians might opt to work with stand-alone care management organizations in our second model.

Payment method

Payment methods in both models would be similar. Payment to the care coordination entity (the group or the care management organization) would be tied to cost savings and quality goals through either shared savings or an at-risk care management fee. An incentive payment could go to physicians to encourage them to collaborate with these programs. In the case of a group, this incentive payment would go to the group. A separate payment may be less necessary when the group practice has a care coordination program. But if the two models coexist and the incentive payment only went to the individual physicians working with the care management organizations, physicians who practice in groups could be disadvantaged.

Given the challenge of the long-term sustainability of the Medicare program, limited evidence on cost savings, and the need for Medicare to move to value-based purchasing, putting the accountable entity at some risk gives a strong incentive to provide cost-effective, quality-enhancing

interventions. Further, this type of financial risk can provide physicians, hospitals, and others flexibility in designing care coordination strategies. The alternative—fees with no risk—requires Medicare to define the specific set of services, how they could be delivered, and who would be eligible for payment. Once care coordination has proven to be effective, demonstrated savings may not continue to be necessary and may also be more difficult to calculate. As more beneficiaries use these services, it would become increasingly difficult to achieve cost savings as the control group will shrink over time.

At-risk payment for care coordination services The purpose of an at-risk payment is to create a strong incentive to provide cost-effective interventions. Here we consider two types of at-risk payment—shared savings and an at-risk care management fee. Both require the accountable entities (provider groups in model one or external care management organizations in model two) to take on “business” risk for the population they serve. The downside risk involved for the accountable entity delivering the care coordination services would be limited to the costs of those services. The entity would be at no risk for delivering the actual Medicare benefits as is the case in the MA program. The accountable entity may not be paid for its services or not paid the full cost of them unless the costs of care for the population it serves are less than they would have been absent the care coordination services.

One type of at-risk payment is shared savings. Shared savings require the provider group or external care management organization to invest the resources necessary to coordinate care without any up-front payment. The organization receives payment only if its efforts create savings for the Medicare program. We found no examples, other than the PGP demonstration, in which this incentive is the only form of payment. However, the organizations involved in the PGP demonstration described this approach as a strong incentive to encourage better coordination, although the specific design raises concerns, which we discuss later.

An at-risk care management fee is used by the MHS program and the Medicare high-cost beneficiary demonstration. In these models, CMS pays the organization a negotiated fee for care management up-front, but part or all of the fee must be paid back if the program does not meet specified savings targets and quality goals. In the high-cost beneficiary demonstration the organizations can also opt to share in any savings over and above the care management fee.

Physicians and hospitals in both models are still paid under fee-for-service for Medicare-covered clinical services. However, if at the end of a certain time frame the Medicare program expenditures (Parts A and B) for the assigned population are lower than those of an equivalent population used as a control group, the organization is either eligible to share in the savings or allowed to keep part or all of the care management fee.

Both the shared savings and at-risk care management fee concepts are relatively straightforward, but the calculations to determine whether and how much savings should or did occur are complex. It is necessary to identify either a population with which to compare costs or to calculate an expected cost trend and then compare it with actual costs.

The time frame over which the savings are calculated is also important. Depending on whether the physician group or external care management organization already has an infrastructure in place and how quickly it is able to enroll beneficiaries, it could take several years before the full impact of the program is shown.

If fully implemented, it might be difficult to define an expected cost trend independent of care coordination services. Over time, calculating savings would become more difficult as more beneficiaries became eligible for care coordination services. Currently, care coordination services are only offered to beneficiaries in regions where a Medicare demonstration or pilot is located. If implemented as a part of the Medicare program, it will not be possible to withhold these services from eligible beneficiaries who currently make up the control group. Further, even if the calculations were based on expected costs, every year the base would shift as increasing numbers of beneficiaries were served by these programs.

The risk of the two forms of incentives are different, with shared savings requiring more up-front risk (no payment is provided until savings are realized) but a higher potential pay-out if savings above the cost of the intervention are realized. The at-risk care management fee allows organizations to receive payment up front, but if sufficient savings are not realized, they must pay some or all of it back. Medicare could also consider withholding part of the fee and waiting to pay the rest at a later point in time based on performance. It is yet to be seen if organizations currently contracting with CMS that do not meet their targets are willing or able to return this money.

Different types of organizational structures may favor one financial incentive over another. Larger organizations

may be better able to afford the initial up-front investment in the shared savings payment, while smaller entities may prefer the at-risk care management fee. Whether large or small, provider groups may also find the up-front investment required in shared savings aligns with other internal goals. For example, some of the PGP demonstration sites noted that the infrastructure developed for the demonstration, such as interoperable electronic health records or other mechanisms for tracking patients, was already a part of their overall strategic plan. A small physician practice may also have made some of these investments and appreciate the opportunity to be rewarded for achieving better patient outcomes.

Provider groups with hospitals in their systems may be most effective in creating savings, but because savings targets are determined based on the costs of both Part A and B services, these groups will need to consider the loss of revenue from reduced admissions when deciding whether to offer a care coordination program. It may be easier for provider groups with hospitals to identify patients with complex conditions, to afford the necessary infrastructure, and to create teams of physicians and hospital personnel. Hospital and physician teams can prevent further hospitalizations after discharge and provide ongoing services to keep the patient as healthy as possible. Further, because the savings these programs create are often a result of lower admissions, provider groups with hospitals may have an incentive to be a part of a care coordination program to ensure that at least some of the revenue lost from decreased admissions is made up through either the shared savings or the care management fee.

However, because much of the savings come from decreased hospitalization, provider groups with hospitals may find it hard to achieve a net gain in dollars sufficient to cover their investment. One PGP demonstration site with a hospital projected that the share of savings it could achieve would not be enough to cover the loss of hospital revenue and the intervention costs. Another factor to consider is whether hospitals are located in markets with sufficient demand to replace patients that may avoid hospitalizations due to improved care coordination.

Decreasing avoidable hospitalizations is an important goal for individual patients and the Medicare program, and this type of investment may have some long-term benefits for the provider organization. However, organizations with hospitals will need to carefully balance the potential dollars lost with those gained.

The level and formula for calculating savings required are also issues. In the PGP demonstration, CMS keeps the first 2 percent of savings for the Medicare program—regardless of the level achieved—because of a concern over random variation. Beyond that, any difference between the expected and actual beneficiary cost of care (including the care coordination services) can be shared with the provider group. If the savings are 5 percent, CMS keeps the first 2 of the 5 percent—40 percent of the savings created by the program.

It is unclear whether it is feasible for provider groups to reap any savings over and above the sum of 1) the Medicare 2 percent withhold, 2) the cost of the interventions, and 3) the loss of revenue from decreased admissions, at least for a provider group with a hospital. A more equitable approach might be for CMS to designate a percentage that would go to the program regardless of the dollars saved. For example, CMS could keep a certain percent of every dollar saved, regardless of the level of savings.

When paying an at-risk care management fee, CMS negotiates the target savings level. The target in both the MHS and the Medicare high-cost demonstration is 5 percent. As the demonstrations progress, we will learn more about whether that level is achievable and at what cost.

Fee for physician interaction with care management The second component of payment under both of our models is a fee to recognize the physicians' time to interact with the care management program on behalf of their complex eligible patients. The goal of this fee is to encourage physician involvement in care coordination.

Currently, CMS does not pay physicians to participate in any of these programs. Provider groups and the current care management organizations have an incentive to engage physicians because they are at risk for achieving savings. Our interviewees, particularly those not affiliated with a provider group, described numerous mechanisms they currently use to engage enrollees' personal physicians, including sharing the care management fee CMS pays to the organization with their beneficiaries' physicians.

The Medicare program could decide that the incentives in current models are sufficient for encouraging physicians to interact with the care coordination programs and that

direct Medicare payments are not necessary. However, interviewees have noted that some physicians do not view external programs as supportive because they demand time for which their offices are not compensated. While it may not be as necessary to provide these payments for physicians in provider groups, they will also need to spend time interacting with the care coordination program, even if it is internal to the practice. Further, if our illustrative models coexisted, the Commission would not want to disadvantage physicians who practice in more integrated systems of care. Therefore, both of our illustrative models include payments to physicians or groups to pay for time spent communicating with the care management program generally outside of office visits.

How would the physician office fee work? Medicare could establish monthly fees to cover the interactions between physicians and the care management program. Although some face-to-face visits are necessary to discuss program enrollment options and referral requirements, Medicare's payments would primarily be aimed at covering non-face-to-face activities involved in the patients' care coordination. The fee would cover activities related to referrals, patient information transfers, care plan oversight, and ongoing communications between the physician's office and the care management organization on patient status and progress. The fee would not require the physician to bill separately for these activities. For example, physicians would not bill separately for phone calls on behalf of the enrolled patient; rather, physicians would document this activity and consider it covered in their monthly fee from Medicare.

This new fee would be introduced as a new code on the physician fee schedule. As with other fee schedule services, these expenditures would be accommodated by reallocating dollars among all services in the fee schedule. A certain level of documentation would be required to ensure that the services for this code were provided when billed. Although Medicare does not generally reimburse for non-face-to-face encounters, some precedents do exist, and are discussed in the text box.⁹

Enrollment and eligibility

In both models, we assume that CMS would use administrative data to identify a population for which the care management organization would be evaluated for cost savings. We also assume that physicians would refer additional patients. If a physician office wished to be compensated for time coordinating with the care

Examples of current coverage for care coordination without face-to-face contact

For home health and hospice patients, Medicare covers three activities that physicians provide—certification, recertification, and care plan oversight (CPO)—without requiring face-to-face encounters. This coverage recognizes the need for physicians to provide important care management activities without requiring the patient or the physician to make face-to-face contact. This exception to Medicare's general face-to-face requirement shows an example of how Medicare can broaden its coverage of care coordination activities to include the interaction of physicians with care management organizations for complex patients. It also illustrates ways that Medicare can direct payments for care coordination activities through the physician fee schedule.

The physician fee schedule includes billable codes for certification, recertification, and CPO of home health and hospice patients. Billable activities include:

- communication with interdisciplinary team and pharmacist, including phone calls or other verbal communication;
- review of patient status reports;
- modification of plan of care, including the review and signing of modification orders; and
- review of lab results, reports, and records.

CPO must be furnished by a physician, a nurse practitioner, clinical nurse specialist, or physician assistant with a collaborative relationship with the physician who signed the initial hospice or home health

agency plan of care. Beneficiaries can receive CPO services if they require complex treatment, are being cared for by multidisciplinary teams, and are enrolled in a Medicare-approved home health agency or hospice.

The CPO services must take at least 30 minutes in a calendar month to be billable. The services do not need to be provided on the same day, but the total services over the course of a month must add up to at least 30 minutes. The physician or nonphysician practitioner must personally document the date, the time spent, and a brief description of the activities provided in the patient's record. The physician must have had a face-to-face service with the patient within six months of billing for the CPO.

A precedent also exists for monthly fees for care management activities for certain physicians treating specified patients. Medicare makes monthly payments to physicians who provide renal dialysis services to patients with end-stage renal disease. This fee includes many of the evaluation and management activities involved with dialysis patient care, including care coordination activities provided during the month, such as telephone calls and coordination with dietitians and social workers.

Although adjusted by the number of times the physician makes face-to-face contact with the patient, the fee includes coverage for non-face-to-face activities that occur between visits. Like the CPO requirements, the monthly service codes represent a full calendar month of services. Also, only one physician per patient may bill for the monthly fee. ■

management program, its eligible patients would need to designate the physician as their primary source of care in order to receive the care coordination services but could switch designations at any time.

In both models, the accountable entity would determine which beneficiaries need differing levels of care coordination services. However, the calculations of cost

savings necessary for determining payment would be performed on the overall population identified by CMS.

In addition to direct enrollment by the care management organization, physicians would be encouraged to refer eligible patients to the program in both models. One question would be whether the care management program would be required to accept all physician referrals, given it would be at risk for cost savings and physicians might

refer less complex patients when paid for coordinating their care.

We also assume that the patients in both models would need to demonstrate a certain level of commitment for working with the physician's office. While not locked into only seeing this physician, beneficiaries could identify the practitioner they believe oversees most aspects of their care and designate him or her to be the contact with the care management program. This practitioner, or the group on behalf of the practitioner in the case of a provider-based program, would receive the monthly fee when the beneficiary enrolls in the care management program. This designation of a primary physician is also a part of the Advanced Medical Home concept described in the previous section: Patients are encouraged to choose one physician, either a primary care physician or a specialist for the patients' chief chronic medical condition, whose office will serve as the central resource.

Accountability

How can Medicare ensure that the care coordination programs are effective and that the physician fee is being used for what it was intended? Care coordination programs should be evaluated both in terms of cost savings and quality improvement. Physician accountability for interacting with the care coordination program is also important.

Regarding cost savings, much of the accountability is built into the payment mechanism. In both our models, the care coordination program would be accountable for a certain level of cost savings.

Related to quality, a variety of process and outcome measures are currently in use in the CMS pilot and demonstrations and we see them as a part of our two models. Additionally, surveys of patients' perceptions of care could also provide information on patients' experience with the program.

Table 2-4 shows the mix of process and outcomes measures used in the PGP demonstration, many of which are also used by CMS for evaluating MHS contractors. Other outcomes measures, such as reduced admissions (including readmissions), could also be used for both cost and quality accountability.

Patient surveys could also capture patient experience in the program. Several of our interviewees noted that CMS was including this type of information in its assessments. The interviewees also used patient perceptions to gauge

the performance of their own organization. One survey (the Care Transitions Measures) could be used to assess patients' knowledge of how to manage their condition, including recognition of symptoms that indicate they should see a physician (see text box on page 38). The MHS pilot includes patient satisfaction as one measure of accountability.

After the appropriate quality measures are defined, how they are used for payment is also an issue. In the PGP demonstration, the level of savings available to the organization varies based on quality scores. Over the three years of the demonstration, the percentage of payments based on quality scores increases. In the first year, quality scores are 30 percent of the overall score, whereas in the third year they rise to 50 percent of the score. Over time, as it becomes more difficult to calculate cost savings, CMS could rely more heavily on quality measures and could focus those measures on conditions most influenced by care coordination services.

Physician offices that bill for the fee to coordinate with the care management program would be accountable for their fees in much the same way they are accountable for other fee schedule services they provide. Because physician fees would not be at risk, establishing practical mechanisms of physician accountability will be important. Historically, Medicare's reluctance to pay for services that do not require the patient's presence is based on program integrity concerns. However, recent exceptions to the face-to-face requirement include ways to establish accountability documentation for fees billed to Medicare without face-to-face contact. Physicians may also share in accountability for the quality measures through a pay-for-performance program.

Other mechanisms to improve chronic care management

Several other mechanisms can directly and indirectly improve care coordination and chronic care management. For example, Medicare could increase payments for evaluation and management (E&M) services or establish new billing codes to enhance payments for chronic care patients associated with face-to-face visits. These higher payments could be applied generally across all E&M codes, or they could be limited to services provided to patients with multiple chronic conditions. Other mechanisms include pay-for-performance initiatives and strategies to accelerate the adoption of information technology.

**TABLE
2-4**

Examples of quality measures: The PGP demonstration

Diabetes	CHF	CAD	Preventive care
HbA1c management	Left ventricular function assessment	Antiplatelet therapy	Blood pressure screening
HbA1c control	Left ventricular ejection fraction	LDL cholesterol lowering drugs	Blood pressure control
Blood pressure management	testing	Beta-blocker therapy for a patient	Plan of care
Lipid measurement	Weight measurement	with prior myocardial infarction	Breast cancer screening
LDL cholesterol level	Blood pressure screening	Blood pressure	Colorectal cancer screening
Urine protein testing	Patient education	Lipid profile	
Eye exam	Beta-blocker therapy	LDL cholesterol level	
Foot exam	Ace inhibitor therapy	Ace inhibitor therapy	
Influenza vaccination	Warfarin therapy		
Pneumonia vaccination	Influenza vaccination		
	Pneumonia vaccination		

Note: PGP (physician group practice), CHF (congestive heart failure), CAD (coronary artery disease), HbA1c (hemoglobin A1c), LDL (low-density lipoprotein).

Source: Research Triangle Institute Project Number 07964.013. Prepared for CMS. Physician Group Practice Demonstration Quality Measurement and Reporting Specifications, Version 2, July 29, 2005

Medicare fee-for-service already covers some care coordination services in its current E&M codes, as described in the text box on page 53. Although these commonly used codes technically include time for pre- and post-visit care coordination activities associated with office visits, they may not adequately account for the extra time and effort needed for complex patients either within the visit or between visits. This concern is compounded for physicians who have higher-than-average shares of patients with chronic illnesses. New medications and clinical protocols may warrant the introduction of new or higher payments for tracking and monitoring complex patient care. During our research, interviewees and experts repeatedly stated that even upper-level E&M codes have not kept pace with the physician resources needed for pre- and post-visit time necessary to treat complex patients.

Additionally, the physician fee schedule provides financial incentives for the physician to see more patients rather than spend extra time counseling a patient during a visit. That is, physicians may bill certain add-on codes for face-to-face visits that significantly exceed the usual service duration, but these codes carry lower payments than the physician may otherwise receive seeing a different patient for the same amount of time.

The American Medical Association/Specialty Society Relative Value Scale Update Committee (RUC) recently recommended an increase in payments for the majority of Medicare's E&M codes (Coughlin 2006). These increases

are not limited to complex patients but apply to all patients with longer visits. These recommendations apply to the work relative value units (RVUs) of the Medicare fee schedule.¹⁰ If CMS accepts the RUC's recommendations, then it will designate the RVU increases for selected E&M codes in its proposed rule for the 2007 physician fee schedule.

Broader policies to increase payments for E&M services would recognize the importance of care management services that are directly linked to face-to-face E&M visits. Similarly, establishing new billing codes for comprehensive services provided to beneficiaries with multiple chronic conditions could help achieve these goals.

Physicians and other Part B providers, such as nurse practitioners, who play larger roles in patient care management would be most likely to bill these codes. These providers may include any type of physician who manages the care of eligible patients, including primary care providers, geriatricians, and specialists, such as cardiologists with large caseloads of patients with multiple chronic conditions. Because changes in RVUs for fee schedule services are done in a budget neutral manner, revising or introducing codes for E&M RVUs would not theoretically incur additional Medicare spending for physician services.

Pay-for-performance initiatives (in which a portion of providers' payments are based on the quality of their care) are an additional mechanism for improving care

coordination in FFS Medicare. In a recent report to the Congress, the Commission discussed design principles and implementation issues for establishing pay-for-performance programs in Medicare (MedPAC 2005). We recommended that the Congress establish a quality incentive payment policy for physicians in Medicare. Such a policy could enhance several aspects of care quality, including care coordination.

Indicators that measure care quality are likely to capture, to some degree, the level of care coordination involved in providing care. That is, higher care quality may well signal better care coordination. Thus, initiatives to make higher payments to providers with better performance on process and outcome measures may, in turn, promote better care coordination.

Data management is a major component of care coordination programs. Initiatives to accelerate physicians' adoption and use of IT may also improve the coordination of care for Medicare beneficiaries. Indeed, pay-for-performance measures could spur physicians to adopt information technology that improves care. Further, providers would be building the infrastructure needed for future quality and pay-for-performance assessments. The Commission has recommended that pay-for-performance programs include measures of functions that are supported by the use of IT. For example, quality measures on providers' ability to track progress on all their Medicare patients with diabetes could encourage physicians to adopt IT and improve care coordination. ■

Current fee schedule billing allowance for care coordination activities

The physician fee schedule includes a family of evaluation and management (E&M) codes for billing Medicare based on different types of encounters, such as office or hospital visits with either new or established patients. Under the fee-for-service payment system, physicians and certain nonphysician practitioners (such as nurse practitioners and physician assistants) bill Medicare for E&M services using the physician fee schedule. Other office personnel, such as registered nurses, may perform activities included in the E&M service considered “incident to” the physician’s service, such as taking a blood pressure or calling the patient with lab results.

In general, care coordination and care management services are considered a part of the E&M visit, and Medicare requires that the patient and the provider have a face-to-face encounter to bill for such services. Each E&M code includes physician time allotted for preparing, caring for, and following up on patients. These times are called pre-, intra- and post-service times and they are included in the physician work valuation of the code. Activities conducted by support staff (including registered nurses, licensed practical nurses, medical secretaries, receptionists, and technicians) are included in the practice cost relative values.

The fee schedule lists E&M codes by the level of care provided to allow for a continuum of relative values

and corresponding fees for each service. Specifically, E&M codes are broken down by the degree to which three service components—history, exam, and medical decision making—occurred during the service. Therefore, physicians usually bill Medicare based on the content of the service they provided rather than the amount of face-to-face time they had with the patient during a visit.

In cases where face-to-face contact was consumed mostly by care coordination and counseling, physicians may bill an E&M code based on the total time the physician spent with the patient rather than the extent to which the three service components were included in the visit. For example, if a face-to-face visit focuses mostly on a review of treatments prescribed by a patient’s specialists and does not include an exam or medical history, the physician may still bill as if these components were present. Thus, when care coordination activities consume most of an appointment, they can be substituted for other required components that are needed to support code selection.

Additionally, physicians may bill certain add-on codes for visits that significantly exceed the usual service duration. These are called prolonged service codes, and CMS specifies that physicians may bill them when face-to-face contact during an E&M visit exceeds specified time thresholds by at least 30 minutes. ■

Endnotes

- 1 The Commission recommended in the March 2005 report to the Congress that Medicare build incentives for quality improvement into the payment systems for hospitals, physicians, home health agencies, dialysis facilities and physicians who treat dialysis patients, and Medicare Advantage plans. We also recommended that CMS measure the relative resource use of physicians and provide confidential feedback.
- 2 This analysis was based on the number of evaluation and management claims with unique personal identification numbers for beneficiaries in 2003.
- 3 Many of the programs we describe in this report use other terms for their activities, such as disease management or case management. Disease management programs promote self-management, but for the most part have not been designed to manage health conditions broader than a specific disease (Wolff and Boulton 2005). Care coordination uses disease management tools, but applies them broadly to the whole patient with the understanding that Medicare beneficiaries who need this level of management often have multiple chronic conditions. Some of the attributes of care coordination are also similar to case management, whereby a manager ensures that care for very sick patients is well managed, often within a setting of care.
- 4 Other types of information gathering tools include home monitoring devices, such as special phones that patients use to call in vital signs, easy-to-use blood pressure cuffs, and patients' scales that automatically send the readings to the care management database.
- 5 One program used a salaried group of physicians, in addition to a nurse care manager, to do home visits for a defined client base. It is yet to be seen if this is a cost-effective model. The beneficiaries in this program are very complex, and the concept is to provide hospital-level care at home. If the patient needs urgent physician attention, the organization can send the physician to the home rather than referring the patient to the emergency department or hospital. The organization stated that patients who are hospitalized are often sent home earlier because the physicians in the hospital know that they are discharging the patient to a physician. The patients still see their primary physician, but physicians who do the home visits are also available and familiar with the patient's needs.
- 6 In some programs, such as the physician group practice demonstration sites, beneficiaries did not have to agree to participate. They were a part of the program (with varying degrees of intervention) if they were patients of the physician or other providers who provided care coordination services.
- 7 Even though some beneficiaries in the group died, a sizable portion of people in the top 5 percent subsequently had lower spending.
- 8 Rates of readmission decrease significantly for these conditions if the analysis only includes readmissions for the same diagnosis. However, our analysis still shows that these beneficiaries are vulnerable to repeat admissions, regardless of the primary diagnosis.
- 9 Although the Current Procedural Terminology list of billing codes, published by the AMA, includes some non-face-to-face physician services, such as a phone consultation, Medicare does not associate them with any RVUs and thus does not make payments for these codes.
- 10 For a further description of the Medicare physician fee schedule and its use of RVUs, see MedPAC's Payment Basics series at http://www.medpac.gov/publications/other_reports/Dec05_payment_basics_physician.pdf.

References

- American College of Physicians. 2006. *The advanced medical home: A patient-centered, physician-guided model of health care*. Policy monograph. Washington, DC: ACP.
- Bodenheimer, T., E. H. Wagner, and K. Grumbach. 2002. Improving primary care for patients with chronic illness. *Journal of the American Medical Association* 288, no. 14 (October 9): 1775–1779.
- Casalino, L., R. R. Gillies, S. M. Shortell, et al. 2003. External incentives, information technology, and organized processes to improve health care quality for patients with chronic diseases. *Journal of the American Medical Association* 289, no. 4 (January 22/29): 434–440.
- Chodosh, J., S. C. Morton, W. Mojica, et al. 2005. Meta-analysis: Chronic disease self-management programs for older adults. *Annals of Internal Medicine* 143, no. 6: 427–438.
- Coleman, E. A., E. Mahoney, and C. Parry. 2005. Assessing the quality of preparation for posthospital care from the patient's perspective: The Care Transitions Measure. *Medical Care* 43, no. 3 (March): 246–254.
- Coleman, E. A., J. D. Smith, J. C. Frank, et al. 2004. Preparing patients and caregivers to participate in care delivered across settings: The care transitions intervention. *Journal of the American Geriatrics Society* 52, no. 11 (November): 1817–1825.
- Coleman, E. A. 2003. Falling through the cracks: Challenges and opportunities for improving transitional care for persons with continuous complex care needs. *Journal of the American Geriatric Society* 51, no. 5: 373–383.
- Congressional Budget Office. 2005. *High-cost Medicare beneficiaries*. Washington, DC: CBO.
- Congressional Budget Office. 2004. *An analysis of the literature on disease management programs*. Washington, DC: CBO.
- Coughlin, B. 2006. You could see big increases in most E&M services next year. *Part B News Online* 20, no.13. March 27.
- Fireman, B., J. Bartlett, and J. Selby. 2004. Can disease management reduce health care costs by improving quality? *Health Affairs* 23, no. 6 (November/December): 63–75.
- Forster, A. J., H. J. Murff, J. F. Peterson, et al. 2003. The incidence and severity of adverse events affecting patients after discharge from the hospital. *Annals of Internal Medicine* 138, no. 3 (February): 161–174.
- Goetzel, R. Z., R. J. Ozminkowski, V. G. Villagra, et al. 2005. Return on investment in disease management: Review. *Health Care Financing Review* 26, no. 4 (Summer): 1–19.
- Grumbach, K., and T. Bodenheimer. 2002. A primary care home for Americans. *Journal of the American Medical Association* 288, no. 7 (August 21): 889–893.
- Hing, E., D. K. Cherry, D. A. Wodwell. 2005. *National Ambulatory Medical Care Survey: 2003 summary*. Advance data from vital and health statistics, no. 265. Hyattsville, MD: National Center for Health Statistics.
- Institute of Medicine. 2001. *Crossing the quality chasm: A new health system for the 21st century*. Washington, DC: National Academy Press.
- Joyce, G. F., E. B. Keeler, B. Shang, et al. 2005. The lifetime burden of chronic disease among the elderly. *Health Affairs Web Exclusives* (September 26). <http://www.healthaffairs.org>.
- Medicare Payment Advisory Commission. 2005. *Report to the Congress: Medicare payment policy*. Washington, DC: MedPAC.
- Medicare Payment Advisory Commission. 2004. *Report to the Congress: New approaches in Medicare*. Washington, DC: MedPAC.
- McGlynn, E. A., S. M. Asch, J. Adams, et al. 2003. The quality of health care delivered to adults in the United States. *New England Journal of Medicine* 348, no. 26 (June 26): 2635–2645.
- Min, L. C., D. B. Reuben, C. H. MacLean, et al. 2005. Predictors of overall quality of care provided to vulnerable older people. *Journal of the American Geriatrics Society* 53, no. 10 (October): 1705–1711.
- Naylor, M. D., D. Broton, R. Campbell, et al. 1999. Comprehensive discharge planning and home follow-up of hospitalized elders. *Journal of the American Medical Association* 281, no. 7 (February 17): 613–620.
- Rich, M. W., V. Beckham, C. Wittenberg, et al. 1995. A multidisciplinary intervention to prevent the readmission of elderly patients with congestive heart failure. *New England Journal of Medicine* 333, no. 18 (November 2): 1190–1195.
- Rittenhouse, D. R., D. Grumbach, E. O'Neill, et al. 2004. Physician organization and care management in California: From cottage to Kaiser. *Health Affairs* 23, no. 6 (November/December): 51–62.

Rothman, A. A., and E. H. Wagner. 2003. Chronic illness management: What is the role of primary care? *Annals of Internal Medicine* 138, no. 3 (February 4): 256–261.

Schoen, C., R. Osborn, P. T. Huynh, et al. 2005. Taking the pulse of health care systems: Experiences of patients with health problems in six countries. *Health Affairs Web Exclusives* (November 3). <http://www.healthaffairs.org>.

Wagner, E. H., B. T. Austin, C. Davis, et al. 2001. Improving chronic illness care: Translating evidence into action. *Health Affairs* 20, no. 6 (November/December): 64–78.

Wolff, J. L., and C. Boult. 2005. Moving beyond round pegs and square holes: Restructuring Medicare to improve chronic care. *Annals of Internal Medicine* 143, no. 6 (September 20): 439–445.

Yarnall, K. S., K. I. Pollak, T. Østbye, et al. 2003. Is there enough time for prevention in primary care? *American Journal of Public Health* 93, no. 4 (April): 635–641.

CHAPTER

3

**Medicare's hospice
benefit: Recent trends and
consideration of payment
system refinements**

Medicare's hospice benefit: Recent trends and consideration of payment system refinements

Chapter summary

Medicare's hospice benefit has grown dramatically since its inception in 1983. Between 2000 and 2004, the total number of hospice users among beneficiaries rose almost 50 percent, while the total number of covered days of hospice care doubled. The payment system was developed from a demonstration project that analyzed the costs of hospice care for patients with terminal cancer diagnoses who lived in the community. As the number of users has grown, the population of hospice patients has become more diverse. Today, more Medicare hospice patients have noncancer principle diagnoses than cancer diagnoses and hospice patients can live in the community or in nursing homes.

Growth of the benefit and changes in the hospice population have led this Commission and others to suggest that the hospice payment system should be evaluated to assess whether it should be modified to improve payment accuracy. To test possible payment refinements in light of limited Medicare data, the Commission contracted with RAND to test the ability of case-mix adjusters to improve the predictive power of the hospice payment system. RAND used data on all Medicare patients

In this chapter

- Growth and change in Medicare's hospice benefit
- Consideration of payment system refinements
- Medicare hospice payment: Directions for further investigation

served by agencies of one large, multi-state, for-profit hospice chain for this analysis because its data contained detailed information not available from Medicare administrative records.

RAND found that adding diagnosis and other patient characteristics did not improve the ability of the number of days in the current per diem payment categories to predict variation in labor costs associated with a hospice episode. Results from analysis of this single chain do not rule out that additional case-mix adjusters would improve the accuracy of the per diem payment system if tested on a more representative population of hospice patients and providers. Nor can we conclude that case-mix adjusters would not improve the explanation of the variation in costs in an analysis that included data on all costs of hospice care, not just visit labor costs. The results from this study also show that the first and last days of the stays have more visits and higher visit labor costs than the intervening days. Higher payments for the beginning and end of stays, relative to the middle days of the stay, may result in more accurate payments. However, these results from a single chain's data are suggestive and should not be considered generalizable to all Medicare hospice patients without further evaluation.

Such evaluations would assess whether Medicare could improve the accuracy of the payment system. Paying accurately for all types of patients is important to ensure that the program is paying rates that cover providers' costs for all types of patients. The program needs to collect more detailed data from Medicare-participating hospice agencies to assess the relationship between patient characteristics and the frequency and intensity of services for a representative group of hospice users. An analysis of payment adequacy, such as those the Commission undertakes annually for other health care sectors covered by the Medicare program, could provide information about access to hospice care for Medicare beneficiaries, providers' access to capital, and the relationship of payments to costs of Medicare patients in hospice. These findings, along with data on the use of hospice and supply of providers, could inform an assessment of the adequacy of Medicare hospice payment policies. ■

Growth and change in Medicare's hospice benefit

The Medicare program began offering a hospice benefit in 1983 (HCFA 1983). From the beginning of the benefit, Medicare paid hospices using a prospective payment rate for each day of care. The payment method and Medicare base rates were developed using cost data from 26 hospices providing care to Medicare patients with terminal cancer under a Health Care Financing Administration demonstration project between 1980 and 1982. The payment rates have been increased for inflation and other cost increases, but the payment method and the base rates for hospice care have not been updated since the initiation of the benefit.

Medicare spent \$6.7 billion on hospice care in 2004. The CMS Office of the Actuary estimates that the Medicare program will spend \$9.8 billion on hospice care for beneficiaries in 2006 (OACT 2005). Hospice services' spending is projected to increase at an average rate of 9 percent per year from 2004 to 2015. This rate outpaces the growth in spending projected for hospital, physicians, skilled nursing facility, and home health services. During the same period the number of Medicare beneficiaries is expected to grow at an average annual rate of about 2 percent per year.

Changes raise payment accuracy questions, but data are limited

Since the establishment of the benefit, the population of hospice users has become more diverse and the practice of caring for hospice patients has changed. For example, the proportion of patients with cancer as the primary hospice admission diagnosis steadily declined from 75 percent in 1992 to 58 percent in 2000 (NCHS 2003). An analysis performed by RAND for the Commission found that in 2002 and 2003, the share of hospice users with cancer diagnoses had fallen to 43 percent. Neurodegenerative conditions such as dementia, end-stage Alzheimer's disease, and Parkinson's disease were the most common noncancer primary diagnoses among Medicare hospice patients, followed by cardiovascular disease. These changes raise the question of whether the Medicare hospice payment system accounts for the current costs of caring for hospice users that have terminal diagnoses unlike those patients in the original demonstration.

Another change has been growth in the use of hospice care among patients who reside in nursing home settings

(Miller et al. 2000).¹ Nursing home patients were not included in the original demonstration that was used to develop the payment categories and base payment rates (Greer et al. 1983). But precisely tracking the use of hospice among nursing home residents over time is difficult because Medicare hospice data do not readily allow identification of nursing home residents. One study using Medicare data estimated that 45 percent of hospice patients lived in nursing homes between 1996 and 1999 (Campbell et al. 2004).²

Costly but beneficial treatments that may be both palliative and curative have been developed since the benefit began (Lorenz et al. 2004, Huskamp et al. 2001). But, because of limited data, the extent to which these treatments are being used is unclear. Some evidence of changes in the provision of hospice care come from a Government Accountability Office (GAO) study that found the relative costs of services that make up a typical day of hospice care have changed since the inception of the benefit (GAO 2004). Costs for home health aides, supplies, and outpatient services make up a smaller share of the cost of a day of routine home care—the most commonly billed category of Medicare hospice care—since the hospice demonstration. In contrast, costs of nursing, drugs, social services, and durable medical equipment have increased as a share of routine home care costs per day. For Medicare's coverage rules and examples of covered services, see the text box on page 62.

Evaluation of the relationship between current patients' characteristics and costs could determine whether these changes in the use of hospice and the mix of services matter—that is, whether the current payment system allocates payments according to the variation in the costs of different patient types. However, Medicare does not collect beneficiary-level data on the number and types of visits and the use of drugs, equipment, and supplies. Hospices report aggregate data on cost reports, but these do not allow us to understand differences among patients. Claims tell only the type of day for which the hospice was paid, not what resources were used. Medicare data on the characteristics of hospice users are also limited. Unlike in many other prospective payment systems, the program does not require hospice agencies to collect or report patient characteristics using a standard patient assessment instrument. Consequently, as currently collected, Medicare data do not permit a detailed assessment of the relationship between patient-level characteristics and service use and cost. For example, the claim does not indicate whether a beneficiary lives in the community alone or with a

Hospice coverage rules

The Medicare hospice benefit covers palliative and support services for beneficiaries who have a life expectancy of six months or less if the disease follows its normal course. Two physicians, typically the patient's own doctor and the hospice physician, must certify the prognosis for a patient to be eligible to elect hospice. Covered services under the hospice benefit include:

- skilled nursing care;
- drugs and biologicals for pain control and symptom management;
- medical equipment and supplies;
- physical, occupation, and speech therapy;
- social work services and counseling;
- home health aide and homemaker services;
- short-term inpatient care;
- inpatient respite care;
- grief support for the patient and family; and
- other services necessary for the palliation and management of the terminal illness.

Beneficiaries who elect the Medicare hospice benefit agree to forgo Medicare coverage for curative treatment for the terminal illness. Medicare continues to cover items and services unrelated to the terminal illness. The first hospice benefit period is 90 days. The patient can then be recertified for another 90 days. After the second 90 days the patient can be recertified for subsequent 60-day periods. There is no limit on the number of benefit periods beneficiaries may elect as long as they remain

eligible. Beneficiaries can switch from one hospice to another one time during a hospice election period and can disenroll from hospice at any time.

The interdisciplinary team must establish, maintain, and follow a written plan of care for each person admitted to a hospice program, according to Medicare's current conditions of participation for hospices.³ The interdisciplinary team consists of a physician, registered nurse, social worker, and pastoral or other type of counselor. Hospices are also required to use volunteers to provide services equal to at least 5 percent of total paid patient care time. The plan of care must assess the patient's needs, identify services to be provided (including management of discomfort and symptom relief), and describe the scope and frequency of services needed to meet the patient's and family's needs.

Hospice care is carved out of Medicare's managed care benefit, Medicare Advantage.⁴ Medicare Advantage plan enrollees can elect hospice care outside their plan under the same eligibility rules as beneficiaries in fee-for-service Medicare. Beneficiaries who elect hospice care do not need to disenroll from their Medicare Advantage plan, although they may choose to do so. When a Medicare Advantage enrollee elects hospice care and remains enrolled in a Medicare Advantage plan, the plan is no longer financially liable for all Medicare-covered services the beneficiary uses while in hospice care. Medicare, therefore, reduces its monthly capitated payment for that beneficiary. Fee-for-service Medicare pays for the hospice care as well as care unrelated to the terminal condition. The plan continues to be liable, however, for Part D benefits (prescription drugs) and non-Medicare benefits (e.g., vision or dental care) that it offers to its enrollees. Medicare's reduced capitated payment is meant to cover this liability. ■

caregiver or lives in a nursing home—circumstances that might affect service use or agencies' costs.

Payment categories and rates

The Medicare program pays hospice providers a set rate for each day a beneficiary elects the hospice benefit.

Payment for each day is not contingent on a patient receiving a visit on a given day and providers are not required to report visit data to the program. Although a patient may not receive a visit on a given day, the hospice may still incur costs of on-call services, care planning,

**TABLE
3-1**

Medicare hospice payment categories and rates, FY 2006

Category	Description	Base payment rate	Labor share	Share of days
RHC	Home care provided on a typical day	\$126 per day	69%	93.0%
CHC	Home care provided during periods of patient crisis	30.76 per hour	69	4.1
IRC	Inpatient care for a short period to provide respite for primary caregiver	131 per day	54	0.2
GIC	Inpatient care to treat symptoms that can not be managed in another setting	563 per day	64	2.7

Note: FY (fiscal year), RHC (routine home care), CHC (continuous home care), IRC (inpatient respite care), GIC (general inpatient care). Payment for CHC is an hourly rate for care delivered during periods of crisis if care is provided in the home for 8 or more hours within a 24-hour period beginning at midnight. A nurse must deliver half of the hours of this care to qualify for CHC-level payment. The minimum daily payment rate at the CHC level is \$246 per day (8 hours at \$30.75 per hour); maximum daily payment at the CHC level is \$738 per day (24 hours at \$30.75 per hour).

Source: Base payment rates and labor shares are from CMS Manual System Pub 100-04 Medicare Claims Processing, Transmittal 663, CR 3977, "Update to the Hospice Payment Rates, Hospice Cap, Hospice Wage Index and the Hospice Pricer for FY 2006." Data on share of days are from RAND Corporation's analysis of 100 percent hospice standard analytic files from CMS for calendar years 2002 and 2003.

drugs, or supplies for the patient. Medicare pays according to a fee schedule that has four base payment amounts for four categories of care: routine home care, continuous home care, inpatient respite care, and general inpatient care. Two caps apply to hospice agencies' payments each year. See the text box on page 64 for more information about the hospice caps.

In 2002 and 2003, 93 percent of Medicare hospice days were paid at the routine home care rate, 4.1 percent were continuous home care days, 2.7 percent were inpatient respite care days, and 0.2 percent were general inpatient care days. The payment categories are distinguished by the location and intensity of the services provided. Payment rates vary according to expected input cost differences based on the hospice demonstration data. The base payment rates are adjusted for geographic differences in wages by multiplying the labor share, which varies by category, of each base rate by the applicable hospice wage index (Table 3-1).⁵ A hospice is paid the routine home care rate for each day the patient is enrolled in hospice unless the hospice provides continuous home care, inpatient respite care, or general inpatient care.

Beneficiary liability for hospice services is minimal. Hospices may charge a 5 percent coinsurance for each drug furnished outside the inpatient setting, but the coinsurance may not exceed \$5 per drug. For inpatient respite care, beneficiaries are liable for 5 percent of Medicare's respite care payment per day. Beneficiary coinsurance for respite care may not exceed the Part A inpatient deductible, which was \$952 per year in 2006.

Hospice providers' costs and payments

The Commission has never formally analyzed the adequacy of Medicare hospice payments because data on Medicare costs and payments at the agency level have been limited.⁶ Between 1992 and 1999, hospices were not required to submit Medicare cost reports. However, the Balanced Budget Act of 1997 required hospice agencies to submit a cost report for each fiscal year, beginning in 1999. Unlike cost reports for other providers, such as hospitals, skilled nursing facilities, and home health agencies, the Medicare hospice cost report collects Medicare cost data, but not Medicare payment information. Medicare payments to each agency must be calculated from claims by matching claims for the time period overlapping the cost-reporting period. In addition, agencies were not required to submit electronic cost reports until reporting periods beginning on or after December 31, 2004.

Although data are limited, the available information about hospice margins suggests they vary by facility size and other characteristics. For example:

- The GAO estimated that the Medicare per diem rate for all hospice care in freestanding hospices was 8 percent higher than Medicare costs in 2000 and over 10 percent higher in 2001 (GAO 2004).⁷ Smaller hospices had, on average, higher per diem costs than large or medium hospices for each of the payment categories.⁸ Medicare costs were lower than payments for continuous home care, routine home care, and general inpatient care days, but costs were higher than Medicare payments for inpatient respite care days.

Hospice caps

When the hospice benefit was established, two caps were formulated to limit program liability for hospice spending. One cap limits the share of inpatient care days (either inpatient respite care or general inpatient care) an agency may provide to 20 percent of its total patient care days each year. This cap was also intended to prevent hospice care from becoming a predominantly inpatient benefit and to preserve the delivery of hospice care in the patient's home (Gage et al. 2000). If an agency exceeds the 20 percent inpatient cap, Medicare pays the routine home care rate for the days above the threshold.

The second cap limits the average annual payment per patient a hospice can receive from the program.⁹ The average annual payment cap is calculated for the period November 1 through October 31 each year. For the year ending October 31, 2005, the cap amount was \$19,776. If an agency's total payments divided by its total number of beneficiaries exceed the cap amount, then the agency must repay the excess to the program. As with the 20 percent inpatient day cap, this cap is not a spending limit on each individual beneficiary, but is applied at the agency level. The average aggregate payment cap is adjusted annually by the medical expenditure category of the consumer price index for

all urban consumers. Unlike the daily payment rates, the average aggregate payment cap is not adjusted for geographic differences in cost. As a result, an agency serving a lower wage area can provide more days of the same category of care per beneficiary before reaching the cap than an agency serving a higher wage area.

Because the cap is applied at the agency level, hospices can fall below the cap by having only patients whose lengths of stay do not cause the agency to exceed the average annual cap amount. Alternatively, agencies can have a mix of patients with long lengths of stay and payments in excess of the cap and patients with shorter lengths of stay and payments below the cap. The number of hospices exceeding the average annual payment cap has historically been low. The Government Accountability Office found that between 1999 and 2002 less than 2 percent of hospices reached the cap. Two large, publicly traded chain providers have had agencies that exceeded the aggregate annual caps, which has drawn attention to the caps (Joseph 2005).

To determine whether more hospices are reaching the average annual payment caps, we examined data from the four regional home health intermediaries (RHHIs), contractors that process and pay Medicare claims. We

(continued on next page)

- Total margins of freestanding hospices varied by agency size and for-profit/nonprofit status, according to an analysis using 2003 freestanding hospice cost-report data (McCue and Thompson 2005).¹⁰ For example, the median margin for large for-profit agencies was 18 percent, but the median for large nonprofits was 2 percent. However, these total margins are calculated using all payers' payments and all patients' costs so they may not be the same as Medicare margins.
- Hospice industry data also showed that total margins varied by agency size as measured by average daily census from an average of 11 percent to 19 percent in 2004 (NHPCO 2005). However, excluding fundraising dollars, the National Hospice and Palliative Care Organization (NHPCO) reports average agency

margins of 2 percent (NHPCO 2006). These margin data are from a small number of agencies voluntarily reporting their calculations to the NHPCO and therefore are not representative of all hospice providers.¹¹ These, too, are total margins so they may not be the same as Medicare margins.

Given the age and lack of representativeness of the currently available information, these data are merely suggestive of the magnitude and variability of the current relationship between costs and payments across the industry. Additional analysis of the most recent Medicare cost and payment data for a representative group of hospices is needed to confirm the magnitude and variation of current Medicare margins for hospice providers, which could in turn inform an understanding of the adequacy of Medicare payment for hospice services.

Hospice caps (cont.)

found that more agencies are reaching the aggregate annual cap, but that nearly all of the increase is accounted for by agencies in the Palmetto region (Table 3-2). Through 2003, the share of hospices reaching the cap in that region was a relatively small share of total agencies. In 2003, the 81 agencies that reached the cap were just 3 percent of hospices in the region; in 2004, the share of hospices reaching the cap jumped to almost 15 percent. The 20 percent inpatient cap is rarely

reached in any of the regions according to data from the RHHIs.

Differences in shares of agencies reaching the cap across the four RHHIs raise the question of whether providers reaching the cap are concentrated in certain regions or whether all of the RHHIs are consistently applying the cap calculation payment method defined by law.¹² ■

**TABLE
3-2**

Recent trends in the number of hospices reaching the annual payment cap vary by region

Regional home health intermediary	2000	2001	2002	2003	2004
Hospices over cap					
Associated Hospital Services	0	0	0	0	0
Cahaba	0	2	4	0	N/A
Palmetto	10	21	21	81	128
United Government Services	N/A	N/A	3	7	10
Overpayment amount (in millions)					
Associated Hospital Services	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Cahaba	0.0	0.1	0.9	0.0	N/A
Palmetto	5.9	10.3	9.5	57.7	94.6
United Government Services	N/A	N/A	0.4	2.1	2.8

Note: N/A (not available). The four regions are each served by a different regional home health intermediary (RHHI). Associated Hospital Services is the RHHI for providers in CT, MA, ME, NH, RI, and VT. Cahaba is the RHHI for providers in CO, DC, DE, IA, KS, MD, MO, MT, ND, NE, PA, SD, UT, VA, WV, and WY. Palmetto is the RHHI for providers in AL, AR, FL, GA, IL, IN, KY, LA, MS, NC, NM, OH, OK, SC, TN, and TX. United Government Services is the RHHI for providers in AK, AS, AZ, CA, HI, ID, MI, MN, NJ, NY, NV, OR, WA, and WI. The annual spending cap limits the average annual payment per patient a hospice can receive from the program. If an agency's total payments divided by its total number of beneficiaries exceed the cap amount, then the agency must repay the excess to the program. The cap is adjusted annually by the medical expenditure category of the consumer price index for all urban consumers. The figures for 2004 are not final because guidance from CMS indicates that the cap amount for this period may change.

Source: Unpublished data from regional home health intermediaries.

More Medicare beneficiaries used hospice in 2004 than in 2000

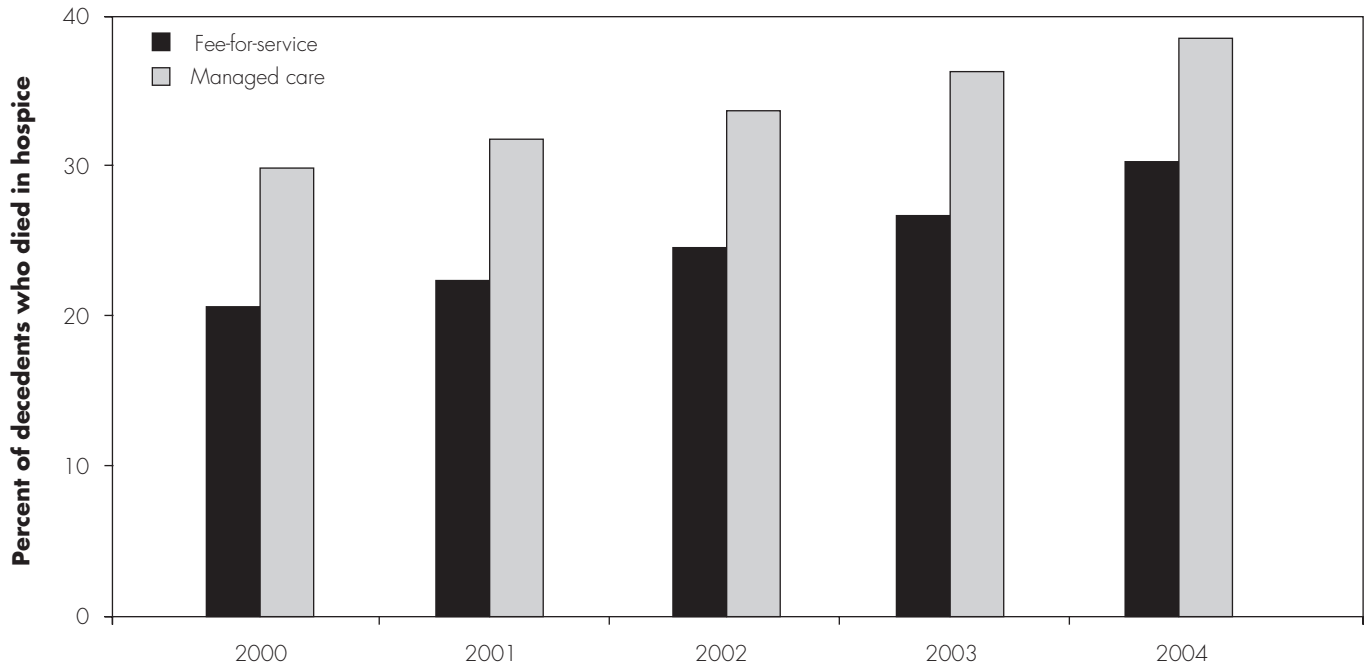
More Medicare beneficiaries are electing to use hospice before they die. The rate of hospice use grew from 22 percent of decedents in 2000 to 31 percent of decedents in 2004. Differences in managed care and fee-for-service decedents' hospice use persisted through 2004, with decedents in managed care plans having higher rates of hospice use (Figure 3-1, p. 66). Use is still highest among white Medicare beneficiaries, with nearly one-third of decedents using hospice. But growth in the use of hospice has occurred among beneficiaries in all racial

and age groups. This increased use of Medicare's hospice benefit suggests improved awareness and appreciation of the benefit by physicians, hospitals, patients, and their families (MedPAC 2004). In recent years, CMS has also promoted the availability of the benefit to providers and beneficiaries, for example through advertisements in physician journals.

With the increase in the share of decedents electing hospice before they die, the total number of hospice users has increased (Table 3-3, p. 66). Between 2000 and 2004, the number of hospice users increased almost 50 percent

FIGURE 3-1

Hospice use has grown for all Medicare decedents, but use remains higher among those in managed care



Source: MedPAC analysis of 5 percent Enrollment Database file, 2005 from CMS.

TABLE 3-3

Use of hospice among Medicare beneficiaries increased from 2000 to 2004

	2000	2004	Percent change 2000-2004
Beneficiaries in hospice	534,261	797,117	49%
Payment (in billions)	\$2.9	\$6.7	130
Days of care (in millions)	26	52	101
Share of decedents in hospice	22%	31%	N/A

Note: N/A (not available). Data include Puerto Rico.

Source: Beneficiaries, payments, and days of care from Medicare National Summary for HHA, Hospice, SNF, and Outpatient. http://www.cms.hhs.gov/MedicareFeeforSvcPartsAB/02_MedicareUtilizationforPartA.asp#TopOfPage. Accessed February 13, 2006. Share of decedents in hospice from MedPAC analysis of 5 percent Enrollment Database file, 2005 from CMS.

and the total number of covered days of hospice care doubled during that same period.

The increase in the number of covered hospice days outpaced the growth in the number of users. This trend is driven by increasingly longer lengths of enrollment over time for the share of beneficiaries at the upper end of the enrollment distribution. These stays drove up the mean length of enrollment between 2000 and 2004, but the median remains at about two weeks (Figure 3-2). From 2000 to 2004, more than 25 percent of beneficiaries dying in hospice were enrolled for less than a week before their deaths. These general trends in the distribution of length of enrollment in hospice are the same for hospice beneficiaries in fee-for-service Medicare and in Medicare managed care plans, so heavier rates of use do not seem to result in longer lengths of enrollment.

Analysis of the diagnosis on the Medicare hospice claims from 2002 and 2003 shows variation in the lengths of stay by disease category (Table 3-4, p. 68). Across all disease categories, at least half of patients did not use any type of days of care other than routine home care. This is consistent with the finding that, across all disease

categories, the vast majority of all hospice days—93 percent in 2002 and 2003—are routine home care days.

Length of stay also varied widely by state from a low of 41 days in South Dakota to a high of 122 in Mississippi in 2004 (Figure 3-3, p. 69). Reasons for this variation in length of stay are unknown. The rate of hospice use among Medicare beneficiaries also varies by state. Research has found that the use of hospice is associated with physician, patient, and market characteristics but that, as with other types of healthcare services, “much variation in hospice use is unexplained” (Lorenz et al. 2004).

The supply of hospice providers increased between 2001 and 2005

The number of Medicare-certified hospices has increased in the past five years. The mix of hospice provider types has changed as well. Hospice agencies can be freestanding agencies or based in a hospital, skilled nursing facility, or home health agency.¹³

The number of hospice agencies participating in the Medicare program rose 26 percent from 2001 to 2005. In 2005 alone, 251 new Medicare hospice agencies joined the program while 27 agencies terminated their participation. This recent period of growth is attributable to the increase in the number of freestanding providers (Figure 3-4, p. 70).

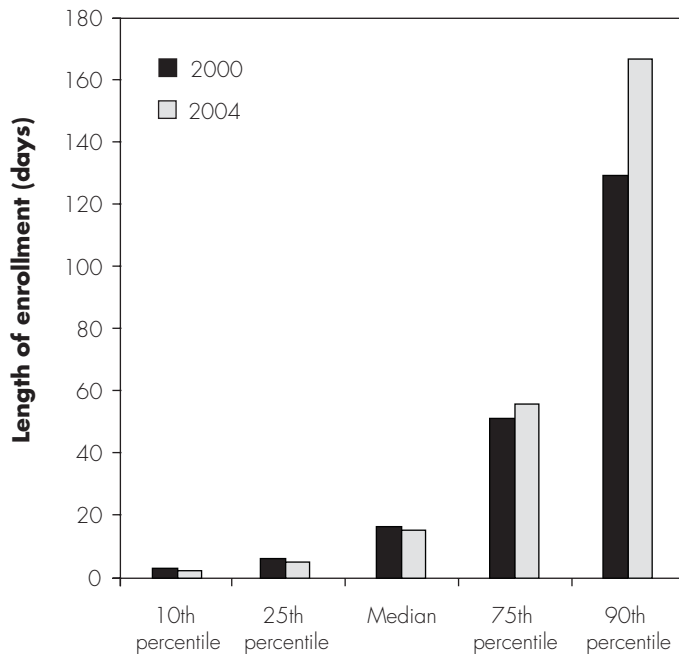
Freestanding hospices account for the largest share of any hospice type—57 percent in 2005. This is a change from the mix of hospice provider types participating in the 1980–1982 demonstration, where the most common type of hospice provider was hospital-based (42 percent), followed by freestanding providers (31 percent), and home health agency-based (27 percent). There were no skilled nursing facility-based providers in the demonstration (GAO 2004). As of February 2006, 46 percent of hospice agencies were for-profit compared to 31 percent in 2001.

Consideration of payment system refinements

Changes in the use and provision of hospice care suggest that the hospice payment system should be re-evaluated. Evaluation of the hospice payment system would assess whether the benefit structure and payment rates, developed 25 years ago, could be changed to improve the accuracy of the payment rate. Paying accurately for all types of patients

FIGURE 3-2

Long hospice stays are getting longer, but short stays persist



Note: Data are for Medicare beneficiaries in fee-for-service Medicare.

Source: MedPAC analysis of 5 percent Enrollment Database file, 2005 from CMS.

is important to ensure that the program is paying rates that cover providers’ costs for all types of patients.

Determining the accuracy of the current payment system is difficult. Medicare administrative data offer little detail about hospice services that each patient uses. In this section, we describe the limitations of Medicare data in more detail. We then describe an analysis of the hospice payment system using data from one large chain provider. The results of this analysis are not necessarily generalizable to the entire Medicare population, but they permit a description of one large chain’s service provision and costs not available from Medicare data.

Administrative data limitations

The Medicare data available to assess the relationship between hospice patient characteristics and the use of services are limited. The type of services provided, the type of personnel who provided the care, and the frequency and duration of patient visits are not collected on the Medicare claims. Medicare claims provide information at the patient level only on the payment

**TABLE
3-4**

Total days of hospice care vary by disease category

Disease category	Mean total days of care	Mean days of:			
		RHC	CHC	IRC	GIC
All conditions	46.5	43.2	1.9	1.3	0.1
Cancer conditions					
Colorectal	48.3	44.0	2.4	1.4	0.1
Lung, larynx, pleura	40.1	36.6	1.8	1.2	0.1
Hematological	34.3	30.7	2.0	1.2	0.1
Noncancer conditions					
Neurodegenerative	61.3	58.7	2.4	1.0	0.1
Ill-defined debility	54.5	52.3	1.6	0.9	0.1
Cerebrovascular	35.4	31.3	1.9	1.9	0.0

Note: RHC (routine home care), CHC (continuous home care), IRC (inpatient respite care), GIC (general inpatient care). Disease categories were created using International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) codes.

Source: RAND Corporation's analysis of 100 percent hospice standard analytic files from CMS for calendar years 2002 and 2003.

category for which the agency billed and the number of days of each category. Comprehensive evaluation of patient costs and service use by hospice patients would require Medicare to collect additional data.

When the Commission last reviewed hospice payment policy in 2004, we concluded that an examination of the services hospices currently provide was needed to ensure that payments accurately account for efficient provider costs (MedPAC 2004). While not a formal recommendation, the Commission suggested that data on the types of services different patients use could be collected nationally by requiring hospice providers to report the information on claims forms or in cost reports. Alternatively, the data could be collected from a sample subset of providers. Data collection efforts should balance the need for information with the administrative burden placed on providers and CMS.

The program has not collected any additional hospice data since the Commission's report. Thus, necessary data are not available for research on potential payment system refinements. In the absence of a representative Medicare hospice data set, we contracted with RAND to analyze one chain provider's data. These data allow us to assess whether detailed use information suggests any potential modifications to Medicare's hospice payment system to distribute payments according to the variations in the costs of different types of patients. This analysis is described in the following section.

Testing case-mix adjustment using data from a large chain provider

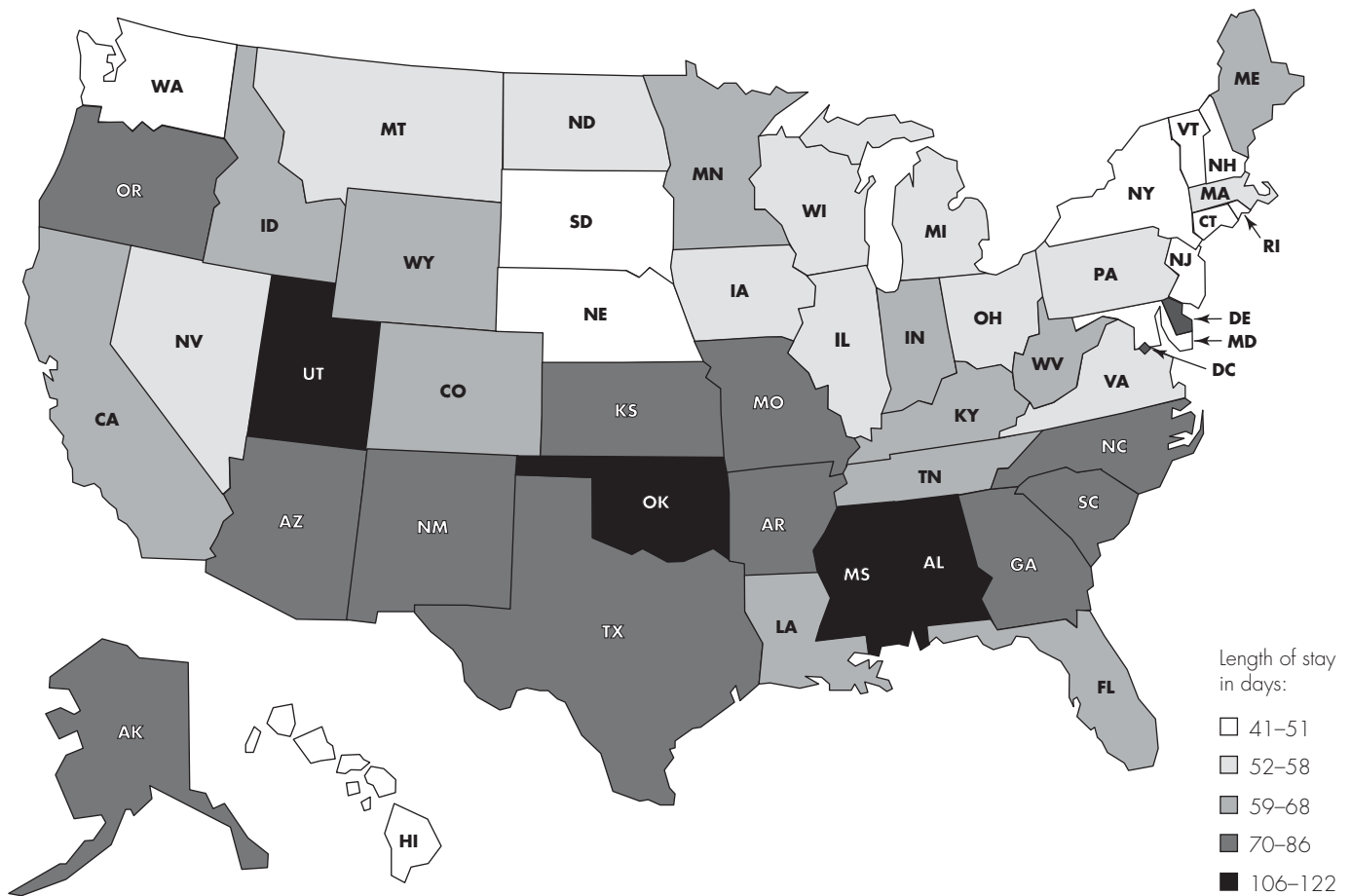
Given the current per diem payment structure and the change in the hospice population over time, RAND focused on three specific questions related to potential refinements to the hospice payment system. These questions had been raised in earlier literature and in the Commission's June 2004 report (MedPAC 2004).

- How well does the per diem system reflect the variation in hospice patient resource use?
- Should case-mix adjusters such as diagnoses be considered?
- Are the beginnings and ends of hospice stays more intensive?

Using one chain's data, RAND found that the variation across patients in the number of visits and visit labor costs was well explained by the number of days in each of the current per diem payment categories. (For additional information on data and methods see the text box on page 73.) In addition, RAND found that patient characteristics alone (including diagnosis, marital status, and residence in a nursing home) explain much less of the variation in resource use across patients for the hospice stay. When added to the model of days and per diem payment categories, case-mix adjusters were not found to improve the explanatory power of the per diem payment system. RAND also found that the beginnings and ends of

**FIGURE
3-3**

Average length of stay in hospice by state, 2004



Source: MedPAC analysis of CMS data from Medicare Hospice Utilization by State, CY 2004. <http://www.cms.hhs.gov/MedicareFeeForSvcPartsAB/Downloads/HOSPICE04.pdf>. Accessed February 13, 2006.

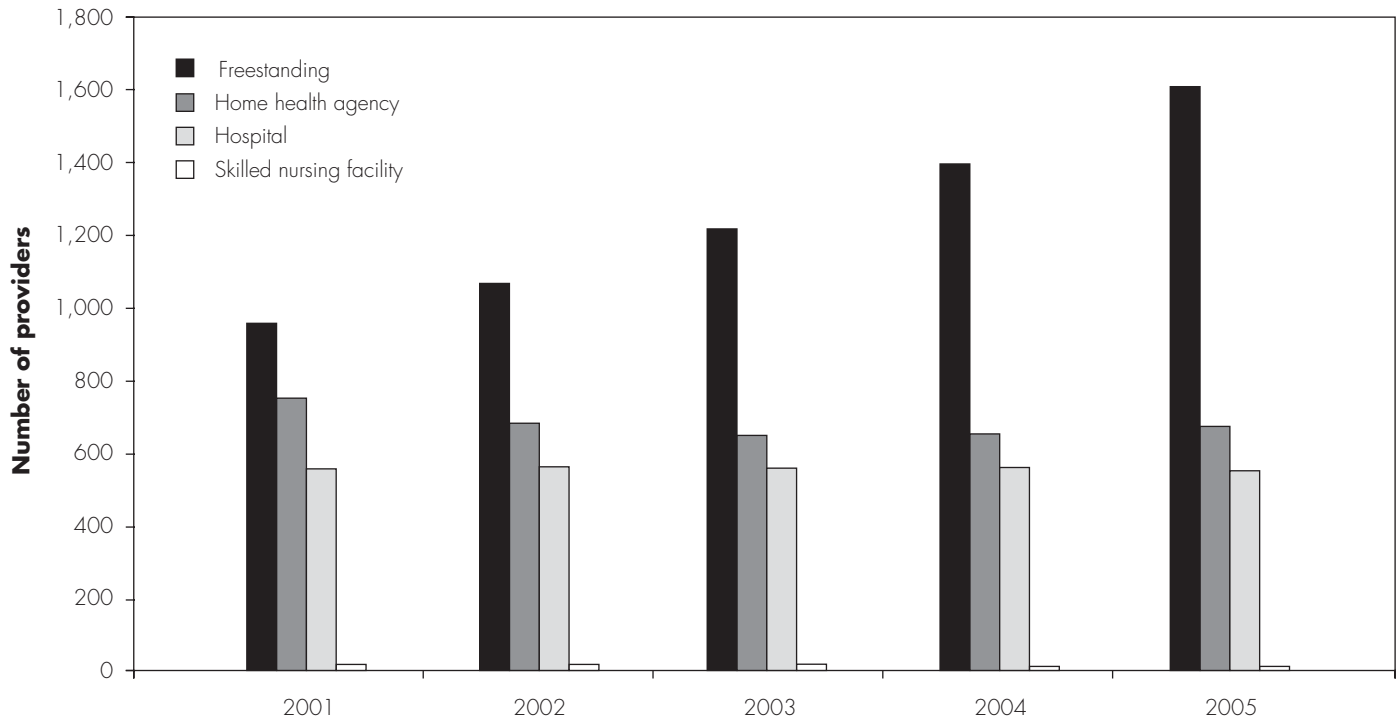
hospice stays are more resource intensive for this chain. This is consistent with findings from earlier qualitative research (Huskamp et al. 2001). For a variety of reasons discussed in the following section, these results may not be generalizable to the population of Medicare hospice patients.

How well does the per diem system reflect variation in hospice resource use?

RAND estimated an ordinary least squares regression to examine how well the number of days in each of the per diem payment categories explained variation in hospice visits and visit labor costs across the chain's patients. The adjusted R-squared is approximately 90 percent for both the number of visits and visit labor costs, indicating that variation in both the number of visits and visit labor costs for patients' hospice stays are well explained by

the number of days in each of the per diem payment categories.

This result reflects several factors. Within each type of day of care there was little variation in visits and visit labor costs, so the number of visits in the hospice episode was largely a function of the number of days of care by type of day. This lack of variation in visit labor costs could be a function of dying patients of all diagnoses and characteristics measured in this model having similar needs for hospice visits within the per diem categories. Other nonlabor costs, such as drugs, equipment, or travel time may vary by patient characteristics but the data did not allow us to test this. In addition, the regression results may simply reflect that the chain provider responded to the financial incentives of the current per diem system and provided the level of care that the per diem covers.

**FIGURE
3-4****An increase in freestanding agencies fueled growth
in the number of hospice providers, 2001–2005**

Note: Data for 2001–2005 are as of the end of each calendar year.

Source: MedPAC analysis of unpublished Online Survey, Certification, and Reporting System data from CMS.

The lack of variation may also be a function of practice patterns of a single chain's agencies, which are more likely to be homogenous than those of a diverse and representative sample of providers. It is not possible with available data to determine whether or to what extent the findings reflect each of these factors. Data from additional providers would allow us to compare the level of care across different providers who may have different practice patterns.

Should case-mix adjusters such as diagnoses be considered?

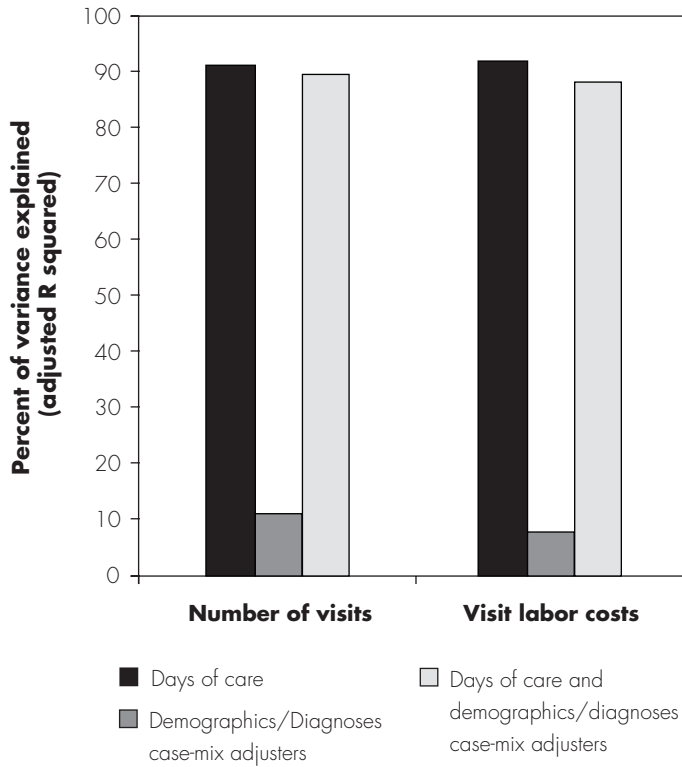
The chain provider data contain patient-level characteristics including primary International Classification of Diseases, Ninth Revision, Clinical Modification (ICD–9–CM) diagnosis codes, race/ethnicity, marital status, age, receipt of care in a nursing home, discharge status, and location. The clinical advisors to the RAND team aggregated individual ICD–9–CM codes into nine cancer and seven noncancer diagnosis categories that were clinically similar and that they thought

would have similar resource use for the purpose of the analyses described below.

RAND tested whether these characteristics were useful predictors of resource use both on their own and in conjunction with the per diem category variables. Figure 3-5 shows the results of three regressions. The first bar is the adjusted R-squared based on the number of days of care by type—routine home care, continuous home care, and general inpatient care. The second bar is the adjusted R-squared when only the patient-level demographics and diagnoses are included. Many of these disease categories are statistically significant predictors of visits and visit costs for the episode, but these factors alone explain no more than 12 percent of the variation in the number of visits and visit labor costs. When added to the model that contains days of care by type, the demographic and diagnoses variables add little explanatory power, as shown by the third bar. In a statistical sense, they do not add explanatory power when the number of variables added to the model is taken into consideration.

FIGURE 3-5

Potential case-mix adjusters explain little additional variation in visits and visit labor costs



Source: RAND Corporation analysis of chain provider's data from 2002 and 2003.

With these data alone, we can not rule out that additional case-mix adjusters (e.g., functional status or availability of caregivers) beyond those available in these data or the same case-mix adjusters tested on a different population served by other agencies would improve the explanation of variance. In addition, results using case-mix adjusters could change using a dependent variable that more fully captured the total costs of care, including drugs, supplies, and nonvisit labor costs.¹⁴

Are the beginnings and ends of hospice stays more intensive?

Because the data from the chain provider record the admission date, discharge date, and the date of each visit, RAND was able to construct measures of the distribution of visits across each patient's stay to assess how well a constant per diem rate reflects the resource use throughout a hospice stay. The first and last three days are more intensive than days falling in the middle of a hospice stay. The median length of stay in the sample is 13 days and

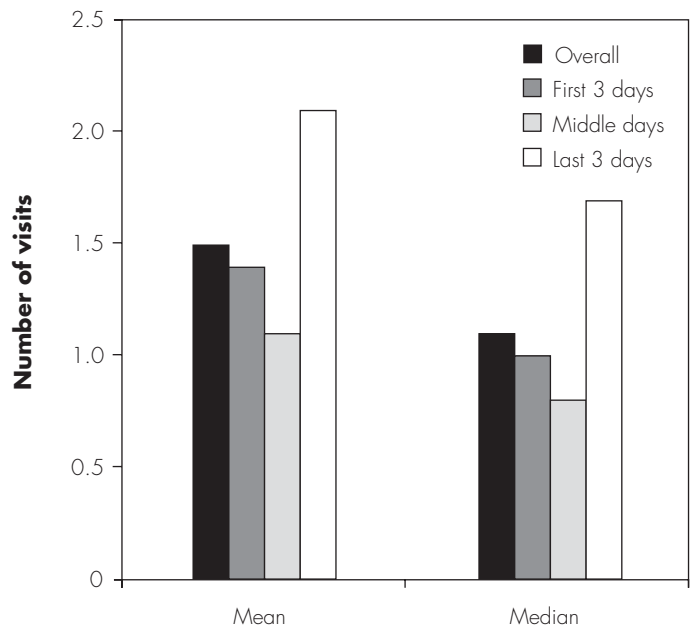
the median number of visits received is 18; the median number of visits received per day is 1.5. Figure 3-6 plots the relative number of visits at the beginnings, middles, and ends of hospice stays. Given that the median length of stay is less than two weeks, stays were broken into three categories: first three, last three, and middle days of each stay. Stays of three days or less were allocated to the last three days; stays of six days or less were allocated first to the last three days and then to the first three days. At the median, patients received twice as many visits during the last three days as they did in the middle days. Because the beginnings and ends of stays are relatively more expensive, a constant per diem rate may create incentives for providers to seek patients with longer lengths of stay.

Medicare hospice payment: Directions for further investigation

Growth in the benefit, changes to the hospice population, and changes in the delivery of care over time underscore the need to evaluate Medicare's hospice prospective payment system—both the adequacy of the hospice

FIGURE 3-6

More intensive care is delivered at beginning and end of hospice stays



Note: Data for the first three days include preadmission visits. Data for the last three days exclude patients discharged alive.

Source: RAND Corporation analysis of chain provider's data from 2002 and 2003.

payment rates and the relative rates of the different payment categories. This is not to say that growth in the hospice benefit is not appropriate for or beneficial to the program or those who have elected the benefit. However, as with all payment systems, the hospice payment system should be evaluated to assess what the program is buying and whether it is paying adequately for all patients, as well as to ensure value for the program and taxpayer.

The results of RAND's analysis of the chain's data show that case-mix adjusters based on patient characteristics did not improve the per diem system's ability to predict variation in patient costs for this provider. However, these results do not rule out the viability of case-mix adjustments using alternative case-mix adjusters or using these adjusters on a representative population of hospice patients. In addition, this one chain may have more homogenous practice patterns and protocols across patients than a similarly large population selected randomly from the Medicare population of hospice providers. Replicating the patient-level analysis to yield results that reflect the universe of Medicare hospice patients and providers would require the Medicare program to collect additional data on all or at least a representative sample of patients and providers. The RAND study also can not evaluate the quality of the care received.

This Commission and the GAO have previously recommended evaluation of Medicare's hospice payment system, recognizing that this would require additional data. In our May 2002 report to the Congress, we called for the Secretary of the Department of Health and Human Services to evaluate hospice payments to ensure they are consistent with the costs of providing appropriate care (MedPAC 2002). We recommended that the Secretary: 1) analyze differences in the care and resource needs of hospice patients and 2) determine whether a case-mix-adjusted payment system for hospice care is feasible, including studying ways to establish a high-cost outlier policy. Similarly, the GAO recommended that the Administrator of CMS should: 1) collect patient-specific data on hospice visits and services and their costs and 2) determine whether the hospice payment method and payment categories need to be modified (GAO 2004). CMS concurred with the GAO recommendation that the agency should collect data but noted that funding for data collection was limited.

As discussed in this chapter, descriptive research on the care provided to Medicare hospice patients and how that

care has changed over time can not be conducted with currently collected Medicare data. Therefore, the program needs to collect additional data. Collecting additional data (e.g., the number, frequency, and duration of visits; personnel providing the care; and patient residence) would provide more detail on the costs of providing care to different Medicare hospice patients and how those costs vary by patient and provider characteristics. Some information on the beneficiary's residence, such as whether it is an urban or rural area, is available. Other data, such as whether the beneficiary resides in a nursing facility or private residence, are not available from hospice claims. The relationship between the location of residence and costs can not be tested using currently available data.

In the future, the Commission could assess the adequacy of current Medicare hospice payments, like we do for other sectors, by examining information about beneficiaries' access to care, the supply of providers, the volume of services, and the quality of care, as well as providers' access to capital and Medicare payments and providers' costs. Analysis of these factors is undertaken annually for hospital inpatient, hospital outpatient, physician, skilled nursing facility, home health agency, and dialysis services, and most recently for inpatient rehabilitation facility and long-term care hospital services. The results of these analyses inform payment update recommendations that are intended to maintain Medicare beneficiaries' access to high-quality care while getting the best value for taxpayers' and beneficiaries' resources.

We have provided information in this chapter on some of these factors (supply of hospice providers and volume of services), but information on others (access to care and Medicare payments and costs) would require additional analysis. Quality of care would likely be difficult to assess for all Medicare-participating hospices because of the lack of data on quality of care for all agencies. Additional analyses could provide information about the extent to which access to hospice care varies among patients. We could also assess how Medicare costs compare to Medicare payments for all hospices and hospices of different types (e.g., those serving mostly rural and those serving mostly urban patients). Although payment adequacy analysis using this framework could provide a clearer picture of the overall adequacy of Medicare payments, determining how differences in margins or costs across providers relates to differences in the care delivered would still require the collection of detailed visit data as described above. ■

Data and methods

RAND was able to address the question of how well the per diem system with additional case-mix adjusters reflects variation in hospice resource use using the chain's data because the chain's data contained patient- and visit-level detail beyond what is available in the Medicare claims. RAND's analysis sample consisted of 68,725 Medicare patients admitted to the chain's agencies in 2002 and 2003. The chain's patient population was about 6 percent of the total Medicare hospice population during the time period examined. The chain's patient population differs from the Medicare hospice population overall: There are fewer lung cancer and debility patients and more cardiovascular, cerebrovascular, and neurodegenerative patients than are typical in the Medicare population. The chain's patients are also somewhat older (Table 3-5). In addition, the chain billed for more inpatient care than the average hospice and did not bill for respite care days.

The chain data allowed RAND to construct two measures of patient-level resource use: the number of visits received and the labor costs associated with those visits. The number of visits per patient measure was constructed by counting each visit in the visit-level data.¹⁵ Estimated visit labor costs were constructed using information on the number and length of visits, as well as titles of the staff involved. These data were merged with Bureau of Labor Statistics data on average hourly wages of each discipline and adjusted for geographic location using the Medicare wage index. The visit labor cost measure captures the direct costs of time spent with patients, but can not be interpreted as a total cost for the visit because it does not include transportation time, administrative overhead, benefits, and nonlabor costs (e.g., drugs). RAND estimates that visit labor costs for this chain are about one-fifth of total Medicare daily costs. ■

**TABLE
3-5**

Chain and all Medicare hospice patient demographics, 2002-2003

	Chain	All Medicare	Difference (in percentage points)
Disease category			
Cancer	34.0%	42.5%	-8.5%
Noncancer	66.0	57.5	8.5
Age category			
Under 65	4.1	5.1	-1.0
65 to 74	17.8	21.1	-3.3
75 to 84	37.0	37.9	-0.9
85 and over	41.1	35.9	5.2
Marital status			
Divorced/separated/ widowed	58.5	N/A	N/A
Married/ living together	33.5	N/A	N/A
Single	8.1	N/A	N/A
Race			
Asian	1.0	0.6	0.4
Black	11.6	7.7	3.9
Hispanic	11.4	1.3	10.1
Other	0.6	1.0	-0.4
White	75.4	89.5	-14.1
Sex			
Female	59.8	57.6	2.2
Male	40.2	42.4	-2.2
Discharge status			
Died	90.7	82.8	7.9
Discharged alive	9.3	17.2	-7.9

Note: N/A (not available). Category totals may not sum to 100 percent due to rounding.

Source: RAND Corporation analysis of chain provider data and Medicare 100 percent hospice standard analytic files for 2002 and 2003.

Endnotes

- 1 Because nursing home residence can not be determined from a hospice claim, this study imputed nursing home residence by determining whether hospice users also had a record of a nursing home assessment with a date that overlapped the hospice episode.
- 2 This study categorized a beneficiary as a nursing home resident using physician claims. It categorized a beneficiary as a nursing home resident if the place of service code or evaluation and management codes on the physician claims indicated that an encounter with the patient happened in a nursing facility or a skilled nursing facility.
- 3 New conditions of participation for hospices were published in a proposed rule on May 27, 2005. CMS has not yet issued a final rule. The current conditions of participation went into effect in 1983 and were amended in 1990.
- 4 According to CMS, hospice is not carved out of the Program of All-Inclusive Care for the Elderly (PACE), which is “a unique capitated managed care benefit for the frail elderly provided by a not-for-profit or public entity. The PACE program features a comprehensive medical and social service delivery system using an interdisciplinary team approach in an adult day health center that is supplemented by in-home and referral services in accordance with participants’ needs. Since comprehensive care is provided to PACE participants, those participants who need end-of-life care will receive the appropriate medical, pharmaceutical, and psychosocial services through the PACE organization. If the participant specifically wants to elect the hospice benefit from a certified hospice organization, then the participant must voluntarily disenroll from the PACE organization” (CMS 2006).
- 5 The applicable wage index is determined by the location of where the services are provided not by the location of the hospice provider. The hospice wage index values are the pre-floor, pre-reclassification hospital wage index values subject to a budget neutrality adjustment or wage-index floor. Budget neutrality is defined as estimated aggregate payments to hospice providers that would have been made if the 1983 wage index values remained in effect.
- 6 The Commission conducts an analysis of providers’ Medicare margins using Medicare cost reports. These margins are calculated by dividing the difference between Medicare payments and Medicare costs by Medicare payments. The Medicare margin is Medicare revenue as a share of Medicare payments. The results of these analyses can be found in our annual March report.
- 7 GAO calculated Medicare margins by comparing reported costs on the Medicare cost reports to the daily Medicare rates, unadjusted for geographic differences in wages. They used only freestanding hospice cost reports and excluded very low-volume providers from the analysis. The hospice industry noted that cost reports were unaudited and that GAO did not include volunteer or bereavement counseling costs. In response, GAO noted that Medicare cost reports are the only available source of information necessary for their mandated study. They also noted that only those costs that are, by law, reimbursable under Medicare were included in their calculation of hospice costs.
- 8 Agency size was based on the number of days of care provided during the year.
- 9 This cap was originally conceived to be an amount that reflected the cost to the Medicare program for patients with cancer in the last six months of life. However, the average annual payment cap was ultimately set at an amount that was not based on this calculation (GAO 2004).
- 10 Margins in this study were calculated as total net income divided by total patient revenue from the Medicare cost reports. The sample of facilities was limited to hospices with patient days greater than 9,696 and 3 years of financial data.
- 11 On the NHPCO survey, 154 hospices reported total margins and 153 reported margins minus fundraising data.
- 12 Beneficiaries are counted in a given year if they have filed an election to receive hospice care from the hospice during the period beginning on September 28 prior to the beginning of the cap period and ending on September 27 prior to the end of the cap period. If a beneficiary has received hospice care from more than one hospice during the year, each hospice counts the fraction of a beneficiary that represents the portion of a patient’s total hospice stay spent in that hospice. This amount can be obtained from the RHHL.
- 13 Freestanding refers to hospice agencies that are not operated by a hospital, home health agency, or skilled nursing facility.
- 14 The chain provided aggregate drug and supply costs, but not for individual patients.
- 15 Visits made by volunteers were excluded, however, and the chain provider does not record all contacts between patients receiving general inpatient care and the inpatient facility staff.

References

- Campbell, D., J. Lynn, T. Louis, et al. 2004. Medicare program expenditures associated with hospice use. *Annals of Internal Medicine* 140, no. 4 (February 17): 269–278.
- Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2006. PACE fact sheet. <http://www.cms.hhs.gov/PACE/Downloads/PACEFactSheet.pdf>.
- Gage, B., C. Miller, K. Copolla, et al. 2000. Important questions for hospice in the next century. In *Synthesis and Analysis of Medicare's Hospice Benefit*. Washington, DC: Department of Health and Human Services, Assistant Secretary for Planning and Evaluation, Office of Disability, Aging, and Long-Term Care Policy.
- Government Accountability Office. 2004. *Medicare hospice care: Modifications to payment methodology may be warranted*. GAO–05–42. Washington, DC: GAO. October.
- Greer, D. S., V. Mor, S. Sherwood, et al. 1983. National hospice study analysis plan. *Journal of Chronic Disease* 36, no. 11: 737–780.
- Health Care Financing Administration, Department of Health and Human Services. 1983. Medicare program; hospice care. Final rule. *Federal Register* 48, no. 243 (December 16): 56008–56036.
- Hoffman, D., and A. Tarzian. 2005. Dying in America: An examination of policies that deter adequate end-of-life care in nursing homes. *The Journal of Law, Medicine, and Ethics* (Summer): 294–309.
- Huskamp, H., M. Beeuwkes Buntin, V. Wang, et al. 2001. Providing care at the end of life: Do Medicare rules impede good care? *Health Affairs* 20, no. 3: 204–211.
- Joseph, S. 2005. VistaCare rewards sales staff for short LOS patients. *HomeHealth Line* 30, no. 33 (August 26, 2005): 1–5.
- Lorenz, K., S. Asch, K. Rosenfeld, et al. 2004. Hospice admission practices: Where does hospice fit in the continuum of care? *Journal of the American Geriatrics Society* 52: 725–730.
- McCue, M. J., and J. M. Thompson. 2005. Operational and financial performance of publicly traded hospice companies. *Journal of Palliative Medicine* 8, no. 6: 1196–1206.
- Medicare Payment Advisory Commission. 2004. *Report to the Congress: New approaches in Medicare*. Washington, DC: MedPAC.
- Medicare Payment Advisory Commission. 2002. *Report to the Congress: Medicare beneficiaries' access to hospice*. Washington, DC: MedPAC.
- Miller, S., P. Gonzalo, and V. Mor. 2000. Use of Medicare's hospice benefit by nursing facility residents. In *Synthesis and Analysis of Medicare's Hospice Benefit*. Washington, DC: Department of Health and Human Services, Assistant Secretary for Planning and Evaluation, Office of Disability, Aging, and Long-Term Care Policy.
- National Center for Health Statistics, Centers for Disease Control and Prevention, Department of Health and Human Services. 2003. *Characteristics of hospice care discharges and their length of service: United States, 2000*. *Vital and Health Statistics Series* 13, no. 154. Hyattsville, MD.
- National Hospice and Palliative Care Organization. 2006. Comments submitted on behalf of the National Hospice and Palliative Care Organization (NHPCO) to the Medicare Payment Advisory Commission (MedPAC) focusing on the draft chapter on hospice issues. Unpublished e-mail to MedPAC. April 6.
- National Hospice and Palliative Care Organization. 2005. *2004 summary statistics by agency size*. Alexandria, VA: NHPCO.
- Office of the Actuary, Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2005. Office of the Actuary mid-session review. Baltimore: CMS.

CHAPTER

4

**Keeping physicians'
practice expense payment
rates up to date**

Keeping physicians' practice expense payment rates up to date

Chapter summary

The practice expense (PE) component of the physician fee schedule pays for the expenses incurred in operating a practice, such as office rents, nurses' salaries, and equipment. PE payments account for close to half of the \$54 billion Medicare spent under the physician fee schedule in 2004.

Ensuring the accuracy of payments under the physician fee schedule is important for several reasons. First, inaccurate payment rates can distort the market for physician services. Services that are overvalued may be overprovided because they are more profitable than other services. At the same time, undervalued services may prompt providers to increase volume in order to maintain their overall level of payment. Conversely, some providers may opt not to furnish services that are undervalued, which can threaten beneficiaries' access to care. Second, if certain types of services become undervalued relative to others, the specialties that perform those services may become less financially attractive, which can affect the supply of physicians. Finally, misvalued services mean

In this chapter

- Medicare needs current data on each specialty's total practice expenses
- Accuracy and reliability of the direct resource data
- Estimating accurate prices for clinical staff, supplies, and equipment
- Conclusion

that Medicare is paying too much for some services and not enough for others and therefore is not spending taxpayers' and beneficiaries' money wisely.

CMS uses several data sources to derive PE payments, some of which are out of date. We recognize that updating PE data will substantially increase CMS's workload. There is a trade-off between improving the accuracy of PE payments and other demands on the agency's limited administrative resources. Therefore, we suggest that CMS focus its efforts on areas where the data are most out of date and the impact on relative payment amounts (relative weights) is likely to be greatest:

- obtaining current data on the total costs of operating a practice,
- revisiting the assumption that all medical equipment is operated half the time that a practice is open for business,
- updating the prices for the inputs (clinical labor, medical equipment, and supplies) used to provide services, and
- ensuring that the estimates of the types and quantities of inputs are accurate.

We discuss each of these issues in order of priority. Although some time lag between relative weights and actual costs is unavoidable, CMS can still develop a reasonable time frame and approach to periodically update the data sources. The Congress should provide CMS with the financial resources and administrative flexibility to undertake the effort as it will improve the accuracy of Medicare's payments and achieve better value for Medicare spending.

Medicare needs more recent data on the total costs of operating a practice for all specialties because the current source—the Socioeconomic Monitoring System (SMS) survey—is dated, reflecting costs and practice patterns from the mid- to late-1990s. Policymakers will need to consider three key issues when obtaining current practice cost data:

- Either Medicare or specialty groups could sponsor a data collection effort.
- Participation by practitioners could be voluntary or mandatory. A voluntary effort may have a low response rate.
- A publicly or privately sponsored effort could collect data from a nationally representative sample or from all practitioners. Constructing a sample might be more fiscally prudent given the substantial resources necessary to conduct an effort that includes all practitioners.

In addition to the SMS survey, CMS uses a database that contains estimates of the prices, types, and quantities of the clinical labor, medical equipment, and supplies required to provide each service paid under the physician fee schedule. CMS should revisit how it estimates the per service price of medical equipment, in particular the assumption that all equipment is operated half the time that practices are open for business. If this assumption is an underestimate, Medicare's per unit price is too high. We conducted a survey of imaging providers in six markets that indicates that providers in those markets use magnetic resonance imaging (MRI) machines more than 90 percent of the time and computed tomography (CT) machines more than 70 percent of the time. CMS also assumes that practitioners pay an interest rate of 11 percent per year when borrowing money to buy equipment, but more recent data suggest a lower interest rate may be more appropriate. Once CMS begins to value imaging services the same way it values most other physician services, increasing the equipment use assumption and lowering the interest rate estimate would reduce PE payments for CT and MRI services. Because changes to PE relative values are budget neutral, these savings would be redistributed among other physician services.

Further, the agency has not established a time frame to comprehensively review the wage rates for clinical staff or the prices of supplies and equipment. Thus, CMS could set a reasonable schedule for periodically updating this information. The agency could also review the prices of expensive supply and equipment items more frequently than other items.

Finally, to ensure that the types and quantities of inputs in the database are accurate and complete, CMS, with the assistance of the medical community, could check the consistency of values across similar services and obtain current estimates for services that have no information. It is also important for CMS to set a reasonable schedule for reviewing PE relative weights at least every five years as required and more often for services experiencing rapid changes. ■

Practice expense (PE) payments cover the direct and indirect costs incurred in operating a practice. Direct expenses include costs for nonphysician clinical labor, medical equipment, and supplies. Indirect expenses include costs for administrative labor, office expenses (e.g., rent and utilities), and all other expenses. CMS bases PE payments on the relative resources needed to provide a service, known as relative value units (RVUs). These payments account for close to half of the \$54 billion Medicare spent under the physician fee schedule in 2004.

In 2004, the Commission began to raise questions about whether the data sources and the methods that CMS uses to derive PE payments result in accurate prices (MedPAC 2004). More recently, we made a series of recommendations aimed at improving the accuracy of the work component of physician payments, which represents the time, effort, skill, stress, and risk of performing a service (MedPAC 2006).

The current method to derive PE RVUs is referred to as the “top-down” method.¹ Under this method, CMS estimates each specialty’s total practice costs and then allocates costs to a specific service based on the resources required to deliver the service. These resources include nonphysician clinical staff time, medical supplies, and equipment.

In 2005, CMS proposed but did not implement a new method to calculate direct PE RVUs. Instead of starting with total cost pools and then allocating practice costs to individual services, the proposed method sums the direct resources—nonphysician clinical staff time, medical supplies, and equipment—required to furnish each service. Stakeholders refer to this method as “bottom-up.” The agency did not propose changing the methods it uses to derive indirect PE RVUs.

CMS is considering this change because the current method is not easily understandable or transparent and may result in large annual fluctuations in the payment for some services. In addition, the PE payments for some services under the current method are not resource based. Most services that do not involve physician work still use pre-1998 charge-based values. CMS refers to these services as the nonphysician work pool.²

Under either a top-down or bottom-up approach to derive PE payments, CMS will need data that:

- provide current and accurate estimates of the types, quantities, and cost of labor, equipment, and supplies

that physicians and nonphysician practitioners require to run efficient practices;

- are representative of the physician and nonphysician specialties paid for under Medicare’s physician fee schedule;
- reflect the factors—such as site of care and practice size—that affect the costs of running an efficient practice; and
- can be periodically updated so that PE payments reflect current practice patterns and costs.

This chapter reviews the data sources that CMS uses to derive PE payments, some of which are out of date. Inaccurate data could lead to distorted payment rates. We recognize that updating PE data will substantially increase CMS’s workload. There is a trade-off between improving the accuracy of PE payments and other demands on the agency’s limited administrative resources. Therefore, we suggest that CMS focus its efforts on areas where the data are most out of date and the impact on RVUs is likely to be greatest. Although some time lag between relative weights and actual costs is unavoidable, CMS can still develop a reasonable time frame and approach to periodically update the data sources. The Congress should provide CMS with the financial resources and administrative flexibility to undertake the effort as it will improve the accuracy of Medicare’s payments and achieve better value for Medicare spending.

Medicare needs current data on each specialty’s total practice expenses

The data source CMS uses to estimate total practice costs is dated and may not reflect current practice patterns. Up-to-date and accurate data are needed for all specialties recognized under the physician fee schedule. Policymakers will need to consider many issues when updating total practice cost data, including who will sponsor a new effort and how the information will be collected and verified.

CMS derives practice expense payments from outdated data that are not available for all specialties

CMS uses an American Medical Association (AMA) survey—the Socioeconomic Monitoring System (SMS)—to estimate each specialty’s hourly total practice expenses.

The Socioeconomic Monitoring System survey is out of date and was not designed to derive practice expense relative values

The Commission and others have raised concerns about the continued use of the Socioeconomic Monitoring System (SMS) data to derive practice expense (PE) payments. Most stakeholders agree that the survey was the best data source available at the time to estimate hourly practice expenses. The SMS survey is now dated, reflecting practice patterns from 1995 through 1999. Thus, the increased use and cost of new technologies—such as health information technology—may not be well measured.

The American Medical Association (AMA) did not design the SMS survey with the goal of developing PE relative value units (RVUs) for the physician fee schedule. As a result, CMS has adjusted the survey data in order to derive PE RVUs.

First, the SMS survey did not include all physician specialties paid for under the physician fee schedule, nor did it include nonphysician practitioners. The survey distinguished among 26 major physician specialties, while Medicare recognizes over 60 physician and nonphysician groups. The AMA drew the survey sample from its Physician Masterfile, a file of physicians practicing in the United States, and surveyed physicians who spent more than 20 hours per week engaged in patient care activities, including office- and hospital-based physicians (but not residents). This file does not include nonphysician practitioners (e.g., physician assistants, physical therapists, and optometrists) who can bill separately under the physician fee schedule.

Consequently, CMS crosswalked certain specialties to the most appropriate SMS specialty category because specialties recognized by Medicare either did not correspond to those in the SMS survey or were not included. For example, CMS used data for “all physicians” for the specialty of podiatry and crosswalked the specialties of oral surgery and maxillofacial surgery to otolaryngology.³ Crosswalking data from one specialty to another would not be necessary if total cost data were available for all Medicare-recognized specialties.

Second, the survey includes the cost of services—nonphysician practitioners, drugs, and lab services—paid separately by Part B. CMS has removed the costs of some of these services (e.g., drugs) from the data.⁴ But CMS has not removed the cost of nonphysician practitioners when they separately bill Medicare. If CMS or the AMA were to design a survey specifically to derive PE payments, this survey could exclude these services.

Third, the SMS survey measures the practice expenses of individual physicians. But CMS’s method of deriving PE payments requires data at the practice level. To translate the SMS values to the practice level, CMS’s method assumes that physician owners share practice expenses equally and that all physician owners in a practice work the same number of hours. A new survey could be designed to collect data at the practice level.

The Government Accountability Office (GAO) and others have raised a number of additional concerns about the SMS survey, including:

- The response rate for the practice expense questions was lower than that for the overall survey, which reduced the sample size for some specialty groups. GAO raised concerns that the reported practice expenses may not be representative of all physicians in some specialties because of the limited number of respondents (GAO 1999).
- The SMS survey asked physicians to report their number of direct patient care hours during a typical week. Some stakeholders are concerned about the accuracy of the reported data because the question relied on the recall of the responding physicians, and it did not clearly define the types of activities that respondent physicians should have included (Lewin Group 2000, CMS 2000). ■

**TABLE
4-1**

Hourly practice expenses increased for some specialties between 1995-1999 and 2001-2003

	Hourly total practice expenses estimated from:			Percentage of total costs that are indirect, estimated from:	
	Original SMS surveys	Supplemental surveys	Percent change	Original SMS surveys	Supplemental surveys
Allergy and immunology	\$129	\$196	52%	56%	62%
Cardiology	82	184	124	66	56
Dermatology	119	179	50	66	70
Gastroenterology	62	114	84	77	70
Oncology	99	189	91	60	59
Radiation oncology	67	138	106	56	53
Radiology	68	137	101	68	61
Urology	96	137	43	55	69

Note: SMS (Socioeconomic Monitoring System). Hourly total practice expenses are reported in 1995 dollars. Column entitled "Original SMS surveys" provides the hourly practice expenses derived from 1995-1999 SMS surveys. Column entitled "Supplemental surveys" represents surveys conducted by the specialties between 2001 and 2003. CMS accepted but has not used the surveys submitted by certain specialties (radiology, cardiology, radiation oncology, dermatology, allergy/immunology, gastroenterology, and cardiology) to derive 2006 practice expense (PE) relative value units (RVUs) because the agency did not implement changes in the methods used to derive direct PE RVUs.

Source: CMS 2006a, CMS 2004, CMS 2001.

The issues surrounding continued use of this survey include:

- It is dated, reflecting practice costs and patterns from 1995 to 1999.
- It was not designed to be used to derive PE RVUs.
- It does not include all specialty groups recognized by Medicare.

The text box provides more information about the limitations of the SMS survey.

Using data obtained from the SMS, CMS calculates hourly practice expenses for the specialties included in the survey. The agency multiplies each specialty's hourly practice expenses by the number of services the specialty provided to Medicare beneficiaries to estimate each specialty's total cost pool (MedPAC 2004). CMS then allocates each specialty's total cost pool to individual services based on the estimated direct resources of each service.

Until recently, CMS permitted specialties to submit more current (supplemental) data on total practice expenses to try to keep the values up to date. The Balanced Budget Refinement Act of 1999 (BBRA) mandated that CMS establish a process to consider supplemental data submissions when updating the physician fee schedule.⁵ Through 2006, the agency has accepted supplemental data

from 13 specialties, although it is not yet using all of the information.⁶

Relying on more current practice cost data submitted by some (but not all) specialties raises several issues. Supplemental submissions do not provide a recurring source of information for all specialties. Although the BBRA gave providers the option to submit more current information, they are not mandated to do so. Since the BBRA, few groups (16 out of more than 60 specialties) have submitted newer data. Groups informed the Commission that collecting PE information is costly and time consuming, and that they do so only when it is likely to increase their payment rates.

Using more current information from some but not all specialties could cause significant distortions in relative PE payments across services. When CMS uses supplemental submissions, a redistribution of PE RVUs occurs because it generally implements the changes in a budget neutral manner.⁷ Hourly practice expenses increased substantially for those specialties that recently provided data to CMS, ranging from 43 percent for urology to 124 percent for cardiology (Table 4-1). Hourly practice expenses for other specialties remained the same. As a result, once CMS uses specialties' supplemental data, PE payments for services primarily furnished by them could increase while payments for services furnished by other specialties could decrease.

**TABLE
4-2**

Alternative approaches to collect practice cost data raise many issues

Sponsor	Participation of practitioners	Issues
Privately sponsored	Voluntary	<ul style="list-style-type: none"> • Low response rate • Depending on sponsor, effort may not include all Medicare-recognized specialties • CMS could purchase data from groups sponsoring survey; the Congress needs to ensure the Secretary has necessary resources
Publicly sponsored	Voluntary	<ul style="list-style-type: none"> • Low response rate • The Congress needs to ensure the Secretary has necessary resources
Publicly sponsored	Nonvoluntary	<ul style="list-style-type: none"> • Resistance by practitioners and specialties • Requires change in regulation • The Congress needs to ensure the Secretary has necessary resources

Updating total practice expense data

Obtaining current total practice cost data raises a number of issues. Who would sponsor the effort and would the effort be voluntary? For illustrative purposes, Table 4-2 compares three alternatives: a voluntary privately sponsored effort, a voluntary publicly sponsored effort, and a nonvoluntary publicly sponsored effort.

Physician and nonphysician groups could jointly sponsor such an effort. CMS recently expressed interest in purchasing data from a privately sponsored survey (CMS 2006c). Of concern is whether all specialties would fund and participate in a private effort, particularly the 13 specialties with more recent practice expense data that CMS accepted.

Public or private sponsors could design a data collection effort to overcome the limitations of the SMS survey, such as the lack of PE information for all specialty groups recognized by Medicare. At issue is whether such an effort would be voluntary or nonvoluntary.

A voluntary effort, whether publicly or privately sponsored, is likely to have a low response rate if history is any guide. Fewer respondents answered the PE questions on the SMS survey than other questions (40 percent vs. 60 percent, respectively) (GAO 1999). In addition, the response rate and the number of usable responses from the 1999 SMS survey were lower than those from prior years (CMS 2001). The highest response rate to the specialty groups' surveys that CMS accepted was 27 percent (Table 4-3). CMS's contractor evaluating these newer submissions concluded that high response rates are not achievable given the sensitive nature of the data being surveyed and the burden placed on the respondents (Lewin Group 2005). Sponsors of a voluntary effort will also need to address whether respondents fairly represent all physicians and nonphysician practitioners.

CMS and specialty groups will need to consider overarching issues in designing and implementing a new data effort. They could gather information from a nationally representative sample or from all practitioners. Using a sample might be more fiscally prudent given the substantial resources necessary to conduct an effort that includes all practitioners. Alternatively, CMS and specialty groups could use a rotating panel of practitioners. The sponsor could pay participants to take part in the panel and allow the sponsor to review the supporting PE data.

The sponsor could stratify the sample by factors that affect practice costs, such as the size of the practice and site of care (office- vs. hospital-based). Average practice costs increase with size for some specialties such as cardiology (Lewin Group 2004). Across specialties, office-based practices incur higher hourly practice costs, on average, than hospital-based practices because the latter have lower direct practice costs.

CMS and specialty groups also need to consider response bias. Respondents might inaccurately report practice cost information knowing that the agency will use it to derive PE RVUs. Consequently, the sponsor will need to ensure that processes are in place to ensure the data's accuracy.

In determining how frequently to update the practice cost information, CMS will need to consider the resources necessary to obtain current data. Practice costs could increase or decrease over time with changes in medical equipment, supplies, and practice patterns (e.g., site of care and technology changes). For example, use of clinical information systems would increase the indirect practice expenses for those specialties adopting such technology.

CMS needs current data on total practice costs even if it decides to derive direct PE RVUs using a new, bottom-up approach. The agency will require total indirect costs for each specialty to derive indirect PE RVUs.

Accuracy and reliability of the direct resource data

CMS maintains a database with detailed information about the types and quantities of nonphysician clinical labor, medical equipment, and supplies used by practitioners to furnish nearly all of the 7,600 services paid for under the physician fee schedule.⁸ Table 4-4 shows an example of the level of detail for one service—cystourethroscopy (Current Procedural Terminology (CPT) code 52000).

In addition to the types and quantities of these inputs, CMS also estimates a price for each clinical staff category, equipment item, and supply. Using these data, the agency estimates the direct costs incurred by practitioners to furnish a service. For example, CMS estimates that the cost to provide a cystourethroscopy in 2006 is \$27.75 for nonphysician clinical staff, \$28.45 for medical supplies, and \$5.44 for medical equipment.

Currently, CMS uses these data to allocate each specialty's total practice expenses to individual services. Under the bottom-up method, CMS could sum the cost of each input to derive direct PE RVUs. At issue is the consistency,

TABLE 4-4

Direct resource data provide very specific estimates of clinical labor, medical equipment, and supplies

Direct resource	Types and quantities of direct resources for a cystourethroscopy
Clinical staff	17 minutes by a nurse or assistant before the procedure begins
	58 minutes by a nurse or assistant during the procedure
Medical equipment	Power table
	Mobile instrument table
	Light source (xenon) Fiberscope, flexible, cystoscopy
Medical supplies	1 sterile drape towel (18 inches by 26 inches)
	1 underpad (2 feet by 3 feet)
	1 package, minimum multispecialty visit
	1 package urology cystoscopy
	1 patient education booklet

Note: Inputs are for care provided in the nonfacility setting.

Source: CMS 2006b.

reliability, and accuracy of this information and the process for periodically updating the data to reflect current practice patterns. We first discuss how CMS derives the types and quantities of inputs and ways to improve their accuracy, and then describe ways to improve the prices for each input.

TABLE 4-3

Response rates to supplemental practice expense surveys are low

Specialty	Response rate	Number of usable responses
Allergy and immunology	27%	154
Dermatology	22	154
Urology	21	226
Radiology	21	171
Oncology	18	245
Gastroenterology	14	99
Independent laboratories	14	90
Physical therapy	14	134
Radiation oncology	13	86
Cardiology	13	389

Note: CMS approved the supplemental data submitted by these specialties between 2001 and 2005.

Source: Lewin Group 2003, Lewin Group 2004, Lewin Group 2005.

The Relative Value Scale Update Committee refined the original resource input estimates

CMS convened 15 expert panels—the Clinical Practice Expert Panels (CPEPs)—in 1995 to estimate the direct inputs associated with providing each service to the typical patient. Using these data, CMS originally proposed a bottom-up approach to implement resource-based PE RVUs. However, CMS implemented the current top-down method in 1999 partly because of concerns about the accuracy of the CPEPs' estimates.

In 1999, the AMA/Specialty Society Relative Value Scale Update Committee (RUC) established a multispecialty committee, the Practice Expense Advisory Committee

The process for estimating practice expense inputs

The practice expense committee established by the American Medical Association (AMA)/ Specialty Society Relative Value Scale Update Committee (RUC) relies on information from specialty groups on the resources they require to furnish services. The AMA provides the specialty societies with background materials, such as the current resource estimates for a service. Each specialty society then gives the practice expense committee its proposed resource estimate for the service, describing how the estimate was developed and listing necessary tasks (GAO 2004). The composition of the practice expense committee is similar to the RUC with additional nursing representation (AMA 2005).

The RUC submits all official recommendations on practice expense inputs to CMS. The RUC can decide to adopt the practice expense committee's recommendation, modify it before submitting it to CMS, or refer it back to the practice expense committee. The RUC has also recommended changes to the practice expense inputs when conducting its five-year reviews of work relative value units.¹⁰ Official recommendations to CMS require the approval of two-thirds of the RUC. Although CMS makes all final decisions about changes to the resource estimates, it has generally accepted the RUC's recommendations. ■

(PEAC), to refine the direct inputs.⁹ CMS has accepted nearly all of the recommendations made by PEAC for refining about 7,600 codes. As a result of the PEAC's efforts, the current direct resource inputs differ markedly from those originally recommended by the CPEPs. GAO and most other stakeholders agree that the PEAC improved resource estimates for individual services (GAO 2004).

The RUC now assigns the Practice Expense Review Committee (PERC) the task of estimating the inputs for new and revised codes and refining estimates for codes not reviewed by the PEAC. Both practice expense committees use a process that is similar to the one the RUC uses to estimate work RVUs for new and revised codes. The text box above provides more information about the review process.

Medicare will need to ensure that the direct input estimates are accurate

Do the direct inputs accurately identify the nonphysician clinical labor, medical equipment, and supplies used by efficient practitioners to provide a service? This issue is important because CMS recently proposed to use only the direct inputs to derive direct PE RVUs (CMS 2005b).

CMS should address at least three issues to ensure that the direct input database is accurate and complete. First, the agency should check whether the resources of similar services are estimated using standard values of clinical staff time, supplies, and equipment, referred to as "standardized packages." In particular, CMS and

the PEAC may not have consistently applied these standardized packages to services they refined early in the process. Second, CMS, with the assistance of the medical community, should obtain estimates for services that are not currently valued (CMS 2005a). Last, CMS should ensure that the database contains no errors and anomalies. From time to time, stakeholders have informed the agency about incorrect values in the database, which CMS has corrected (CMS 2003).¹¹

It is also important for CMS to periodically review the direct inputs because practice expenses could increase or decrease over time. They could rise if nonphysician clinical staff replaces some physician work. By contrast, practice expenses could decline if practitioners become more efficient or substitute less costly equipment and supplies for more expensive items.

The agency has stated that there needs to be an ongoing review process for the direct PE inputs to reflect changes in practice or new technology but has not proposed any specific plan for doing so (CMS 2005a). Although the statute requires the Secretary to review and make adjustments to the relative values for all physician fee schedule services at least every five years, CMS has not yet proposed a five-year review of PE RVUs. The agency fully implemented the resource-based PE RVUs in 2002, which suggests that CMS should review them by 2007. However, the refinements of the direct inputs continued through the end of 2005.

If CMS were to establish a process for reviewing PE RVUs that relies on specialties to identify misvalued services (similar to the current method for reviewing work RVUs), we are concerned that it could focus on undervalued codes rather than overvalued ones. Previous five-year reviews of the work RVUs led to substantially more increases in RVUs than decreases (MedPAC 2006). This outcome is not surprising given that the specialty societies and their members have a financial stake in the process.

Manufacturers of medical equipment and supplies sometimes recommend that CMS update values in the direct input database. Manufacturers have incentives to request that CMS substitute more costly equipment and supplies for less costly items.

It may be appropriate to review recently introduced services more frequently because the practice expenses may change over time. As early performers of a service become more familiar with a procedure, they can complete it more quickly. The service's clinical labor time, therefore, should decline. The Commission previously recommended scheduled reviews of the work RVUs for recently introduced services to ensure that Medicare's payment rates reflect changes in physician work (MedPAC 2006).

Estimating accurate prices for clinical staff, supplies, and equipment

In addition to maintaining accurate estimates of the type and quantity of direct inputs for each service, CMS also needs to set accurate prices for each of the inputs (clinical staff, equipment, and supplies). Otherwise, the relative weights for practice expense could become distorted over time. There are two primary challenges with keeping the prices up to date: CMS's database contains more than 1,000 inputs, and there is no systematic process for identifying and correcting pricing errors.

To improve the process for maintaining accurate input prices, CMS could:

- set a reasonable schedule for periodically updating clinical staff wages;
- set a reasonable schedule for periodically updating all supply and equipment prices and more frequently reviewing the prices of expensive supplies and equipment (based on a dollar threshold); and

- revisit how it estimates the per service cost of medical equipment, in particular the assumption that all equipment is operated half the time that practices are open for business.

According to a Commission survey of imaging providers in six markets, providers in those markets use magnetic resonance imaging (MRI) machines more than 90 percent of the time and computed tomography (CT) machines more than 70 percent of the time. CMS also assumes that practitioners pay an interest rate of 11 percent per year when borrowing money to buy equipment. Recent data from the Federal Reserve Board suggest that a lower interest rate may be more appropriate. Once CMS begins using direct inputs to value imaging services, increasing the equipment use assumption and lowering the interest rate assumption would reduce payment rates for CT and MRI services. Because changes to practice expense relative values are budget neutral, these savings would be redistributed among other physician services.

Updating clinical staff wages

CMS last updated nonphysician clinical staff wages for the 2002 fee schedule and has not indicated when wages will be reviewed again. Because wages for different types of clinical staff increase at different rates, PE RVUs could become less accurate over time unless wage data are kept up to date. Although reviewing wages is a time-consuming effort, CMS could set a reasonable schedule to do so periodically.

The CPEP and PEAC have given CMS information on the types of clinical staff and amount of staff time used for each service. CMS then estimates a wage rate for each category (e.g., nurses and radiology technicians). CMS multiplies the wage rate for each type of staff by the number of minutes to determine the total cost. For example, cystourethroscopy (CPT code 52000) performed in a physician office is estimated to involve 75 minutes of nurse time. CMS assumes a nurse wage rate of \$0.37 per minute. Thus, the cost of a nurse for this procedure is \$27.75.

CMS updated staff wages for the 2002 physician fee schedule using primarily 1999 data from the Bureau of Labor Statistics (BLS) (CMS 2001).¹² Because the BLS survey does not include all staff types represented in the practice expense database, CMS used supplementary data for 12 of the 38 staff categories.¹³ CMS originally estimated wages for the 1998 physician fee schedule.

Because services vary in the types of staff used and wages for different jobs grow at varying rates, the relative values for services could become distorted if wage data are not kept current. For example, pathology services are more likely to use laboratory technicians, while vascular ultrasound services are more likely to use vascular technologists. When CMS updated wage rates for 2002, there was variation in the growth of rates for different clinical labor categories.¹⁴ At the lower end, estimated wages for laboratory technicians increased by 14 percent (cumulatively) and for registered nurses by 21 percent (CMS 2001). By contrast, wages for vascular technologists grew by 54 percent and for medical and technical assistants by 63 percent. If wage data for each labor category are not updated periodically, services that use staff whose wages increase at above-average rates will become undervalued. Conversely, services that use staff whose wages grow at below-average rates will become overvalued.

Updating supply and equipment prices

As complex services (like advanced imaging) that were once generally done in hospitals spread to physician offices, equipment and supplies become a more integral part of physician services. As a result, it is important that CMS value them accurately. Although CMS updated prices for all supplies and equipment in the last few years, the agency has not indicated when it will next perform a comprehensive review. Consequently, CMS should consider setting a reasonable schedule to reprice all equipment and supply items periodically. Moreover, the prices of new, high-cost supplies and equipment could be reviewed more frequently than other items to ensure that price changes are reflected in the data used to set relative values.

CMS updated all the supply prices for the 2004 physician fee schedule and revised equipment prices for the 2005 and 2006 fee schedules.¹⁵ Because there are more than 1,000 individual supply and equipment items, this task was very time consuming. CMS hired a consultant who examined vendor catalogs and websites to determine a “typical” price for an item. When the consultant could not identify prices for a specific item, CMS asked specialty societies to provide information with supporting documentation, such as invoices. This review resulted in significant price changes for some items. For example, the estimated cost of an MRI room declined by half from 2004 to 2006, from \$3.1 million to \$1.6 million (CMS 2006b).¹⁶ By contrast, the estimated price for a CT room increased

from \$1 million in 2004 to \$1.3 million in 2006, reflecting the diffusion of new 16-slice scanners (CMS 2006b).¹⁷ In addition to CMS’s comprehensive review of all items, specialty groups and manufacturers can request that the price of an existing item be changed. These groups have a greater incentive to identify undervalued supplies and equipment than overvalued items.

To ensure that both overvalued and undervalued items are identified and corrected, CMS could periodically review the prices of all supplies and equipment, particularly new and expensive items that can account for a large share of a service’s practice expense. Prices for new items are likely to drop over time as they diffuse into the market and as other companies begin to produce them. Some new disposable supplies have very high prices. For example, CMS estimates that a probe used in radiofrequency ablation of renal tumors (CPT code 50592) costs \$1,995 per service; a new probe is used each time the service is performed (CMS 2006b). In the final rule for the 2006 physician fee schedule, CMS recognized the need to revalue high-cost, new technology supplies and said that it would discuss options for updating supply prices in the proposed rule for the 2007 fee schedule (CMS 2005a).

In contrast to disposable supplies, the cost of equipment is spread over many uses and thus usually represents a small share of a service’s direct expense (GAO 1998). However, expensive equipment can still be quite costly on a per use basis. For example, CMS assumes that MRI equipment has a purchase price of \$1.6 million and costs \$563 per service for MRI of the brain, without contrast followed by contrast (CPT code 70553).

Because CMS has limited administrative resources and there are many supply and equipment items, CMS could set a dollar threshold for items that it will examine more frequently. For example, the RUC recently encouraged CMS to review annually the prices of supplies that cost \$200 or more (Rich 2005). Only 40 supply items are priced above \$200, according to the RUC. CMS could update prices for a small number of expensive supplies and equipment using catalogs, invoices, and other documentation provided by specialties. Regular review of new equipment and supply prices is consistent with our recent recommendation calling for scheduled reviews of the work RVUs for new services (MedPAC 2006).¹⁸

Although a lower priority, it is also important to periodically reprice other supplies and equipment. Otherwise, services that use many equipment and supply inputs could become misvalued over time. Rather than

**TABLE
4-5**

Distribution of direct costs of select MRI and CT services, 2006

**Share of total direct costs
for technical component**

Service	CPT code	Equipment	Supplies	Nonphysician clinical staff
MRI, lumbar spine (with contrast)	72148	90.2%	2.7%	7.0%
MRI, brain (without contrast followed by contrast)	70553	88.9	4.5	6.6
CT, pelvis (with contrast)	72193	85.2	6.5	8.3

Note: MRI (magnetic resonance imaging), CT (computed tomography), CPT (Current Procedural Terminology). The technical component includes the cost of the equipment, supplies, and clinical staff, but not the physician's interpretation. Indirect costs are not shown.

Source: Physician practice expense input files from CMS 2006b.

reviewing all items in the same year, CMS could examine prices for a different subset of items each year (perhaps items used by a given specialty). Over time, the agency would eventually review prices for all supplies and equipment.

Setting the per service price of medical equipment

To set the per service price of a unit of equipment, CMS multiplies the number of minutes it is used for that service by the equipment's cost per minute. The number of minutes the equipment is used is usually equal to the clinical staff time involved in performing the service.¹⁹ The cost per minute for a unit of equipment is based on several factors:

- the equipment's purchase price,
- useful life,
- annual maintenance costs,
- the cost of capital,
- the number of hours per year a physician office treats patients, and
- how frequently the equipment is used.²⁰

In the previous section, we discussed how CMS estimates purchase prices. In this section, we address how CMS estimates equipment use and the cost of capital.

Estimating how frequently equipment is used

When setting the price of medical equipment associated with a specific service, such as a laser used for eye surgery, CMS assumes the equipment is used half the

time the practice is open for business.²¹ If a machine is actually used most of the time, its cost is spread across more units of service, resulting in a lower cost per service than if it were only operated half the time. Such equipment is currently overvalued by CMS. The cost of a machine used less than half the time is spread across fewer units of service, resulting in a higher cost per service than if it were operated half the time. Such equipment is currently undervalued.

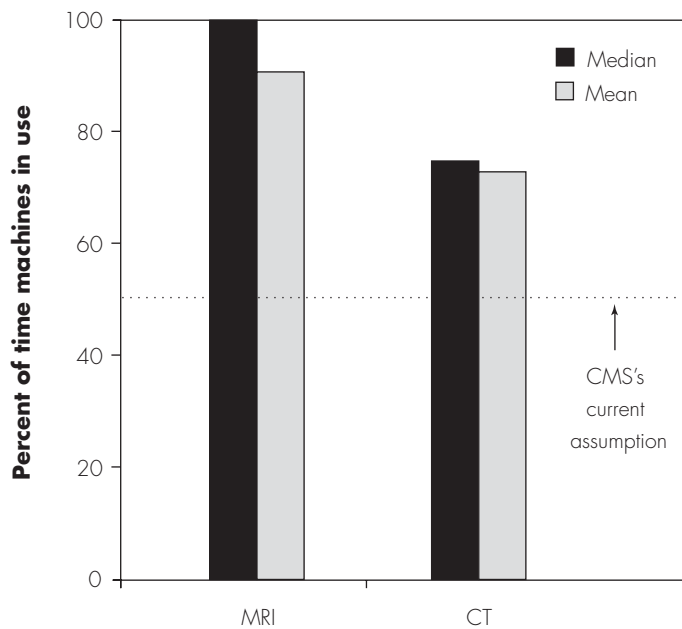
How did CMS arrive at a 50 percent assumption for equipment capacity? When CMS initially developed the resource-based practice expense RVUs, it sought—but was unable to obtain—valid information on how frequently various equipment was used across procedures and payers.²² In the absence of such data, CMS decided to assume that all equipment is used 50 percent of the time (CMS 1997).

We explore whether the 50 percent utilization assumption is appropriate for imaging machines. It is important that CMS price imaging equipment accurately because the agency has expressed strong interest in using direct cost inputs—such as equipment costs—to value imaging services (CMS 2005b, CMS 2002). Currently, the practice expense payments for most imaging services are primarily based on pre-1998 charges.

Providers have a financial incentive to increase the use of expensive equipment unless it is unprofitable. Thus, it is possible that MRI or CT machines are used more than half the time. Expensive equipment accounts for a large share of the direct cost of advanced imaging studies (Table 4-5). Equipment costs are fixed; in other words, the cost does not increase as volume grows. Variable costs (supplies and

FIGURE 4-1

MRI and CT machines used most of the time providers were open for business



Note: MRI (magnetic resonance imaging), CT (computed tomography). We calculated the percent of time providers used machines by dividing the number of hours per week each machine was used by the number of hours per week the provider was open for business. The confidence interval around the mean MRI use rate is 85 percent to 97 percent. The confidence interval around the mean CT use rate is 65 percent to 81 percent.

Source: National Opinion Research Center survey of imaging providers in six markets for MedPAC (NORC 2006).

clinical staff time) account for a relatively small portion of direct costs. Most of the indirect (or overhead) costs—such as office rent, utilities, and administrative staff—are relatively fixed. Providers have an incentive to perform enough services to cover the fixed cost of the equipment. Once the fixed cost is covered, there is a greater incentive to perform more services because the marginal profitability of additional services increases significantly; the profit equals the payment rate (which does not change as volume grows) minus the variable costs.

Higher volume per machine could explain at least some of the recent rapid growth in imaging volume.²³ Between 1999 and 2003, per beneficiary use of CT scans (of parts of the body other than the head) grew by 16.3 percent per year on average (MedPAC 2006). During the same period, per beneficiary use of MRI studies (of parts of the body other than the brain) grew by 19.3 percent per year

on average. By comparison, use of all physician services increased by 5.4 percent per year between 1999 and 2003.

The Commission surveyed providers in six markets that performed MRI and CT services on Medicare beneficiaries to examine whether certain imaging equipment is used more than half the time. This survey indicates that providers in those markets used MRI and CT machines significantly more than 50 percent of the time they were open for business. We focused on MRI and CT equipment because of the rapid spending growth for these services and the high cost of these machines, as well as the likelihood that CMS will begin using direct cost inputs to value these services. We recognize that other types of equipment may be used more (or less) frequently than half the time.

Survey of imaging providers The Commission surveyed 133 physician practices and independent diagnostic testing facilities that performed MRI or CT studies. The providers were from six markets: Boston; Miami; Greenville, South Carolina; Minneapolis; Phoenix; and Orange County, California. These markets were chosen to represent a range of geographic areas and per capita Medicare spending. Boston and Miami are in the top quartile of spending, Orange County and Greenville are in the middle quartiles, and Phoenix and Minneapolis are in the bottom quartile. The survey asked about the following characteristics:

- number of hours per week the provider is open for business,
- whether the provider has a MRI or CT scanner,
- number of MRI and/or CT scanners,
- age of MRI and CT equipment, and
- hours per week that MRI and CT equipment is used.

The survey's response rate was 72 percent, achieved during a five-week field period (NORC 2006).²⁴ The text box contains more information about the survey.

We calculated use rates for each provider by dividing the number of hours per week each machine was used by the number of hours per week the provider was open for business. The median use rate across all providers for MRI machines was 100 percent; in other words, the equipment was always in operation when the median provider was open for business (Figure 4-1). The mean use rate was 91 percent (the confidence interval was 85 percent to

Methodology for the survey of imaging providers

The sampling frame for the Commission's survey of imaging providers was based on providers who performed the technical component of a magnetic resonance imaging (MRI) or computed tomography (CT) service in 2003.²⁵ To be eligible for selection, a provider must:

- have been paid under the physician fee schedule in 2003 (this includes physicians and independent diagnostic testing facilities (IDTFs));
- have performed an MRI or CT scan on a patient whose claims appear in the 5 percent Medicare carrier file, which is based on a 5 percent random sample of beneficiaries;
- be located in one of six markets (Boston; Miami; Greenville, South Carolina; Minneapolis; Phoenix; and Orange County, California).

The Commission and our contractors—the National Opinion Research Center (NORC) and Georgetown University—created a file of physicians and IDTFs that met these conditions, then aggregated individual physicians into group practices. We grouped physicians into practices to avoid double-counting physicians who share the same equipment (NORC 2006). We did not aggregate IDTFs because they did not share the same site. Grouping physicians into practices involved the following steps:

- All physicians with the same address were considered to be in the same imaging group.

- Each practice was included in the sample if it appeared to be in operation when the survey was conducted (February to March 2006), based on internet searches.
- If an imaging group was no longer in operation but one or more physicians could be linked to a new location, that location was included in the sample. The contractors tracked physicians using internet yellow pages, Google searches, and physician directories.
- Groups were dropped from the sample if they were no longer in operation and their physicians could not be linked to new locations.
- Only one site was included in the survey if a group operated multiple sites.
- Providers who were located at or appeared to be owned by a hospital were excluded.

This process identified 189 imaging groups and IDTFs, which were each mailed a short questionnaire. The providers were able to respond by mail, fax, or telephone. The contractor followed up with all nonresponders by phone. After the initial mailing, the contractors determined that 56 providers were ineligible and 133 were eligible. The ineligible providers were out of business, part of a multisite group already represented in the sample, owned by or located at a hospital, or had no MRI or CT equipment. Eighty of the 133 eligible providers completed the survey.²⁶ Most surveys were completed in less than five minutes. ■

97 percent). A few providers had use rates above 100 percent (they used their equipment for more hours than the facility was normally open for business). These providers said that they operate beyond normal business hours to accommodate patients with urgent needs. The median use rate across all providers for CT equipment was 75 percent, which was very close to the mean of 73 percent (the confidence interval was 65 percent to 81 percent) (Figure 4-1).

There are some limitations to this survey. It is not nationally representative because the sample is based on six markets. Because the sample size is small, there is probably substantial random variation. Thus, the confidence intervals around the mean use rates are relatively large. However, even the low ends of the confidence intervals are above the current 50 percent equipment use assumption. In addition, the results should be unbiased because every nonhospital imaging provider in the 2003 Medicare claims file (5 percent sample of

**TABLE
4-6**

Illustration of how changing equipment use and interest rate assumptions affects equipment price per service

Percent of time equipment is used	Interest rate	Estimated equipment price per service
50	11%	\$100
75	6	60
90	6	50

Note: CMS currently assumes that all equipment is used 50 percent of the time and the annual interest rate on loans to purchase equipment is 11 percent. The alternative equipment use and interest rate assumptions and the \$100 cost of equipment per service are illustrative. Equipment with different baseline prices would fall by the same proportion if the alternative assumptions are used. This table does not show the impact on overall direct practice expenses or indirect practice expenses.

beneficiaries) had the same chance of being selected for the survey (as long as they met the conditions of eligibility).²⁷

Our survey raises questions about whether CMS underestimates how frequently providers use MRI and CT equipment. It appears that MRI and CT machines are operated significantly more than 50 percent of the time, at least in these six markets. Further, the survey demonstrates that a short questionnaire can be used to collect information on how often providers use medical equipment and achieve a high response rate.

Instead of basing the assumption of equipment use on empirical evidence, however, should it be based on an expectation of how frequently efficient providers operate equipment? To encourage more efficient use of expensive equipment, CMS could adopt an assumption that such equipment is used most of the time a provider is open for business. This standard, which would lower payment rates for services that have high equipment costs, is consistent with the Commission’s position that Medicare should pay for costs incurred by efficient providers. However, this policy might impair access to care in rural areas, if equipment is rarely used. Further, it could conflict with Medicare’s goal to set relative values for physician services that reflect typical resource use.

Estimating the cost of capital to purchase medical equipment

When estimating the cost of capital to purchase medical equipment, CMS assumes that providers pay an interest

rate of 11 percent per year when borrowing money to buy equipment. More recent data suggest that this interest rate assumption is too high. The current estimate is based on prevailing loan rates for small businesses, which are used as a proxy for physician practices (CMS 1997).²⁸ CMS has not updated this assumption since it was developed in 1997.

CMS could periodically revise the interest rate estimate as rates change over time. A key issue would be whether to use a rate from a single year or an average of rates from multiple years. Using an average rate from multiple years would reflect the range of rates paid by physicians who bought their equipment at different times. The number of years used to calculate the average rate could be based on the estimated useful life of equipment, such as 5 years for MRI and CT machines (AHA 1998).

Although we were not able to locate data on recent small business loan rates, the Federal Reserve Board conducts an ongoing survey that CMS could use to revise its interest rate assumption. The Board collects quarterly information on commercial and industrial loans made by commercial banks to different types of borrowers. One of the advantages of using this survey is that it is updated regularly, which would make it easier for CMS to keep its assumption up to date.

Based on the Federal Reserve surveys conducted during the last five years (from the second quarter of 2001 to the first quarter of 2006), loans of more than one year had average annual interest rates over the last five years that ranged from 5.3 percent to 6.0 percent, depending on the risk of the loan (Federal Reserve Board 2006).²⁹ The highest risk category (6.0 percent) includes loans that are considered acceptable risk. Borrowers in this category have fair credit ratings, no recent credit problems, and no access to the capital markets (Federal Reserve Board 2003).³⁰ If CMS were to adopt a lower interest rate estimate, this would reduce payment rates for services that have high equipment costs.

Impact of changing equipment assumptions

Once CMS begins using direct cost inputs to value the technical component of imaging services, increasing the equipment use assumption and lowering the interest rate assumption would reduce PE payment rates for services like CT and MRI studies. Because changes to PE relative values are budget neutral, these savings would be redistributed among other physician services.

Table 4-6 illustrates the impact of changing these assumptions on equipment price per service. If CMS were to use a higher assumption of equipment use and a lower interest rate assumption, estimated equipment price per service would decline significantly. For example, increasing the equipment use rate from 50 percent to 75 percent and lowering the interest rate estimate from 11 percent to 6 percent would reduce equipment price per service by 40 percent (based on CMS's formula for calculating equipment price per service).³¹ Most of this reduction would be from changing the equipment use rate. Raising the equipment use rate from 50 to 90 percent and reducing the interest rate to 6 percent would lower equipment price per service by 50 percent. The percentage changes would be the same for all types of equipment and services, even when a procedure's length of time and equipment purchase price varies.

Conclusion

This chapter suggests several ways for CMS to improve the data used to determine physicians' practice expense payments, including:

- options for collecting more recent data on practice costs for all specialties,
- methods to improve the accuracy and completeness of the database that estimates the types and quantities of direct cost inputs for each service, and
- approaches for keeping the prices of direct inputs up to date.

The Commission has also raised questions about whether the assumptions used to estimate the per service cost of certain imaging machines may overstate the cost of operating these machines.

We recognize that updating practice expense data will substantially increase CMS's workload. There is a trade-off between improving the accuracy of PE payments and other demands on the agency's limited administrative resources. Therefore, we suggest that CMS focus its efforts on areas where the data are most out of date and the impact on relative weights is likely to be greatest. Although some time lag between relative weights and actual costs is unavoidable, CMS can still develop a reasonable time frame and approach to update the data sources. The Congress should provide CMS with the financial resources and administrative flexibility to undertake the effort as it will improve the accuracy of Medicare's payments and achieve better value for Medicare spending.

In future work, we plan to further examine alternatives for collecting more recent data on practice costs and the process by which the direct cost inputs are developed and refined. This research will include interviews with members of the AMA's multispecialty practice expense committee and CMS staff. We also intend to study alternative methods for deriving PE relative values. ■

Endnotes

- 1 See MedPAC 2004 for a detailed example of how CMS calculates the practice expense payment.
- 2 The major specialties composing the nonphysician work pool are radiology, radiation oncology, and cardiology.
- 3 Because the SMS survey did not capture the costs of uncompensated care, CMS crosswalked emergency medicine's cost pools for administrative labor and other expenses to the practice expense per hour for all physicians (CMS 2001).
- 4 For example, CMS adjusted the hourly cost for medical materials and supplies for oncology and allergy/immunology because Medicare makes separate payment for the drugs furnished by these specialties. The agency also adjusted the direct patient care hours for pathologists to account for the fact that time spent performing autopsies and supervising technicians are Part A services (CMS 1998a).
- 5 In the August 2004 proposed rule, CMS extended until 2005 the period for accepting supplemental data that meet the specific criteria set forth in the November 2000 final rule. After that point, CMS has not accepted supplemental practice expense data. The deadline for submitting supplemental data to be considered in calendar year 2006 was March 1, 2005.
- 6 CMS has accepted but is not yet using the surveys submitted by certain specialties because the agency withdrew its practice expense proposals in the final rule for the 2006 fee schedule in part due to a calculation error in deriving practice expense RVUs. These specialties include: radiology, cardiology, radiation oncology, freestanding radiation oncology centers, dermatology, allergy/immunology, gastroenterology, and cardiology.
- 7 Section 303 of the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 (MMA) required that CMS use survey data submitted by specialty groups that have at least 40 percent of their Part B payments attributable to the administration of drugs to adjust PE RVUs for drug administration services. The MMA provided an exception from budget neutrality for any additional expenditures resulting from the use of these data. Four specialty groups met this criterion (oncology, rheumatology, urology, and gynecology) and two have submitted surveys to CMS (oncology and urology).
- 8 CMS only includes equipment that costs at least \$500 in the practice expense database. The cost per use for equipment costing less than \$500 would be negligible, because the cost is spread out over many uses.
- 9 The AMA formed the RUC in 1991 to make recommendations to CMS on physician work relative values for new and revised codes.
- 10 For example, if the RUC removed a physician office visit from a surgical procedure with a 90-day global period, the RUC decreased the nonphysician clinical labor, supplies, and equipment related to that office visit.
- 11 For example, the American Society of Colon and Rectal Surgeons noted that some of the supply inputs had not been changed to match the accepted new recommendations for CPT codes 45900, 45905, 45910, 47382, 49321, 49322, 49422, and 49429 (CMS 2003).
- 12 The original clinical staff wage rates, which were initially used for the 1998 physician fee schedule, were developed by a consultant to CMS using 1994 and 1995 wage survey data from the BLS.
- 13 For example, wages for MRI and CT technologists are based on a 2001 survey conducted by the American Society of Radiologic Technologists.
- 14 CMS's wage rates for 1998 were based on data from 1993 and 1994, and the updated rates are primarily based on data from 1999 (CMS 2001).
- 15 When CMS updated the prices, it also improved the uniformity of the supply and equipment databases. For example, the agency created 14 categories of supplies and standardized how supplies are described. CMS also developed six categories for equipment and combined items that were duplicative (CMS 2003). Most of the original supply and equipment prices were developed by a CMS consultant in 1997 using pricing data from supply catalogs.
- 16 An MRI room includes a 1.5 Tesla scanner, power injector, and monitoring system (CMS 2005b).
- 17 A CT room includes a 16-slice scanner, power injector, and monitoring system (CMS 2005b).
- 18 Because the physician work required for a new service would be expected to decline over time as physicians become more efficient in furnishing it, we recommended that new services likely to experience reductions in value should be reviewed (MedPAC 2006).

- 19 For most types of equipment, CMS assumes that the equipment is in use during the entire time the procedure is performed. However, pathology services can involve many types of testing equipment, so CMS assumes that they are used sequentially rather than simultaneously.
- 20 The useful life of each equipment item is based on a publication by the American Hospital Association that lists the estimated life of equipment used by hospitals (AHA 1998). CMS assumes that all equipment items have annual maintenance costs equal to 5 percent of the equipment's purchase price. This assumption is based on information from the Medical Group Management Association (CMS 1997).
- 21 Standby equipment (e.g., a crash cart) and equipment used for many procedures at the same time (e.g., a refrigerator) are considered to be indirect practice expenses and are not priced separately.
- 22 CMS received information from some physician groups on equipment that is used less than 50 percent of the time (CMS 1998b). However, CMS did not accept these estimates because they were not based on representative surveys of physicians.
- 23 The growth of imaging services could also be related to an increase in the number of machines. There are no national data on changes in the number of MRI and CT machines used by nonhospital providers.
- 24 The response rate is calculated by dividing the number of providers who completed the survey by the number of providers who are believed to have met the survey criteria (the criteria included having an MRI or CT machine, being open for business during the survey, and being independent of a hospital). There were 80 providers who completed the survey and 111 providers who were estimated to have been eligible for the survey.
- 25 IDTFs are entities that furnish diagnostic services and are independent of a hospital or physician office. There were 78 physician practices and 55 IDTFs in the sample. The technical component of an imaging service includes the cost of the equipment, supplies, and nonphysician staff, but not the physician's interpretation.
- 26 The contractors could not confirm the eligibility of the 53 providers who did not complete the survey, but estimated that 31 of them (59 percent) were eligible for the survey based on the eligibility rate of the providers who were successfully contacted.
- 27 To be eligible for the survey, providers had to still be in operation when the survey was conducted in 2006, operate MRI or CT equipment, be paid under Medicare's physician fee schedule, and be independent of a hospital.
- 28 CMS was unable to locate data on loan rates for physician practices (CMS 1997). The length of the loan is based on the equipment's useful life.
- 29 The average prime rate during this period was 5.2 percent.
- 30 Because many physician groups do not have access to capital markets, this category seems to be a reasonable proxy for physician practices.
- 31 The alternative equipment use assumptions in this section (75 percent and 90 percent) are based on the Commission's survey of imaging providers in six markets (NORC 2006). The alternative interest rate estimate (6 percent) is based on the average annual interest rate for loans issued during the previous five years (Federal Reserve Board 2006). These alternative assumptions are meant to be illustrative.

References

- American Medical Association. 2005. *AMA/specialty society RVS update process*. Chicago, IL: AMA.
- American Hospital Association. 1998. *Estimating useful lives of depreciable hospital assets*. Chicago, IL: AHA.
- Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2006a. 2007 practice expense per hour data. <http://www.cms.hhs.gov/PhysicianFeeSched/>.
- Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2006b. CPEP files. <http://www.cms.hhs.gov/PhysicianFeeSched/>.
- Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2006c. Practice expense town hall meeting. Feb. 15. Baltimore, MD.
- Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2005a. Medicare program; revisions to payment policies under the physician fee schedule for calendar year 2006 and certain provisions related to the competitive acquisition program of outpatient drugs and biologicals under Part B. Final rule. *Federal Register* 70, no. 223 (November 21): 70116–70150.
- Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2005b. Medicare program; revisions to payment policies under the physician fee schedule for calendar year 2006. Proposed rule. *Federal Register* 70, no. 151 (August 8): 45763–46064.
- Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2004. Medicare program; changes to Medicare payment for drugs and physician fee schedule payments for calendar year 2004. Interim final rule. *Federal Register* 69, no. 4 (January 7): 1084–1132.
- Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2003. Medicare program; revisions to payment policies under the physician fee schedule for calendar year 2004. Final rule. *Federal Register* 68, no. 216 (November 7): 63196–63213.
- Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2002. Medicare program; revisions to payment policies under the physician fee schedule for calendar year 2003 and inclusion of registered nurses in the personnel provision of the critical access hospital emergency services requirement for frontier areas and remote locations. Final rule. *Federal Register* 67, no. 251 (December 31): 79966–80013.
- Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2001. Medicare program; revisions to payment policies under the physician fee schedule for calendar year 2002. Proposed rule. *Federal Register* 66, no. 149 (August 2): 40377–40378.
- Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2000. Medicare program; revisions to payment policies under the physician fee schedule for calendar year 2001. Final rule. *Federal Register* 65, no. 212 (November 1): 65375–65424.
- Centers for Medicare & Medicaid Services, Department of Health and Human Services. 1998a. Medicare program; revisions to payment policies and adjustments to the relative value units under the physician fee schedule for calendar year 1999. Final rule and notice. *Federal Register* 63, no. 211 (November 2): 58814–58895.
- Centers for Medicare & Medicaid Services, Department of Health and Human Services. 1998b. Medicare program; revisions to payment policies under the physician fee schedule for calendar year 1999. Proposed rule. *Federal Register* 63, no. 108 (June 5): 30818–30824.
- Centers for Medicare & Medicaid Services, Department of Health and Human Services. 1997. Medicare program; revisions to payment policies under the physician fee schedule, other Part B payment policies, and establishment of the clinical psychologist fee schedule for calendar year 1998. Proposed rule. *Federal Register* 62, no. 117 (June 18): 33158–33164.
- Federal Reserve Board. 2006. *Federal reserve statistical release: Survey of terms of business lending*. March 21. <http://www.federalreserve.gov/releases/e2/>.
- Federal Reserve Board. 2003. *Survey of terms of business lending: Instructions*. March 5. http://www.federalreserve.gov/boarddocs/reportforms/forms/FR_2028a--s20030305_i.pdf.
- Government Accountability Office. 2004. *Medicare physician fee schedule: CMS needs a plan for updating practice expense component*. GAO–05–60 (December). Washington, DC: GAO.
- Government Accountability Office. 1999. *Medicare physician payments: Need to refine practice expense values during transition and long term*. GAO/HEHS–99–3 (February). Washington, DC: GAO.
- Government Accountability Office. 1998. *HCFA can improve methods for revising physician practice expense payments*. GAO/HEHS–98–79 (February). Washington, DC: GAO.

Lewin Group. 2005. *Recommendations regarding supplemental practice expense data submitted for 2006*. Falls Church, VA: The Lewin Group.

Lewin Group. 2004. *Recommendations regarding supplemental practice expense data submitted for 2005*. Falls Church, VA: The Lewin Group.

Lewin Group. 2003. *Recommendations regarding supplemental practice expense data submitted for 2004*. Falls Church, VA: The Lewin Group.

Lewin Group. 2000. *An evaluation of the Health Care Financing Administration's resource based practice expense methodology*. Contract no. 500-95-0059/TO#6. Report for the Health Care Financing Administration, Department of Health and Human Services. Falls Church, VA: The Lewin Group.

Medicare Payment Advisory Commission. 2006. *Report to the Congress: Medicare payment policy*. Washington, DC: MedPAC.

Medicare Payment Advisory Commission. 2004. *Report to the Congress: Impact of resource-based practice expense payments for physician services*. Washington, DC: MedPAC.

National Opinion Research Center. 2006. Survey of imaging centers and physician offices' use of MRI and CT equipment. Draft submitted to MedPAC. March 31.

Rich, William L. III. 2005. Letter to Mark B. McClellan, September 28.

CHAPTER

5

**Adding quality measures
in home health**

Adding quality measures in home health

Chapter summary

In March 2005, the Commission suggested that additional measures be developed to complement the ones that have already been developed, collected, and used for quality measurement in home health. The current set of measures focuses on the clinical effectiveness of care given to patients whose physical conditions are improving. Adding measures could:

- broaden the patient population covered by the measure set,
- capture safety as an aspect of quality,
- capture an aspect of care directly under providers' control,
- reduce variation in practice, and
- provide incentives to improve information technology.

As a step toward adding new measures to the existing set, we convened a panel of researchers, quality measurement experts, and home health providers to identify best practices. These practices can be translated into measures of the process of care. We asked the panel to focus on fall prevention and wound care because falls and wounds are prevalent

In this chapter

- Strengths and weaknesses of the current measure set
- Gathering best practices
- Translating best practices into process measures

among home health users; the practices are part of the care for patients whose physical condition is not improving, as well as for patients who are improving; and are related to patient safety. We wanted to complement—and not replicate—CMS’s work on best practices in other areas. Panel members gave us examples of best practices, such as developing a standard protocol for contacting a physician when a skin wound does not respond to treatment and determining significant blood pressure changes while the patient is standing to assess the risk of falling.

After identifying best practices, the next step is to create measures based on the practices. For example, a process measure for a blood pressure practice would include a precise description of who should receive the care, at what time and how often the care should occur, a very specific definition of the practice itself, and rules for excluding patients who should not receive the care. Following development, the process measures would be tested against the Commission’s criteria and could be added to home health’s measure set. ■

Strengths and weaknesses of the current measure set

In 2003, the Commission recommended that Medicare use a portion of payments to reward providers who furnish high-quality care or improve the quality of care for their patients (MedPAC 2003). Most of Medicare's payments are neutral or negative toward quality. Where there are good measures of the quality of care, the program should reward the high-quality performance of providers. There are three types of quality measures:

- **Outcome measures**—indicate a change in health status such as the recovery, restoration of function, or survival of the patient following health care.¹
- **Process measures**—indicate whether a specified practice has been applied to a patient.
- **Structural measures**—indicate characteristics of the setting in which care takes place, such as the adequacy of medical equipment, the qualifications of the staff, or the administration of the facility (Donabedian 1966).

The Commission developed a set of criteria for quality measurement to determine whether Medicare could begin linking payment to performance. In home health, we determined that the measures based on currently required patient assessments met those criteria: They are accepted, valid, reliable, and adequately risk adjusted. The data collection burden is minimal because the information needed is already part of the patient assessment tool that is required at the beginning and end of Medicare home health episodes. The measures compare patients' functional score at admission to their score at discharge to determine, for example, the improvement of their ability to walk, dress, and manage their oral medications. The outcomes are adjusted to account for patient characteristics present at the initiation of care that affect the patients' likelihood of improvement, such as diagnosis, comorbidities, overall level of functioning, and health risk behaviors. The measures apply to many patients and relate to areas where there is room for providers to improve their performance. In March 2005, the Commission recommended that the Congress implement a pay-for-performance program in home health, based on measures that passed the Commission's criteria (MedPAC 2005).

Most of the measures in the current, publicly reported set assess improvement in functioning. Only one measure assesses stabilization as an outcome; the remaining measures capture adverse events (Table 5-1, p. 106). The table illustrates that three important organizations—the Agency for Healthcare Research and Quality (AHRQ), the National Quality Forum (NQF), and CMS—have reviewed quality measures for home health and all three have endorsed a core set. The measures with a check mark in the AHRQ column were given a high rating by a group of technical experts and AHRQ uses them in annual reports to the nation on the quality of health care. The NQF used a consensus process among stakeholders to endorse the measures with a check mark in the NQF column. The third column indicates the measures used by CMS in public reporting on home health quality in Home Health Compare. The final column shows that the three organizations are aligned on most of the measures.²

Adding new measures to the currently available outcome measures could broaden the patient population we can assess, expand the types of quality we can measure, capture an aspect of care directly under providers' control, reduce variation in practice, and add incentives to improve information technology. Measure sets should not be static; they should evolve to incorporate new measures and to remove any measures that no longer reflect best practice or have no more room for improvement among providers. Any type of measure—outcome, process, or structure—could be added to expand the current set. We chose to explore new process measures because they can address each of the goals for evolving the set.

Unlike measures of functional improvement, process measures could address the quality of ongoing efforts by nurses, therapists, and others to prevent the deterioration of health for patients who are not improving. The NQF (2005) concluded that developing “at least some measures that apply to **all** home health care patients” is a priority area. Measures of preventive processes, such as the steps that home health professionals take to reduce the risk of falling, could apply to all patients and thus broaden the patient population we can assess.

Outcome measures are best at indicating the clinical effectiveness of care. For example, the outcome measure “improvement in walking” indicates whether physical therapy and nursing care provided to patients were effective at increasing the patients' mobility. However, clinical effectiveness is only one of the dimensions of quality of care. The NQF also identified patient safety as

**TABLE
5-1**

The current home health measure set

Measures	AHRQ	NQF	CMS	All three
Improvement in:				
shortness of breath	✓	✓	✓	✓
bladder control	✓	✓	✓	✓
upper body dressing	✓			
bathing	✓	✓	✓	✓
management of oral medications	✓	✓	✓	✓
walking or moving around	✓	✓	✓	✓
status of surgical wounds		✓		
toileting	✓			
getting in or out of bed	✓	✓	✓	✓
pain interfering with activity	✓	✓	✓	✓
confusion frequency	✓			
light meal preparation	✓			
Stabilization in bathing	✓			
Discharge to community		✓	✓	
Any emergency care provided	✓	✓	✓	✓
Emergency care related to wounds		✓		
Emergency care related to medications		✓		
Emergency care for hypo/hyperglycemia		✓		
Increase in number of pressure ulcers		✓		
Acute care hospitalization	✓	✓	✓	✓

Note: AHRQ (Agency for Healthcare Research and Quality), NQF (National Quality Forum).

Source: AHRQ report on home health quality measures for CMS public reporting, March 2003. www.cms.hhs.gov/quality/hhqj/HHQIAHRQ.pdf. Center for Health Services Research 2002, NQF 2005.

an important dimension of quality—as outlined by the Institute of Medicine (2001) in its seminal study—and a priority area for quality measurement in home health. Measuring processes such as fall prevention or wound care could address agencies’ ability to maintain patients safely in their homes and to educate patients to sustain themselves safely, which are important goals of the home health benefit.

Providers reasonably expect to be judged on the quality of aspects of care that they can influence (McGlynn 1997). Process measures capture an aspect of care that is under providers’ control: whether providers take very specific actions in the course of caring for their patients. Process measures indicate whether providers adhere to evidence-based best practices that have been demonstrated to improve the outcomes of care. As such, they are not

influenced by the unique health status of each patient, which is beyond the provider’s control.

If a purchaser such as Medicare were to adopt and use process measures, it could speed the adoption of best practices and reduce some of the variation in care that arises from failures to adhere to best practices. Adherence to best practices involved in care for vulnerable, elderly patients ranged from 52.2 percent for screening to 58.5 percent for follow-up care (McGlynn et al. 2003). The potential for standardization is real: When researchers randomly assigned home health nurses to an intervention group that used evidence-based nursing protocols and education and compared them to a randomized control group of nurses, they found a statistically significant reduction in the variation in the number of visits provided, and no increase in adverse events (Feldman et al. 2004).³

Financial incentives for measuring and reporting care processes could encourage providers to improve their informational capabilities to meet the new data requirements. The data for the current set of outcome measures are collected only at the first and last visits of a patient episode and do not include the practice of care in the interim. Some best practices suggest that patient assessment should continue during the episode and that certain protocols should be integrated into assessment activities. When nurses, therapists, and other home health professionals are encouraged by best practices to assess, record, use, and share more information about the patients' health status during an episode, it will encourage wider use of information technology. Examples include:

- *Electronic medical records.* The use of electronic medical records to store and provide information on a patient's past medical history, lab reports, and medications could greatly enhance the ability of health professionals to make informed decisions regarding care. In addition, electronic medical records could allow an organization to measure the quality of its care in real time rather than waiting for quarterly or annual measurements.
- *Management tools.* For example, patient registries, clinical reminder systems, and computerized patient assessments help providers manage a specific aspect of care.⁴ If nurses used a computer program to help prompt and record patient assessments, it could reduce the burden of recording important clinical information, suggest appropriate tests, and immediately identify patients who need special interventions to address their needs.
- *Patient communications.* Devices used in patients' homes to monitor their health can make it easier for patients to monitor their condition, communicate with caregivers, and identify the need for a medical intervention.

Gathering best practices

After reviewing the literature and speaking to many experts in the field, the Commission did not find any process measures for fall prevention or wound care that were already validated and in use. We took the first step in developing process measures by gathering best practices for fall prevention and wound care. Once best practices are identified, they can be translated into process measures.

We convened a panel of researchers, quality measurement experts, and providers to share best practices, focusing on fall prevention and wound care. Although the scope of home health is much broader than fall prevention and wound care, we focused our panel's work on this portion of home health care practice to generate a complete discussion on the specifics of each practice. A failure to limit the scope would not have made good use of our resources. Also, we did not wish to duplicate a current effort by CMS to develop condition-specific process measures. In 2005, CMS modified a contract it had with the Center for Health Services Research at the University of Colorado to review existing process measures and to propose ways to integrate them into the home health quality data collection as appropriate. In addition to considering measures that address pain, depression, medication management, and other broad topics, CMS is looking at process measures for some specific conditions such as heart failure, diabetes, chronic obstructive pulmonary disease, and coronary artery disease. We expect that our work will complement CMS's.

Fall prevention and wound care practices have several important strengths as potential process measures. First, fall prevention can be important for all patients. About one-third of all elderly in the community fall every year; 1 in 10 falls leads to a fracture and 1 in 20 falls requires medical attention (Gillespie et al. 2003). Even falls that do not lead directly to injury can trigger a cascade of mental and physical problems. Second, wounds are widespread among the home health population. Improper care of wounds can lead to long, costly hospital stays. On average, hospitalizations for pressure sores last 13 days and cost nearly \$40,000 (Russo and Elixhauser 2006). Third, both kinds of measures can capture the ongoing care of patients whose function may not be improving and can capture the dimension of patient safety. The panel discussed the strengths and weaknesses of these practices in terms of these criteria: 1) What is the evidence for this practice? and 2) What impact will this practice have on beneficiaries' health status or the ability to remain safely at home? Generally, the panelists agreed that several practices had a strong evidence base and high potential impact.

Fall prevention practices

Table 5-2 (p. 108) includes several of the most promising fall prevention practices. The panelists told us that one of the deficiencies of current practice is in the identification of patients' fall risk. A study of fall risk assessment and

**TABLE
5-2****Fall prevention practices**

Practice	Specifications
Use a standard, multifactor tool	<ul style="list-style-type: none">• Include patients' fall history• Include medication inventory
Use validated techniques to measure fall risk	<ul style="list-style-type: none">• Measure postural hypotension• Measure balance deficits by asking patient to stand on one foot for 10 seconds
Link assessment tool to appropriate follow-up activities	<ul style="list-style-type: none">• Contact physician to review number and type of medications that increase fall risk• Refer patient to a physical or occupational therapist• Initiate gait training, balance training, or strength training

Source: MedPAC analysis of expert panel discussion conducted February 2006.

management practices found frequent failures in practice (Fortinsky et al. 2004). The panelists discussed many practices that related to improved assessment. They emphasized that assessment alone was not enough, but that evidence-based interventions to address risks should be part of the process of care. In other words, reducing falls requires two steps: 1) identifying patients at risk and 2) providing care designed to reduce the factors that may lead to falling. Examples of both good risk assessments and good interventions are in Table 5-2.

Panelists presented strong evidence for the practice of validated techniques to assess fall risk, rather than using unstandardized methods of observation. Members of the panel had tested these practices at their agencies and measured substantial success at reducing the number of falls among their patients. Several panel members noted a recent study that concluded that agencies with low hospitalization rates integrated prompts to make plans for interventions within the fall risk assessment activity (Briggs Corp. 2005). Linking assessment and intervention could be achieved in different ways. For example, a patient assessment program on a nurse's handheld computer could be written to prevent a nurse from moving on to the next question on the patient assessment form if the nurse indicates that a risk was present. The nurse would be required to enter an intervention in the care plan to address the risk (e.g., refer patient to occupational therapist) before the patient assessment program could continue.

The panel's conclusions were similar to those in a recent meta-analysis of clinical studies of fall prevention among older adults (Gillespie et al. 2003). The analysis included a review of 62 trials involving over 21,000 elderly people. The analysis found strong evidence that a multifactor assessment tool linked with an intervention program, strength training, balance training, and withdrawal of medication that increases the risk of falling all significantly reduced falls among elderly in the community. A multifactor tool includes environmental, medical, functional, and psychosocial problems rather than focusing on one or a few of these factors. The meta-analysis also found that a home hazard assessment and modification program had a statistically significant effect on the number of falls; however, the panel said that this practice was already standard and consistent among providers of Medicare home health services.

Wound care practices

Table 5-3 includes some of the most promising practices for wound care. In this area of practice, too, the group said that best practices were not followed consistently among all home health agencies. Panelists agreed there was room for improvement and standardization in wound assessment and treatment.

Several panel members said that taking a photograph or digital image of the wound was a substantial improvement in the process of measuring wounds and recording changes. One panelist noted that a photograph was also a very useful tool for communications from home health nurses to physicians. Her agency had a substantial increase in the number of physicians who were willing to change the plan of care when an image of the wound accompanied the change request. Though several panel members thought that the cost of photographs would be prohibitive, several other panel members already used the technology or were familiar with providers who did. Providers who record images of wounds say it is easy to implement this practice.

The treatments and the notification protocols that were suggested by the panel are consistent with AHRQ's best practice guidelines for the treatment of pressure ulcers (AHRQ 1994). The panel discussed both pressure ulcers and surgical wounds and agreed that some treatments and physician contact protocols for pressure wounds also apply to surgical wound care.

Among the assessment practices discussed was use of specific wound measurement tools. Providers on the panel

said that attention to location and size of the wound, depth, drainage, odor, and wound margins are all key elements of the most effective tools. Panelists agreed that rather than requiring the use of a particular assessment tool, best practice guidelines should recommend the features of the tool that should be used.

The panelists shared concern over the wide national variation in wound care. Several noted that practices known to prolong or even prevent wound healing are still the standard plan of care for some patients in some areas. As long as poor wound care practices continue to injure patients or prolong their recovery, the diffusion of best practices will remain critical to improving the health of Medicare beneficiaries.

In some instances, panelists from home health agencies felt that the physicians who give wound treatment orders for the plan of care prevented agencies from implementing better treatments. Panelists thought that some physicians were not familiar with the most recent studies of effective wound care. Establishing wound care best practices—and providing rewards for them—would give agencies the weight of Medicare’s endorsement, clinical evidence, and financial incentives to engage physicians to reconsider the wound care practices they order.

Translating best practices into process measures

The work of the panel could be used to expand the home health measure set by translating the best practices into process measures and validating those measures. Process measures include a precise description of who should receive the care, at what time and how often the care should occur, a very specific definition of the practice itself, and rules to exclude patients who should not receive the care. The process measure would then be tested against the Commission’s criteria for good measures: Is it reliably specified? Is it a valid measure of good practice? Would it require unduly burdensome data collection?

Part of the assessment of these measures could include determining whether the practices they describe are within the scope of the benefit. For example, some panelists questioned whether some fall prevention activities are within the scope of services that home health agencies should provide according to the rules that govern the home health benefit. Many fall prevention techniques

TABLE 5-3

Pressure wound care practices

Practice	Specifications
Improve assessment	<ul style="list-style-type: none"> • Assess skin from head to toe • Assess wound at each visit • Photograph wound as part of the record
Improve treatment	<ul style="list-style-type: none"> • Offload pressure ulcers • Maintain moist wound bed as appropriate • Develop a turning schedule or increase mobility as appropriate • Use infection control techniques • Educate caregivers regarding infection control and following turning schedule
Develop physician contact protocols	<ul style="list-style-type: none"> • Contact physician at first sign of infection • Contact physician if wound does not respond to treatment within 2 weeks

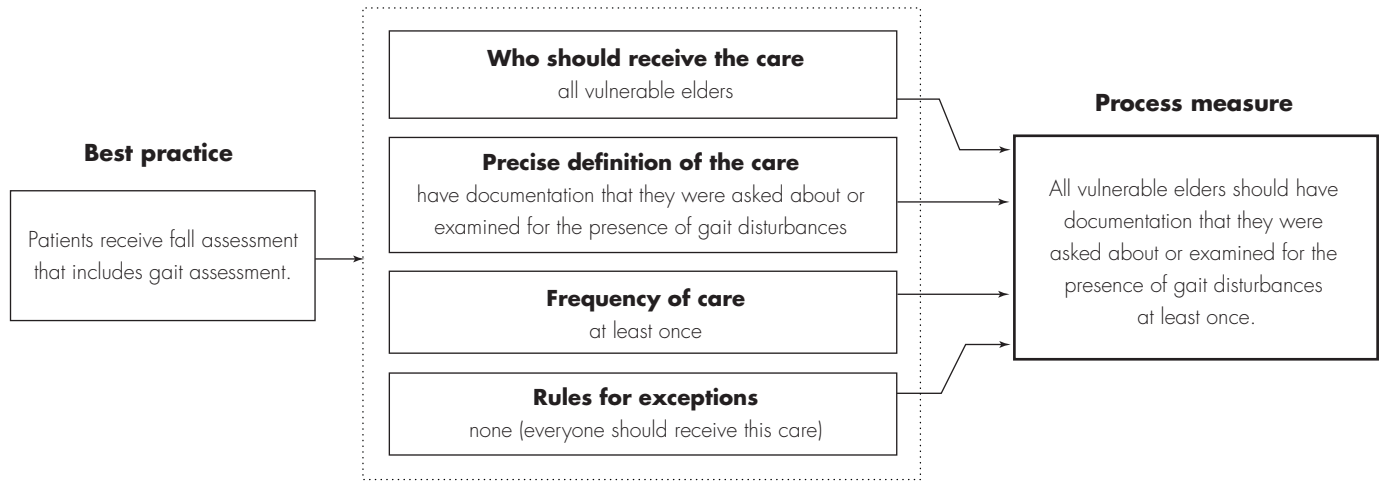
Source: MedPAC analysis of expert panel discussion conducted February 2006.

could occur during regular visits and patient contact, such as patient assessment and education. However, over the course of the days and weeks of an episode of care, home health personnel spend relatively little time in patients’ homes and have limited control over the patients’ environment. They can not physically prevent falls in the same way that an inpatient setting could.

On the other hand, the panelists may have been reacting to the lack of definition of the benefit, which we have noted in previous reports. For decades, administrators and the Congress have struggled with defining the home health benefit. In 1989, “skilled care was explicitly extended beyond specialized services to include judgmental services such as skilled observation, patient assessment and management, and evaluation of patients’ care plans” (Feder and Lambrew 1996). However, coverage is restricted to services that are reasonable and medically necessary to treat an illness or injury. For example, while it may be beneficial to evaluate a diabetic patient’s balance, this evaluation might not be necessary to treat the diabetes that was the primary reason he or she was admitted to home health care. The lack of definition of the benefit raises some questions about whether some good health practices related to safety and prevention are strictly within the scope of the home health benefit.

**FIGURE
5-1**

Example: Translating fall prevention best practice into process measure



Note: The process measure in this example is from Rubenstein et al. 2001.

Source: MedPAC analysis.

Figure 5-1 illustrates the translation from best practice to process measure for the example of a fall prevention best practice. Generally, process measures are the quantifiable details of what should be done, to whom, and how frequently, based on best practices. In the figure, we begin with our panel’s suggestion that best practice for fall risk assessments should include a gait assessment. Details based on that best practice are developed (the center of the figure). Finally, a process measure based on the details is assembled at the far right of the figure (Rubenstein et al. 2001). This process measure would be accompanied by instructions to determine who is a “vulnerable elder” and what “documentation” and “gait disturbances” are. The instructions would be designed to ensure that each agency reports the same care for the same patient population. If the data were consistent from agency to agency, the measure would be considered reliable.

Potential measures must be assessed for reliability and validity. A popular method for reliability testing is measuring two raters’ agreement in describing the same encounters. In the example of the practice of gait assessment, two different nurses or a nurse and a physical therapist might not agree on the kind of clinical activity that constitutes an “examination” of gait disturbances without some additional information to describe the clinical practice.

The validity of process measures could be assessed in several ways. One way is to determine whether evidence links the processes to improved outcomes. Our panel provided clinical information and cited randomized, controlled trials that established these links for the discussed practices. Another way is to assess the measure’s content validity—whether the process to be measured captures the most important aspects of the best practice on which the measure is based, according to expert judgement. A third way is to assess construct validity—whether all the measures within a set are related to the same practice (e.g., whether all of the processes in a set of “fall prevention” measures are related to the practice of fall prevention). If one or two measures within a set do not correlate well with the rest of set, based on statistical analysis, perhaps they are not valid measures of the same type of practice that the other measures capture.

Once developed, process measures could enhance the current quality measure set in five key ways. They would expand the applicable patient population and expand the scope of quality to include safety. They would measure an aspect of care that the provider controls and provide an incentive to improve information technology use. Finally, they would help current best practices diffuse. These improvements represent a step forward in the evolution of quality measurement for home health, a step that the

Commission has concluded is necessary to maintain all measure sets. We encourage CMS to use measurement development experts to translate fall prevention and wound care best practices into process measures and to validate those measures.

The home health measure set must continue to evolve. Ongoing research can create or validate new measures of all types or refresh measures currently in the set. Process measures should be added, altered, or dropped if new guidelines have stronger evidence, better outcomes, or provide more cost-effective alternatives. ■

Endnotes

- 1 Outcomes are often divided into several subtypes, including mortality, adverse events (e.g., infections), and patient experience (e.g., whether the patient understands how to use medical equipment at home).
- 2 AHRQ anticipates that it will use CMS's current publicly reported set of measures in its next series of reports (Moy 2006).
- 3 All of the patients in this research had a congestive heart failure diagnosis. The outcomes measured included physician and emergency department use, hospital admission, condition-specific quality-of-life measures, patient satisfaction, and survival at 90 days. Physician use, emergency department use, and patient mortality remained the same in the intervention group. Hypothesized improvements in the other outcomes did not occur.
- 4 These management tools are often embedded in an electronic medical record; however, they are also available on their own.

References

- Agency for Healthcare Research and Quality. 1994. *Clinical practice guidelines 15: Treatment of pressure ulcers*. <http://www.ncbi.nlm.nih.gov/books>.
- Briggs Corporation. 2005. *Briggs national quality improvement/hospitalization reduction study*. West Des Moines, IA: Briggs Corporation.
- Center for Health Services Research, University of Colorado Health Services Center. 2002. *OASIS and outcome-based quality improvement in home health care: Research and demonstration findings, policy implications, and considerations for future change*, vols. 1–4. Denver, CO: Center for Health Services Research.
- Donabedian, A. 1966. Evaluating the quality of medical care. *The Milbank Memorial Fund Quarterly* 44, no. 3: 166–203.
- Feder, J., and J. Lambrew. 1996. Why Medicare matters to people who need long-term care. *Health Care Financing Review* 18, no. 2 (Winter): 99–112.
- Feldman, P. H., T. R. Peng, C. M. Murtaugh, et al. 2004. A randomized intervention to improve heart failure outcomes in community-based home health care. *Home Health Care Services Quarterly* 23, no. 1: 1–23.
- Fortinsky, R. H., M. Iannuzzi-Sucich, D. Baker, et al. 2004. Fall-risk assessment and management in clinical practice: Views from healthcare providers. *Journal of the American Geriatrics Society* 52, no. 9: 1522–1526.
- Gillespie, L. D., W. J. Gillespie, M. C. Robertson, et al. 2003. Interventions for preventing falls in elderly people. *The Cochrane Database of Systematic Reviews*, 4.
- Institute of Medicine. 2001. *Crossing the quality chasm: A new health system for the twenty-first century*. Washington, DC: National Academies Press.
- McGlynn, E., S. Asch, J. Adams, et al. 2003. The quality of health care delivered to adults in the United States. *New England Journal of Medicine* 348, no. 26: 2635–2645.
- McGlynn, E. 1997. Six challenges in measuring the quality of health care. *Health Affairs* 16 (May/June): 7–21.
- Medicare Payment Advisory Commission. 2005. *Report to the Congress: Medicare payment policy*. Washington, DC: MedPAC.
- Medicare Payment Advisory Commission. 2003. *Report to the Congress: Variation and innovation in Medicare*. Washington, DC: MedPAC.
- Moy, Ernest. 2006. Telephone conversation with Sharon Bee Cheng, March 31.
- National Quality Forum. 2005. *National voluntary consensus standards for home health care*. Washington, DC: NQF.
- Rubenstein L. Z., C. M. Powers, and C. H. MacLean. 2001. Quality indicators for the management and prevention of falls and mobility problems in vulnerable elders. *Annals of Internal Medicine* 135, no. 8 (October): 686–693.
- Russo, C. A., and A. Elixhauser. 2006. *Hospitalizations related to pressure sores*. Washington, DC: AHRQ.

CHAPTER

6

**Toward better value in
purchasing outpatient
therapy services**

Toward better value in purchasing outpatient therapy services

Chapter summary

Spending for outpatient therapy services—including physical therapy, occupational therapy, and speech-language pathology services—almost doubled to \$3.9 billion from 2000 to 2004 yet the Commission knows very little about the value of this purchasing. There is little information about who receives services and no information about their outcomes, making it hard to evaluate program spending.

The large expenditure growth was the result of more beneficiaries using these services and more services being furnished to each user. Spending per beneficiary also varied considerably. Without additional information, we can not know if the spending growth and variation reflect differences in the types of patients treated or if patients who received more services had better outcomes. The spending patterns also raise questions about how to allow beneficiaries to get the services they need without requiring Medicare and patients to pay for services that are medically unnecessary.

In this chapter

- Growth in Medicare spending since 2000
- Variation in spending
- Alternative ways to manage therapy service use
- Information needed to evaluate Medicare's therapy purchases
- Next steps for CMS

To learn about alternative strategies to ensure appropriate use of outpatient therapy, the Commission convened an expert panel and interviewed numerous researchers, medical directors at companies that process Medicare claims, representatives from companies that market guidelines and outcomes tracking systems, and private plan representatives. Of the strategies explored, developing guidelines and tracking resource use and patient outcomes are the most promising avenues for CMS to pursue.

Like all fee-for-service methods, the payment system used for outpatient therapy generally encourages providers to furnish services to therapy users. Only patients using many services are affected by the spending limitations imposed on a per beneficiary basis. CMS needs better information about the therapy needs of beneficiaries and their outcomes to consider alternative payment methods. This will require the agency to develop patient assessment tools that gather information about beneficiaries' risk factors and their outcomes. More than one tool may be required given the diverse care needs of patients receiving therapy and speech-language pathology services. Concurrent pilot studies could be used to evaluate alternative data collection methods and the feasibility of using the tools in a wide range of settings for a diverse patient population. Data gathered from the pilot studies could be used to establish benchmarks for therapy practice, develop risk-adjustment methods to predict the care needs of patients, and refine the therapy caps and the exceptions process.

With more complete information about therapy and speech-language pathology service users and patient outcomes, CMS can consider how to reform the payment system so that the program gets value for its purchasing. One option is to pay for a bundle of services that varies by patient condition, with protections for unusual situations or care needs. Another is to develop an incentive payment system that encourages therapists and speech-language pathologists to provide high-quality care and also be conservative in furnishing services. In either payment approach, adequate risk-adjustment methods are essential to making providers financially neutral toward the

types of patients they treat. Given that outpatient therapy makes up a relatively small share of Medicare spending, CMS will want to select cost-effective interventions to make best use of its limited resources.

On January 1, 2006, the therapy caps that limit program spending per beneficiary were reinstated. As required by the Congress, CMS implemented an exceptions process allowing beneficiaries to apply for approval of medically necessary services beyond the spending limits in 2006. CMS will need to carefully monitor this process to ensure that these additional services were medically necessary. ■

Spending on outpatient therapy services has almost doubled since 2000, yet the Commission knows very little about the value of this purchasing. CMS noted that the growth in minor procedures, which includes outpatient therapy services, was a key contributor to recent increases in fee schedule spending in its letter to the Commission in March 2005 and again in April 2006 (Kuhn 2005, Kuhn 2006). However, it is difficult to evaluate this spending without better information about the care needs of beneficiaries and their outcomes.

Background

About 12 percent of beneficiaries use outpatient therapy. (The text box on page 122 provides basic information about the types of therapy services, Medicare coverage, and Medicare payments.) Therapy users, particularly users of occupational therapy (OT) and speech-language pathology (SLP) services, are disproportionately female and tend to be older than beneficiaries who do not use therapy services.

Providers of outpatient therapy

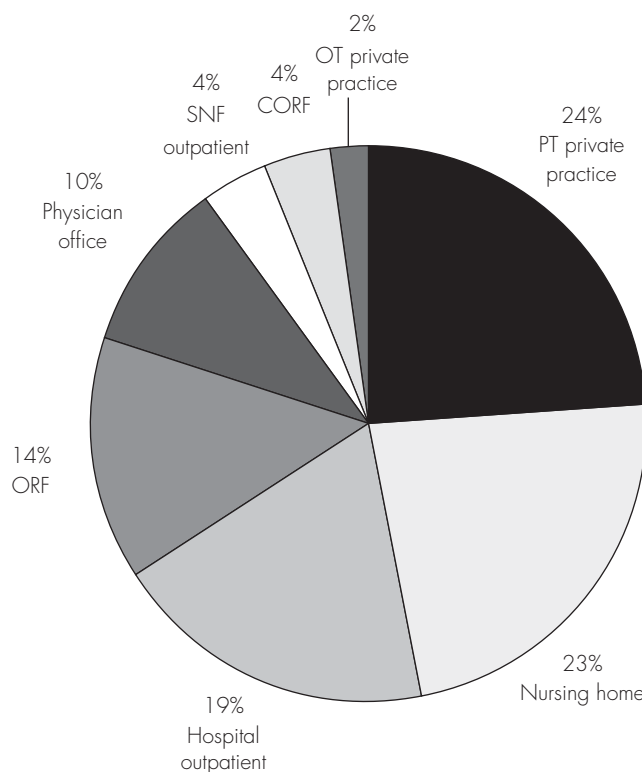
Outpatient therapy services are furnished in many different settings (Figure 6-1). Therapists in private practice work in their own offices or as employees of physician-owned group practices. If a therapist works in a physician's office, the therapist may bill Medicare independently or furnish the service as "incident to" a physician visit.¹ Incident to services must be supervised by a physician.

Services furnished in therapists' private practices and in nursing homes account for the largest share of Medicare payments for outpatient therapy.² Though hospital outpatient departments treat over a third of therapy users, they make up a smaller share of Medicare spending. On average, hospital outpatient departments treat beneficiaries for a shorter period of time and furnish fewer services per day (Ciolek and Hwang 2004a). Nursing homes treat about 15 percent of users but account for a larger share (23 percent) of Medicare spending. Data are not available to determine if this spending variation reflects differences in the types of patients treated.

Other outpatient therapy settings include physicians' offices, occupational therapists in private practice, outpatient rehabilitation facilities (ORFs), and comprehensive outpatient rehabilitation facilities

FIGURE 6-1

Outpatient therapy is furnished by many different entities



Note: PT (physical therapist), ORF (outpatient rehabilitation facility), SNF (skilled nursing facility), CORF (comprehensive outpatient rehabilitation facility), OT (occupational therapist). Based on share of Medicare spending in 2004. PT private practice and OT private practice include therapists employed by physician groups who bill independently and are not furnishing services incident to physician services.

Source: MedPAC analysis of the 5 percent file of carrier and fiscal intermediary claims for 2004.

(CORFs).³ The vast majority of users (93 percent) do not receive services from multiple providers. Most SLP services are furnished in institutional settings.

Therapy caps

The Balanced Budget Act of 1997 imposed limits on Medicare payments for all outpatient therapy service providers except hospital outpatient departments.⁴ Two therapy caps were in effect for calendar year 1999. One cap limited spending per beneficiary to \$1,500 for physical therapy (PT) and SLP combined; the other capped spending at \$1,500 per beneficiary for OT services. Beginning in 2000, the Congress suspended both caps for all but about three months in 2003 until January 1,

What are outpatient therapy services?

Outpatient therapy services include physical therapy (PT), occupational therapy (OT), and speech-language pathology services (SLP) services.

- **PT services**—restore and maintain physical function and treat or prevent impairments, functional limitations, and disabilities that may result from disease, disorders, conditions, or injury. Examples include therapeutic exercise, such as aerobic conditioning, and therapeutic activities, such as agility and balance training.
- **OT services**—improve and compensate for a patient's ability to conduct activities of daily living, such as training for food preparation after the loss of a limb or developing strategies to optimize balance and coordination to help a patient with a hip fracture get dressed.
- **SLP services**—help patients with difficulties communicating and swallowing as a result of disease, injury, or surgery. For example, stroke patients may receive SLP services to recover their ability to speak.

Outpatient therapy does not include services furnished to a beneficiary during a Part A-covered hospital or skilled nursing facility stay or a home health care episode. These therapies are included in the payments made to those settings.

Medicare's spending on outpatient therapy services is relatively concentrated. Of the three therapies, PT makes up over three-quarters of Medicare spending and users. In 2004, two services (therapeutic exercise and therapeutic activities, both billed by PT and OT) accounted for over half of all therapy spending. The SLP service with the highest spending—treatment of swallowing dysfunction—accounted for only 3 percent of total therapy spending.

Most PT and OT services are billed in 15-minute increments. For example, a 45-minute session is billed as 3 units of a therapy service. The majority of SLP

services are not timed and, in most instances, providers can bill only one unit per visit.

What are Medicare's coverage rules?

Medicare covers outpatient therapy services as long as the services are furnished by a skilled professional, are appropriate and effective for the patient's condition, and are of reasonable frequency and duration. The beneficiary must be under the care of a physician, who must approve the plan of care every 30 days. The patient must have a treatable condition and be improving. Medicare does not cover outpatient therapy services that maintain a level of functioning or serve as a general exercise program. Therapists and speech-language pathologists must meet the standards and conditions required by regulation.⁵ Qualified physical and occupational assistants are also covered as long as they are supervised. Athletic trainers, chiropractors, and nurses do not meet the qualification and training requirements for therapists.⁶

How does Medicare pay for therapy services?

Medicare pays for outpatient therapy services under Part B. Payments are established in the physician fee schedule for each unit of service, regardless of where the services are provided. As with most services covered under Part B, Medicare pays 80 percent of the payment amount and the beneficiary is responsible for a 20 percent coinsurance. Providers of speech-language pathology services can not bill Medicare independently—these services must be billed through an institution, a physician, or a therapist in private practice.

As with other fee-for-service payments, this method of payment does not encourage providers to be mindful of the resources used to treat most beneficiaries because only the highest users are affected by spending limits imposed by the therapy caps. ■

2006. During the moratorium, program spending on therapy services was unlimited, assuming the services met other coverage requirements. On January 1, 2006, the therapy caps went back into effect. Both caps limit annual spending to \$1,740 per beneficiary.⁷

The Deficit Reduction Act of 2005 required the Secretary of Health and Human Services to establish an exceptions process allowing beneficiaries to request an exemption from the therapy caps if the services they require are medically necessary (the text box on page 124 describes the exceptions process). This process applies to services furnished during calendar year 2006. The exceptions process counters a key criticism of the therapy caps: They disadvantage beneficiaries with high-care needs and the providers who treat them. Without an exceptions process, beneficiaries who needed therapy services above the spending limits had to pay for them out of pocket, go without them, or use hospital outpatient providers, which are exempt from the therapy caps. Now, with the exceptions process in place, beneficiaries who need services above the caps can apply to have those services covered without changing providers.

The other main concern about the caps is not addressed, even with the exceptions process: Providers are not encouraged to furnish the least amount of services to achieve good patient outcomes under a fee-for-service system. Until spending reaches the therapy limits, providers may furnish more services than the patient benefits from. Providers who use resources above the therapy limits to achieve better outcomes are penalized under a cap system.

Information available on therapy claims

Medicare claims have limited information about the characteristics of users, making valid comparisons across patients and measuring outcomes impossible or extremely difficult. Claims do not include information about the functional status of the patient at the start or end of a course of treatment. Functional status measures include the patient's ability to perform physical and personal activities, cognitive state, and living environment (e.g., the social support available). As a result, the Commission can not evaluate a patient's functional status or whether it changed over time, or group patients with similar care needs.

The claims information also does not include reliable diagnosis and impairment (e.g., leg or back pain) information about the patients receiving therapy and SLP

services. Institutions are not required to submit specific diagnoses on their claims. The most common code used for PT services is not a diagnosis; it is "other physical therapy." Another problem with the diagnosis coding is that although a single claim may include more than one type of service furnished during the visit, providers are not required to list separate diagnoses for each service rendered. As a result, patients may be treated for two conditions during the same visit but the claim may include only one diagnosis code.

The claims do not consistently include information about a patient's comorbidities and they do not include acuity measures of a patient's symptoms, which affect a patient's need for services. Over three-quarters of beneficiaries have one chronic condition and a majority of beneficiaries have two or more (MedPAC 2004). Yet, only about half of the outpatient claims have two or more diagnoses codes on them. The number and type of comorbidities (e.g., arthritis, osteoporosis, cardiac and pulmonary conditions, diabetes, and depression) affect a patient's functional status (Groll et al. 2005, Stewart et al. 1989). Researchers have also found that patients with common chronic conditions have worse mental health and bodily pain compared to patients without them (Stewart et al. 1989). These factors will limit a patient's ability to improve and increase the time needed to recover.

Finally, except for therapists in private practice, individual therapists and speech-language pathologists typically do not have unique provider numbers. As a result, it is not possible to compare practice patterns of individual providers. In addition, we can not compare service use across different practice arrangements because therapists practicing as part of a physician group can not be distinguished from those practicing as part of a group of therapists.

Growth in Medicare spending since 2000

Since the therapy caps were lifted in 2000, spending has almost doubled to \$3.9 billion in 2004 (Figure 6-2, p. 125). Between 2000 and 2004, spending increases averaged 18 percent a year. PT and OT grew slightly faster than SLP services.

The large growth is a combination of more beneficiaries using therapy services and more services being furnished

CMS exceptions process for spending above the therapy caps

CMS has designed a two-part exceptions process to the therapy caps retroactive to January 1, 2006. Assuming other coverage requirements are met (e.g., services are medically necessary and restorative in nature), patients with qualifying conditions or complexities may use the automatic process for exception from the therapy caps. These circumstances include a patient having 1) one of a list of specific conditions for which the patient is being treated or 2) one of a list of comorbidities or clinically complex situations that will affect the patient's rate of recovery. Manual exceptions, which must be made in writing with supporting documentation, will be considered for patients who are not eligible for the automatic exceptions process but whose care needs are believed to require services beyond the therapy limits. A manual request may seek approval for up to 15 visits. There are no visit limits on automatically granted requests (CMS 2006a, CMS 2006b).

The list of conditions that qualify a patient to use the automatic process for exception is extensive and includes joint replacement, Parkinson's disease, multiple sclerosis, stroke, osteoarthritis, various bone fractures, open wounds, and dysphasia. Complexities that qualify a patient to use the automatic process for exemption include comorbidities that otherwise do not qualify a patient to use the automatic exception process (e.g., diabetes, chronic obstructive pulmonary disease, congestive heart failure, and hypertension) or situations that are likely to prolong a patient's recovery time. Clinically complex situations that qualify a patient to use the automatic process for exemption from the therapy caps include:

- The beneficiary was discharged from a hospital or skilled nursing facility within 30 days.
- The beneficiary has a generalized musculoskeletal condition or a condition that affects multiple sites.

- The beneficiary has a cognitive disorder (e.g., depression or dementia) that will affect the rate of recovery.
- The beneficiary requires both physical therapy and speech-language pathology services concurrently.
- The beneficiary had a prior episode of outpatient therapy during the calendar year for a different condition.
- The beneficiary requires the therapy to be able to return to a previous place of residence.
- The therapy will decrease a beneficiary's need for assistance with activities of daily living or instrumental activities of daily living.
- The beneficiary does not have access to a hospital outpatient department.

The exceptions process is purposefully broad. Previous analysis had indicated that in many diagnosis groups there were at least some patients who would have exceeded therapy caps had they been in place (Ciolek and Hwang 2004c).

Many private payers handle exceptions to their standard coverage limits (typically defined by a number of days or visits) with manual review processes. Often, a therapist or nurse conducts an initial review. A physician then conducts a second level of review. CMS had to develop a process that would be mostly automated given the volume of claims and the lack of infrastructure to conduct reviews. The specificity of CMS's criteria will increase consistency in how the companies that process Medicare claims—known as claims contractors—consider beneficiaries' applications. ■

to each user (Table 6-1). Since 2000, the number of users grew by an average of 8 percent a year, much faster than the 1 percent to 2 percent growth in beneficiaries each year. In part, the increase probably reflects the growing

number of beneficiaries with chronic conditions. Another contributing factor is likely the expanded number of elective surgeries (both inpatient and outpatient) for which outpatient therapy is appropriate follow-up treatment.

For example, the number of hip and knee replacements grew 34 percent during this same time period. It is also possible that outpatient therapy now substitutes for services furnished on an inpatient basis more frequently. Discussions with therapy association representatives also indicated that some of the service growth reflected beneficiaries' desire to remain active and independent. Finally, until CMS clarified the definition of a therapist in 2004, nontherapists—such as athletic trainers—provided therapy services, which could have expanded the number of providers furnishing services.

Service intensity also drove therapy expenditures. Spending per user grew an average of 9 percent per year. Although fee raises during this period account for some of the increase, the number of units billed grew by an average of 13 percent per year. Growth in commonly furnished services, not new modalities, drove the increases. Due to the lack of data on functional status, we can not assess if the spending led to better patient outcomes.

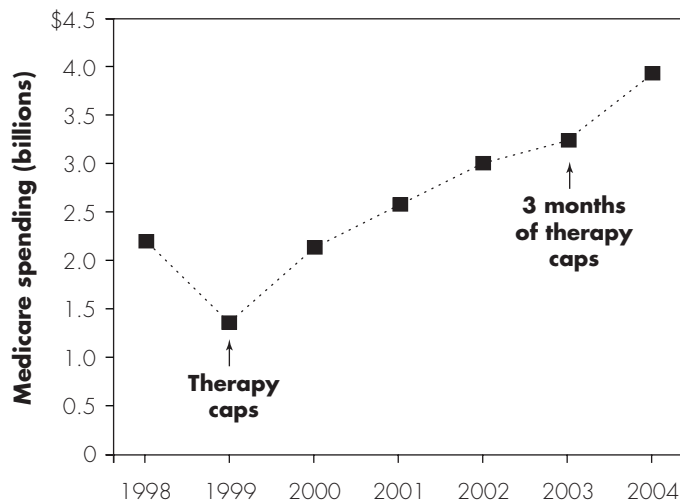
Growth by provider setting

Since the therapy caps were lifted in 2000, spending increased annually an average of 18 percent but the growth rates varied considerably by setting. The largest spending growth occurred for therapists in private practice (Figure 6-3, p. 126).

Several factors help explain private practice's rapid growth.⁸ In 1998, the skilled nursing facility prospective payment system was implemented. In response, facilities cut back on the therapists they employed. Many therapists who were laid off established their own practices. In 1999, CMS changed the conditions of participation

FIGURE 6-2

Medicare spending on outpatient therapy services has almost doubled since 2000



Note: Therapy caps were in effect for all of 1999 and for three months in 2003.

Source: MedPAC analysis of the 5 percent file of carrier and fiscal intermediary claims for 1998–2004.

so that owners of therapy practices did not have to be on site and do all the billing for services furnished by licensed therapists. Licensed employee therapists could independently bill the program, resulting in more therapists in private practice.

Also in 1999, institutional therapy providers moved from cost-based reimbursement to payments established under the physician fee schedule. With the elimination of any payment differentials between settings, many therapists

TABLE 6-1

Outpatient therapy users and service intensity have increased since 2000

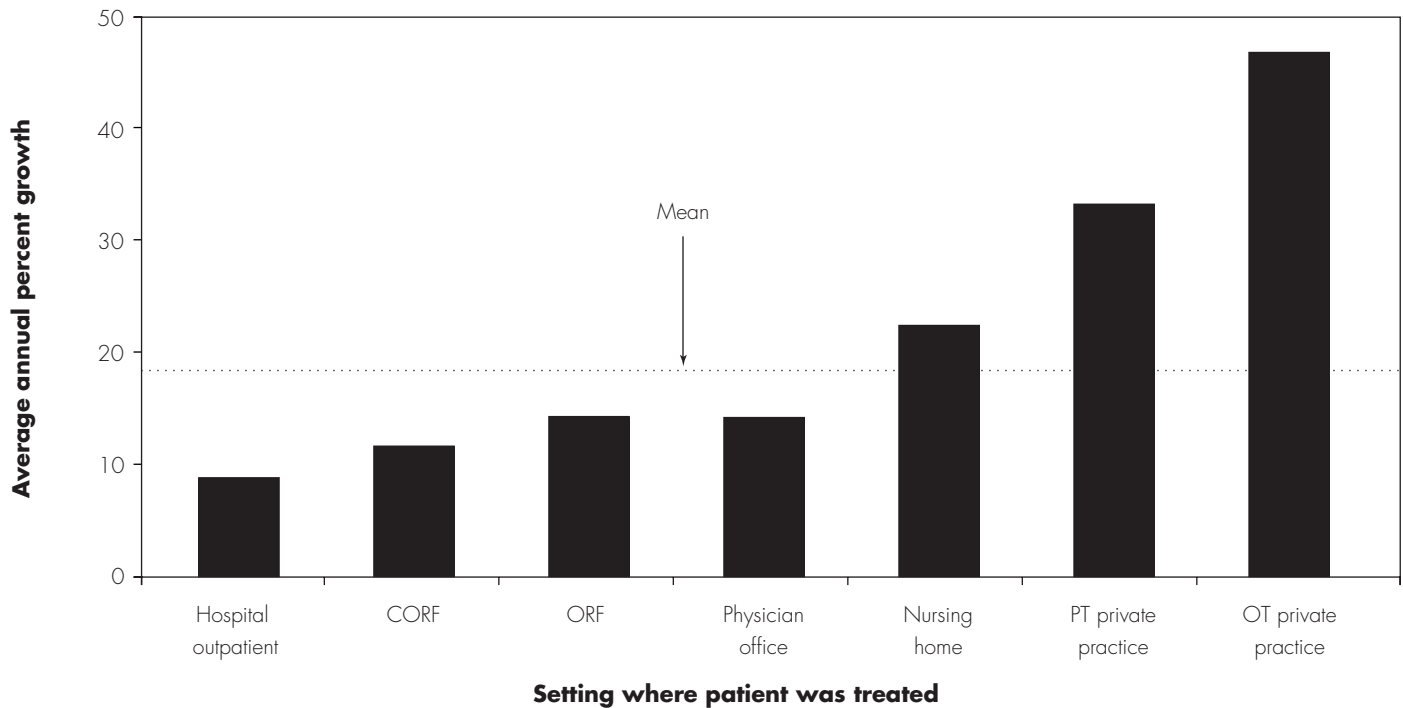
	1998	1999*	2000	2001	2002	2003*	2004	Average annual change 2000–2004
Spending (billions)	\$2.1	\$1.4	\$2.0	\$2.5	\$3.0	\$3.2	\$3.9	18%
Users (millions)	3.1	3.0	3.3	3.7	4.0	4.2	4.5	8
Spending per user	\$671	\$469	\$621	\$693	\$749	\$760	\$883	9

Note: *Indicates the year in which the therapy caps were operational (full year in 1999, 3 months in 2003).

Source: MedPAC analysis of the 5 percent file of carrier and fiscal intermediary claims for 1998–2004.

**FIGURE
6-3**

Medicare spending on therapists in private practice grew faster than that for other providers, 2000–2004



Note: CORF (comprehensive outpatient rehabilitation facility), ORF (outpatient rehabilitation facility), PT (physical therapist), OT (occupational therapist). PT private practice and OT private practice include therapists employed by physician groups who bill independently and are not furnishing services incident to physician services.

Source: MedPAC analysis of 5 percent fiscal intermediary and carrier 2000–2004 claims files.

changed their practice from an ORF to an independent practice as a way to avoid the survey and certification requirements of institutional settings.

Finally, CMS clarified in March 2003 that therapists could be employees of physicians' practices but still be considered in independent practice. This clarification enabled physicians to employ therapists but not be responsible for supervising their work. As a result of all of the outlined changes, the number of therapists in private practice who furnished services to beneficiaries more than doubled and accounted for over a quarter of all therapy spending in 2004.

Our interviews with various stakeholders identified a factor that may contribute to increases in therapy use, but we could not verify whether the practice is widespread. Some physicians may hire therapists as part of their group practice and then refer patients to them as a way to generate income.⁹ The "in-office ancillary" exception states that therapy services are exempt from the Stark

restrictions that limit physicians from referring patients to entities in which they have an ownership stake.¹⁰

Variation in spending

In 2004, spending averaged \$883 per user but this was substantially influenced by very high spending for a small number of users; the median was \$435. Spending varied considerably by diagnosis, setting, and state. Several clinical experts with whom we spoke mentioned the difficulty of comparing service users due to the heterogeneity of the patients seen in outpatient therapy settings.

Variation by diagnosis

Spending varied considerably depending on the medical condition being treated. In 2002, PT spending for an episode of care—where an episode represented a group

FIGURE 6-4**Per user spending on outpatient therapy varied threefold across settings**

Note: OT (occupational therapist), PT (physical therapist), ORF (outpatient rehabilitation facility), CORF (comprehensive outpatient rehabilitation facility). PT private practice and OT private practice include therapists employed by physician groups who bill independently and are not furnishing services incident to physician services.

Source: MedPAC analysis of 5 percent fiscal intermediary and carrier 2004 claims files.

of visits associated with PT—ranged from \$416 for ankle sprain episodes to \$1,012 for spinal cord injury episodes (Ciolek and Hwang 2004a).¹¹ This range will affect the share of patients in each diagnosis code who are likely to be exempt from the therapy caps. For example, in 2002, an estimated 13 percent of patients with lower back pain and 29 percent of patients with difficulty in walking would have exceeded the PT/SLP cap had one been in place (Ciolek and Hwang 2004c). This wide range in care needs underlines the importance of having an adequate patient classification system and risk-adjustment methodology for comparing patient outcomes and resource use.

Variation by setting

While spending averaged \$883 per user, there was more than a threefold difference across settings (Figure 6-4). The least costly setting was hospital outpatient departments, while the most expensive was CORFs. Because the information about patients is limited, the

Commission does not know if the variation across settings is due to differences in the types or complexity of patients treated or if patients who received more services had better outcomes. The Government Accountability Office (GAO) found that in Florida CORFs furnished more services to beneficiaries compared with other types of facility-based providers (GAO 2004). Differences in patients' prior hospitalization diagnoses and demographic information did not explain this disparity. The GAO could not examine whether patients treated in CORFs had better outcomes.

One study that examined the costs of episodes of care across settings found that care furnished for the same clinical condition (as reported by the diagnosis code) varied in duration and the services furnished per day. For example, PT episodes for musculoskeletal conditions of the knee and lower leg were 35 percent longer and had 56 percent higher payments per day in CORFs compared to hospital outpatient departments. As a result, episode payments were more than twice as high in CORFs

compared to the hospital setting (Ciolek and Hwang 2004a).

Because CORFs are concentrated geographically, we looked at where beneficiaries get therapy and SLP services in states with no CORFs. In these states, a high proportion of users received services at hospital outpatient departments.

Variation by state

There are also large spending differences by state. Commission analyses found that in 2004, Mississippi and Florida had the highest average outpatient therapy spending per user (\$1,426 and \$1,126, respectively), while spending in North Dakota and Minnesota was less than half these amounts.¹² In states with low per user spending in 2004, users were more likely to be treated in hospital outpatient departments (the setting with the lowest per beneficiary spending), compared with states with high per user spending. Because payment rates are the same across providers, differences are attributable to the volume and intensity of services. The different local coverage policies of claims contractors may also be a factor.

Medical necessity of services

In addition to differences across providers in patient complexity and outcomes achieved, another source of variation may be the amount of medically unnecessary services furnished to beneficiaries. Studies conducted by GAO and the Office of Inspector General (OIG) of the Department of Health and Human Services resulted in recommendations that CMS have its contractors conduct adequate medical reviews of outpatient therapy claims and increase provider education about coverage rules, local medical review policies, and documentation requirements (GAO 2004, OIG 2001, OIG 2000a, OIG 2000b). CMS has clarified its policies regarding therapy services and posted education materials regarding physical therapy services on the web (CMS 2005, CMS 2004). In a recent study of physical therapy services billed by physicians, OIG found that most of the claims it reviewed did not meet program requirements (OIG 2006). Its analysis of Medicare claims data from 2000 to 2004 revealed instances of unusually high volumes of claims, which suggest that the services are vulnerable to abuse.

Although Medicare claims contractors provide some oversight of the services furnished, their reviews are limited and inconsistent across contractors. Some contractors look for multiple billings on the same day for

services that are not time-based (e.g., patient evaluations), which typically can be billed only one per day. Some contractors have edits on timed services that set a limit for the maximum number of minutes that can be billed on a single day, with the idea that most beneficiaries can not tolerate more than a set amount. Some contractors also look to see if the number of services billed over a given time period is reasonable, with the idea that most beneficiaries would no longer be improving. A CMS contractor noted that edits could also be developed for clinically illogical service combinations billed during a single day (Ciolek and Hwang 2004b).

GAO recommended that the Secretary implement improvements in CMS's automated system for identifying claims that are likely to be improper (GAO 2005). In the Deficit Reduction Act of 2005, the Congress subsequently required that clinically appropriate edits be implemented by July 1, 2006.

Although no data are likely to definitively confirm a patient's need for services, patient-level information could be used to predict a patient's care needs and rehabilitation potential based on similar patients. This information could be used to monitor resource use and outcomes and identify aberrant practices.

Alternative ways to manage therapy service use

The increased number of users and services furnished and the large variation in spending raise questions about how best to allow beneficiaries to get the services they need while paying for only services that are medically necessary. The therapy caps may control spending for beneficiaries who use unusually high amounts of care, but will not address the appropriateness of care for beneficiaries using low and moderate amounts of care. Other strategies are needed to make sure that users can benefit from therapy services and that the amount of therapy provided is appropriate for the beneficiary's condition. The Commission consulted a variety of experts—including researchers, medical directors at Medicare claims contractors, providers, product vendors, and private payers—to learn about alternative ways to manage therapy use. The text box describes a panel we convened and the experts we consulted.

Expert advice on ways to manage therapy service use

The Commission convened an expert panel of researchers, medical directors of claims contractors, and private plan representatives to consider some of the policy options available to the program. We asked the 15 panelists to evaluate the evidence for delineating therapy care needs of elderly patients and to consider the current activities undertaken by Medicare claims contractors and private payers to manage service use. We also asked them to identify the information that CMS needs to collect to assess patient outcomes and develop a payment system with adequate risk adjustment.

We also conducted over 25 interviews with post-acute care researchers and representatives from companies that market guidelines and outcomes tracking systems,

private plans, and users of guidelines and tracking systems. We asked the private plan representatives to describe their approach to managing therapy use and their assessment of whether the approach could work for Medicare. The representatives from outcomes tracking companies described the product, the predictive model and risk-adjustment methodology, the outcomes measures, and the mix of patients in their database. We asked the guideline company representatives to describe how the guidelines are developed and revised, outline how their clients use them (prospectively, concurrently, or retrospectively), and evaluate the evidence basis underlying the guidelines. ■

Outsource managing the benefit

Some payers contract out the management of therapy services (mostly PT and OT) to companies specializing in orthopedic specialty benefits. These companies offer a range of services, including utilization management, medical review, and establishment and management of a network of therapy providers. Focusing on musculoskeletal conditions, these companies manage service use, identify inappropriate care, and reduce claim appeals. Their clients, typically large insurers and a range of managed care organizations, are generally not set up to manage the relatively small cost items spread over a period of time that characterize most therapy services.

Benefit management companies generally perform pre-authorization and concurrent review services using their own guidelines based on clinical expertise, published medical association recommendations, and medical literature. At admission, a therapist assesses a patient's functional status (e.g., range of motion, level of pain, and ability to perform activities of daily living). A proprietary model estimates the number of visits the patient will require to reach a certain level of improvement. The therapist provides services until the patient reaches the targeted outcomes or fails to improve. Peer therapists or

nurses conduct medical reviews for patients who require additional visits to ensure that the plan of care continues to match the patient's care needs. By comparing service use to norms, these companies manage therapy use based on the patient's clinical condition and progress.

In cases where the company manages a network of therapy providers, contracts delineate the terms of payment. One company explained that it pays providers on a per visit basis (not per service) as a way to decrease the number of modalities furnished during a visit. If the company were to bundle payments to span episodes of care, it might overpay for patients who reach their goals earlier than expected. Daily payments, the company said, focus providers on the medical necessity of every day of care.

Contracting out the management of a therapy benefit generally complements other review activities that the payer does in-house to monitor the appropriateness of their subscribers' or enrollees' service use. For example, these payers and plans often conduct their own medical reviews of hospitalizations but have determined that managing an in-house review of therapy services is not cost effective. In contrast, the scale of the Medicare program makes concurrent review infeasible without spending considerably more on administrative expenses.

Increase copayments

One way to encourage appropriate use of therapy services would be to make the beneficiary responsible for a larger share of the payments. While not a common strategy, some private plans have adopted higher copayments for therapy services as a way to lower the demand for services. One plan told us that by shifting its definition of therapy services from primary to specialty care, it raised the copayment for each therapy visit from \$15 to \$25. The following year, service use declined by about 8 percent. Another plan examined the differences in therapy use across its Federal Employees Health Benefits plans and found that groups with the highest copayments had the lowest service use. As a result, it encouraged employers to raise copayments and about half have done so. However, the plan reported that many employers were reluctant to raise copayments because the approach is viewed as taking away benefits.

Medicare would likely face opposition from providers and beneficiaries to proposals to raise the copayments for all therapy services above the current 20 percent. Another strategy might be to consider tiered copayments. In this model, a beneficiary's use of services would be compared to some benchmark, such as the average use by patient condition. For service use within an acceptable range, copayments would remain at 20 percent. If service use exceeded the norm by some significant amount, the beneficiary would pay higher copayments for those services that were above some threshold. CMS would need to establish practice norms by patient condition—for example, based on average service use for older users or, ideally, evidence-based practice guidelines. Without adequate risk adjustment, beneficiaries with higher care needs could face difficulties accessing services or being penalized for needing more care.

Use practice guidelines to manage resource use

Some private payers, providers, and benefit management companies use commercially available practice guidelines to review and approve the number of visits furnished to a patient. Although guideline products (such as those marketed by McKesson/InterQual, Apollo Managed Care Consultants, and Milliman) differ in the details of the patient groupings and the care they recommend, there are broad similarities. For any given clinical condition, such as osteoarthritis in the shoulder, the guidelines often include clinical criteria used to evaluate whether therapy

or SLP services are indicated (e.g., limited range of motion), the recommended modalities of treatment (e.g., therapeutic exercise), and the average number or range of visits. The guidelines are developed in an iterative fashion. Staff clinicians compile and review the existing medical evidence, which includes peer-reviewed journals, other published data, guidelines developed by health research organizations and professional organizations, expert opinion, and unpublished data. Increasingly, guidelines include a rating of the quality of the evidence used to establish them.¹³ Draft recommendations are then reviewed and revised by an external group of experts.

Most often, guidelines are used by payers and providers in two ways. First, they are applied concurrently to an ongoing treatment regimen to approve continued service provision. Using condition-specific guidelines and an associated estimated number of visits, a peer reviewer asks the provider to confirm a patient's diagnosis and rehabilitation potential (like Medicare, most payers require patients to be improving) to ensure that continued care is medically necessary. Second, guidelines are used retrospectively to compare providers' practices to those of other providers or to norms, such as national average visits. Service provision that is unusually high or low is flagged for follow-up review and, in some cases, provider education.

The therapy associations have also been active in disseminating information about best practices. Based on expert panels it convened, the American Occupational Therapy Association reviewed the evidence basis for specific conditions and published "evidence briefs" on selected topics, such as stroke and Parkinson's disease. The American Physical Therapy Association (APTA) has undertaken two guidelines-related activities to increase the evidence basis for practicing therapists. First, it wrote a guide to help physical therapists identify preferred tests and interventions used to treat a variety of conditions. Though explicitly not intended to serve as clinical guidelines, the guide promotes appropriate service provision (APTA 2003). Second, it established a "Hooked on Evidence" website that includes a database of the current research evidence on physical therapy interventions.

Experts with whom we spoke had mixed opinions about applying guidelines to beneficiary service use. They differed in their assessment of the quality of evidence underlying the currently available guidelines. Some

thought the guidelines lacked a strong foundation in randomized controlled trials, while others thought that the basis was strong enough to guide practice.¹⁴ Most agreed that guidelines could reduce the variation in service use but that they would need to be tailored to an elderly population if used by Medicare. Existing guidelines are generally written for a younger, healthier population and do not directly consider comorbidities and other factors that may increase a beneficiary's care needs. Guidelines not tailored to the Medicare population, especially if used to establish payments, could encourage providers to select low-cost patients and to ignore treating the full spectrum of patients' care needs (Boyd et al. 2005). Many thought that guidelines encouraged providers to furnish the approved number of visits rather than to consider a beneficiary's continued need for therapy services.

Assuming the guidelines created were age appropriate, they would be useful in several ways. First, CMS could compare a provider's service use to the guidelines as a way to detect unusually low or high service provision. While many claims contractors have local coverage policies that identify specific service use, national guidelines would be a way to standardize contractors' policies. National guidelines could be used to modify the payment process, with some method to allow exceptions for beneficiaries with unique care needs. In addition, guidelines could be used to educate providers and referring physicians about conditions and how much service has been shown to be effective for them, based on the literature. Finally, the guidelines might form the basis of a bundled payment method, such as episodes of therapy treatment.

Using guidelines for prior authorization or concurrent review is costly and probably not cost effective for Medicare. One health system told us its prior authorizations cost about \$30 per review and it had discontinued them. A carrier medical director told us his organization had used concurrent reviews to detect maintenance therapy, but had discontinued them because of their questionable value. Claims contractors told us that additional reviews, besides automated edits, created additional workload that could not be supported by current funding levels.

Track service use and patient outcomes

Providers increasingly monitor patient outcomes and service use to identify potentially inappropriate (either high or low) service use and to evaluate the resource use and patient outcomes. Some providers use vendor

software, such as LIFEwareSM and Focus On Therapeutic Outcomes, Inc. (FOTO), to assess patients' functional status at admission and discharge and to compare their outcomes and resource use with the practices of other providers whose data are in the vendor's databank. APTA has developed an outcomes tracking and database called CONNECT as part of an electronic patient record system that will enable a physical therapy practice to compare its practice patterns to others.

By tracking the number of visits furnished and patient outcomes, these systems allow clinicians to use the information to reduce the number and mix of services billed during a visit to achieve a desired outcome. One integrated health system told us it had lowered therapy use by 8 percent by tracking service use and outcomes in combination with standardizing patient evaluations and decision making algorithms. Another integrated health system uses vendor software that includes a risk-adjusted predictive model and an extensive database of patients to estimate the average number of visits likely to be needed to achieve a specific improvement in outcomes. Based on these estimates, it pre-approves a number of visits that varies by patient condition. The system plans to create incentives for providers to furnish the least amount of services to achieve good patient outcomes.

Tracking resource use and patient outcomes is essential to establishing practice norms and to evaluating program spending. In addition to flagging aberrant practice, benchmarks could be used to vary the therapy caps by patient condition. Limits could be lower for beneficiaries with modest care needs and higher for beneficiaries with extensive care needs. Limits that vary by condition would encourage providers to be mindful of the amount of services furnished to all beneficiaries, not only the beneficiaries affected by the current therapy caps. Similarly, practice norms could form the basis of a new payment system.

Pay differently for therapy services

Many plans are not using innovative payment methods as a way to manage therapy provision. Often, they pay on a per service basis and limit the number of visits or days of therapy care. Some have shifted to paying per day, as a way to control the number of units billed during a visit. As already discussed, some plans use guidelines and tracking systems to guide the approval of and payment for continued service provision.

**TABLE
6-2**

CMS does not collect much of the information useful for predicting and comparing beneficiaries' therapy care needs

Data element	Item available in Medicare data	
	Yes	No
Age	✓	
Gender	✓	
Diagnoses and impairments ^a	✓	
Comorbidities ^a	✓	
Acuity of condition at onset		✓
Type of injury (sprain, strain, fracture, or post-surgical)		✓
Severity (e.g., the number of days since onset or surgery)		✓
Ability to perform physical activities at admission and discharge		✓
Ability to conduct daily activities and routines at admission and discharge		✓
Cognitive status at admission and discharge (including depression, distress, and degree of community integration)		✓
Motivation and self-efficacy		✓
Social support and assistance		✓
Environmental factors, such as accessibility of residence		✓
Treatment setting ^b	✓	
Previous medical use, including surgical history ^c	✓	
Pain		✓

Note: ^a The information gathered about a patient's diagnosis and comorbidities is often incomplete.

^b Setting may reflect aspects of case mix and severity that are not measured by other variables.

^c Data are available if various Medicare claims files are linked.

Source: Information gathered from the CMS stakeholders' meeting (February 9, 2006) and MedPAC interviews with clinical experts.

Many experts with whom we spoke noted that Medicare needs to pay for outpatient therapy and SLP services so that providers are not financially encouraged to furnish services. One clinician told us that the current method was a barrier to practicing cost effectively because to do so could lower service billings and result in "lost" revenue. He noted that until payers consider patient outcomes in their payment method, evidence-based practice is not encouraged. One integrated health system, Presbyterian Health Plan, plans to pay providers on the basis of their

resource use (e.g., how many visits were furnished) and the patient outcomes (e.g., functional improvement). Payments to a provider will vary depending on how the resources used and patient outcomes compare to what is predicted for the patient.

Information needed to evaluate Medicare's therapy purchases

Without better information, CMS can not evaluate the value of the therapy and SLP services furnished to beneficiaries. It does not know if higher program spending resulted in better outcomes. And without information about who uses these services and their outcomes, CMS can not design a payment system that encourages providers to be mindful of the resources used while achieving good outcomes for their patients.

The agency needs two types of information. First, more complete information about a beneficiary's impairment and risk factors would indicate their care needs and rehabilitation potential. Second, functional status measures at admission and discharge would provide information on functional improvement—a critical outcome. Linking patient characteristics, resource use, and patient outcomes will allow CMS to assess when service provision is efficient and when patients improve. CMS will need to consider the investments it can afford to make, given that demands for program improvements far outstrip its resources.

Patient characteristics related to therapy care needs

Many patient characteristics and risk factors are related to outpatient therapy care needs. These include a patient's impairment and comorbidities, physical status at admission, and cognitive status at admission (including motivation and participation). In addition, the living environment (e.g., social support and assistance available to the patient) also shapes a patient's need for rehabilitation services.

Currently, CMS does not collect information on most of the risk factors identified by experts and stakeholders and does not gather any patient assessment information to indicate a patient's functional status (Table 6-2). Extensive data matching of beneficiary information from different claims files would be required to use data on prior medical service use.

Tools for collecting functional status measures

Although there are over 75 functional status instruments, many are specific to a disease or impairment. Often, a tool's accuracy or relevance declines as it tries to measure patients outside the range of patients it was designed to assess. Generic tools, such as the Short Form-36, are insensitive to some differences in physical disabilities and are unable to discriminate among patients at the upper and lower bounds of their accuracy.¹⁵ In addition, the measures gathered from the various tools differ and the data gathered from them can not be compared (McHorney and Cohen 2000).

The Commission looked at four tools to learn about the possibilities for gathering outcomes data. The tools vary considerably in the range of patient conditions they typically assess and their survey method. Two tools—the Patient Inquiry[®] tool developed by FOTO, Inc. and the Activity Measure for Post-Acute Care (AM-PAC)—use computer adaptive technology and item response theory methodology to estimate functional status (see text box on page 134). Two tools use more traditional survey methods—the Outpatient Physical Therapy Improvement and Assessment Log (OPTIMAL) and the National Outcomes Measurement System (NOMS). Each tool has its relative strengths.

The Patient Inquiry[®] tool

The Patient Inquiry[®] tool has been used primarily to assess orthopedic patients in over 200 outpatient clinics.¹⁶ FOTO's database includes over 1.6 million records, including over 300,000 patients who used the computer adaptive technology tool. The Patient Inquiry[®] tool estimates a patient's functional status, functional improvement, and number of visits needed for a specific functional improvement. Its predictive model includes a risk-adjustment method that considers the patient's age, impairment, acuity, severity, and surgical history to estimate the number of visits and the expected functional improvement. As FOTO extends its data collection to include complex medical and neurological patients, it will refine its risk-adjustment methodology and patient classifications.

FOTO's software also links resource use to functional improvements, allowing providers who purchase the measurement system to evaluate their resource use and patient outcomes. Its reporting features enable users

to compare therapists' and site-specific measures (the number of visits and functional gains) to national averages.

FOTO has a grant from CMS to explore the feasibility of a pay-for-performance system for PT and OT services. FOTO is refining its risk-adjustment methodology using its historical data and information collected on Medicare beneficiaries at two sites. It will also compare actual Medicare payments with an estimate of what payments would have been had a pay-for-performance system been in place at the two sites. It will also identify the types of patients whose care needs were poorly estimated by its predictive model. A final report on this project should be available mid-2006.

The strengths of this tool are its large database, risk-adjusted predictive model, and reporting features. However, the tool has not been used to assess patients with complex medical and neurological care needs and its ability to accurately assess them warrants careful examination. Because it relies on patients' self-reported assessment information, using patient proxies for patients with significant cognitive and communication impairments would need to be explored. In addition, the tool has not been used across a variety of outpatient therapy settings and its ease of use will need to be confirmed.

The Activity Measure for Post-Acute Care

The AM-PAC was developed to assess patients across post-acute settings, in both institutional providers (skilled nursing facilities, inpatient rehabilitation facilities, and long-term care hospitals), and noninstitutional settings (home health care and outpatient clinics).¹⁷ The tool uses a broad conceptual framework to assess a patient's ability to perform three types of activities: physical, personal and instrumental, and applied cognitive.¹⁸ Though generally a self-report tool, limited research found that it was reliable using proxy reporting (Andres et al. 2003).

Though its database is small, the tool has been tested on patients with complex medical, neurological, and orthopedic conditions (Coster et al. 2006, Siebens et al. 2005). As such, it can be used to assess a wide range of Medicare patients, including those with chronic conditions and comorbidities and the 15 percent of Medicare therapy users who are nursing home residents. However, its measurement accuracy for patients with significant cognitive and communications impairments needs to be established. For example, the current set of questions may not adequately assess patients with extensive swallowing difficulties.

Computer adaptive technology: An overview

Computer adaptive technology and item response theory are increasingly used to assess the health outcomes of patients because of their considerable advantages over traditional survey methods (Jette and Haley 2005). This measurement strategy tailors the questions asked of each patient based on the patient's response to an initial question and answers to subsequent questions. Using an item bank of many questions, skip patterns adjust the length of the assessment until a desired level of accuracy in estimating a patient's functional status is achieved. Relying on data gathered about other similar patients, an accurate estimate can be made after answering a small number of questions.

Generally, patients are given the survey to complete themselves during the evaluation or visit. An initial question for every patient might be how hard it is to go up or down 10 stairs. Subsequent questions would then ask how hard it is to do other activities, with each question triggered by the patient's response to the preceding question. If going down stairs was hard, a patient might be asked about how easy it is to get out

of a car. If descending the stairs was relatively easy to do, the patient might be asked about performing more difficult tasks, such as walking around the block. Because every question in the item data bank is calibrated on the same scale, each patient can answer a different set of questions but the functional abilities across patients can still be compared.

There are four advantages to this type of instrument. First, patients across a wide spectrum of settings, abilities, and clinical conditions can be tested without the survey becoming excessively long. Typically, a patient is assessed using about 10 questions, making it more efficient than other surveys.¹⁹ Second, the tool is accurate over a broader range of patients than many of the generic or disease- or impairment-specific tools. Third, the outcomes also can be compared because a single tool is used to assess a wide range of patients. Last, an assessment tool is relatively easy to update using computer adaptive technology and item response theory. Questions can be changed over time while maintaining comparability between older and newer versions of the survey. ■

As it is a relatively recent development, the tool does not currently tie resource use to functional improvement. HealthSouth and Kaiser Permanente of Northern California recently decided to implement the AM-PAC to evaluate patient outcomes across their settings, including outpatient rehabilitation clinics. The initial 20-site pilot study with HealthSouth was successful and they are expanding its use to another 190 clinics. Kaiser is piloting the tool in a clinic specializing in stroke, traumatic brain injury, and neurological patients. If successful, it will consider using it in other post-acute settings and outpatient clinics.

Outpatient Physical Therapy Improvement in Movement Assessment Log

The OPTIMAL self-report instrument was designed by APTA to document the outcomes of physical therapy treatments furnished primarily to patients with

musculoskeletal conditions in outpatient settings.²⁰ It assesses a patient's ability and confidence to perform 21 mobility actions such as standing, walking, bending, and climbing stairs (Guccione et al. 2005).

This tool could provide useful outcomes information about beneficiaries receiving PT in outpatient settings. This traditional tool represents a possible alternative to the more complex computer adaptive technology and item response theory methods. However, the feasibility of extending this tool beyond PT services needs to be explored. Further work needs to be done to establish its ability to assess patients with a wide range of conditions, including those with significant impairments. As with other self-report tools, the use and comparability of patient proxies with patient responses needs to be examined. The use of the tool across the full spectrum of outpatient therapy settings would also need to be examined.

National Outcomes Measurement System

NOMS was developed in the late 1990s by the American Speech-Language Hearing Association to measure the functional status of patients with substantial speech, cognitive, or communication impairments. In reviewing other tools, the association found that existing tools did not fully capture patients' speech and communication abilities. Beneficiaries receiving SLP services—such as patients recovering from a stroke with comprehension and speech difficulties or patients with apraxia of speech—typically have speech, communication, and cognitive impairments. For many of them, a self-report tool is clinically inappropriate or will gather information that is not reliable.

The tool scores patients on up to 15 functional communication measures—such as memory, spoken language comprehension, spoken language expression, and swallowing—that are selected based on the patient's disorder. The tool is currently used by over 1,400 speech-language pathologists who are trained and tested on administering the assessment. This training is likely to increase the tool's reliability across assessors. The tool includes a reporting feature that compares a provider's outcomes and resource use for individual clinical groups, such as stroke or Parkinson's disease, to national benchmarks.

By design, this tool assesses patients who need to use SLP services. In selecting this tool, CMS would need to consider a second tool that would be used to assess patients with primarily PT and OT care needs.

Uses for the risk factor and functional status information

Data gathered on a beneficiary's risk factors and functional status would be helpful in several ways. First, the information could be used to develop a classification system that sorts patients into groups with similar resource needs. Such groupings are required to develop accurate risk-adjustment methodologies that allow valid comparisons of the care needs, service use, and outcomes across patients. Some of the experts with whom we spoke thought that the risk factors for each type of therapy might be different and that separate risk-adjustment methodologies should be explored.

Once adequate risk-adjustment methods have been established, CMS could use the comparative information to develop benchmarks for treating older patients. While actual practices would represent a reasonable starting

point for developing guidelines, they should be replaced with evidence-based guidelines tailored to the elderly if they become available. Benchmarks could be used to modify the payment process and identify beneficiaries with exceptional care needs that would be considered separately. Unique provider numbers for every therapist and speech-language pathologist could be used to hold individual providers accountable for their resource use and outcomes. Such accountability will become especially important if CMS links payment to outcomes.

From the provider's perspective, data-generated benchmarks could be used to predict a patient's likely resource needs and outcomes based on the experiences of similar patients. While a patient is under a provider's care, continued comparisons to benchmarks would direct treatment so that the best outcomes possible are achieved. Ideally, benchmarks and examination of outcomes would identify when treatments should continue and when they are no longer effective.

Service use by patient grouping could also be used to revise the therapy caps and the exceptions process. The exceptions process exempts a wide range of patients, partly because the information about patients' care needs is limited. Better data would allow this process to more accurately identify beneficiaries with exceptional care needs. In addition, data about care needs could be used to vary the therapy caps by patient condition.

Once risk-adjustment methods and patient groupings have been established, CMS can predict the care needs of different types of patients. Then, it could consider alternative payment systems that include incentives for providers to be efficient and achieve good patient outcomes.

Next steps for CMS

Medicare needs to have a payment system for therapy services that encourages providers to be mindful of the services used while achieving good patient outcomes. Before CMS considers changing Medicare's method of paying for therapy services, however, it needs more information about therapy users and their outcomes. This will require CMS to design patient assessment tools that gather risk factor information and outcomes measures. CMS also needs to develop accurate risk-adjustment methods that can help make valid patient comparisons.

With accurate ways to group patients with similar therapy needs, CMS could establish practice guidelines, profile providers' practice patterns, and, in the near term, refine the therapy caps and exceptions process. Ultimately, this information would shape a new payment design.

Selecting an outcomes measurement tool

CMS needs to select the measurement tools that are best suited to assess patients receiving therapy and SLP services. This may involve selecting more than one tool given the wide range in patient conditions receiving these services. Only the NOMS system is able to assess patients with severe speech and cognitive impairments, yet it is not appropriate for assessing most patients receiving PT and OT. Conversely, the tools developed to assess PT patients may not be able to assess all SLP patients, even with the use of patient proxies. While the selection of multiple tools may result in more accurate patient information, it will limit the comparability across patients.

In evaluating each tool, CMS needs to consider the range of patients it can accurately assess and how this range compares to the diversity of patients who receive therapy and SLP services. If necessary, it will also have to evaluate whether the tool could be expanded to accurately assess a broader range of patients. The tool must be accessible to patients with limited manual dexterity and able to assess patients with significant cognitive and communication impairments. The use of patient proxies may expand a tool's range, but CMS will need to examine the comparability of assessments gathered from self-report tools, clinicians, and other patient proxies. CMS will need to consider any systematic differences in the assessments gathered using various methods and, if necessary, what techniques are available to make the assessments comparable.

An additional factor to consider is the number of assessments that have already been completed using each tool. A large database of assessments, particularly if it reflects a wide variation across patients, will facilitate CMS's development of an accurate risk-adjustment methodology. The tools also vary in their current reporting features. For example, the AM-PAC currently does not link a patient's resource use to functional improvements—though presumably it could with time—whereas the Patient Inquiry[®] does.

Another aspect to consider is whether the tool is in the public domain. The use of a privately held tool may not

be affordable or negotiable. To avoid problems with copyright, CMS will want to fully explore this issue.

CMS also may want to select a tool that it can use across other post-acute settings. In a congressionally mandated demonstration of post-acute care, the Secretary is required to gather patient assessment information across post-acute settings using a standard patient assessment tool.²¹ A tool such as the AM-PAC could be used across post-acute care and outpatient settings, allowing CMS to compare the functional status of beneficiaries across the post-acute care continuum. This would avoid the current "silos" of patient assessment information, whereby the data from three assessment tools used in post-acute settings can not be compared or combined.²² Comparability is particularly important for patients who are hospitalized prior to receiving outpatient therapy, such as those recovering from strokes or fractures and dislocations of the hip and knee. For many of these patients, outpatient therapy is part of their post-acute care. The GAO recommended that the Department of Health and Human Services expedite development of a process for assessing patients' care needs for outpatient therapy services by ensuring that these services were considered in its efforts to standardize existing patient assessment instruments (GAO 2005).

Conducting pilot studies

One way for CMS to test its selection of one or more patient assessment tools and gather data quickly would be to conduct concurrent pilot studies that compare different methods of gathering risk-adjustment and outcomes data. Each study would test the feasibility of a different assessment instrument using a representative mix of outpatient therapy settings and patients. By including a wide range of providers and different tools, the studies could test the feasibility and practical aspects of alternative information-gathering tools from a broad mix of beneficiaries and settings. Before the start of a pilot study, CMS may want to determine if an existing tool could be expanded to assess a broader range of patients than its current design. If so, the study could also test newly added assessment questions.

Each pilot study should include an evaluation of the limitations of the tool, including:

- the accuracy across the range of patients who receive PT, OT, and SLP services;
- the feasibility of using the tool in a variety of settings;

- the ease of use by patients with differing impairments (if a self-report tool); and
- the likelihood of success—and the costs associated—with large-scale use.

It is likely that each tool will be appropriate for specific types of patients and not others. CMS should also think about if, and how, any of the tools could be combined and used in a way to minimize the burden on providers.

At the end of the pilot studies, CMS would be able to evaluate which tools work for which types of patients and settings and consider the feasibility of computer adaptive technology and item response theory versus more a traditional data-gathering method. After selecting the assessment tool or tools, CMS would make any necessary refinements to the way the data are collected before rolling out the data collection method to all therapy providers.

Designing a new payment system

When more complete information about therapy users is available, CMS can consider how to reform the payment system to get value for program purchasing. Two broad options include a payment based on episodes or patient outcomes.

An episode-based payment would pay a provider for a series of therapy or SLP services associated with treating a patient from evaluation through the end of treatment. The payment amounts would vary, depending on the predicted resource use of patients with similar care needs. Episodes for simple impairments would have lower payments than episodes for complex cases. Payment protections would need to be developed for unusual circumstances or outlier cases. Paying on the basis of a larger bundle of services discourages therapists from furnishing services of marginal value. Outcomes measures would be needed to ensure that providers do not stint on care.

An incentive payment system would pay providers based on patient outcomes and resource use. CMS could take data from the pilot study to develop benchmarks for patient outcomes measures and resource use. These benchmarks could then form the basis of an incentive payment system.

In both payment approaches, adequate risk-adjustment methods are essential to making providers neutral toward the types of patients they treat. If the groupings used to establish payments include patients with sufficiently different care needs, providers will be reluctant to treat

patients with above-average care needs. Additionally, without adequate risk adjustment, paying for functional gains may compromise access for patients who are slower to improve or have less rehabilitation potential (Stineman 2005).

In addition to encouraging providers to furnish only those services that improve a patient's outcomes, the payment system should hold providers more accountable. Whether the service provision is of relatively short duration or part of a long recovery process, the design of a payment system for therapy services should be consistent with the overarching goal of making providers accountable for the care delivered. And, in the longer term, it needs to look across all service provision, regardless of setting.

Monitoring the exceptions process

While these data collection and other design activities are underway, CMS needs to make sure that its exceptions process is used for medically necessary care. To minimize the resources required to conduct these reviews, CMS could start with analyses to identify aberrant practice patterns. For example, CMS might examine the percent of beneficiaries treated by providers who have requested and received automatic and manual exceptions and compare the request and approval patterns across providers. Unusual patterns could trigger requests for additional information. CMS has indicated that it will examine billing trends for aberrant practices to ensure that providers use the exceptions process for only those beneficiaries with exceptional care needs. Such monitoring is critical to ensure the exceptions process is being used as intended: to provide only medically necessary services to those beneficiaries with extensive care needs. ■

Endnotes

- 1 Services billed under a therapist's provider number are included in the "therapists in private practice" categories. Services furnished incident to physician services are included in the "physician services" category.
- 2 Nursing homes furnish therapy services to long-stay residents and the services are paid for under Part B. Therapy services furnished to skilled nursing facility patients are paid for in the daily rates of the prospective payment system and are not part of outpatient therapy services. These facilities also provide outpatient services to beneficiaries who live in the community.
- 3 Outpatient rehabilitation facilities offer a range of therapy services in a clinic-like setting. CORFs differ from other therapy providers in two ways: 1) they must offer psychological or social services and the services of a physician who specializes in rehabilitation medicine, and 2) they are authorized to provide and be paid separately for nontherapy ancillary services (e.g., respiratory therapy and drugs that can not be self administered) when medically necessary. A very small share of outpatient therapy services are provided by ambulatory surgery centers and home health agencies.
- 4 A fuller description of the history and impact of the therapy caps can be found at http://www.medpac.gov/publications/other_reports/Dec05_Medicare_Basics_OPT.pdf.
- 5 Medicare will also cover therapy services furnished by physician assistants, nurse practitioners, and clinical nurse specialists if the state in which they practice permits them to furnish therapy services. When therapy services are provided incident to a physician, the staff member furnishing the service must meet the requirements for therapists (with the exception of licensure).
- 6 In 2004, CMS clarified the qualifications for personnel furnishing therapy services in physicians' and therapists' offices (CMS 2004).
- 7 As required by the Congress, CMS has adjusted the limits each year for inflation using the Medicare Economic Index.
- 8 Interviews with representatives from CMS, the American Physical Therapy Association, and the American Occupational Therapy Association confirmed these factors.
- 9 Generally, physicians require the therapists to assign their Medicare payments to the physician practices and then the practices pay the therapists' salaries.
- 10 The Stark II law allows physicians to provide most "designated health services" (including physical therapy) in their own offices (called the "in-office ancillary exception"). Depending on their structure, such arrangements are legal. Some states restrict or prohibit the ownership or investment in physical therapy services by physicians. Proponents of the exception argue that it allows physicians to control the quality of care and enhances patient convenience.
- 11 An episode lasted as long as care was provided without a 60-day break.
- 12 These spending amounts were adjusted for differences in local prices using the geographic practice indices.
- 13 For example, randomized clinical trials are rated as the best evidence and unpublished data are rated as the weakest.
- 14 The randomized clinical trials often exclude patients with comorbidities because treatments are likely to appear less effective than if only healthier and younger patients are included (Iezonni 2003). Some observers argue that clinical trials are too resource intensive to expect all practices to be guided by them. Instead, targeted trials could be combined with carefully recorded and analyzed clinical practices to establish best practices (Kane 1997).
- 15 For example, patients with stroke and Parkinson's disease were shown to not be accurately measured using the Short Form-36 (O'Mahoney et al. 1998, Hobson and Meara 1997). Generic health status measures were shown to have biases when used to assess patients with disabilities (Anderson and Meyers 2000, Kersten et al. 1999).
- 16 The FOTO website lists numerous journal articles published using its tool, including those validating it. This bibliography is found at http://www.fotoinc.com/research_papers.htm.
- 17 The three domains (physical and movement activities, personal and instrumental activities, and applied cognitive activities) of the AM-PAC have been validated (Coster et al. 2004a, Coster et al. 2004b, Haley et al. 2006, Haley et al. 2004a).
- 18 The tool is based on the domains of daily activities outlined by the World Health Organization's International Classification of Functioning, Disability, and Health. This classification considers a patient's health condition (including physical and cognitive functioning), activities and participation, and the contextual factors (including physical, social, and attitudinal environments) that shape a patient's experience (Üstün et al. 2003).

- 19 For example, the computer adaptive technology and item response theory were found to be 70 percent more efficient than the lower extremity functional scale in assessing patients with hip, knee, foot, or ankle impairments (Hart et al. 2005). A 10-question version of the AM-PAC produced accurate and consistent measures of functional status (Haley et al. 2004b).
- 20 The tool focuses on assessing the “activities and participation” domain of the International Classification of Functioning, Disability, and Health.
- 21 The Deficit Reduction Act of 2005 requires the Secretary to implement a three-year demonstration by January 1, 2008, to assess the costs and patient outcomes across different post-acute settings. It requires that hospitalized patients be evaluated at discharge to determine the most appropriate post-acute placement and that the patients be assessed at the end of their post-acute care. The same assessment tool must be used by acute care hospitals at a patient’s discharge and by post-acute settings.
- 22 CMS requires skilled nursing facilities to use the Minimum Data Set, home health care agencies to use the Outcomes and Assessment Information Set, and inpatient rehabilitation facilities (IRFs) to use the IRF-Patient Assessment Instrument. Because the time frames, definitions, and scales differ across the tools, information from the assessments can not be compared across settings (Jette and Haley 2005, MedPAC 2005, Iezzoni and Greenberg 2003)

References

- American Physical Therapy Association. 2003. *Guide to physical therapy practice, second edition*. Alexandria, VA: APTA.
- Anderson, E., and A. Meyers. 2000. Health-related quality of life outcomes measures. *Archives of Physical Medicine and Rehabilitation* 81(supplement 2): S30–S45.
- Andres, P., S. Haley, and P. Ni. 2003. Is patient-reported function reliable for monitoring post-acute outcomes? *Journal of Physical Medicine and Rehabilitation* 82, no. 8: 614–621.
- Boyd, C., J. Darer, C. Boulton, et al. 2005. Clinical practice guidelines and quality of care for older patients with multiple comorbid diseases. *Journal of the American Medical Association* 294, no. 6 (August 10): 716–724.
- Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2006a. *CMS fact sheet on outpatient therapy caps: Exceptions process required by the DRA*. <http://www.cms.hhs.gov/apps/media/press/release.asp?Counter=1782>.
- Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2006b. *CMS Manual System change request 4364, transmittal R855*. <http://www.cms.hhs.gov/transmittals/downloads/R855CP.pdf>.
- Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2005. *CMS Manual System change request change 3648, transmittal 36*. <http://www.cms.hhs.gov/transmittals/downloads/R36BP.pdf>.
- Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2004. Medicare program; revisions to payment policies under the physician fee schedule for calendar year 2005. Final rule. *Federal Register* 69, no. 214 (November 15): 66235–66885.
- Ciolek, D., and W. Hwang. 2004a. *Development of a model episode-based payment system for outpatient therapy services: Feasibility analysis using existing CY 2002 claims data*. Columbia, MD: AdvanceMed.
- Ciolek, D., and W. Hwang. 2004b. *Feasibility and impact analysis: Application of various outpatient therapy service claim HCPCS edits, final report*. Columbia, MD: AdvanceMed.
- Ciolek, D., and W. Hwang. 2004c. *Utilization analysis: Characteristics of high expenditures of outpatient therapy services, CY 2002 final report*. Columbia, MD: AdvanceMed.
- Coster, W., S. Haley, and A. Jette. 2006. Measuring patient-related outcomes after discharge from inpatient rehabilitation settings. *Journal of Rehabilitation Medicine*. In press.
- Coster, W., S. Haley, L. Ludlow, et al. 2004a. Development of an applied cognition scale to measure rehabilitation outcomes. *Archives of Physical Medicine and Rehabilitation* 85: 2030–2036.
- Coster, W., S. Haley, P. Andres, et al. 2004b. Refining the conceptual basis for rehabilitation outcome measurement: Personal care and instrumental activities domain. *Medical Care* 42, no. 1: I-62–I-72.
- Government Accountability Office. 2005. *Little progress made in targeting outpatient therapy payments to beneficiaries' needs*. GAO-06-59. Washington, DC: GAO.
- Government Accountability Office. 2004. *Comprehensive outpatient rehabilitation facilities: High Medicare payments in Florida raise program integrity concerns*. GAO-04-709. Washington, DC: GAO.
- Groll, D., T. To, C. Bombardier, et al. 2005. The development of a comorbidity index with physical function as the outcome. *Journal of Clinical Epidemiology* 58, no. 6: 595–602.
- Guccione, A., T. Mielenz, R. DeVellis, et al. 2005. Development and testing of a self-report instrument to measure actions: Outpatient Physical Therapy Improvement in Movement Assessment Log (OPTIMAL). *Physical Therapy* 85: 515–530.
- Haley S., P. Ni, R. Hambleton, et al. 2006. Computer adaptive testing improved accuracy and precision of scores over random item selection in a physical functioning item bank. *Journal of Clinical Epidemiology*. In press.
- Haley, S., W. Coster, P. Andres, et al. 2004a. Activity outcome measurement for post-acute care. *Medical Care* 42, no. 1 (supplement): I-49–I-61.
- Haley, S., W. Coster, P. Andres, et al. 2004b. Score comparability of short forms and computerized adaptive testing: Simulation study with the activity measure for post-acute care. *Archives of Physical Medicine and Rehabilitation* 85: 661–666.
- Hart, D., J. Mioduski, and P. Stratford. 2005. Simulated computerized adaptive tests for measuring functional status were efficient with good discriminate validity in patients with hip, knee, or foot/ankle impairments. *Journal of Clinical Epidemiology* 58: 629–638.
- Hobson, J., and R. Meara. 1997. Is the SF-36 health survey questionnaire suitable as a self-report measure of the health status of older adults with Parkinson's disease? *Quality of Life Research* 6, no. 3: 213–216.

- Iezzoni, L. 2003. *Risk adjustment for measuring health care outcomes*. Ann Arbor, MI: Health Administration Press.
- Iezzoni, L., and M. Greenberg. 2003. Capturing and classifying functional status information in administrative databases. *Health Care Financing Review* 24, no. 3: 61–76.
- Jette, A., and S. Haley. 2005. Contemporary measurement techniques for rehabilitation outcomes assessment. *Journal of Rehabilitation Medicine* 37: 1–8.
- Jette, A., S. Haley, and P. Ni. 2005. Comparison of functional status tools used in post-acute care. *Health Care Financing Review* 24, no. 3: 13–24.
- Kane, R. 1997. Improving outcomes in rehabilitation: A call to arms (and legs). *Medical Care* 35, no. 6 (supplement): JS21–JS27.
- Kersten, P., M. Mullee, J. Smith, et al. 1999. Generic health status measures are unsuitable for measuring health status in severely disabled people. *Clinical Rehabilitation* 13: 219–228.
- Kuhn, H. 2006. Letter to MedPAC regarding the 2007 physician fee schedule. http://www.cms.hhs.gov/sustainableGRatesConFact/downloads/MedPAC_Letter_estimated_2007.pdf.
- Kuhn, H. 2005. Letter to MedPAC regarding the 2006 physician fee schedule. <http://www.cms.hhs.gov/providers/sgr>.
- McHorney, C., and A. Cohen. 2000. Equating health status measures with item response theory: Illustrations with functional status items. *Medical Care* 38, no. 9: II-43–II-59.
- Medicare Payment Advisory Commission. 2005. *Report to the Congress: Medicare payment policy*. Washington, DC: MedPAC.
- Medicare Payment Advisory Commission. 2004. Letter to Richard Cheney on direct access to outpatient physical therapy services. Washington, DC: MedPAC. December 30.
- Office of Inspector General, Department of Health and Human Services. 2006. *Physical therapy billed by physicians*. Washington, DC: OIG.
- Office of Inspector General, Department of Health and Human Services. 2001. *Physical, occupational, and speech therapy for Medicare nursing home patients: Medical necessity and quality of care based on treatment diagnosis*. OEI-09-99-00563. Washington, DC: OIG.
- Office of Inspector General, Department of Health and Human Services. 2000a. *Monitoring Part B therapy in SNF patients*. OEI-09-99-00550. Washington, DC: OIG.
- Office of Inspector General, Department of Health and Human Services. 2000b. *Six-state review of outpatient rehabilitation facilities*. OEI-04-99-01193. Washington, DC: OIG.
- O’Mahoney, P., H. Rodgers, R. Thomson, et al. 1998. Is the SF-36 suitable for assessing health status of older stroke patients? *Age and Aging* 27: 19–22.
- Siebens, H., P. Andres, P. Ni, et al. 2005. Measuring physical function in patients with complex medical and postsurgical conditions: A computer adaptive approach. *American Journal of Physical Medicine and Rehabilitation* 84, no. 10: 741–748.
- Stewart, A., S. Greenfield, R. Hays, et al. 1989. Functional status and well being of patients with chronic conditions. *Journal of the American Medical Association* 262, no. 7: 907–913.
- Stineman, M., M. Kallen, C. Thompson, et al. 2005. Challenges in paying for effective stays. *Medical Care* 43, no. 9: 841–843.
- Üstün, T., S. Chatterji, N. Kostansjek, et al. 2003. WHO’s ICF and functional status information in health records. *Health Care Financing Review* 24, no. 3: 77–88.

CHAPTER

7

Part D plan offerings

Part D plan offerings

Chapter summary

Part D uses a market-based approach in which private plans deliver Medicare prescription benefits and assume some risk for the drug spending of their enrollees. The law gives organizations that sponsor Part D plans flexibility in designing and administering drug benefits within certain restrictions. For 2006, nearly 80 organizations are offering 1,429 prescription drug plans (PDPs) on a stand-alone basis:

- 9 percent use the defined standard benefit, 48 percent have the same actuarial value as basic coverage but a different benefit design, and 43 percent include enhanced benefits (basic coverage plus some supplemental coverage).
- 15 percent include coverage in the defined standard benefit's coverage gap, typically for generic drugs.
- 66 percent have no deductible or a reduced deductible.
- Nearly 90 percent of the 1,429 PDPs are offered by 16 organizations, which often use the same benefit structure, cost sharing, and formulary among their different plans.

In this chapter

- Part D's structure and initial levels of enrollment
- Part D plan offerings for 2006
- Part D formularies
- Looking ahead

Another 1,303 Medicare Advantage–Prescription Drug plans (MA–PDs) are available nationwide, but access to specific plans varies depending on the county in which a beneficiary lives:

- 7 percent use the defined standard benefit, 29 percent have actuarially equivalent basic benefits, and 64 percent include enhanced benefits.
- 28 percent include coverage in the coverage gap, typically for generic drugs.
- 83 percent have no deductible or a reduced deductible.
- Nearly 40 percent of MA–PDs charge no additional premium for Part D coverage beyond what they charge for Parts A and B services.

As of mid-April 2006, CMS estimated that 27 million of the 43 million Medicare beneficiaries (61 percent) either signed up for Part D plans or had prescription drug coverage through employer-sponsored coverage under Medicare’s retiree drug subsidy. Another 3.5 million beneficiaries (8 percent) were federal or military retirees who receive drug coverage with at least the same value as the Part D benefit. All of the more than 7 million individuals who are dually eligible for Medicare and Medicaid or who are already enrolled in a Medicare Savings Program within their state are deemed eligible for Part D’s low-income subsidy (or “extra help”) that pays for some or all of their premiums and cost sharing. About 1.7 million other non-Medicaid beneficiaries with low incomes and assets qualified for Part D’s low-income subsidy.

Both MA–PDs and PDPs use formularies to manage the cost and use of prescription drugs. The most frequent tier structure distinguishes preferred and nonpreferred brand name drugs and includes a specialty tier for very expensive drugs, biologicals, and injectables. Plans that distinguish between preferred and nonpreferred brand name drugs charge median copays of \$5 to \$7 for generics, \$22 to \$29 for preferred brands, and \$50 to \$55 for nonpreferred brand name drugs. About 60 percent of all Part D plans have a specialty tier and charge a median of 25 percent to 30 percent coinsurance

for them. Beneficiaries may not appeal the cost-sharing amounts for drugs on a specialty tier.

The median Part D plan lists about 1,000 drugs, with MA-PDs typically listing somewhat more drugs than PDPs. Among all plans, those that offer nonpreferred brand tiers generally list more drugs than plans with only brand and generic distinctions. Our analysis shows little difference in formulary size between plans that are and are not eligible for auto-enrollees. Note that the number of drugs on a plan's formulary does not necessarily represent beneficiary access to needed medications. Unlisted drugs may be covered through the nonformulary exceptions process, which for some plans may be relatively easy, but for other plans may be more burdensome for enrollees and physicians. Alternatively, on-formulary drugs may not be covered in cases where a plan does not approve a prior authorization request.

Most Part D plans apply drug utilization tools, such as prior authorization, to selected drugs. Plans use these tools for drugs that are expensive, potentially risky, or to encourage use of available lower cost therapies. Our analysis shows that Part D plans typically apply prior authorization to less than 10 percent of the drugs on their formularies and use step therapy for a very small share of drugs concentrated in selected therapeutic categories.

In the coming years, the Commission will continue to analyze aspects of cost, quality, and access under Part D. With further data, we would like to examine how plans' benefit designs and formularies affect enrollee plan choice (by characteristics of beneficiaries and plans), beneficiary access to medications, beneficiary out-of-pocket spending, beneficiary health outcomes, and Medicare program spending. Additionally, the Commission will examine how Part D is meeting the needs of special populations, such as those residing in long-term care facilities, and study the consequences of plans' formulary changes and utilization management tools—such as prior authorization—on beneficiaries, pharmacists, and physicians. ■

Part D, Medicare's new outpatient prescription drug benefit that began in January 2006, is a departure from traditional Medicare. Like the Medicare Advantage (MA) program, Part D differs from Medicare's fee-for-service (FFS) program for Parts A and B services because it uses competing private plans that are at risk for some of their members' benefit spending. The new program encourages both MA plans that include prescription drug benefits—Medicare Advantage—Prescription Drug plans (MA-PDs)—and new stand-alone prescription drug plans (PDPs) to participate. The latter are plans that offer drug benefits without a broader package of medical benefits. Organizations offering Part D plans submit bids to CMS to provide Part D benefits. CMS calculates the national average of bids for basic Part D benefits and then Medicare pays plans the same capitated amount per enrollee based on a percentage of the national average, adjusted for the risk of the individual enrollee. (For more detail about Part D payments to plans and how Medicare subsidizes Part D, see MedPAC 2005b, 2005c.) Plans may also receive additional payments from Medicare for members who qualify to receive Part D's low-income subsidies (also called "extra help") or who have drug spending high enough to trigger individual reinsurance subsidies.¹

Rather than Medicare specifically defining Part D benefits, organizations that sponsor plans have flexibility in designing and administering drug benefits within certain restrictions. This approach has the advantage of providing a range of plan options that could potentially better suit each individual beneficiary's needs. The approach also lets plans use different mixes of management tools—such as formulary designs—to balance enrollees' desire for access to drug therapies with the need to control benefit costs. At the same time, allowing flexibility in Part D benefit designs means that CMS must monitor plans to help ensure that some do not try to avoid enrolling beneficiaries with higher prescription drug spending.² The agency must also strive to ensure that its risk adjusters capture differences in individuals' benefit spending on Part D drugs.

Organizations that offer private plans negotiate prices for pharmaceuticals and pharmacy services, and the results of these negotiations affect plan bids and premiums. Since plans are at risk for some of their members' drug spending, some policymakers believe that delivering Part D benefits through competing private plans will lower Medicare payments and Part D premiums and may help to constrain cost growth. Others believe that a delivery system that is

more like traditional Medicare would provide beneficiaries with better access to prescription drugs, less administrative burden, and lower prices.

Part D's market-based approach also means that beneficiaries who are most familiar with traditional Medicare face new challenges. They must choose among dozens of plans available in their local area, each with somewhat different benefit structures, cost-sharing requirements, premiums, and networks of pharmacies. (Plans must also include long-term care pharmacies in their networks. We provide background about the services they provide and how Part D may affect that industry in the text box on page 150.) Plan options differ in important dimensions that are often not obvious or easy to understand. As a result, CMS and others are challenged to provide even the most knowledgeable beneficiaries with sufficient information to help them make informed choices. (Chapter 8 describes some of those challenges.) In addition, some Medicare beneficiaries may be unfamiliar with the tools that private plans use to manage drug benefits such as formularies and tiered cost sharing, formulary exceptions processes, prior authorization, and grievance and appeals procedures. Individuals may face issues related to the use of these tools as they transition from their previous drug benefits to their new Part D coverage and, over time, if they switch among Part D plans or if their plans exit the market (MedPAC 2004).

Part D's structure and initial levels of enrollment

Policymakers sought to design Part D to promote adequate access to appropriate drug therapies for Medicare beneficiaries while encouraging efficiency, quality, and cost control. Before Part D began, the majority of the noninstitutionalized Medicare population had prescription drug coverage through current or former employers, Medicaid, MA plans, and certain medigap policies.³ The relative generosity of those sources of coverage varied considerably, ranging from comprehensive Medicaid coverage with low cost sharing to medigap policies that typically had higher cost-sharing requirements, an overall limit on the dollar value of their benefits, and generally were not subject to formularies and management tools. Beneficiaries with employer-sponsored policies had relatively generous coverage but were also typically subject to pharmacy benefit management tools, including limited formularies. Beneficiaries with no prescription

Long-term care pharmacies

In order to meet the prescription drug needs of beneficiaries who live in long-term care (LTC) facilities (nursing homes and skilled nursing facilities), such facilities contract with long-term care pharmacies (LTCPs). Approximately 3.5 million Medicare beneficiaries (9 percent) live in an LTC facility (Lewin Group 2004). Many have poor overall health with multiple chronic conditions and require 24-hour nursing care. Their health status also means that they are more likely to use a large number of prescription drugs, which increases the probability of adverse drug events. Beneficiaries residing in LTC facilities take an average of 8 to 10 medications per day, compared with 5 to 6 for Medicare beneficiaries who live in the community.

LTCPs generally offer services beyond those provided by retail pharmacies. Among these are specialized compounding and packaging; alternative forms of drug administration (e.g., unit dosing, liquid dosing, chewable tablets, infusion services, or parenteral administration); 24-hour access to a pharmacist; medication delivery (including emergency deliveries); medication and treatment carts; and medical records management. Because of the relatively complex nature of these services, most LTC facilities tend to contract with a single LTCP to provide these services. Under the Part D program, LTCPs are subject to “any willing pharmacy” provisions. These provisions mean that plans must offer standard contracting terms and conditions, including performance and service criteria,

for LTCPs specified by CMS. Plans must also provide members with convenient access to LTCPs—all plan enrollees in an LTC facility must be able to access their covered Part D drugs through an LTCP in the plan’s network. If LTCPs contract with as many plans as are available in a region, it is possible that even if a facility has residents who are enrolled in different Part D plans, LTC facilities will be able to continue to contract with a single LTCP.

Before the Part D benefit was introduced, LTCPs generally were reimbursed through four primary sources: Medicaid, Medicare Part A, private insurance, or self-pay. The LTCP market represents about \$8 billion in annual revenues (Leavitt 2005). Medicaid has been by far the largest source of revenue for LTCPs, accounting for 60 percent to 65 percent of their revenues, with the other three sources of revenue accounting for a little over 10 percent each. Most, if not all, of the revenues that previously came from Medicaid will now come from individual prescription drug plans (PDPs) and Medicare Advantage–Prescription Drug plans (MA–PDs) under the Part D program, while additional shares of both private pay and private insurance revenue may also be replaced by Part D. Therefore, most LTCPs face a sea change in the source of a majority of their revenues. Now, state Medicaid payment rates and rules are being replaced by payment rates, formularies, and other management tools for PDPs and MA–PDs.

continued on next page

drug coverage generally had no supplemental coverage to Medicare at all or purchased medigap plans that did not cover prescription drugs.

Program structure

A combination of stand-alone PDPs and MA–PDs deliver the Part D benefit throughout the United States and in U.S. territories. Organizations can offer PDPs in one or more of 34 geographic regions; regional MA–PDs may operate in one or more of 26 MA regions; and local MA–PDs may operate in various service areas (one or more counties) throughout the country. Plans bear some risk for their enrollees’ drug spending and compete for enrollees

on the basis of premiums, benefit structures, access to specific drug therapies, pharmacy networks, and quality of services. To encourage Medicare beneficiaries to enroll, the government subsidizes premiums by nearly 75 percent and provides additional premium and cost-sharing subsidies for beneficiaries who have low incomes and assets. A late-enrollment penalty similar to that for Part B also provided an incentive for beneficiaries to enroll during an initial open enrollment period, which ended on May 15, 2006.⁴

The Medicare Prescription Drug, Improvement, and Modernization Act of 2003 (MMA) defines a standard

Long-term care pharmacies (cont.)

The change from Medicaid to Medicare reimbursement is important because many of the additional services described above are provided by LTCs at no extra charge to LTC facilities (Lewin Group 2004). LTCs have not traditionally charged for such services because those costs were covered partly by the margin between Medicaid payment rates and the cost of acquiring drugs and supplies. In addition, LTCs—particularly the four largest chains—have traditionally collected rebates from drug manufacturers, based on their ability to direct market share to specific drugs. These rebates have also helped to finance additional services. One might argue that the ability of LTCs to provide these additional services at no charge may indicate that payment rates for drugs were too high and that the competitive pressures created by the Part D program will result in lower prices to both Part D and non-Part D enrollees.

In its instructions to Part D plans for contract year 2007, CMS expressed concern about the continued payment of rebates to LTCs providing drugs as part of a Part D plan's network (CMS 2006). CMS believes that any rebates to participants in the Part D program ultimately should accrue to the government

and beneficiaries through lower premiums. CMS also noted that rebates paid to LTCs could be in violation of federal anti-kickback standards. CMS requires that all Part D plan sponsors include a provision in their pharmacy contracts in which pharmacies must fully disclose to the sponsor any rebates from drug manufacturers.

Further, the change from a single payer for a majority of LTC facility residents to multiple payers may have implications for beneficiaries, LTCs, LTC facilities, and Part D plans. In particular, all of these stakeholders face challenges as beneficiaries transition among plans—initially from their Medicaid coverage to enrollment in Part D, as well as when some beneficiaries switch among Part D plans. There may also be administrative burden associated with coordinating between different plans' formularies and complying with CMS requirements regarding the availability of nonformulary drugs.

The Commission will monitor the experience of LTCs with the Part D program and examine this issue in more detail in future work. ■

drug benefit under Part D, which an organization may offer. For 2006, the defined standard benefit includes:

- a \$250 deductible;
- coverage for 75 percent of covered drug expenses up to an initial coverage limit of \$2,250;⁵
- a coverage gap with 100 percent beneficiary cost sharing between the initial coverage limit and an out-of-pocket threshold reached when the enrollee has accrued \$3,600 of true out-of-pocket costs (or \$5,100 in total drug expenses for enrollees without supplemental drug coverage);⁶ and
- beyond the out-of-pocket threshold, the greater of either 5 percent coinsurance or copays of \$2 for generic or preferred brand name drugs and \$5 for brand name drugs.

These threshold amounts will increase each year by CMS's estimate of the annual change in drug spending per person. For 2007, the values are as follows: a \$265 deductible, \$2,400 initial coverage limit, and a \$3,850 out-of-pocket threshold. Above the catastrophic threshold, copayment amounts will increase to \$2.15 for generics or preferred brand name drugs and \$5.35 for other drugs.

The law gives organizations substantial flexibility beyond the defined standard benefit. Plans may, for example, offer a basic plan that has the same actuarial value as the defined standard benefit but with a different design. A plan could offer a tiered cost-sharing design with different copays by tier—such as for generic, preferred brand name, nonpreferred brand name drugs, and specialty drugs—between the deductible and the \$2,250 initial coverage limit. However, cost-sharing requirements under such a tier structure would need to have the same

actuarial value as the 25 percent coinsurance required under the defined standard benefit. Alternatively, a plan could lower or eliminate its deductible but require cost sharing greater than 25 percent. Plans that offer such actuarially equivalent benefits must meet certain tests to comply with the law. CMS evaluates plan benefit designs to help ensure that competition among plans is based on premiums for comparable benefits rather than selection among enrollees. However, tests of actuarial equivalence do not go so far as to require comparable formularies. Even two competing plans in which both plans offer the defined standard benefit may be somewhat different from one another because they can include different mixes of preferred and nonpreferred drugs on their formularies or have differences in their pharmacy networks. CMS also reviews plan formularies to assure that enrollees have access to certain medications and to ensure that plans do not discriminate against any particular type of beneficiary.

Organizations offering basic Part D coverage (the standard benefit or one that is actuarially equivalent to it) may also choose to offer enhanced alternative coverage. Enhanced coverage combines a basic benefit with supplemental benefits. Supplemental coverage could include either reductions in cost-sharing requirements that increase the actuarial value of the benefit package, coverage of drugs that are specifically excluded as Part D drugs under the MMA, or both. For example, a plan might include zero or reduced cost sharing for generic drugs in the coverage gap. However, the enrollee must pay for all of these additional benefits through a supplemental premium and any additional cost sharing required by the plan. Plans must assure CMS that their premium for supplemental coverage takes into account higher basic drug spending induced by the supplemental coverage.

Part D includes a low-income subsidy (LIS) that provides assistance for out-of-pocket spending by individuals with low incomes and assets. In 2006, individuals who do not receive Medicaid must have an income below \$14,355 for a single person or \$19,245 for a married couple to be eligible. (These values are 150 percent of the federal poverty level, or FPL.) Assets must be no greater than \$10,000 for an individual or \$20,000 for a couple, excluding the beneficiary's primary residence and vehicles. Individuals who receive both full Medicaid and Medicare benefits (called dual eligibles) and other beneficiaries with incomes of up to 135 percent of the FPL who meet asset tests may be eligible to have Medicare pay their entire premiums and significantly reduce their copays for plans that qualify to receive such enrollees.

These beneficiaries have copays ranging from \$1 to \$5 if they live in community settings. Full-benefit dual eligibles residing in long-term care facilities have no cost sharing. Individuals with incomes between 135 percent and 150 percent of the FPL who meet the asset test may qualify for sliding-scale premium assistance and reduced cost sharing. Both groups are effectively exempt from Part D's coverage gap—the range of drug spending between Part D's initial coverage limit and its catastrophic threshold in which beneficiaries would normally pay 100 percent coinsurance. One should note, however, that unless a beneficiary successfully obtains a formulary exception, all Part D enrollees only receive benefit coverage for drugs that are listed on their plan's formulary.

These subsidies are applicable only to Part D plans with premiums that are at or below a certain threshold level calculated for each region.⁷ That threshold amount is designed to assure that beneficiaries who qualify for the LIS are enrolled in lower priced plans, while ensuring that at least one stand-alone PDP is available to them. Participating organizations pay attention to the LIS thresholds because those amounts determine whether their plans are eligible to be randomly assigned beneficiaries through CMS's auto-enrollment process—virtually guaranteeing those plans some initial enrollees. Auto-enrollment saves plans marketing costs, and qualifying organizations can count on Medicare paying for all or much of those enrollees' premiums and cost sharing. CMS auto-enrolled about 6 million beneficiaries who are dually eligible for Medicare and Medicaid to begin Part D coverage on January 1, 2006—the date that their primary prescription drug coverage through Medicaid officially ended.⁸ In a process similar to that for duals, CMS also helped enroll about 1 million of the 1.7 million other individuals who qualified for Part D's LIS as of April 30, 2006.

Enrollment in Part D and other sources of drug coverage

The program's initial open enrollment period began on November 15, 2005, and ran through May 15, 2006. Early projections of prescription drug coverage for 2006 varied. The Congressional Budget Office (CBO) estimated about 37 million (87 percent) of all Medicare beneficiaries would have coverage, while CMS's Office of the Actuary (OACT) estimated 41 million (94 percent) (CBO 2004, 2004 Technical review panel on the Medicare Trustees Report). Both sets of numbers include beneficiaries who enroll in Part D as well as those with primary drug

**TABLE
7-1**

Part D enrollment and other sources of drug coverage in early 2006

	Millions enrolled as of			
	1/13/2006	2/11/2006	3/18/2006	4/18/2006
Enrollment that leads to Medicare program spending:				
Voluntary enrollees in stand-alone PDPs	3.6	4.9	6.4	8.1
Enrollees in MA-PDs (including some duals)	5.1	5.3	5.7	5.8
Individuals dually eligible for Medicare and Medicaid and auto-enrolled in Part D plans	5.6	5.7	5.8	5.8
Individuals covered by Medicare retiree drug subsidy	6.4	6.4	6.2	6.8
Subtotal	20.6	22.3	24.0	26.5
Enrollment that does not lead to Medicare program spending:*				
Estimated federal retirees in TRICARE and FEHB	3.1	3.1	3.5	3.5
Total	23.8	25.4	27.6	30.0

Note: PDP (prescription drug plan), MA-PD (Medicare Advantage prescription drug [plan]), FEHB (Federal Employees Health Benefits program). TRICARE is the health program for military retirees and their dependents. For calendar year 2006, CMS projects that an average of 43.1 million beneficiaries will be enrolled in Medicare Parts A and/or B. Columns may not sum due to rounding.

*In addition, CMS estimates that 5.8 million Medicare beneficiaries have drug coverage of equal or greater value to Part D benefits through the Department of Veterans Affairs, Indian Health Service, former employers that do not receive Medicare's retiree drug subsidy, or through current employers.

Source: CMS press releases dated as shown above.

coverage through employer-sponsored health plans, through which the sponsor receives Medicare's retiree drug subsidy (RDS). Medicare provides a tax-free subsidy to employers for 28 percent of each eligible individual's drug costs that fall within a specified range of spending. These projections exclude beneficiaries with retiree drug benefits through the Federal Employees Health Benefits (FEHB) and TRICARE programs, which cover federal and military retirees and their dependents, as well as other sources of coverage. (Although beneficiaries with FEHB and TRICARE coverage have drug benefits that are equal or greater in value to the Part D benefit (called creditable coverage), those programs do not participate in the RDS.) The Medicare trustees most recently estimated that 31 million Medicare beneficiaries (73 percent) would have Part D or RDS coverage on May 15, 2006 (Boards of Trustees 2006).⁹

As of mid-April 2006, CMS estimated that 26.5 million of the 43 million Medicare beneficiaries (61 percent) either had signed up for Part D plans or had prescription drug coverage through employer-sponsored coverage under the RDS (Table 7-1). Voluntary enrollees in stand-alone drug plans numbered 8.1 million, or 19 percent of the 43

million. Individuals who are dually eligible for Medicare and Medicaid and enrollees in MA-PDs each numbered 5.8 million, and each group made up 13 percent of the 43 million. Individuals whose employers receive the RDS in return for remaining the primary payer of prescription drug coverage made up 6.8 million (16 percent) of the 43 million. Those four groups directly affect Medicare program spending.

Other Medicare beneficiaries have creditable drug coverage, but that coverage does not affect Medicare program spending. For example, 3.5 million beneficiaries (8 percent) were federal retirees who receive drug coverage through FEHB or TRICARE. Another 5.8 million others (13 percent) had prescription drug coverage through the Department of Veterans Affairs, Indian Health Service, former employers that are not a part of Medicare's RDS, or through current employers because the individual is still an active worker (data not shown).

The Commission did not receive information about enrollment levels in specific Part D plans in time to include it in this report. However, data on enrollment levels by plans' parent organizations are shown on page 165.

Defining Part D organizations and plans

Throughout this chapter we define an organization as an entity—usually a combination of an insurer or medical plan with a pharmacy benefit management firm and a network of pharmacies—that offers one or more Part D plans. A plan is a specific combination of benefits offered to all Medicare beneficiaries who live within a prescription drug plan (PDP) region or Medicare Advantage prescription drug plan region. When an organization chooses to offer a plan nationwide, it actually offers 34 different PDPs (one for each geographic region), even if those plans share the same benefit design, formulary,

and structure of tiered copays. CMS guidance limits each organization to offering no more than three types of plans in each region. As a result, some larger organizations are offering as many as 102 plans (3 plans multiplied by 34 regions) across the PDP regions, plus additional plans offered in the U.S. territories or designed for specific employer groups. For 2007, CMS had considered limiting each organization to two plan types per region, but ultimately decided to continue permitting organizations to offer up to three PDPs in each region if one of those plans includes benefits in the coverage gap (CMS 2006). ■

Enrollment in Part D's low-income subsidy program

Prior to the start of Part D, projections of enrollment in the LIS program also varied. OACT estimated that 10.9 million out of 14.5 million eligible Medicare beneficiaries would participate in the LIS program in 2006—all 7.2 million dual eligibles, qualified Medicare beneficiaries (QMBs), and specified low-income Medicare beneficiaries (SLMBs), as well as 3.7 million other individuals who did not previously participate in Medicaid. By comparison, CBO estimated that fewer nonduals would enroll in the LIS program, for total enrollment (dual and nondual) of 8.7 million in 2006. The Medicare trustees currently estimate that 9 million Medicare beneficiaries will be eligible for Part D's LIS program in 2006 (Boards of Trustees 2006).

All individuals who are dually eligible for Medicare and Medicaid or who are already enrolled in a Medicare Savings Program within their state (QMBs and SLMBs) are deemed eligible for Part D's LIS. However, enrolling other non-Medicaid beneficiaries is proving more difficult. The Social Security Administration (SSA), which determines eligibility for the LIS program, received nearly 5 million applications for the LIS program. A number of those applications were denied because beneficiaries had income or assets that were too high, or the SSA received a duplicate application. As of April 30, 2006, 1.7 million non-Medicaid beneficiaries with low incomes and assets qualified for the LIS program. Some of these individuals did not realize that they must apply for the LIS

program and then also enroll in a specific Part D plan. For this reason, CMS auto-enrolled individuals in plans who qualified for the LIS but had not yet chosen a plan themselves.

Part D plan offerings for 2006

This section describes the degree of variation that exists among Part D benefits and premiums for 2006. Throughout this chapter we exclude plans that are exclusive to certain groups of enrollees, such as plans available only to employer groups, Programs of All-Inclusive Care for the Elderly, special needs plans, and demonstrations. We also limit the analysis to plans offered within the 50 states. Although much variation exists, our analysis reveals patterns in the structure of benefit designs that organizations have chosen to offer.

Plan entry, benefit designs, and premiums among PDPs

Although 1,429 PDPs are available across the country, most of those plans are offered by 16 larger actors in Part D—that is, organizations or groups of organizations offering at least one plan nationwide or a total of 30 or more plans in one or more of the 34 regions (the text box defines organizations and plans). In many cases, those organizations offer the same two or three benefit structures in the regions of the country in which they participate, and they typically use the same formulary. While individual

**TABLE
7-2**

Characteristics of PDPs in 2006

	All types of benefits	Basic benefits		Enhanced benefits
		Defined standard	Actuarially equivalent	
Total number of plans	1,429	132	689	608
Distribution of plans (in percent):				
Plan type	100%	9%	48%	43%
Type of deductible				
Zero	58	N/A	18	40
Reduced	8	N/A	5	3
\$250	34	9	25	0
Cost-sharing structure before the initial coverage limit				
Uses 25% coinsurance	9	9	0	0
Uses tiered cost sharing	91	N/A	48	43
Copays	21	N/A	8	13
Coinsurance	3	N/A	2	0
Both	67	N/A	38	30
Coverage in the gap				
Generics	13	N/A	0	13
Generics and brands	2	N/A	0	2
None	85	N/A	48	27
Offers mail-order pharmacy services	91	8	43	40

Note: PDP (prescription drug plan), N/A (not applicable). Percentages are not weighted by plan enrollment. The PDPs described here exclude plans offered in U.S. territories. Benefits labeled actuarially equivalent to Part D's standard benefit include what CMS calls "actuarially equivalent standard" and "basic alternative" benefits. Plans with "gap coverage" include some benefits in the range of beneficiary drug spending above the standard benefit's initial coverage limit and below its out-of-pocket threshold. Part D's defined standard benefit requires the enrollee to pay 100 percent coinsurance in this coverage gap.

Source: MedPAC based on CMS plan benefit design and landscape data.

beneficiaries still face many plan options, the degree of variation across the country may not be as large as 1,429 PDPs might suggest. Although availability varies by county, MA-PDs are offering an additional 1,303 plans around the country.¹⁰ MA-PDs are more likely than PDPs to offer enhanced (supplemental) benefits and charge no deductible, often at no additional premium beyond the monthly premium that the enrollee pays for medical services.

Characteristics of PDPs offered by all organizations

A relatively small number of organizations (16) accounts for 1,225 of the 1,429 PDPs offered among the 34 regions, and nearly 60 other organizations are offering the remaining 204 PDPs. In this section, we provide statistics for all 1,429 PDPs. Note that this analysis is not weighted

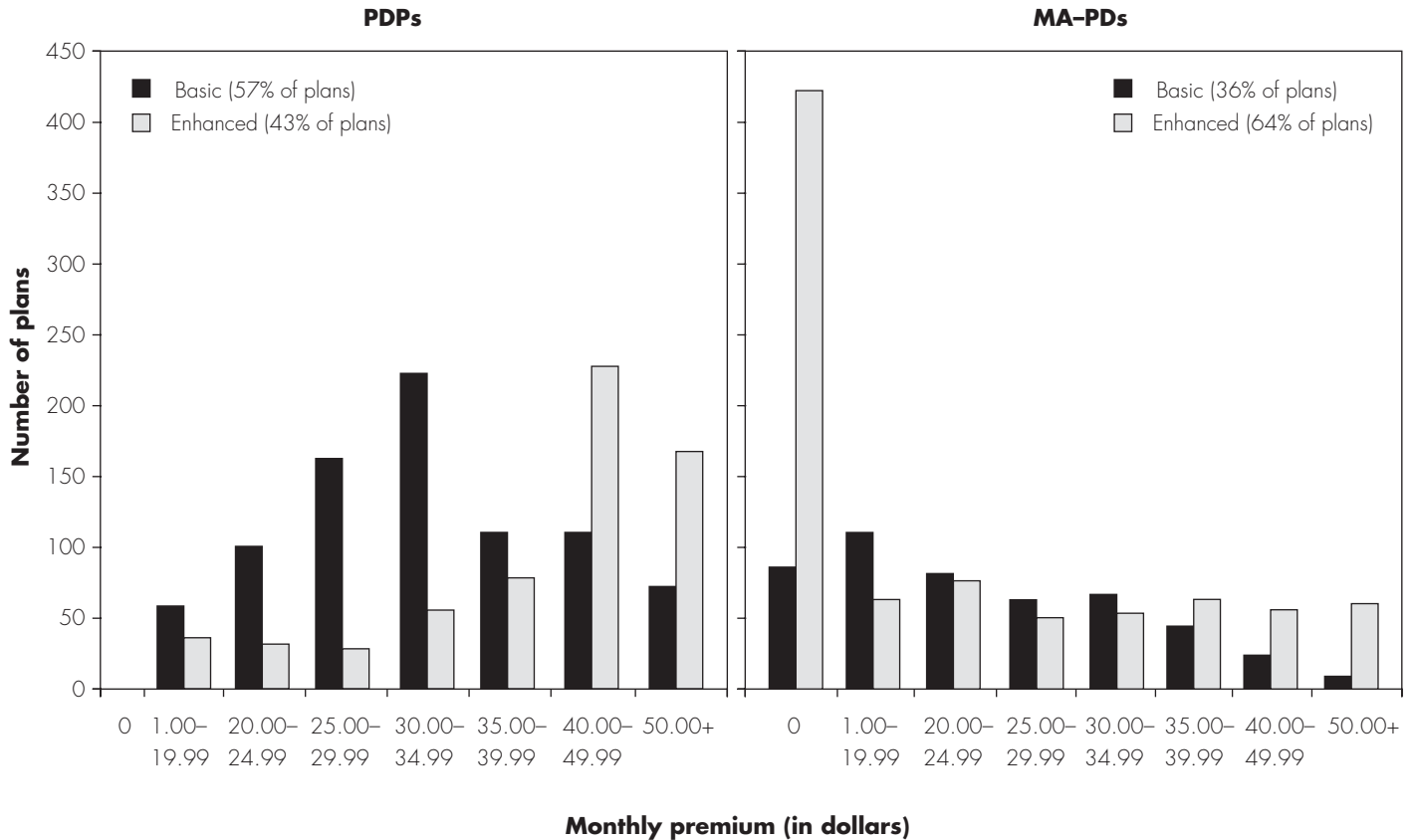
by each plan's enrollment. Few plans use Part D's standard benefit design; instead, many offer a reduced or no deductible design and most use tiered cost sharing.

Among all PDPs, 57 percent provide basic benefits—either Part D's standard benefit design (9 percent) or a benefit that is actuarially equivalent to the standard benefit (48 percent) (Table 7-2). The remaining plans are enhanced (43 percent); they include basic benefits and supplemental coverage.

Organizations may be testing the waters by trying several different benefit designs. Still, the design of a sizable number of PDPs reflects a widely held perception that beneficiaries do not want to pay deductibles. About 58 percent of all PDPs do not charge a deductible, 34 percent use the standard benefit's \$250 deductible, and the remainder use deductibles that are less than \$250.

**FIGURE
7-1**

Distribution of PDP and MA-PD premiums for basic and enhanced plans in 2006



Note: PDP (prescription drug plan), MA-PD (Medicare Advantage prescription drug [plan]). Distributions are not weighted by beneficiary enrollment. Total number of PDPs is 1,429, which excludes plans offered in U.S. territories. Total number of MA-PDs is 1,303, which excludes demonstration programs, 1876 cost plans, and plans offered in U.S. territories. MA-PD enrollees must pay any other Medicare Advantage premiums in order to obtain Part D prescription drug coverage. Benefits labeled basic include Part D's standard benefit design as well as benefits that are actuarially equivalent to standard benefits. Enhanced plans include supplemental coverage.

Source: MedPAC based on CMS plan benefit package and landscape data.

No enhanced plans use the standard benefit's deductible, and many actuarially equivalent plans charge no deductible either. A plan could charge no deductible yet maintain actuarial equivalence to the standard benefit by charging higher cost sharing or lowering the benefit's initial coverage limit.

Most plans (91 percent) use cost-sharing tiers rather than Part D's defined standard benefit with flat 25 percent coinsurance. This probably reflects organizations' judgment that beneficiaries will prefer the relative predictability of fixed-dollar copays over coinsurance. However, 67 percent of all PDPs use a combination of copays (usually for lower price tiers) and coinsurance (typically for specialty drugs on higher price tiers). Some plans use copays for preferred drugs but charge

coinsurance for nonpreferred drugs or for prescriptions filled at out-of-network pharmacies. Relatively few PDPs offer any coverage in the standard benefit's coverage gap.

Among all basic PDPs (defined standard benefits and those that are actuarially equivalent) in our analysis, the simple average monthly premium is \$33. By comparison, CMS officials have noted that beneficiary premiums are expected to average \$25 a month (McClellan 2006). The reason for this difference is that the \$25 figure is weighted by Part D enrollment. CMS auto-enrolled beneficiaries in Part D plans with lower price premiums, which partly explains the difference in averages. Additionally, CMS's administrator also noted that the majority of beneficiaries who were not dually eligible for Medicare and Medicaid

**TABLE
7-3**

Premiums and cost-sharing requirements among PDPs in 2006

	Basic benefits		
	Defined standard*	Actuarially equivalent	Enhanced benefits
Monthly premium			
Minimum	\$2	\$14	\$5
Maximum	85	63	105
Median	28	32	44
Mean	26	35	43
Deductible			
Minimum	250	0	0
Maximum	250	250	150
Median	250	250	0
Median cost sharing for:			
Plans with generic/brand tier structure			
Generic copay	N/A	5	7
Brand copay	N/A	28	30
Specialty tier coinsurance (where applicable)	N/A	25%	25%
Plans with generic/preferred brand/nonpreferred brand tier structure			
Generic copay	N/A	\$7	\$5
Preferred brand copay	N/A	22	26
Nonpreferred brand copay	N/A	55	50
Specialty tier coinsurance (where applicable)	N/A	25%	30%

Note: PDP (prescription drug plan), N/A (not applicable). Values do not reflect plan enrollment. The PDPs described here exclude plans offered in U.S. territories. Cost sharing is for median cost sharing among plans that use tiered cost sharing before the initial coverage limit. Benefits labeled actuarially equivalent to Part D's standard benefit include actuarially equivalent standard and basic alternative benefits.

*Part D's defined standard benefit has a \$250 deductible (in 2006) and 25% coinsurance below the initial coverage limit.

Source: MedPAC based on CMS plan benefit package and landscape data.

selected plans with premiums below the national average premium (McClellan 2006).

Turning again to the simple (unweighted) distribution of plans' premiums, note that at the median, premiums for enhanced plans run about \$10 more per month than premiums for basic benefits (left-hand side, Figure 7-1). Within each category of basic and enhanced plans, there is quite a bit of variation among premiums. Some enhanced benefits cost less than \$20 per month in certain regions, while a handful of basic plans cost more than \$75 per month. Across all types of PDP benefits offered in the 34 regions—including both basic and enhanced packages—the plan with the lowest premium is a defined standard benefit at a cost of just under \$2 per month, while

the highest premium plan provides enhanced coverage for about \$105 per month (Table 7-3).

Plans that are actuarially equivalent to the defined standard benefit have median and mean premium values that are \$5 to nearly \$9 higher, respectively, than those for the defined standard benefit.¹¹ This occurs even though, by design, they have the same expected benefit value. The higher average premium could reflect a higher willingness to pay among beneficiaries for the relative predictability of fixed copays over coinsurance. This result may also reflect higher costs for providing a benefit with fixed-dollar copays than one with coinsurance; a benefit design with copays could put a plan at greater risk for increases in pharmaceutical prices.

**TABLE
7-4**
PDPs offered in 2006 by organizations with at least one nationwide plan

Organization and plan name	Regions in which plan is offered	Plans qualifying for auto-enrollment	Type of benefit	Range of monthly premiums	Deductible	Cost sharing by tier at in-network preferred pharmacies	Gap coverage
Aetna							
Medicare Rx:							
Essentials	34	6	Actuarially equivalent	\$28-\$39	\$250	\$5/\$25	None
Plus	34	0	Enhanced	37-50	0	\$7/\$35	Generics
Premier	34	0	Enhanced	52-67	0	\$2/\$20/\$40	Generics
Cigna							
CIGNATURE Rx:							
Value Plan	34	7	Actuarially equivalent	30-37	250	\$4/\$20/\$40	None
Plus Plan	34	0	Enhanced	40-42	0	\$5/\$30/\$50	None
Complete Plan	34	0	Enhanced	43-51	0	\$5/\$30/\$50	Generics
Coventry							
AdvantraRx:							
Value	34	0	Enhanced	18-25	0	\$10-\$15/\$36-\$60	None
Premier	34	0	Enhanced	29-38	0	\$5-\$10/\$20-\$40/ \$50-\$70	None
Premier Plus	34	0	Actuarially equivalent	40-50	0	\$5/\$20-\$40/\$54-\$70	None
Medco							
YOURx Plan	34	19	Actuarially equivalent	27-36	250	\$4/\$17/75%/25%	None
MemberHealth							
Community Care Rx:							
Basic	34	23	Actuarially equivalent	26-33	250	0%/25%/45%	None
Choice	34	0	Actuarially equivalent	34-41	250	\$4/\$20/\$40	None
Gold	34	0	Enhanced	38-45	100	\$4/\$25/\$50	None
PacifiCare							
PacifiCare:							
Saver Plan	34	31	Actuarially equivalent	19-35	0	\$8/\$22/\$47-\$53/33%	None
Select Plan	34	2	Actuarially equivalent	30-49	0	\$8/\$22/\$56-\$73/33%	None
Comprehensive Plan	2	0	Enhanced	37-41	0	\$8/\$22/\$53-\$54/33%	Generics
Complete Plan	32	0	Enhanced	34-55	0	\$8/\$22/\$22-\$54/\$53/ 33%/33%	Generics

Note: PDP (prescription drug plan). Benefits labeled actuarially equivalent to Part D's standard benefit include actuarially equivalent standard and basic alternative benefits. Plans that "qualify for auto-enrollment" have premiums that are at or below threshold values calculated by CMS for each PDP region. Plans with "gap coverage" include some benefits in the range of beneficiary drug spending above the standard benefit's initial coverage limit and below its out-of-pocket threshold. Part D's defined standard benefit requires the enrollee to pay 100 percent coinsurance in this coverage gap.

Source: MedPAC based on CMS plan benefit package and landscape data.

**TABLE
7-4**

PDPs offered in 2006 by organizations with at least one nationwide plan (cont.)

Organization and plan name	Regions in which plan is offered	Plans qualifying for auto-enrollment	Type of benefit	Range of monthly premiums	Deductible	Cost sharing by tier at in-network preferred pharmacies	Gap coverage
Silverscript							
SilverScript	34	27	Actuarially equivalent	\$24-33	\$250	\$7-\$9/25%/25%	None
SilverScript Plus	34	0	Actuarially equivalent	49-63	100	\$7-\$8/\$22-\$25/\$60-\$62/25%	None
Unicare							
Medicare Rx:							
Rewards	34	34	Actuarially equivalent	17-31	250	\$5/\$25/25%/25%	None
Rewards Plus	33	0	Enhanced	26-39	0	\$10/\$30/25%/25%	None
Rewards Premier	33	0	Enhanced	35-52	0	\$10/\$30/\$60/30%/30%	Generics
United							
AARP Medicare Rx	34	33	Actuarially equivalent	23-30	0	\$5/\$28/\$55-\$56/25%	None
United Health Rx	4	4	Actuarially equivalent	21-23	50	\$7/\$23/\$54/25%	None
United Medicare MedAdvance	34	28	Actuarially equivalent	27-32	0	\$10/\$23/\$52-\$55/25%	None
WellCare							
WellCare:							
Signature	34	33	Actuarially equivalent	17-33	0	\$0/\$0/\$62-\$73/\$62-\$73/30%-33%	None
Complete	34	0	Enhanced	33-51	0	\$0/\$0/\$15/\$50/30%	None
Premier	34	0	Enhanced	35-54	0	\$0/\$0/\$30/\$60/30%	None

Note: PDP (prescription drug plan). Benefits labeled actuarially equivalent to Part D's standard benefit include actuarially equivalent standard and basic alternative benefits. Plans that "qualify for auto-enrollment" have premiums that are at or below threshold values calculated by CMS for each PDP region. Plans with "gap coverage" include some benefits in the range of beneficiary drug spending above the standard benefit's initial coverage limit and below its out-of-pocket threshold. Part D's defined standard benefit requires the enrollee to pay 100 percent coinsurance in this coverage gap.

Source: MedPAC based on CMS plan benefit package and landscape data.

Plans that use tiered cost sharing tend to charge fixed-dollar copayments rather than a percentage coinsurance of the prescription's price. Among plans that use a generic/brand name tier structure, median copays for generic drugs are \$5 to \$7, and those for brand name drugs are \$28 to \$30. Plans that distinguish between preferred and nonpreferred brand name drugs have the following median copay values: \$7 to \$5 for generics, \$22 to \$26 for preferred brand name drugs, and \$55 to \$50 for nonpreferred brand name drugs. As we discuss in greater detail later in the chapter, many plans use a separate tier for higher-cost specialty drugs, such as biologics. PDPs

that incorporate a specialty tier into their tier structure tend to charge 25 percent to 30 percent coinsurance. Based on CMS guidance, plan enrollees may not appeal payment of a lower tier's cost-sharing requirement for such specialty drugs.

Organizations with nationwide participation

Ten organizations have at least one plan in all 34 of the PDP regions (Table 7-4). The offerings of these 10 organizations account for nearly 900 of the 1,429 PDPs available across the 34 regions. None of these organizations offer Part D's standard benefit design.

Instead, most use tiered copays or a combination of copays and coinsurance and keep the standard benefit's \$2,250 initial coverage limit. Many of the plans have equivalent actuarial values to the standard benefit, but charge no deductible or a deductible lower than the standard benefit's \$250. While most of these sponsoring organizations chose to offer one or more enhanced plans, fewer than half of those enhanced plans provide coverage in the standard benefit's coverage gap. As discussed in Chapter 9, beneficiaries in many regions have access to at least one MA–PD that includes coverage in the gap. The enhanced plans that do provide such coverage tend to cover generic drugs but not brand name drugs.

Organizations use different combinations of cost-sharing tiers and coverage approaches for their different benefit packages. For example, Aetna Medicare Rx Essentials lists a smaller number of drugs on its formulary than its Medicare Rx Premier product. The Medicare Rx Essentials product includes a \$5 copay for a tier-one drug and \$25 for a tier-two drug, where tiers generally correspond to covered generic and brand name prescriptions. Aetna Medicare Rx Premier's formulary charges \$2 for a tier-one, \$20 for a tier-two, and \$40 for a tier-three drug (covered but nonpreferred drugs).

While they are not national plans, another six organizations are major participants in Part D; they offer 30 or more PDPs across the 34 regions (Table 7-5). A few of these entities offer a larger total number of plans than do some of the 10 organizations with nationwide offerings. Combined, these “near-national” entities contribute more than 300 of the 1,429 PDPs available across the 34 regions. Several of these organizations offer the defined standard benefit. Thirty-one Humana PDP Complete plans provide coverage in the standard benefit's coverage gap and cover generic and brand name drugs.

Characteristics of plans that qualify for auto-enrollees

About 29 percent of all PDPs qualified to receive auto-enrollees in 2006. Since the LIS threshold amounts are calculated among premiums for basic benefits (or the portion of enhanced benefits associated with basic coverage), no plans with enhanced benefits were assigned auto-enrollees. As a result, auto-enrolled members are much more likely to be assigned to a plan that uses Part D's defined standard benefit than not. Plans that qualified for auto-enrollees in 2006 are somewhat less likely to use tiered cost sharing: 76 percent do so versus 91 percent

among all PDPs. This is because more plans that qualified for auto-enrollees use the defined standard benefit with 25 percent coinsurance.

The potentially higher cost-sharing liability of coinsurance might be a cause for concern if those LIS enrollees were paying for most of their plans' cost-sharing requirements. However, since the LIS covers most of the out-of-pocket spending for these enrollees, the more relevant issue is how the formularies of plans that qualify for auto-enrollees compare with those that did not. We discuss this issue in greater detail later in this chapter.

Geographic variation in plan entry and premiums

All regions of the country experienced strong plan entry among stand-alone Part D plans. Every region has at least 27 PDPs offering Part D coverage and the median number of plans per region is 43. Alaska has the fewest, with 27 plans, while the Pennsylvania-West Virginia region has the most, with 52 PDPs (Table 7-6, p. 162). Similarly, Medicare beneficiaries who qualify to receive Part D's LIS also have a broad choice of PDPs available. For example, Arizona and Florida had the fewest PDPs qualifying for auto-enrollees (6), while Virginia, South Carolina, and Texas each had 16 PDPs qualifying. All regions but Alaska have at least one PDP available with a monthly premium of \$20 or less.

Although the average monthly premium in each region varies, the variation is not as large as one might have expected. The simple average (that is, not weighted by enrollment) monthly premium for basic benefits varies by as much as \$10: Mean basic premiums range from \$28 to \$38 (Table 7-6, p. 162). Similarly, unweighted monthly premiums for enhanced benefits range between \$37 and \$48.

Offerings by MA–PDs

In addition to PDPs, which offer Part D drug coverage separately to beneficiaries in the FFS program, private health plans are offering 1,303 MA–PDs around the country. In order to enroll in an MA–PD plan, beneficiaries must elect to have their health care services (e.g., hospital and physician care) provided by the MA–PD. As discussed in Chapter 9, MA–PDs are available to practically all beneficiaries nationwide, and as of mid-April 2006, about 13 percent of the Medicare population was enrolled in MA–PD plans. The vast majority of these are offered at a local level; that is, availability varies depending on the county in which a beneficiary lives.

**TABLE
7-5**
"Near-national" organizations with 30 or more PDPs among the 34 regions

Organization and plan name	Regions in which plan is offered	Plans qualifying for auto-enrollment	Type of benefit	Range of monthly premiums	Deductible	Cost sharing by tier at in-network preferred pharmacies	Gap coverage
American Progressive							
Prescription Pathway:							
Bronze	1	1	Defined standard	\$25	\$250	25%	None
Silver	8	0	Actuarially equivalent	34-41	250	\$5-\$6/\$27-\$28/25%	None
Gold	8	0	Enhanced	46-52	0	\$5-\$6/\$27-\$28/25%	None
Platinum	7	0	Enhanced	64-69	0	\$6/\$24/\$40/25%	None
Marquette							
Prescription Pathway:							
Silver	22	0	Actuarially equivalent	34-43	250	\$4/\$29/25%	None
Gold	22	0	Enhanced	46-54	0	\$4/\$29/25%	None
Platinum	22	0	Enhanced	62-71	0	\$4/\$26/\$42/25%	None
Pennsylvania Life							
Prescription Pathway:							
Bronze	31	25	Defined standard	24-34	250	25%	None
Silver	31	0	Actuarially equivalent	34-43	250	\$5/\$28/25%	None
Gold	31	0	Enhanced	46-54	0	\$5/\$28/25%	None
Humana							
Humana PDP:							
Standard	31	30	Defined standard	2-18	250	25%	None
Enhanced	31	0	Enhanced	5-25	0	\$7/\$30/\$60/25%	None
Complete	31	0	Enhanced	39-73	0	\$7/\$30/\$60/25%	Generics, brands
Sterling							
Sterling Prescription Drug Plan	32	0	Actuarially equivalent	49-61	100	\$10/\$22-\$28/40%-50%/25%	None
United American							
UA Medicare Part D Prescription Drug Coverage	31	2	Actuarially equivalent	30-41	0	\$9/\$30/\$60/33%	None

Note: PDP (prescription drug plan). Benefits labeled actuarially equivalent to Part D's standard benefit include actuarially equivalent standard and basic alternative benefits. Plans that "qualify for auto-enrollment" have premiums that are at or below threshold values calculated by CMS for each PDP region. Plans with "gap coverage" include some benefits in the range of beneficiary drug spending above the standard benefit's initial coverage limit and below its out-of-pocket threshold. Part D's defined standard benefit requires the enrollee to pay 100 percent coinsurance in this coverage gap.

Source: MedPAC based on CMS plan benefit package and landscape data.

**TABLE
7-6**

Geographic distribution of PDPs in 2006

PDP region	States in the region	Number of PDPs			Mean premium for:	
		Total	That qualify for auto-enrollment	With monthly premium ≤\$20	Basic benefits	Enhanced benefits
1	ME, NH	41	14	1	\$35	\$44
2	CT, MA, RI, VT	44	11	4	31	42
3	NY	46	15	6	32	37
4	NJ	44	14	4	32	41
5	DC, DE, MD	47	15	3	33	45
6	PA, WV	52	15	2	34	45
7	VA	41	16	2	34	44
8	NC	38	13	2	37	46
9	SC	45	16	1	35	47
10	GA	42	14	1	34	43
11	FL	43	6	4	34	47
12	AL, TN	41	9	1	35	48
13	MI	40	14	1	34	43
14	OH	43	10	3	33	42
15	IN, KY	42	13	1	36	46
16	WI	45	14	4	31	41
17	IL	42	15	1	32	43
18	MO	41	10	2	34	43
19	AR	40	13	2	35	46
20	MS	38	12	2	36	47
21	LA	39	11	1	38	48
22	TX	47	16	2	33	44
23	OK	42	12	2	36	46
24	KS	40	11	2	34	42
25	IA, MN, MT, ND, NE, SD, WY	41	14	3	32	44
26	NM	43	8	6	29	41
27	CO	43	10	3	32	41
28	AZ	43	6	4	31	40
29	NV	44	7	3	30	40
30	OR, WA	45	15	5	31	41
31	ID, UT	44	14	3	34	44
32	CA	47	10	6	28	38
33	HI	29	8	3	31	37
34	AK	27	8	0	34	41
Total		1,429	409	90	33	43

Note: PDP (prescription drug plan). Mean values are not weighted by plan enrollment. The PDPs described here exclude plans offered in U.S. territories. Benefits labeled basic include Part D's standard benefit design as well as benefits that are actuarially equivalent to standard benefits. Enhanced plans include supplemental coverage. Plans that "qualify for auto-enrollment" have premiums that are at or below threshold values calculated by CMS for each PDP region.

Source: MedPAC based on CMS plan benefit package and landscape data.

However, 48 regional PPOs (4 percent of all MA-PDs) offer a package of Parts A, B, and D services to Medicare beneficiaries who live anywhere within the MA region.

Because of certain provisions in law and regulation, offerings through MA-PDs differ systematically from PDPs. For example, the law allows MA-PDs to use 75 percent of the difference between an MA plan's benchmark

**TABLE
7-7**

Characteristics of MA-PD drug benefits in 2006

	All types of benefits	Basic benefits		
		Defined standard	Actuarially equivalent	Enhanced benefits
Total number of plans	1,303	96	376	831
Distribution of plans (in percent):				
Plan type	100%	7%	29%	64%
Type of organization				
Local HMO	66	4	18	43
Local PPO	21	1	8	12
PFFS	10	1	2	7
Regional PPO	4	1	1	2
Type of deductible				
Zero	80	N/A	18	62
Reduced	3	N/A	2	1
\$250	17	7	8	1
Cost-sharing structure before the initial coverage limit				
Uses 25% coinsurance	7	7	0	0
Uses tiered cost sharing	93	N/A	29	64
Copays	34	N/A	16	17
Coinsurance	0	N/A	0	0
Both	59	N/A	13	46
Coverage in the gap				
Generics	23	N/A	0	23
Generics and brands	5	N/A	0	5
None	72	N/A	29	36
Offers mail-order pharmacy services	96	7	27	62

Note: MA-PD (Medicare Advantage prescription drug [plan]), PPO (preferred provider organization), PFFS (private fee-for-service), N/A (not applicable). Local plans (HMOs, PPOs, and PFFS plans) select individual counties in which they operate. Regional PPOs must provide Medicare services throughout a CMS-defined region that encompasses one or more states. Percentages are not weighted by plan enrollment. The MA-PDs described here exclude demonstration programs, 1876 cost plans, and plans offered in U.S. territories. Benefits labeled actuarially equivalent to Part D's standard benefit include what CMS calls "actuarially equivalent standard" and "basic alternative" benefits. Plans with "coverage in the gap" include some benefits in the range of beneficiary drug spending above the standard benefit's initial coverage limit and below its out-of-pocket threshold. Part D's defined standard benefit requires the enrollee to pay 100 percent coinsurance in this coverage gap.

Source: MedPAC based on CMS plan benefit package and landscape data.

payment and its bid for providing Parts A and B services (called rebate dollars) to supplement its package of benefits or lower its premium. MA-PDs appear to have used this provision to lower the portion of their premium attributable to Part D or to supplement Part D's benefit. A much larger proportion of MA-PD plans provide enhanced benefits than do PDPs—64 percent of MA-PDs (Table 7-7) compared with 43 percent of PDPs (Table 7-2, p. 155). In addition, more than 500 MA-PDs (nearly 40 percent) charge no additional premium for Part D coverage

beyond what they charge for Parts A and B services (right-hand side of Figure 7-1, p. 156).

MA-PDs are less likely to charge a deductible than PDPs. For 2006, 80 percent of all MA-PDs have no deductible (Table 7-7), compared with 58 percent of PDPs (Table 7-2, p. 155). They are similar to PDPs in that they are just as likely to use a tiered cost-sharing structure, but MA-PDs are somewhat more likely to use four tiers than their stand-alone counterparts. They are also more likely to provide coverage within Part D's coverage gap: 23 percent of

**TABLE
7-8**
Premiums and cost-sharing requirements among MA-PD drug benefits in 2006

	Basic benefits		
	Defined standard*	Actuarially equivalent	Enhanced benefits
Monthly drug premium			
Minimum	\$0	\$0	\$0
Maximum	77	78	120
Median	23	24	0
Mean	25	21	16
Monthly total plan premium (including medical and drug premiums)			
Minimum	0	0	0
Maximum	202	179	260
Median	63	63	29
Mean	68	61	41
Deductible			
Minimum	250	0	0
Maximum	250	250	250
Median	250	0	0
Median cost sharing for:			
Plans with generic/brand tier structure			
Generic copay	N/A	5	7
Brand copay	N/A	30	30
Specialty tier coinsurance (where applicable)	N/A	25%	30%
Plans with generic/preferred brand/nonpreferred brand tier structure			
Generic copay	N/A	\$5	\$5
Preferred brand copay	N/A	29	28
Nonpreferred brand copay	N/A	55	50
Specialty tier coinsurance (where applicable)	N/A	25%	25%

Note: MA-PD (Medicare Advantage prescription drug [plan]), N/A (not applicable). Values are not weighted for plan enrollment. The MA-PDs described here exclude demonstration programs, 1876 cost plans, and plans offered in U.S. territories. Cost sharing is for median cost sharing among plans that use tiered cost sharing before the initial coverage limit. Benefits labeled actuarially equivalent to Part D's standard benefit include actuarially equivalent standard and basic alternative benefits.

*Part D's defined standard benefit has a \$250 deductible (in 2006) and 25% coinsurance below the initial coverage limit.

Source: MedPAC based on CMS plan benefit package and landscape data.

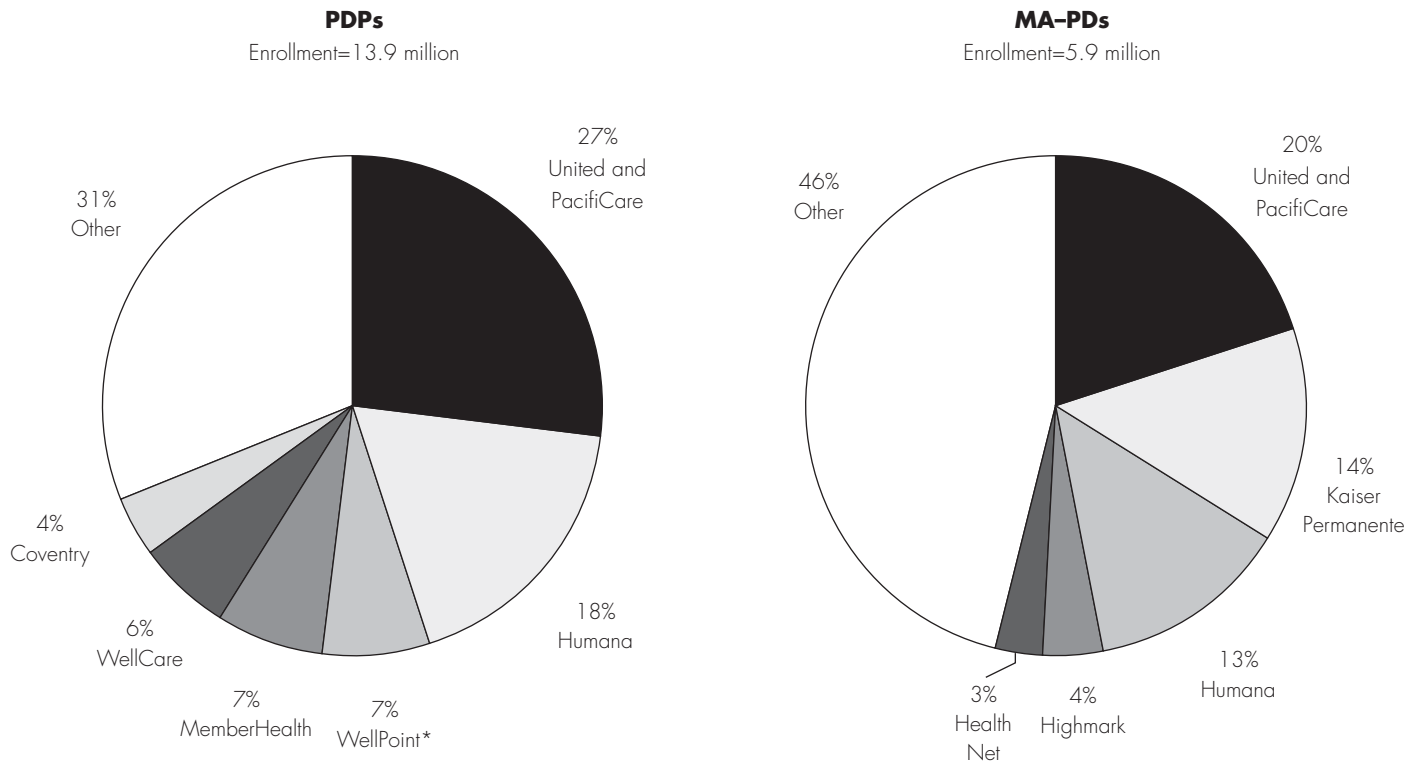
MA-PDs offer coverage of generic drugs, and another 5 percent of MA-PDs provide coverage of both generic and brand name drugs. By comparison, 13 percent of PDPs offered generic coverage in the gap and 2 percent covered generic and brand name drugs (Table 7-2, p. 155). The higher availability of drug coverage in the gap may prove attractive to beneficiaries and increase the proportion of beneficiaries enrolled in MA plans.

Many MA organizations have applied some of their rebate dollars toward the premiums of enhanced plans (Table

7-8). The median monthly premium for an enhanced MA-PD is essentially zero. However, as discussed in Chapter 9, not every beneficiary has access to a zero-premium enhanced plan; availability depends on the county in which they live.¹² Also, in order to obtain MA-PD coverage, enrollees must pay the Part B premium and any other premium amount charged by their plan for regular medical services. The median combined MA-PD premiums for medical services and prescription drugs range from \$63 to \$29 per month (Table 7-8).

**FIGURE
7-2**

Distribution of Part D enrollees by organization



Note: PDP (prescription drug plan), MA-PD (Medicare Advantage prescription drug [plan]). Data are as of April 27, 2006.
*Includes Blue Cross Blue Shield New England Alliance, Blue Medicare Rx, and Unicare.

Source: MedPAC based on CMS enrollment data.

Unlike for PDPs, there is little difference between the mean and median premium values for defined standard benefits and plans that are actuarially equivalent (Table 7-8). As is the case with PDPs, MA-PDs frequently use fixed-dollar copayments. However, it is also common to combine copays with coinsurance for certain tiers such as those for specialty drugs. Median cost-sharing amounts are similar to those used by PDPs. MA-PDs that use a generic/brand name tier structure typically charge \$5 to \$7 to fill a generic prescription and \$30 for brand name prescriptions. Plans that distinguish between preferred and nonpreferred brand name drugs have the following median copays: \$5 for generics, \$29 to \$28 for preferred brand name drugs, and \$55 to \$50 for nonpreferred brand name drugs. Plans often charge 25 percent coinsurance for specialty and higher priced drugs.

Enrollment by organization

As of late April 2006, Part D enrollment was concentrated among plans offered by a small number of parent organizations (Figure 7-2). Several of those organizations offer both stand-alone PDPs and MA-PDs. For example, United and PacifiCare (which merged recently) had 27 percent of the 13.9 million enrollees in PDPs and 20 percent of the 5.9 million enrollees in MA-PDs. Similarly, Humana had a considerable portion of both markets: 18 percent of PDP enrollees and 13 percent of MA-PD enrollees. As information on enrollment in specific Part D plans becomes available, the Commission will monitor those data to see how enrollment patterns affect plans' decision to enter or exit the market. Also, for 2007 and beyond, CMS will begin to weight Part D plans bids by enrollment when the agency calculates the nationwide

Guidance for plan formularies in 2006

The Medicare Prescription Drug, Improvement, and Modernization Act of 2003 (MMA) designated the U.S. Pharmacopeia (USP)—a nongovernmental, nonprofit organization—to develop a model therapeutic classification system that plans could use to design their formularies. Plans were not required to use this model, but the USP Model Guidelines were used as the classification structure for 74 percent of the Part D formularies in place at the start of the Medicare drug benefit (USP 2006).¹³ The 2006 USP guidelines provided the following therapeutic classification system:

- 41 broad therapeutic categories (e.g., cardiovascular agents),
- 137 pharmacologic classes (e.g., dyslipidemics), and
- 118 formulary key drug types (e.g., statins).

CMS's guidance on the formulary drug lists includes the following requirements:

- Plan formularies must generally include at least two drugs in each approved therapeutic category and class, regardless of the drug classification system used.¹⁴
- In specified categories and classes, formularies must include at least one drug from USP's category of key drug types.¹⁵
- Plans must list "all or substantially all" of the drugs listed in six drug categories: antidepressant, antipsychotic, anticonvulsant, anticancer, immunosuppressant, and HIV/AIDS drugs.¹⁶
- Plans may only have one specialty tier that may be designed for high-cost and unique drugs and biologicals, such as injectable drugs. Beneficiaries may not appeal the cost-sharing amount—generally limited to 25 percent—for drugs placed on a specialty tier.¹⁷

- Formularies should list drugs on a nonpreferred tier only when therapeutically similar drugs are available on a lower tier.

The text box on page 168 describes some of the challenges CMS faced, and will continue to face, when determining whether plans fulfill these requirements.

The MMA excludes certain categories of drugs from Part D coverage. These are the same categories of drugs that states have had the option to exclude from their Medicaid programs. Enhanced plans can cover these drugs, but beneficiaries must pay for this added coverage themselves, typically through premiums.¹⁸

All beneficiaries have the right to request Part D coverage of a nonformulary drug and to appeal denials. To obtain coverage for a nonformulary drug, the prescribing physician must provide a statement (and supporting documentation upon request) that the nonformulary drug is medically necessary because all drugs on the formulary would not be as effective for the enrollee or would have adverse effects. Plans may manage enrollees' drug utilization by requiring prior authorization or other action to obtain coverage for specific drugs.

During the early months of the drug benefit, CMS released several guidance documents on plan transition policies for new enrollees who were on medications which are nonformulary or require other action, such as prior authorization. CMS extended the general minimum transition period during which time plans had to temporarily cover such prescriptions and ensure that pharmacists did not encounter plan delays or denials for them. The extension increased the minimum transition period from 30 days to 90 days. ■

average plan bid, federal subsidies, and beneficiary premiums. Thus, patterns of enrollment in 2006 could lead to significant changes in beneficiary premiums for 2007.

Part D formularies

The Medicare drug benefit allows plans to develop and use formularies to manage the cost and use of prescription drugs. Indeed, all PDPs and MA-PDs participating in the new Medicare drug benefit use formularies to designate the coverage and tiered cost-sharing status of outpatient drugs. To the extent that formularies assist plans in encouraging safe, effective, and cost-conscious drug prescribing and utilization, they are a key to the success of the overall Medicare drug benefit. Attention to formulary implementation is important to ensure that beneficiaries have access to a range of needed medications. In our June 2004 report to the Congress, the Commission discussed formulary structure and design issues (MedPAC 2004).

In this section, we review statutory and regulatory standards for Part D formularies and present some descriptive analyses of the formularies that PDPs and MA-PDs submitted to CMS for the launch of the Medicare drug benefit. This early study provides some basic analysis and a beginning point for tracking changes in plan formularies over time. In the future, with enrollment and drug claims data, we will be able to examine how plan formularies affect enrollee plan choice (by beneficiary and plan characteristics), beneficiary access to medications, beneficiary out-of-pocket spending, Medicare spending, and beneficiary health outcomes.

At this point, we are able to examine the formularies and benefit designs that Part D plans submitted to CMS for use at the start of the drug benefit. For our analysis, researchers at the National Opinion Research Center (NORC) and Georgetown University examined all the formularies submitted to CMS beginning January 1, 2006. Findings from this analysis indicate that most Part D formularies distinguish between preferred and nonpreferred brand name drugs and include specialty tiers. Plan formularies typically list about 1,000 drugs (where the method for counting drugs is defined in the following section), but the number of drugs covered varies somewhat based on several plan characteristics, such as a plan's tier structure. Also, plans typically apply some utilization management tools to drugs in certain therapeutic categories.

Formulary designs

All MA-PDs and PDPs submitted their plan formularies to CMS for review and approval. CMS examined several factors to verify that the formularies met minimum standards. These standards were established to enhance beneficiary access to medications that may present unique therapeutic advantages in safety and efficacy, and to prevent plans from discouraging enrollment of beneficiaries with certain diseases—above and beyond the explicit prohibition of this practice in the MMA. The text box on page 166 describes these standards in more detail.

The text box on page 168 describes some of the challenges CMS faced, and will continue to face, when determining whether plans fulfill these requirements. In particular, the definition of what constitutes appreciable differences in drug products and entities can affect how formulary rules and standards are applied. Such definitions are not formally a part of current U.S. Pharmacopeia (USP) or CMS guidelines. For example, should oral and topical forms of a drug be counted separately? Should all available dosages of a drug be considered on a plan's formulary if at least one is listed? Decisions about whether or not different forms, strengths, and extended-release versions of a given drug are counted as one drug may affect the number and variety of products plans list. In general, CMS appears to have decided that a plan can not satisfy the requirement of two drugs per class by simply using two different forms or strengths of a given drug. The different versions of a drug can be treated differently, however, in terms of coverage and cost sharing.

For purposes of our analysis, we used a proprietary classification system developed by Medi-Span to translate the drugs that plans reported on their formularies into standardized drug entities. Different strengths and release mechanisms (e.g., regular vs. sustained release) are grouped into a single drug entity. Most forms of an entity (e.g., capsule vs. tablet) are typically counted as one drug, but some forms are considered separately if they are used for a notably different purpose. We differentiate between brand name and generic drugs. However, if a generic drug entity is available from several different manufacturers, all are counted as the same drug. Other researchers may categorize drug entities differently and thus obtain slightly different results. In our analysis, plan formularies are not weighted by beneficiary enrollment. We examined all drugs that plans listed and consequently did not select drugs by their frequency of use in the Medicare population.

Defining a drug

How drugs are defined can have a significant impact on formulary rules and standards. CMS generally requires that plan formularies include at least two drugs in each of its therapeutic categories and classes (unless only one drug is available). Yet, two products may be considered the same drug by one measure, while they are treated as separate entities by another.

The Food and Drug Administration's national drug codes (NDCs) are extremely exact and give a separate code for every possible combination of chemical ingredients, strength (e.g., number of milligrams), form, package size (how many doses are typically included in one container used by the pharmacy), and the firm that manufactures or distributes the drug. The U.S. Pharmacopeia (USP) coding, on the other hand, is more general and lists only chemical ingredients. Considerations such as brand name versus generic, strength, and (in most cases) form are absent from the USP scheme.

What drugs are counted

The absence of a clear-cut definition of which drug products should be considered different entities makes it considerably more difficult to interpret the statutory requirement that two drugs be covered in a given category or class. Some of the considerations that complicate this determination include the following:

- Should oral and topical forms be counted separately, especially if they are used to treat different conditions? It appears that the answer could be different for different drugs, as some appear in separate places in the USP classification and others do not.
- Should all versions of a drug (i.e., all NDCs) be covered if at least one is covered? In its June guidance to plans, CMS stated that it will not require all dosages to be included, or all manufacturers' versions of a multisource product to be included. In addition, CMS's guidance on displaying plan formularies makes it clear that plans may place different strengths of a drug on different cost-sharing tiers.
- How should extended-release versions of a drug be treated? It appears that CMS will neither require plans to cover extended-release versions of drugs, nor count them as an additional drug toward the coverage requirements.
- Should two chemically similar, but not identical, drugs count as two drugs? In the case of two chemically similar antidepressants with rather different treatment indications, CMS has allowed an exception to the requirement that plan formularies include all antidepressants and allowed plans to exclude one of these two drugs. ■

Source: NORC 2005.

Tier structures

We examined plan formularies to determine if there were differences in their designs associated with the following plan characteristics:

- national or non-national,
- eligible for auto-enrolled beneficiaries,
- basic or enhanced plans, and
- tier structure.

Plans submitted formularies to CMS with a variety of tier structures, ranging from one to eight tiers. However, not

all tiers reflect cost-sharing differences for enrollees; some plan formularies include several tiers that, in fact, have the same cost sharing. For our formulary analysis, therefore, we delineate tiers only when they mark differences in cost sharing. Most plans' formularies fall into five tier structures, grouped into the following three categories:

- 25 percent cost sharing for all listed drugs;
- generic and brand name tiers (some with and some without an additional specialty tier); and
- generic, preferred brand name, nonpreferred brand name tiers (some with and some without an additional specialty tier).

**TABLE
7-9**

Most Part D plans distinguish between preferred and nonpreferred brands and include specialty tiers

Distribution of plans by tier structures

Plan characteristics	Generic/brand			Generic/preferred brand/ nonpreferred brand		Other
	25% coinsurance, all tiers	Without specialty tier	With specialty tier	Without specialty tier	With specialty tier	
All Part D plans	8%	11%	15%	19%	45%	2%
All PDPs	9	8	22	23	38	1
National, near-national	5	8	21	25	40	0
Non-national	31	3	28	12	21	4
Auto-enrollment	23	2	33	9	33	1
No auto-enrollment	3	10	18	29	40	0
Basic	16	5	25	18	36	1
Enhanced	0	12	18	30	40	0
All MA-PDPs	7	16	6	15	53	3
Local HMO	6	15	5	14	58	2
Local PPO	6	21	8	24	37	5
Regional PPO	29	8	15	10	38	0
PFFS	10	11	11	0	67	0
Basic	18	21	10	16	32	2
Enhanced	1	13	5	14	65	3

Note: PDP (prescription drug plan), MA-PD (Medicare Advantage prescription drug [plan]), PPO (preferred provider organization), PFFS (private fee-for-service). The PDPs described here exclude plans offered in U.S. territories. The MA-PDs described here exclude demonstration programs, 1876 cost plans, and plans offered in U.S. territories. Auto-enrollment refers to PDPs that were eligible for automatically enrolled beneficiaries based on low-income status. Cost-sharing structures are for before the initial coverage limit of Part D. A specialty tier generally includes expensive products and unique drugs and biologicals, such as biotechnology drugs, for which enrollees may not appeal for lower cost-sharing amounts. Numbers may not sum to 100 percent due to rounding.

Source: National Opinion Research Center/Georgetown University analysis for MedPAC of formularies submitted to CMS for January 1, 2006.

Shown in Table 7-9, our analysis found that 61 percent of PDPs and 68 percent of MA-PDs use the generic, preferred, and nonpreferred brand name structure; 30 percent of Part D plans distinguish only between brand name and generic drugs; and fewer than 10 percent have 25 percent coinsurance for all covered drugs. Enhanced plans almost never use this latter structure. PDPs with 25 percent coinsurance were more likely to be non-national, basic, and qualify for auto-enrollment (vs. no auto-enrollees).

As described in the text box on page 166, plans may have a specialty tier. For 2006, CMS did not establish specific criteria for placing drugs on a specialty tier but indicated

that this tier could be used for expensive products and unique drugs and biologicals, such as biotechnology drugs. (For 2007, CMS defined the specialty tier more clearly and has stated that only Part D drugs with plan negotiated prices that exceed \$500 per month may be placed on a specialty tier.) Beneficiaries may not appeal the cost-sharing amount for drugs listed on a specialty tier as they can for drugs on nonpreferred brand name tiers. Cost sharing for a specialty tier is generally limited to 25 percent below the initial coverage limit. Our analysis shows that about 60 percent of the PDPs and MA-PDs include a specialty tier in their formularies.¹⁹ Among these plans, the median PDP lists 46 drugs on a specialty tier and the median MA-PD lists 90.

Plans that use tiered formularies can reduce their financial liability for expensive drugs by placing them on a specialty tier with higher beneficiary cost sharing than other tiers. If beneficiaries reach their annual out-of-pocket spending limits, however, plans must cover these drugs—along with all other medically necessary drugs—at significantly reduced cost-sharing levels.

Formulary sizes

The number of drugs that plans list on their formulary can be another starting place for analyzing Part D formularies. Note, however, that the number of drugs on a plan's formulary does not necessarily represent beneficiary access to needed medications. Plans' processes for nonformulary exceptions, prior authorization, and step therapy requirements can have a strong influence on access. For example, unlisted drugs may be covered through the nonformulary exceptions process, which in some plans may be relatively easy for enrollees and physicians, while for other plans it may be more burdensome. Alternatively, on-formulary drugs may not be covered in cases where a plan does not approve a prior authorization request. Also, a formulary's size can be deceptively large if it includes drugs that are no longer used in common practice.

As can be expected, we found that Part D formulary sizes vary somewhat. The median PDP lists fewer drugs than the median MA-PDs, but broadly speaking, they each typically list about a 1,000 drugs on their formularies, with brand name drugs making up a little more than half (Figure 7-3).²⁰ Among PDPs, the total number of drugs listed ranges from 618 drugs to 1,743, with a median of 957 drugs. Among MA-PDs, the total number of drugs listed ranges from 509 to 2,130, with a median of 1,096. Formularies that are very large approach open formularies, in which all or mostly all drugs are covered. The median plan appears to have many therapeutic categories that exclude some drugs.

When analyzing formulary size by plan type, we see some patterns. At the median, regional PPO and private FFS MA-PDs have the largest formularies, but these only represent 6 percent of the total number of Part D plans. Among PDPs, the non-national plans have the largest formularies. Plans that are eligible for auto-enrollment typically list almost the same number of total drugs and total brand name drugs as plans without auto-enrollment. It is somewhat reassuring that PDPs eligible for auto-enrollees (through lower bids to CMS) have similar formulary sizes—and in particular include similar numbers

of brand name drugs—as other plans. Major differences could have signaled concern of inequitable access to drugs between auto-enrollees and other beneficiaries. While formulary sizes appear similar, further analysis of drug claims and utilization management tools by therapeutic category will be important for measuring beneficiary access to needed medications because formulary size alone does not directly measure access.

For both MA-PDs and PDPs, enhanced plans' formularies are also larger than basic plans' formularies, but this difference is small (particularly for PDPs). Enhanced plans appear to have focused more of their added benefits on other areas, such as coverage in the gap. Our previous analysis of plan benefit designs shows that 36 percent of enhanced PDPs and 43 percent of enhanced MA-PDs offer coverage in the gap (most offering coverage only for generic drugs).

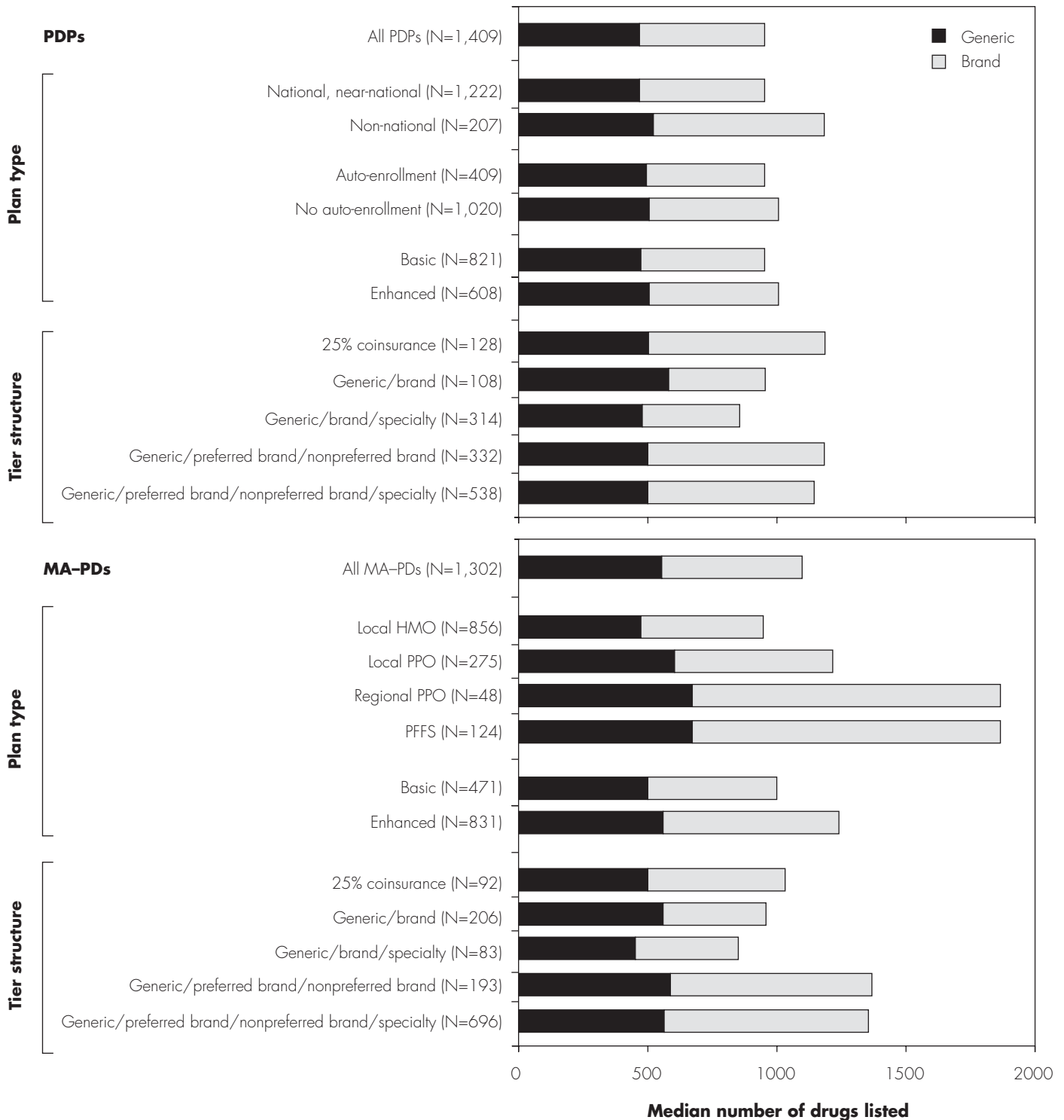
We see more variation in formulary size when we compare by tier structure. As shown in Figure 7-3, for both PDPs and MA-PDs, formularies that have preferred and nonpreferred brand name tiers list more brand name drugs overall than formularies that have a single brand name tier (whether or not they have a specialty tier). In other words, adding a nonpreferred brand name tier is associated with including more drugs on a plan formulary and specifically, more brand name drugs.²¹ This finding is expected because plans generally take on less financial risk for drugs they place on nonpreferred and higher cost-sharing tiers.

We found that plans with specialty tiers do not necessarily list more brand name drugs. In fact, for PDPs, adding a specialty tier to a given tier structure is associated with including slightly fewer brand name listings at the median. However, among MA-PDs, plans that list the most brand name drugs are often those with a nonpreferred brand name tier plus a specialty tier. In some cases, some of the drugs plans place on specialty tiers are drugs that plans are required to list (e.g., some expensive oral anticancer drugs), but in other cases, plans may have listed drugs on the specialty tier that they may not have otherwise listed at all.²²

In addition to regulatory coverage rules for certain therapeutic categories, the number of drugs listed in a therapeutic class also reflects the size of the class of drugs available in the marketplace. In classes with fewer drugs available, plans typically cover a larger share of them. Conversely, when there are more drugs available in a given class, plans are able to negotiate better prices by listing only selected drugs on their formulary. In addition,

FIGURE 7-3

Part D plans typically list about 1,000 drugs



Note: PDP (prescription drug plan), MA-PD (Medicare Advantage prescription drug [plan]), HMO (health maintenance organization), PPO (preferred provider organization), PFFS (private fee-for-service). Occasionally, plans list some generic drugs on brand tiers and vice versa. Plans with "other" tier structures are not displayed. The PDPs described here exclude plans offered in U.S. territories. The MA-PDs described here exclude demonstration programs, 1876 cost plans, and plans offered in U.S. territories. Cost-sharing structures are for before the initial coverage limit of Part D. A specialty tier generally includes expensive products and unique drugs and biologicals for which enrollees may not appeal for lower cost sharing.

Source: National Opinion Research Center/Georgetown University analysis for MedPAC of formularies submitted to CMS for January 1, 2006.

**TABLE
7-10**

The share of drugs listed in a therapeutic category depends on category size and regulation

Median percent of drugs listed by selected therapeutic categories

	Cholinesterase inhibitors	Dyslipidemics	Opioid analgesics	Atypical antipsychotics*
Total drugs in category	4	20	61	6
Plan type:				
PDPs	75%	65%	39%	100%
MA-PDs	75	75	48	100

Note: PDP (prescription drug plan), MA-PD (Medicare Advantage prescription drug [plan]). Descriptions of therapeutic categories are given in parentheses: cholinesterase inhibitors (antidementia agents); dyslipidemics (anticholesterol agents); opioid analgesics (narcotic pain relievers); atypical antipsychotics (nonphenothiazines). Occasionally, plans list some generic drugs on brand tiers and vice versa. The PDPs described here exclude plans offered in U.S. territories. The MA-PDs described here exclude demonstration programs, 1876 cost plans, and plans offered in U.S. territories.
*Under CMS regulation, plans are required to list all drugs in the atypical antipsychotic category.

Source: National Opinion Research Center/Georgetown University analysis for MedPAC of formularies submitted to CMS for January 1, 2006.

there are often more overlapping products in some of these larger classes (e.g., antibiotics or respiratory tract agents), meaning that plans may not see a need to cover all alternatives, even if negotiation is not a factor.

Table 7-10 shows that the share of drugs that plans list can decrease as class size grows. For example, in a therapeutic class with only a small number of drugs, such as cholinesterase inhibitors (within the class of antidementia agents), plans typically list a higher share of available drugs in the market. But in classes where there are many drugs available in the market, such as opioid analgesics, plans typically list a much smaller share on their formularies.

Note, however, that this table does not specify tier placement for plans' listed drugs. For example, further analysis (not shown on this table) finds that among plans that have nonpreferred tiers, the typical PDP plan lists 38 percent of the available brands for dyslipidemics (anticholesterol agents, including statins among others) on the preferred brand name tier and another 50 percent on the nonpreferred brand name tier.

In the six classes in which CMS requires that plans cover all or substantially all drugs (listed in the text box on page 166), plans predictably list a larger share of drugs. For example, in the class of atypical antipsychotics (listed in Table 7-10), both MA-PDs and PDPs typically list all of the available drugs. In some of these six classes, plans do not list all drugs because of allowed exceptions.

As mentioned earlier, formulary size gives some insight into plan differences, but it does not directly measure access to medications. Some drugs listed on a formulary may require further plan approval and alternatively, unlisted drugs can be covered through a nonformulary exceptions process. We will not be able to compare actual differences in utilization and access until we have drug claims data. With claims information, we can begin to assess coverage rates of drugs between plans, particularly if we also know rates of drug claim denials.

Utilization tools

Most Part D plans apply drug utilization management tools to selected drugs. These tools include prior authorization (plans require pre-approval before coverage), step therapy (enrollees must try specified drugs before moving to other drugs), and quantity limits (plans limit the number of doses of a particular drug covered in a given time period). Plans use these tools for drugs that are expensive, potentially risky, subject to abuse, misuse, experimental use, or to encourage use of lower-cost therapies. Some tools are more common than others. For example, all PDPs and almost all MA-PDs (98 percent) use prior authorization for at least one drug on their formularies. The median plan applies prior authorization to 9 percent of the drugs on its formulary (Table 7-11). Step therapy is less commonly used among Part D plans and those that use it do so for a smaller proportion of drugs.²³ Again, use of these tools varies by drug class.

As found in current health plan practices, our analysis shows that Part D plans typically require prior authorization in therapeutic categories with high-cost drugs and drugs with elevated safety risks. For example, PDPs and MA-PDs that use prior authorization typically require this tool for most of the drugs in the immune suppressant category for expensive rheumatoid arthritis drugs. In addition, plans are likely applying prior authorization restrictions in this category (and several other categories) to assist in determining whether the drugs should be covered under Part B.²⁴

Plans also use prior authorization and step therapy for selected drugs in classes where lower cost or over-the-counter drugs are available. For example, in the class of proton pump inhibitors (PPIs) (medications that reduce stomach acid), PDPs typically apply prior authorization to half of their listed PPIs, and if they use step therapy at all, they apply it to all of them. Similarly, MA-PDs also use prior authorization and step therapy at high rates in this therapeutic category. For atypical antipsychotic drugs—a category with both high- and low-cost drugs—PDPs and MA-PDs also appear similar in their application of prior authorization and step therapy. (Under CMS instructions, plans can only apply utilization tools in this category to new-start enrollees—those not already taking a drug in the category.) Plans use step therapy considerably less often than prior authorization. In some therapeutic categories, we found differences between MA-PDs and PDPs in step therapy rates, but differences do not appear systematic.

In general, one might have expected MA-PDs to apply more utilization management tools to their formularies than PDPs because MA-PDs may serve a population more accustomed to such tools for other health services. However, PDPs and MA-PDs often use the same kind of organizations—pharmacy benefit managers (PBMs)—to administer their drug benefits. Thus, similarities between the two are somewhat predictable. In fact, in some cases, PDPs and MA-PDs used the same PBM and submitted formularies that were identical. Nevertheless, PDPs are a new kind of product for a new benefit and we expect their formularies to evolve over time. MA-PDs have more experience taking on risk for a drug benefit, but formulary guidelines and standards for Part D are relatively new.

Formulary changes

Throughout 2006, plans may remove a drug from their formularies, move a drug to a higher cost-sharing tier, or impose new restrictions at any point during the year, as long as they notify affected enrollees, pharmacists, and

**TABLE
7-11**

Part D plans concentrate prior authorization in selected categories

Therapeutic category	Median percent of listed drugs subject to prior authorization, among plans that use it	
	PDP	MA-PD
All drugs	9%	9%
Atypical antipsychotics*	33	33
Dyslipidemics	13	17
Immune suppressants*	83	71
Metabolic bone disease agents	17	17
Molecular target inhibitors*	75	75
Opioid analgesics	12	9
Oral hypoglycemics	17	11
Proton pump inhibitors	50	75
Renin-angiotensins	2	4
Reuptake inhibitors*	5	5

Note: PDP (prescription drug plan), MA-PD (Medicare Advantage prescription drug [plan]). Descriptions of selected therapeutic categories are given in parentheses: atypical antipsychotics (antipsychotics, nonphenothiazines); dyslipidemics (anticholesterol agents); immune suppressants (rheumatoid arthritis agents); opioid analgesics (narcotic pain relievers); oral hypoglycemics (blood sugar level agents); proton pump inhibitors (stomach acid reducers); renin-angiotensins (selected hypertension drugs); reuptake inhibitors (selected antidepressants). The PDPs described here exclude plans offered in U.S. territories. The MA-PDs described here exclude demonstration programs, 1876 cost plans, and plans offered in U.S. territories.

*Plans may only apply prior authorization to new-start enrollees—those not already taking a drug in these categories.

Source: National Opinion Research Center/Georgetown University analysis for MedPAC of formularies submitted to CMS for January 1, 2006.

physicians at least 60 days prior to the change. However, starting in 2007, enrollees who are on medications must have continued coverage for the remainder of the year for their medications and, thus, are exempt from formulary changes during the year. (Some exceptions apply, such as removing formulary drugs that have been withdrawn from the market by either the Food and Drug Administration or a product manufacturer.)

Looking ahead

In 2007, CMS, health plans, pharmacists, and beneficiaries will have had a year of experience with Part D. In addition to working out operational details for this new benefit, CMS will adjust plan subsidies for 2007 based on enrollment-weighted figures from 2006. This may result

in significant changes in premiums for the coming year. For example, if 2007 plan bids are similar to 2006 bids and enrollees cluster in lower-premium plans, the federal subsidy based on the enrollment-weighted average bid will be proportionately lower and beneficiaries' premiums will rise. Some plans may exit if their enrollment is low, and other plans may choose to enter the market. Additionally, some low-income beneficiaries may need to switch plans if their plan no longer qualifies for the low-income premium subsidy, as determined through the bidding process.

In the coming years, the Commission will continue analyzing aspects of cost, quality, and access under Part D. We would like to examine how benefit design and plan formularies affect:

- enrollee plan choice (by characteristics of beneficiaries and plans),
- beneficiary access to medications,
- beneficiary out-of-pocket spending,
- Medicare spending, and
- beneficiary health outcomes.

These analyses will help policymakers construct performance measures to monitor the implementation of the new Medicare drug benefit, as the Commission has discussed previously (MedPAC 2005c). Additionally, the Commission will examine how Part D is meeting the needs of special populations, such as those residing in long-term care facilities. A high priority for future analysis will also be to examine the impact of plans' formulary changes, utilization management tools (such as prior authorization), and nonformulary exceptions processes on beneficiaries and physicians. ■

Endnotes

- 1 Medicare subsidizes 80 percent of an individual's drug spending above the defined standard benefit's out-of-pocket threshold; enrollees pay 5 percent cost sharing and their plan covers the remaining 15 percent. Individual reinsurance acts as a form of risk adjustment by providing greater federal subsidies for the highest cost enrollees. In addition, Medicare establishes symmetric risk corridors separately for each plan to limit a plan's overall losses or profits. Under risk corridors, Medicare limits a plan's potential losses (or gains) by financing some of the higher-than-expected costs (or recouping excessive profits). These corridors are scheduled to widen, meaning that plans should bear more insurance risk over time.
- 2 CMS reviews plans' benefit designs and formularies with the goal of ensuring that plans do not substantially discourage enrollment by any class of enrollees.
- 3 In 2002, 18 percent of noninstitutionalized Medicare beneficiaries had no drug coverage. Thirty-four percent had coverage through employer-sponsored insurance, 14 percent through Medicaid, 12 percent through Medicare HMOs, 12 percent through medigap policies, and 10 percent through other sources such as the Department of Defense or Department of Veterans Affairs (Kaiser Family Foundation 2005). Although enrollment in the standardized medigap plans that include prescription drug coverage has been less than 6 percent of all standard policies, the percentage with prescription drug coverage through medigap plans may be higher because many individuals held pre-standard medigap policies.
- 4 Part D's late enrollment penalty is 1 percent of the base beneficiary premium for each uncovered month. The enrollee would pay this penalty each month for the rest of her life (or as long as she was enrolled in Part D), and the penalty would reflect each year's new (and presumably higher) base premium. An individual who postpones signing up until fall 2006 with coverage beginning on January 1, 2007, would pay a penalty of about \$2 to \$3 per month throughout 2007.
- 5 Enrollees with standard benefits will pay 100 percent coinsurance for drug spending greater than \$2,250 but less than their catastrophic threshold. However, beneficiaries will be able to obtain their plan's discounted price for prescription drugs for drug spending in this coverage gap. They will need to adhere to their plan's formulary, prior authorization, and formulary exceptions processes to receive credit for their out-of-pocket spending toward the \$3,600 catastrophic limit.
- 6 The term "true out of pocket" refers to a feature of Part D in which fewer federal subsidy dollars are directed toward enrollees who have supplemental coverage. Specifically, only certain types of spending on behalf of the beneficiary count toward the catastrophic threshold: the beneficiary's own out-of-pocket spending, that of a family member or official charity, supplemental drug coverage provided through qualifying state pharmacy assistance programs or Part D's low-income subsidies, and supplemental drug coverage paid for with Medicare Advantage rebate dollars under CMS's demonstration authority.
- 7 The low-income premium subsidy amount is calculated as the greater of the low-income benchmark premium (a weighted average of all PDP and MA-PD premiums for basic benefits in each region) or the lowest PDP premium for basic coverage.
- 8 Duals may select a different plan from the one to which they are auto-enrolled up to once per month.
- 9 Since fewer beneficiaries were enrolled at the start of 2006 than by May 15, OACT's average estimate of Part D and RDS coverage for 2006 is 29 million (Boards of Trustees 2006).
- 10 This number excludes demonstration programs, 1876 cost plans, and other plans not open to all Medicare beneficiaries such as employer-group plans and plans in U.S. territories.
- 11 The term actuarially equivalent refers to the expected value of each plan's benefit, not the expected value of the combination of benefit spending and enrollee premiums.
- 12 The relative magnitude of this difference between payments and bids varies geographically, based in part on how the Medicare+Choice program (the precursor to Medicare Advantage) paid particular counties. (For more on how the Medicare+Choice program categorized counties for payment purposes, see MedPAC 2005a.) Differences between payments and bids lead to different MA-PD premiums.
- 13 Plans that used the USP guidelines were granted safe harbor on the issue of discouraging enrollment of high-cost beneficiaries through their classification system.
- 14 Plans may list one drug in a category or class where only one drug is available.
- 15 CMS states, however, that plans may present a reasonable clinical justification for formularies that do not contain at least one drug for each of the USP formulary key drug types. If a USP formulary key drug type only includes drugs that are primarily covered under Part B, it is not CMS's expectation that these key drug types be represented on formularies.

- 16 Plans may apply utilization tools, such as prior authorization, for patients who start drug therapy in these categories (except for the HIV/AIDS category) during their enrollment in the plan.
- 17 For 2006, CMS did not establish specific criteria for drugs listed on a specialty tier, but indicated that it could be used for expensive products. (For 2007, CMS defined specialty tier more clearly and has stated that only Part D drugs with plan negotiated prices that exceed \$500 per month may be placed on a specialty tier.)
- 18 For 2006, this list includes drugs that treat anorexia, weight loss, weight gain, fertility, cosmetic conditions, hair loss, symptomatic relief of cough and colds, most prescription vitamins and minerals, nonprescription drugs, barbiturates, and benzodiazepines. Most state Medicaid agencies covered benzodiazepines and continued to do so; they received the federal match for these expenditures. Beginning in 2007, Part D will not cover drugs used for the treatment of sexual or erectile dysfunction.
- 19 On the plan formulary data, CMS did not indicate which tiers were specialty tiers. Therefore, there may be some tiers that offer specialty-type drugs but do not claim this appeal exemption.
- 20 To meet the absolute minimum listing requirements for formularies, plans would have to list at least 425 drugs (NORC 2005).
- 21 Occasionally, plans list some brand name drugs on lower (generic) tiers and generic drugs on higher (brand name) tiers.
- 22 For example, among plans with specialty tiers, plans listed 60 percent of the drugs in the molecular target inhibitors class (part of the anticancer drugs) on their specialty tier.
- 23 We found that 25 percent of PDPs and 19 percent of MA-PDs use step therapy for at least one drug. CMS's website reports that higher percentages of plans are using step therapy.
- 24 Medicare Part B generally covers medications that can not be self-administered and that are administered by or under the supervision of a physician in the physician's office. Part B also covers oral anticancer drugs, hemophilia clotting factors, drugs furnished by dialysis facilities, drugs furnished as part of an outpatient procedure, and intravenous immune globulin provided in the home. Influenza, pneumonia, and hepatitis B vaccines are also covered under Part B.

References

2004 Technical review panel on the Medicare Trustees Report. 2004. *Review of the assumptions and methods of the Medicare trustees' financial projections*. http://aspe.hhs.gov/health/medpanel/2004/2004_Technical_Review_Panel_on_the_Medicare_Trustees_Report.pdf.

Boards of Trustees, Federal Hospital Insurance and Federal Supplementary Medical Insurance Trust Funds. 2006. *2006 annual report of the Boards of Trustees of the Federal Hospital Insurance and Federal Supplementary Medical Insurance Trust Funds*. Washington, DC: Boards of Trustees.

Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2006. *Instructions for 2007 contract year to Medicare prescription drug plan sponsors*. Baltimore, MD: CMS.

Congressional Budget Office. 2004. *A detailed description of CBO's cost estimate for the Medicare prescription drug benefit*. Washington, DC: CBO.

Kaiser Family Foundation. 2005. *Medicare chartbook, third edition* (Summer). Washington, DC: Henry J. Kaiser Family Foundation.

Leavitt, M. O., Department of Health and Human Services. 2005. *Report to Congress: Review and report on current standards of practice for pharmacy services provided to patients in nursing facilities*. Washington, DC: HHS.

The Lewin Group. 2004. *CMS review of current standards of practice for long-term care pharmacy services*. Prepared for CMS. December 30.

McClellan, M., Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2006. Testimony before the Subcommittee on Health, Committee on Ways and Means, U.S. House of Representatives. 109th Cong., 2nd sess. May 3.

Medicare Payment Advisory Commission. 2005a. *MedPAC payment basics: Medicare Advantage program payment system*. Washington, DC: MedPAC.

Medicare Payment Advisory Commission. 2005b. *MedPAC payment basics: Part D payment system*. Washington, DC: MedPAC.

Medicare Payment Advisory Commission. 2005c. *Report to the Congress: Issues in a modernized Medicare program*. Washington, DC: MedPAC.

Medicare Payment Advisory Commission. 2004. *Report to the Congress: New approaches in Medicare*. Washington, DC: MedPAC.

National Opinion Research Center. 2005. *Final report: Issues in the design and implementation of drug formularies and therapeutic classes*. Submitted to the Office of the Assistant Secretary for Planning and Evaluation, Department of Health and Human Services. September 28. <http://aspe.hhs.gov/health/reports/05/DrugFormularies/index.htm>.

U.S. Pharmacopeia. 2006. *Model guidelines version 2.0: Preamble*. Rockville, MD: USP.

CHAPTER

8

**How beneficiaries learned
about the drug benefit and
made plan choices**

How beneficiaries learned about the drug benefit and made plan choices

Chapter summary

In this chapter, the Commission describes results from a study of how Medicare beneficiaries learned about the Medicare drug benefit and made choices. The study consisted of a beneficiary survey, focus groups with beneficiaries and their family members, and structured interviews with beneficiary counselors.

Individuals had many factors to consider when deciding whether to enroll in Part D, but many reported similar kinds of decisions. Most beneficiaries who signed up for the drug benefit or considered doing so reported that saving money on current drug costs motivated them. Having another source of drug coverage was the most common reason beneficiaries gave for not signing up. In general, individuals who did not sign up for the benefit were less likely to use drugs on a regular basis than those who did.

Beneficiaries who enrolled or are considering enrolling in a plan spent considerable time studying their options. More than two-thirds of beneficiaries surveyed researched and made decisions about signing

In this chapter

- Studying how beneficiaries made choices
- Choosing to enroll in the drug benefit
- Choosing a plan
- The beneficiary counselor perspective
- Information and decision making

up for Part D by themselves. However, those who had signed up were twice as likely to have had help (e.g., from friends and family) than those who were not considering signing up. Although many beneficiaries discussed their choices with family, friends, and insurance agents, fewer beneficiaries used resources like the Medicare toll-free help line, the Medicare website, or counselors to help them understand their options. Beneficiaries found the large number of choices available to them confusing, but a majority in our survey said they had enough information to make a decision.

Most beneficiaries reported that saving money on drug costs was important to them when they considered signing up for the drug benefit. When choosing a particular plan, they considered drugs on the formulary, monthly premiums, overall savings, access to their local pharmacy, and reputation of the company offering the plan. Beneficiaries participating in our focus groups also said these factors were very important. In addition, they stressed the importance of good customer service.

Counselors reported strong demand for their services. Counselors consistently said that their offices were overwhelmed by the high volume of calls they received, particularly in November and December 2005. Noting that they only tend to see beneficiaries with problems, counselors reported that beneficiaries were confused by the number of plan choices and the variation in benefit structure. Counselors said that their outreach efforts led to increased contacts with disabled beneficiaries and beneficiaries dually eligible for Medicare and Medicaid. However, they were less successful in reaching other individuals eligible for the low-income subsidy. ■

Background

With the introduction of the Medicare drug benefit and the expansion of the Medicare Advantage (MA) program, beneficiaries have had to make many choices about their health care options in 2006. As noted in Chapter 7, beneficiaries in every region of the country who choose to participate in the drug benefit program have many plan choices, including stand-alone prescription drug plans (PDPs) and MA prescription drug plans (MA-PDs). The Commission examined what information beneficiaries used to learn about the drug benefit and their individual choices. Our goal was to understand how beneficiaries made decisions so that Medicare could learn how to best support their decision making in the future.

CMS developed information and counseling resources for Medicare beneficiaries through the National Medicare Education Program (NMEP). The Balanced Budget Act of 1997 (BBA) included funding for NMEP to inform Medicare beneficiaries about the different ways that they could receive their Medicare benefits, including through coordinated care plans. The program was designed to inform beneficiaries about their benefits, their health plan choices, and their rights and protections. It consists of five elements:

- *Medicare & You*, a guide to the Medicare program, including comparative information on health plans available to beneficiaries in local areas. CMS mails a guide annually to each household containing a Medicare beneficiary;
- a toll-free help line, 1-800-Medicare, to answer questions on the program;
- a website, www.medicare.gov, designed to provide information on plan choices and program benefits;
- community-based Medicare-sponsored health fairs and educational events; and
- increased funding for federally subsidized individual counseling offered by state and local agencies through the State Health Insurance Assistance Program (SHIP).

In 2006, beneficiaries need more information and counseling following the addition of the Medicare prescription drug benefit and other plan options established in the Medicare Prescription Drug,

Improvement, and Modernization Act of 2003 (MMA). The law also increased funding for the NMEP programs to inform beneficiaries about these new choices and help them understand their options. CMS budgeted \$340.45 million for beneficiary education activities in fiscal year 2005 compared to about \$150 million in 2003 (Justice 2005). Most funds were allocated to the Medicare call center (\$181.6 million). Community-based outreach programs including SHIP grants, CMS regional office outreach activities, targeted outreach to minority communities, and programs to support grassroots coalitions totaled \$48.8 million. Federal funding specifically for SHIPs rose from \$12.5 million in 2003 to \$21 million in 2004 and \$32 million in 2005 (Wright 2006).

In addition to NMEP programs, CMS devoted resources to media advertising, coalitions of beneficiary groups developed their own outreach activities, and individual plans conducted their own advertising campaigns to let beneficiaries know about program changes.

Studying how beneficiaries made choices

The Commission worked with a team of researchers from the National Opinion Research Center (NORC) and Georgetown University to examine how beneficiaries learned about the Medicare drug benefit, their individual choices, and what factors affected their enrollment decisions. The studies included a beneficiary survey, six focus groups, and structured interviews with beneficiary counselors.

The beneficiary survey

NORC and Georgetown designed the beneficiary survey and International Communications Research (ICR) fielded the survey instrument as part of a larger survey. The survey was conducted by telephone from February 8 to March 2, 2006. Using a random-digit dialing approach, researchers identified and interviewed 1,411 respondents age 65 or older.

NORC and Georgetown developed a series of questions designed to obtain information about beneficiary decision making regarding the new Medicare prescription drug benefit. NORC interviewers extensively tested the

questions through cognitive interviews to ascertain whether or not beneficiaries understood the questions.

ICR asked a set of demographic questions in its larger survey and then added additional questions from a number of separate sponsors. ICR weighted the data to ensure that the survey was nationally representative with respect to key demographic variables. Beneficiaries who did not know about the drug benefit or reported that they had employer-sponsored insurance (ESI), Department of Veterans Affairs (VA), or TRICARE drug coverage that they intended to keep were not asked additional questions.

Focus groups

We conducted six focus groups in 2006: three in Richmond, Virginia, from February 27 to 28 and three in Tucson, Arizona, from March 20 to 21. Each focus group included 9 to 12 participants. In each location, one group consisted of family members who were helping beneficiaries make decisions and two groups of beneficiaries. In Richmond, we held one group with only beneficiaries who were enrolled in both Medicaid and Medicare (dual eligibles). Richmond has a low rate of enrollment in MA and none of the beneficiaries reported being enrolled in an MA plan. In contrast, each Tucson group included a mix of beneficiaries enrolled in MA plans and traditional Medicare.

We recruited groups to include beneficiaries with a mix of genders, incomes, and races. Because the purpose of the groups was to discuss decision making regarding the new drug benefit, we screened out beneficiaries who had ESI, TRICARE, or access to drugs through the VA. For the family member groups, we screened based on the insurance coverage of the beneficiaries they were helping.

Structured interviews

We interviewed counselors in all regions of the country who worked with different types of beneficiaries including seniors, nonelderly with disabilities, low-income beneficiaries, beneficiaries living in rural and urban areas, and beneficiaries from different racial and ethnic groups. We began with the 34 prescription drug plan (PDP) regions and grouped geographically contiguous states to create 15 regions, each of which included one or more PDPs. We did not split PDP regions among our geographic regions. In each of the 15 regions, we selected one state for interviews. In these states, we contacted a representative from the SHIP—either the state coordinator or a counselor—and someone from another

agency that provides counseling about Medicare benefits to seniors and people with disabilities. We used several sources to create a pool of beneficiary contacts. These sources include lists of SHIP coordinators, individuals and organizations affiliated with the Access to Benefits Coalition, the Health Assistance Partnership, and the Medicare Rx group.

From January 18 to April 4, 2006, we completed about 30 interviews. Interviewees included 9 counselors at SHIPs, 7 SHIP coordinators, and 14 counselors at other organizations. Among these organizations were local advocacy organizations that work with seniors and people with disabilities, independent living centers, a state pharmacy assistance program, and one regional office of a national organization. SHIP counselors included those who work directly for the SHIP at local state offices and others who work with Area Agencies on Aging or other organizations that receive SHIP funding. Three interviewees counseled only people with disabilities and two helped only beneficiaries over 65. The remaining counselors served beneficiaries of all ages. Two counselors did outreach with specific ethnic groups in languages other than English.

In each study, we explored the following questions:

- Why did beneficiaries choose to enroll or not enroll in Part D?
- How did they decide on specific plans?
- What information sources did they use and was the information helpful to them?

In the following section, we consider the factors that lead individuals to decide whether to enroll in a Part D plan.

Choosing to enroll in the drug benefit

Beneficiaries have to consider many factors when deciding whether to enroll in Part D, but many report similar kinds of decisions. Most individuals who sign up for the drug benefit or are considering doing so report that saving money on current drug costs motivates them. Having another source of drug coverage is the most common reason beneficiaries give for not signing up. In general, beneficiaries who sign up for the benefit are more likely to use drugs on a regular basis than those who are not considering enrolling.

Beneficiaries must go through a multistep process before they decide to enroll in a drug plan.

- **Knowing about the benefit.** Beneficiaries must first learn about the benefit and then decide whether they should enroll. Many beneficiaries already have drug coverage from former employers, the military, MA plans, and other sources. These individuals must decide whether their existing coverage is better for them than enrolling in a stand-alone Part D plan. This is an important step because beneficiaries who enroll in a Part D plan while having other coverage could discover that they have been involuntarily disenrolled from their retiree health plan or MA plan.
- **Accepting auto-assignment.** Beneficiaries who had Medicaid drug coverage in 2005 received notices auto-assigning them to Part D plans. They have to decide whether to remain in the plan they are randomly assigned to or choose a different plan that better meets their needs. Similarly, beneficiaries enrolled in MA plans have to decide whether to receive drug coverage through their plan or choose a different option.
- **Applying for extra help.** Beneficiaries with limited incomes have to decide whether to apply for extra help from Medicare.
- **Signing up for the benefit.** If beneficiaries do not have another source of drug coverage that is at least as good as the Part D standard benefit, they must decide whether to sign up for the drug benefit and choose a specific plan.

Knowing about the benefit

In both our survey and focus groups, we asked interviewees about their experiences at each step of this process. We found that most beneficiaries knew about the drug benefit. About 88 percent of beneficiaries participating in our survey reported that they were aware of the drug benefit.¹ While we only selected for our focus groups beneficiaries who knew about the benefit, their knowledge of specific aspects of the benefit varied. Some had a basic understanding of the benefit structure, while others knew only that a new benefit was available.

We did not explore survey respondents' knowledge of the details of the benefit, but we did ask focus group participants about the benefit structure. Beneficiaries were generally aware that different plans have different coverage levels for different drugs. Some were aware of the coverage gap but many did not seem to understand

how it worked. Most beneficiaries were aware that there was a penalty connected to not enrolling in a drug plan, but few understood how the penalty worked or why it was established. SHIP counselors also reported that beneficiaries were confused about these issues; some individuals believed that they would be charged a penalty for not enrolling at all (the text box on page 186 provides more detail on the late enrollment penalty).

Many family members who were helping an elderly relative to enroll were not noticeably better informed about the benefit than the Medicare beneficiaries in our focus groups. They reported that they were having trouble finding the time to make sense of the options.

Accepting auto-assignment

Just over a quarter of beneficiaries (26 percent) without alternate credible drug coverage reported that they had received an auto-assignment letter. This group included dual eligibles and beneficiaries enrolled in MA plans in 2005. Of these respondents, more than half (15 percent of beneficiaries) said they planned to stay with the assigned plan. Almost a third of those receiving the letter (8 percent of beneficiaries) chose a different plan. The others had not yet made a decision. None of the beneficiaries in our focus groups who were dually eligible for Medicare and Medicaid chose a different plan from their assigned one. Additionally, all of the beneficiaries in our focus groups who belonged to MA plans before 2006 chose to receive their drug benefit through their health plan.

Applying for extra help

About 10 percent of survey respondents applied for extra help from the low-income subsidy. At the time of the survey, one-third of these individuals (3 percent) were approved. SHIP counselors reported that they saw a relatively small number of beneficiaries who seemed to qualify for the subsidy. If they thought that a beneficiary might be eligible, the counselors helped them with the application.

Signing up for the benefit

Of those beneficiaries who knew about the benefit and did not have employer-sponsored coverage, 30 percent reported that they had signed up for a plan and 16 percent were considering doing so (Figure 8-1, p. 187). About 34 percent of survey respondents said they did not plan to sign up for the benefit. Although beneficiaries with ESI were not asked this question, almost half of those beneficiaries who were not considering the benefit

The late enrollment penalty

In order to encourage broad initial enrollment in the drug benefit, Part D includes a penalty for late enrollment similar to that of Part B. Policymakers intended the penalty to ensure that healthy as well as sick beneficiaries would enroll in plans and create a broader risk pool. However, many Medicare beneficiaries may not be aware of or understand that provision. As in the case of Part B, beneficiaries who later sign up for the benefit are assessed a penalty for each month they waited to enroll. Thus, the penalty increases each month that the beneficiary delays enrollment following their initial enrollment period. Once beneficiaries sign up for Part D, the accumulated penalty is added to their monthly premiums throughout their lifetime. Those with drug coverage equal to or better than the standard Part D benefit, for example those with most employer-sponsored retiree coverage, are not charged the penalty if their coverage ends and they enroll in Part D at their earliest opportunity.

Beneficiaries may find that the initial late enrollment penalty—between \$2 and \$3 per month for those who postpone signing up until 2007—may be low enough to be worth delaying enrollment until they know more about the program. The penalty is tied to the national average premium. It is meant to reflect an actuarial assessment of the spending of late-enrolling beneficiaries, who may sign up when their need for medications increases, relative to the spending of the average enrollee. Previously the Commission suggested that CMS move as quickly as possible to determine whether the penalty amount fairly reflects any higher costs associated with delaying enrollment (MedPAC 2004). We also suggested that CMS inform Medicare beneficiaries of the penalty and how it could affect their premiums if individuals delay enrollment. ■

reported that the primary reason was because they had other sources of drug coverage. As noted above, about 15 percent of respondents chose to remain in plans to which they were auto-assigned.

Most survey respondents (93 percent) who signed up or were considering doing so said that saving money on current drug costs and protecting themselves against future costs were important reasons to sign up for the new benefit. Nearly three-quarters of beneficiaries also said avoiding the late enrollment penalty and being able to buy drugs they could not afford before were important (Table 8-1).

In contrast, beneficiaries in our focus groups seemed less concerned about insuring themselves against the cost of future drugs. Instead they focused on whether Part D would cover their current drugs and save them money. Survey results also indicate that beneficiaries with few current drug expenses were less likely to sign up for the drug benefit than those with higher expenses, casting some doubt on the importance they attached to protecting themselves against future costs (Table 8-2, p. 188).

Survey respondents were asked the primary reason why they decided not to sign up for the drug benefit. The most common reason cited was that they had another source

of drug coverage (45 percent) even though beneficiaries with ESI were not asked this question. Other beneficiaries reported that they did not have many prescriptions or that they did not think the benefit would save them money (Figure 8-2, p. 189). About 5 percent of beneficiaries reported that they did not sign up because they found the choices too confusing. Note that beneficiaries could only list their primary reason for not signing up for plans and that other factors may have been of secondary importance.

In general, beneficiaries who have not signed up for the benefit are less likely to use prescription drugs on a regular basis than those who have signed up (Table 8-2, p. 188). Indeed, 52 percent of beneficiaries who are not considering signing up for a drug plan report that they take two or fewer drugs on a regular basis. They also spend less money for their drugs, with almost 50 percent reporting that they spend less than \$20 per month.

Beneficiaries in our focus groups who were not considering signing up for Part D also generally reported that they had few prescriptions. Participants with few prescriptions who did sign up or were considering doing so often cited concern about the penalty they would face if they signed up later as the motivating factor. SHIP counselors also said that the main reasons beneficiaries

chose not to enroll were that they did not have high drug costs, did not believe the benefit would save money, or found the program too confusing. In some regions, counselors reported that beneficiaries were wary of drug plans after their experience with the pull-out of many Medicare+Choice health plans in their area in the period from 1999 to 2001.

Choosing a plan

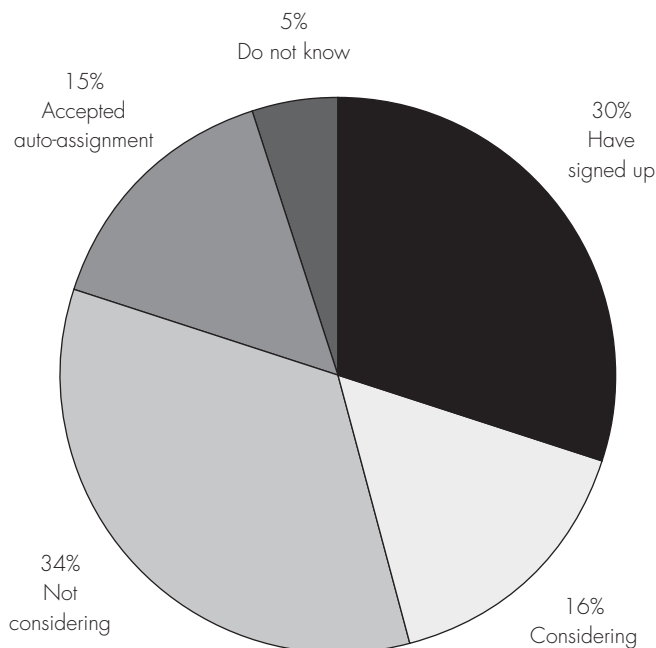
Most beneficiaries did research and made decisions about signing up for a Part D plan themselves. Consistent with other research, beneficiaries had difficulty deciding what they considered most important in a drug plan.² Most beneficiaries listed drug costs, premiums, drug coverage, and company reputation as critical factors in making their choices. We can not tell from the survey which of these reasons was most important to beneficiaries. Although many individuals took a lot of time considering their choices, a much smaller number used the Medicare website or 1-800-Medicare to help them with their decision. Beneficiaries were most likely to seek help from family, friends, and insurance agents.

How beneficiaries made their decision

Over two-thirds of survey respondents (68 percent) said they researched and made the decision about whether to sign up without assistance from another person. However, those who signed up were more likely to have had help than those who were not considering enrollment. In fact,

FIGURE 8-1

Have you signed up for a drug plan or are you considering signing up for a drug plan?



Note: Data are for respondents who were aware of the benefit and did not have employer-sponsored insurance, TRICARE, or Department of Veterans Affairs coverage (N=759).

Source: MedPAC-sponsored beneficiary survey conducted by the National Opinion Research Center (NORC) at the University of Chicago and Georgetown University, February–March 2006.

TABLE 8-1

When you decided to sign up for the new program, how important were each of the following reasons?

Reason for signing up	Respondents who thought reason was important or very important		
	Have signed up for a drug plan	Are considering signing up	Total
Protecting yourself in case your drug costs go up in the future	91%	97%	93%
Saving money on drug costs	91	95	93
Avoiding a penalty for enrolling later in the program	68	78	72
Being able to buy drugs that you could not afford before	66	78	71

Note: Data are for respondents without employer-sponsored insurance, TRICARE, or Department of Veterans Affairs coverage who did not receive an auto-assignment letter (N=264).

Source: MedPAC-sponsored beneficiary survey conducted by the National Opinion Research Center (NORC) at the University of Chicago and Georgetown University, February–March 2006.

**TABLE
8-2**

Beneficiaries who use few drugs are less likely to enroll in a drug plan

Question	Respondents who:			Total
	Have signed up for a drug plan	Are considering signing up	Are not considering signing up	
How many different drugs do you take on a regular basis?				
0	5%	15%	20%	12%
1-2	18	31	32	28
3-5	42	36	36	26
6-10	18	11	12	17
11+	7	6	4	5
Before you signed up for a drug plan (if you signed up for a plan) what did you pay on a monthly basis for your drugs?				
Took no drugs on a regular basis	5	15	20	12
Under \$20 per month	10	9	28	20
Over \$20 but under \$50 per month	19	13	21	19
Over \$50 but under \$100 per month	18	18	13	16
Over \$100 but under \$200 per month	20	18	6	14
Over \$200 but under \$300 per month	10	8	2	6
Over \$300 per month	11	15	3	8

Note: Data are for respondents without employer-sponsored insurance, TRICARE, or Department of Veterans Affairs coverage who did not receive an auto-assignment letter: Respondents who have signed up for the drug benefit (N=229), respondents who are considering signing up (N=119), respondents who are not considering signing up (N=260), and total (N=608). Columns do not sum to 100 percent because they omit respondents who answered 'Do not know' or refused to answer the question.

Source: MedPAC-sponsored beneficiary survey conducted by the National Opinion Research Center (NORC) at the University of Chicago and Georgetown University, February-March 2006.

50 percent of those who said they had enrolled in a plan had help compared to 23 percent of those who decided not to enroll. Twenty-seven percent of beneficiaries who were considering enrollment said they have had help.

About half of those who said they had assistance making their decision turned to a family member or friend (49 percent). Insurance agents (17 percent) and health plans (8 percent) were the next most common sources of help. Relatively few beneficiaries reported they received help from a doctor (1 percent), pharmacist (3 percent), or counselor (6 percent) (Figure 8-3, p. 190).

Picking a drug plan

At least 90 percent of beneficiaries who enrolled or were considering enrolling in a plan cited financial considerations—such as how much plans charged for copays and premiums, whether particular drugs were

covered, and overall savings—as important reasons for choosing a particular plan (Table 8-3, p. 191). The reputation of the company offering the drug plan was also considered important by 90 percent of beneficiaries. Beneficiaries believed that being able to use their current pharmacy was slightly less important (84 percent), followed by whether the plan had a deductible (77 percent) and provided extra coverage for doctor visits (63 percent).³

Beneficiaries in our focus groups also thought that cost and coverage of their drugs were the most important factors. They also stressed the reputation of the plan and were wary of companies with unfamiliar names. Additionally, they wanted to be able to use their neighborhood pharmacy. Some beneficiaries considered plan customer service a determining factor. For example, one participant contacted representatives of each plan and eliminated any plan that did not respond promptly and clearly to his questions.

A little more than half of survey respondents who picked a plan or are considering doing so tried to find out whether the specific drugs they were taking were covered by the plan. Focus group participants described calling plan customer service lines to ask whether their medications were offered by the plan. Many reported difficulty getting answers from this source.

Using Medicare sources

Only 19 percent of beneficiaries in our survey without ESI reported that they or the person who was helping them called 1-800-Medicare, and only 11 percent used the website, although we can not be sure that beneficiaries were fully aware of all of the sources being used by those who helped them.⁴ Only 6 percent of beneficiaries reported that they had consulted a counselor (Figure 8-3, p. 190). None of the beneficiaries in our focus groups had met with a counselor.

We asked beneficiaries who had called 1-800-Medicare or used www.medicare.gov how helpful they found those resources (Figure 8-4, p. 191). About three-fifths of those who used them found the information helpful; two-fifths did not.

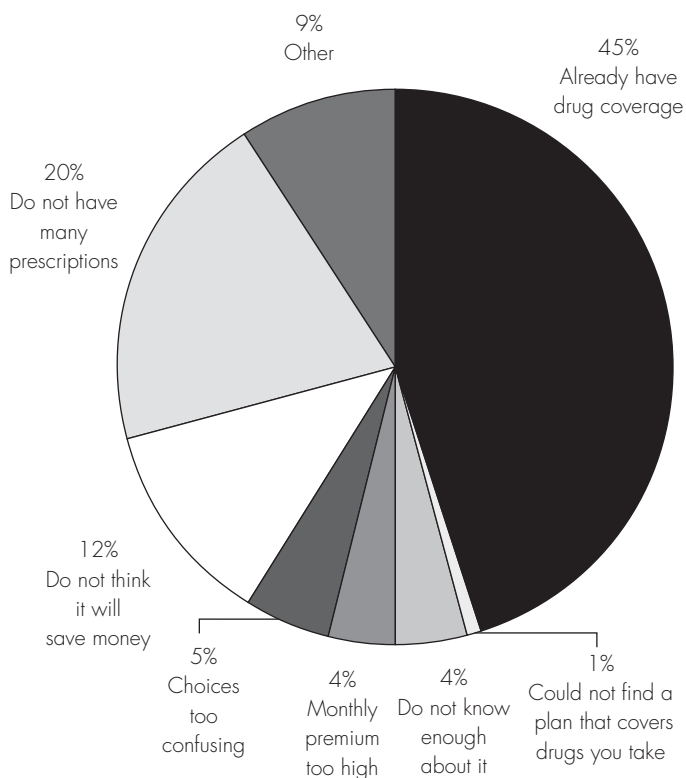
Although we did not ask about use of the Medicare handbook—*Medicare & You*—in our survey, many focus group participants reported that they had read about the drug benefit in the handbook. It was an important source of information for many of them, although some reported that they found it confusing and too “legalistic.” One woman reported that she studied the handbook for several days, then used the information to contact possible plans and request information. Others also mentioned that they had used the handbook to find out what plans were offered in their area, then contacted the plans directly.

In general, few focus group participants said they had used web-based tools or counselors to help them make decisions. They were more likely to mention company plan descriptions they received in the mail, phone calls to plans, and conversations with plan representatives at special events. While some indicated that they talked to their doctors and pharmacists, they did not report getting much information from this approach. More family members noted that they had used the Medicare website but those numbers were also small.

In contrast to beneficiaries, SHIP counselors got most of their information from CMS. They used the website daily in their work. Although they agreed that it was a good

FIGURE 8-2

What was the primary reason that you decided not to sign up for a drug plan?



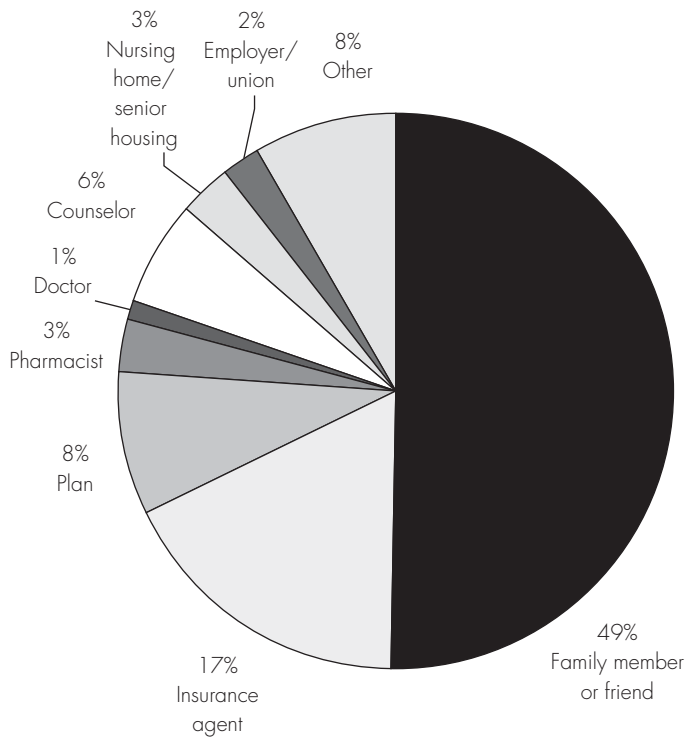
Note: Numbers may not sum to 100 percent due to rounding. Data are for respondents who were aware of the benefit; did not have employer-sponsored insurance, TRICARE, or Department of Veterans Affairs coverage; and were not considering signing up for a drug plan (N=260).

Source: MedPAC-sponsored beneficiary survey conducted by the National Opinion Research Center (NORC) at the University of Chicago and Georgetown University, February–March 2006.

tool, some counselors questioned its accuracy and tried to confirm information with plans before they advised beneficiaries about specific choices. Interviewees reported that CMS conference calls were very useful. Many counselors reported that CMS regional offices have been a particularly good resource when they have had to help beneficiaries with Part D transition problems. Counselors also received useful information from nongovernmental sources like the Health Assistance Partnership, the Patient Advocate Foundation, and the Access to Benefits Coalition. Local groups like senior centers and beneficiary advocate groups also received information from state SHIPs.

**FIGURE
8-3**

If you had help, who was the main person who helped you make a decision about signing up for a drug plan?



Note: Numbers may not sum to 100 percent due to rounding. Data are for respondents who had help making a decision (N=179).

Source: MedPAC-sponsored beneficiary survey conducted by the National Opinion Research Center (NORC) at the University of Chicago and Georgetown University, February–March 2006.

Although they agreed that it was beneficiaries with problems who contacted them, counselors had a negative impression of the Medicare help line. Beneficiaries told them that they were not able to get through or that they could not get their questions answered. One SHIP counselor reported that the call center referred all questions to the local SHIPs.

The beneficiary counselor perspective

SHIP and other beneficiary counselors have a unique perspective on how Part D was implemented. Although they provide individual counseling to only a small percentage of beneficiaries, they have the most in-depth

view of beneficiary decision making and are most likely to see individuals who experience difficulty making a choice or using the drug benefit. In this section, the Commission reports on some of the issues raised by SHIP counselors. Although state SHIP organizations vary greatly in terms of resources, organizational capacity, and the demographic character of the populations they served, many common themes emerged in the interviews.

Beneficiary use of counseling services

SHIPs are state-based organizations that receive federal funds to provide information and counseling about insurance issues to Medicare beneficiaries.⁵ The MMA increased federal funding for the SHIP program from \$12.5 million in 2003 to \$21.1 million in 2004 and \$31.7 million in 2005. For fiscal year 2006, CMS has allocated \$32.7 million (CMS 2006b).

In addition, many other groups have been involved in providing information to beneficiaries about the drug benefit. These groups include senior centers, retirement communities, and beneficiary advocacy groups. Groups that address the needs of individuals with specific diseases or disabilities also provide information on drug plans to their constituencies. SHIP counselors say they are pleased about the increased resources available to beneficiaries through these organizations, but some complained about the lack of coordination among groups.

The number of beneficiaries seeking help from SHIPs and other groups has increased significantly. Counselors consistently reported that their offices did not have the resources needed to meet the high volume of calls they received, particularly in November and December 2005. One office that reported an average of 800 calls each month received 1,500 calls in November. Another SHIP reported an increase in calls from 3,000 a month to more than 30,000 in November and December. In the past year, SHIP counselors have provided individual counseling on the drug benefit to 4.2 million beneficiaries (CMS 2006a). Call volume has declined since the first few weeks of January, but remains much higher than in previous years.

SHIP offices reported that they lack the resources necessary to support the volume of requests for assistance: Their voice mail systems are full and they can not return calls immediately. In early February, one local SHIP coordinator said her volunteers were still returning calls from December. Another reported that her office needed to return between 500 and 800 calls. In addition, many counselors have focused on resolving transition problems

**TABLE
8-3**

How important are each of the following reasons in picking a plan?

Reason for picking a plan	Respondents who thought reason was important or very important		
	Have signed up for a drug plan	Are considering signing up	Total
How much the plan charges you for each prescription	93%	98%	95%
How much the plan charges for monthly premiums	88	99	92
Whether the plan covers the drugs you currently take	92	91	92
How much money you will save on your prescriptions overall	89	90	90
The reputation of the company offering the drug plan	89	91	90
Whether you can continue going to the pharmacy you prefer	85	82	84
Whether the plan has a deductible	75	79	77
Getting extra coverage for doctor visits	55	77	63
Signing up with the same company as your spouse	39	49	42

Note: Data are for respondents who did not receive an auto-assignment letter and signed up or are considering signing up for a drug plan (N=264).

Source: MedPAC-sponsored beneficiary survey conducted by the National Opinion Research Center (NORC) at the University of Chicago and Georgetown University, February–March 2006.

for individuals who have enrolled in plans and therefore had less time to continue education and outreach programs for beneficiaries who had not enrolled in Part D. Some interviewees mentioned that they expected to see another increase in beneficiaries looking for advice before the end of the first enrollment period.

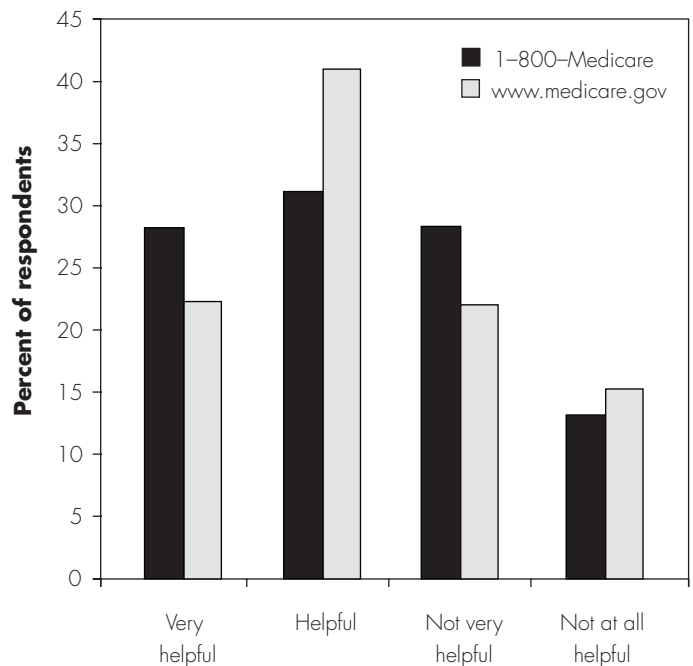
Counseling beneficiaries

SHIPs have had to extend their counseling services to more Medicare beneficiaries because of Part D. For example, they are serving more disabled beneficiaries under 65 than they previously served. This is particularly true for SHIP organizations that are part of state offices on aging. They are also receiving more calls from dual eligibles and family members of dual eligibles. These are not populations that traditionally seek assistance from SHIPs.

SHIPs and other groups offer their own meetings and seminars on Part D and give presentations at events sponsored by other local organizations. Counselors say that they speak with many beneficiaries who have attended multiple presentations before requesting assistance to select and enroll in a plan. There is so much information to present at events that beneficiaries often get overwhelmed. One counselor said that if several counselors are available at a presentation, she separates the attendees by their needs—for instance, people with retiree coverage, people

**FIGURE
8-4**

How helpful was the information provided by...?



Note: Data are for respondents who used 1-800-Medicare (N=115) or www.medicare.gov (N=65).

Source: MedPAC-sponsored beneficiary survey conducted by the National Opinion Research Center (NORC) at the University of Chicago and Georgetown University, February–March 2006.

**TABLE
8-4**

Choosing a drug plan was time consuming but the majority of beneficiaries had enough information to make a decision

Survey question	Respondents who:			Total
	Have signed up for a drug plan	Are considering signing up	Are not considering signing up	
Was the overall information you had available for making your decision too much, too little, or about right?				
Too much	32%	20%	21%	25%
Too little	12	30	15	17
About right	53	42	55	51
Do not know/Refused	4	8	10	6
Overall, how difficult did you find it to choose (or not choose) a plan?				
Not at all difficult	28	13	50	35
Not very difficult	28	19	19	22
Difficult	22	34	11	20
Very difficult	19	31	17	20
Do not know	2	3	3	2
About how much time have you spent making a decision about signing up?				
Less than an hour	18	12	49	30
More than an hour, but less than 8 hours	27	40	31	31
8 hours or more	51	44	15	34
Do not know	3	4	4	4

Note: Numbers may not sum to 100 percent due to rounding. Data are for respondents without employer-sponsored insurance, TRICARE, or Department of Veterans Affairs coverage who did not accept an auto-assignment letter: Respondents who have signed up for the drug benefit (N=229), respondents who are considering signing up (N=119), respondents who are not considering signing up (N=260), total (N=607).

Source: MedPAC-sponsored beneficiary survey conducted by the National Opinion Research Center (NORC) at the University of Chicago and Georgetown University, February–March 2006.

with Medicaid, and people without coverage—so that they receive only the information that applies to them.

Counselors believe that their efforts are most successful when they are able to provide information to beneficiaries in a series of encounters. Counseling sessions may take as long as two hours. Several counselors described a typical scenario. First, a counselor provides basic information to a group of beneficiaries at a senior center or other facility. Next, beneficiaries visit or phone a SHIP office for individual help. Using beneficiary information and the Medicare website, the counselor provides the beneficiaries with descriptions of three plans that would best suit their needs. After the beneficiaries have had a chance to study

the materials, the counselor may help them enroll in a plan.

If beneficiaries might be eligible for additional assistance due to their limited incomes, the counselors help them fill out the necessary forms. They also give them information on other programs that may be available (e.g., the Medicare savings programs).⁶ To date, most counselors have reported that, except for dual eligibles, the population eligible for the low-income subsidy has been difficult to reach.

The beneficiaries who contact SHIPs are confused by the number of plan choices, the variation in benefit structure, how to apply for extra help, the coverage gap, and the penalty for late enrollment. Counselors note that

because of the nature of their work they only tend to see beneficiaries with problems.

Information and decision making

Beneficiaries in our survey who had to make a decision about Part D generally believed that they had enough information to decide whether to enroll in the drug benefit. Those who enrolled or were considering enrolling found it time consuming to make a decision. Both in our focus groups and counselor interviews, individuals suggested ways that Medicare could make it easier for beneficiaries to understand the benefit and choose a plan.

About half (51 percent) of beneficiaries in our survey who had to make a decision thought the amount of information available to them was about right (Table 8-4). About half of those who have signed up or are considering doing so, however, have found the decision difficult. Those who have signed up were more likely to say they had too much information than too little; those who are still considering were more likely to say they had too little information.

Many beneficiaries found choosing a plan to be very time consuming. A majority of those who have already chosen a plan report that it took eight or more hours to make a decision (51 percent). Those who are still considering signing up are likely to have spent eight or more hours (44 percent), and 40 percent have already spent between one and eight hours. Beneficiaries not considering signing up tended to spend much less time on the decision; 49 percent reported taking less than one hour to come to a decision. Our findings from both the survey and focus

groups suggest that beneficiaries spent much of their time comparing information they had received from individual plans rather than using the resources provided by CMS.

In our focus groups, beneficiaries complained about the lack of comparability in the information they received from plans. Several wanted one document that compares plans in an apples-to-apples way. Others suggested a comparison chart or a simple checklist that clearly shows the prices and coverage of each plan or provides answers to frequently asked questions. Although the Medicare website provides this type of information, focus group participants wanted a hard copy. Some suggested that Medicare standardize the benefit packages that plans offer so that beneficiaries could more easily compare their options. Counselors were more likely to emphasize that plan offerings should be limited because beneficiaries were confused by the large number of plan choices. As noted in Chapter 7, CMS will limit the number of plans that an organization can offer in a region in 2007. Some policymakers have discussed a need for standardization of plan offerings.

In future work, the Commission will continue to monitor whether beneficiaries are able to make informed choices about plan offerings. Other questions of interest include:

- Does beneficiary age, gender, or income affect decision making?
- Are there examples of programs that have had particular success educating and enrolling the types of beneficiaries eligible for the low-income subsidy? ■

Endnotes

- 1 Survey participants who did not know about the drug benefit were not asked any additional questions.
- 2 There is a large body of research analyzing differences in the way elderly populations make choices compared to younger populations. See, for example, research by Sing and Stevens (2005), Hibbard and colleagues (2001), and Hibbard and colleagues (1998).
- 3 This question refers to whether a beneficiary considered joining an MA plan and receiving coverage for other services along with the Part D drug benefit.
- 4 These numbers are not included in tables presented in this chapter.
- 5 The program was authorized in 1990 as part of the legislation that standardized Medicare supplemental policies. SHIP resources vary considerably from state to state. Some SHIP programs are well funded and supplement their staff through a large base of volunteer counselors in a wide variety of field locations. All provide one-on-one counseling to beneficiaries through outreach meetings with beneficiary groups, office visits, and phone calls.
- 6 These are programs that provide help with Medicare premiums and, sometimes, cost sharing to beneficiaries with incomes that exceed state requirements for Medicaid but are below a set percent of poverty and meet an asset test (MedPAC 2005). See Chapter 9 for additional details.

References

- Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2006. Medicare announces funding for health insurance counseling program for 2006. Press release, April 5. Washington, DC: CMS.
- Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2006b. CMS FY 2006 program management appropriation.
- Hibbard, J., P. Slovic, E. Peters, et al. 2001. Is the informed-choice policy approach appropriate for Medicare beneficiaries? *Health Affairs* 20, no. 3 (May/June): 199–203.
- Hibbard, J., J. Jewett, S. Engelmann, et al. 1998. Can Medicare beneficiaries make informed choices? *Health Affairs* 17, no. 6 (November/December): 181–193.
- Justice, Diane. 2005. *Beneficiary information and decision supports for the Medicare-endorsed prescription drug discount card* (RL3828). Washington, DC: Congressional Research Service.
- Kelly, C., Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2006. E-mail communication with author, May 4.
- Medicare Payment Advisory Commission. 2005. *Report to the Congress: Issues in a modernized Medicare program*. Washington, DC: MedPAC.
- Medicare Payment Advisory Commission. 2004. *Report to the Congress: New approaches in Medicare*. Washington, DC: MedPAC.
- Sing, M., and B. Stevens. 2005. The value of experience: Differences in knowledge among Medicare beneficiaries. *Inquiry* 42, no. 3 (Fall): 266–280.
- Wright, S. 2006. Early implementation of MMA: Status report of the State Health Insurance Assistance Programs (OEI-05-05-00190). Washington, DC: Office of Inspector General, Department of Health and Human Services.

CHAPTER

9

**The Medicare Advantage
program: Availability, benefits,
and special needs plans**

The Medicare Advantage program: Availability, benefits, and special needs plans

Chapter summary

This year brings several important changes for the Medicare Advantage (MA) program. First, Medicare payments to plans are determined differently. Plans now submit formal bids, then CMS compares the bids with benchmarks to determine payment. Also, the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 (MMA) allows new plan types, including regional preferred provider organizations (PPOs) that are required to serve entire regions. Another change is the introduction of Medicare's Part D prescription drug benefit. MA plans usually include the Part D benefit and receive a separate payment for providing it. These changes and the introduction of stand-alone prescription drug plans to the marketplace affect the competitive environment for MA plans.

Medicare beneficiaries have more MA plans to choose from in 2006, and almost all beneficiaries have access to plans. In 2006, nearly 100 percent of beneficiaries will have MA plans available to them, up from 84 percent of beneficiaries in 2005. Overall, an average of 12 MA plans are offered in each county, ranging to as high as 63. Half of all

In this chapter

- Medicare Advantage plans available for 2006
- Special needs plans

beneficiaries are able to choose from among 16 or more MA plans, and 5 percent of beneficiaries are able to choose from over 40 plans. The increase is due to the participation of new plans and to the expansion of service areas by existing plans.

Regional PPOs are available to 88 percent of beneficiaries. While expanding choices, their availability does not appreciably increase beneficiaries' access to MA plans; 99 percent of beneficiaries have access to local MA plans.

About 95 percent of plans bid under their benchmarks, thus almost all plans had funds to rebate in the form of lower Medicare cost sharing, lower Part B or Part D premiums, or non-Medicare supplemental benefits. As a result, for example, zero-premium MA plans—plans that charge no premium in addition to the Part B premium—are available to 84 percent of Medicare beneficiaries in 2006, up from about 58 percent of beneficiaries in 2005. Almost 70 percent of beneficiaries have access to zero-premium MA plans that also include the Part D benefit. Health maintenance organizations (HMOs) tended to bid further below the benchmarks than other types of plans and thus had larger rebates and greater ability to offer enhanced benefits.

Virtually all Medicare beneficiaries have an available MA plan, regardless of whether they live in urban or rural areas. However, urban beneficiaries are much more likely to have local HMOs and local PPOs available than those in rural areas while private fee-for-service (PFFS) plans are much more likely to be available in rural areas. Because local HMOs and local PPOs tended to bid further below the benchmarks and thus had more rebate dollars to return to beneficiaries than regional PPOs or PFFS plans, additional benefits are more widely available in urban areas than in rural areas.

In future work, we will examine some of the broader questions about the value of private plans to the Medicare program. Such questions may focus on quality, efficiency, and payment issues.

Special needs plans

The Congress created special needs plans (SNPs) to provide a common framework for many of the existing plans for special needs beneficiaries and to expand beneficiaries' access to and choice among MA plans. These special plans include Social Health Maintenance Organizations, Evercare, and various demonstration plans.

2006 marked a significant increase in the number of SNPs available to beneficiaries. In 2004, there were just 11 SNPs. By 2005, that number had grown to 125. In 2006, the total number of SNPs has more than doubled to 276. Organizations with experience partnering with Medicaid and serving special needs populations entered the SNP market, but so did MA organizations with little or no experience serving these populations.

The Commission has sought creative ways to deliver high-quality health care to special needs beneficiaries, particularly dual eligibles. The policy and practical issues we described in the June 2004 report on dual-eligible beneficiaries might be addressed through special needs plans (MedPAC 2004b). Theoretically, SNPs may improve care coordination for dual eligibles and other special needs beneficiaries through unique benefit design and delivery systems.

However, we are concerned that many SNPs are not designed to better coordinate care for special needs beneficiaries. SNPs, even dual-eligible SNPs, are not required to contract with states to provide Medicaid benefits, and many appear not to do so. SNPs that do not integrate Medicare and Medicaid services may not coordinate the two programs. ■

The Medicare Advantage (MA) program allows Medicare beneficiaries to receive their Medicare benefits from private plans rather than from the traditional fee-for-service (FFS) program. There are several important changes for the MA program in 2006. First, Medicare payments to plans are determined differently. CMS no longer determines MA plan payments based solely on administratively set payment rates. Plans now submit formal bids, then CMS compares the bids with benchmarks (derived from the old rates) to determine payment (see text box on page 204). Also, the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 (MMA) allows new plan types, including regional preferred provider organizations (PPOs) that are required to serve entire regions rather than the local plan service areas, which can be limited to a single county.¹

Another key change relates to the introduction of Medicare's Part D prescription drug benefit. Organizations that sponsor MA plans must include the Part D benefit, or an actuarially equivalent or enhanced drug benefit, in at least one of their plan offerings. (In the Commission's terminology, a "plan" is a specific set of benefits offered in a specific service area by a sponsoring organization. A sponsoring organization can offer multiple plans in an area.) Past studies have shown that the availability of prescription drug benefits in many MA plans attracted significant enrollment. Medicare now makes separate Part D payments to the MA plans that include the Part D benefits—Medicare Advantage—Prescription Drug plans (MA-PDs)—as if they were stand-alone prescription drug plans (PDPs). Because many MA plans already offered drug benefits without receiving Medicare reimbursement for them, the Part D payments represent a new stream of funding. Plans that offered drug benefits that did not reach the actuarial value of the Part D benefit were required to improve their drug coverage. Plans also had to meet new formulary and data requirements. Managing the full spectrum of care may allow some plans to operate more efficiently than stand-alone drug plans.

This chapter discusses the competitive environment for MA plans, the range of plan types included in the MA program, plan bidding, and the range of MA plan offerings. The chapter concludes with a special focus on MA special needs plans (SNPs).

Medicare Advantage plans available for 2006

Medicare beneficiaries will have more MA plans to choose from in 2006 than in previous years, and almost all beneficiaries have access to plans. Many of those plans will have low premiums and enhanced benefits not available in the Medicare FFS package.

Features of available plan types

For this chapter, we distinguish four available plan types: local health maintenance organizations (HMOs), local PPOs, regional PPOs, and private fee-for-service (PFFS) plans.² These plans are available to most Medicare beneficiaries. In general:

- HMOs have comprehensive provider networks and members must use network providers in all nonemergency situations.
- PPOs have comprehensive networks, but members may use out-of-network providers if they pay higher cost sharing.
- PFFS plans are not required to have any networks and members may go to any willing Medicare provider.

In practice, some of the distinctions between the plan types may be blurred, as illustrated by a few examples. An HMO that has an out-of-network option may look much like a PPO. A local PPO could cover an entire region, making it resemble a regional PPO. And a PFFS plan may have a network that would make it hard to distinguish from a PPO.

SNPs are other plan types with restrictions on beneficiary enrollment. They will be discussed in detail in a later section of this chapter and will be excluded from most quantitative analyses in this section because of their special nature. Enrollment in SNPs may be limited to beneficiaries with Medicaid eligibility, beneficiaries in long-term care institutions, or beneficiaries with certain chronic or disabling conditions.

As there is a great deal of variation in plan attributes within each type of plan and because the lines between plan types are not always sharp, the statements about plan types should be seen as generalizations and may not apply

Payments to plans based on benchmarks and bids

The benchmark is a bidding target. CMS sets local plan benchmarks for every county administratively, as directed by law. The 2006 benchmarks are the 2005 Medicare Advantage (MA) county payment rates, updated by the projected national growth rate in per capita Medicare spending. If a local MA plan serves a multicounty area, the benchmark against which it bids is an average of the different benchmarks for the counties it serves, weighted by its projected enrollment from each county. In our June 2005 report to the Congress, the Commission recommended several changes to the benchmarks that would result in lowering the benchmarks to a level equal to Medicare's fee-for-service costs (MedPAC 2005).

CMS determines the benchmarks for the MA regional preferred provider organizations (PPOs) by using a more complicated formula that incorporates the plan bids. The region's county benchmarks are aggregated to produce a component of the regional benchmark. This component is averaged with the regional PPO bids to produce the final regional benchmark. The lower the regional PPOs bid, the lower the resulting regional benchmark.

Every plan submits a separate set of bids to cover beneficiaries in each of its service areas. Each bid consists of up to three separate components:

- *The bid for Medicare Part A and Part B benefits (except hospice).* This portion of the bid must assume that the plan would collect the standard Medicare cost sharing from its enrollees. This bid is standardized to

a nationally average beneficiary (a CMS risk factor of 1.0) enrolled in the plan's service area.

- *The bid for supplemental benefits (if any) that the plan covers.* Supplemental benefits may include lower cost sharing on Medicare services, as well as benefits that fee-for-service Medicare does not cover.
- *The bid for the Medicare Part D drug benefit (when offered).*

CMS bases the Medicare Parts A and B payment for private plans on the relationship between their bids and the benchmarks. If a plan's bid falls above the benchmark, then the plan receives the benchmark as its payment and the enrollees will have to pay an additional premium for Medicare Parts A and B that equals the difference between the bid and the benchmark. If the plan's bid falls below the benchmark, the law defines the difference as the plan's savings. The Medicare program retains 25 percent of the savings (if it is a regional plan, CMS places half of this 25 percent into the regional PPO stabilization fund), and the plan receives the other 75 percent of the savings as a rebate, in addition to its bid. The plan must return the rebate to its enrollees in the form of supplemental benefits or lower premiums. The plan can apply any premium savings to the Part B premium (in which case the government retains the amount for that use), to the Part D premium, or to the premium for the total package that may include supplemental benefits. ■

to any individual plan. Some distinctions between the definitions of plan types are in law or regulation:

- Local HMOs with an out-of-network option may be very similar to local PPOs. The major difference is that HMOs are required to submit quality data for all services while PPOs must report some data only for services provided in-network. If a plan's sponsoring organization does not have an HMO license in the relevant state,³ CMS presumes the plan is a PPO and looser reporting requirements will apply.⁴

- The only difference in the definitions between regional PPOs and local PPOs is the service areas they choose to serve.
- A PFFS plan may not be a regional plan and is not required to have a provider network if it pays providers at least Medicare FFS rates.

What motivates plan sponsors (typically insurers) to offer, beneficiaries to enroll in, and providers to participate in different types of plans? Exploration of these dynamics

may help explain plan availability and, eventually, plan enrollment.

Plan sponsor perceptions

When a plan sponsor decides whether to enter a market and what types of plans to offer, it examines the payment it would receive and the network construction required and assesses where it could offer plans that would appeal to beneficiaries. Plan sponsors perceive that different plan types have trade-offs, including Medicare payments, administrative costs of building and maintaining an appropriate provider network, and market competition.

Plans face different requirements for network adequacy and quality data collection. HMOs require a comprehensive network. Local PPOs also require a comprehensive network, but members may go outside the network in exchange for higher cost sharing. Because establishing a comprehensive network across vast regions has presented such a difficult challenge to plans, CMS has chosen to make the regional PPO network requirements looser than the local PPO requirements. Regional PPOs are not required to have network providers in all locations. Instead, the plans must guarantee to find providers when members need care, pay the providers Medicare FFS rates, and charge members the in-network levels of cost sharing. This guarantee is different than the PFFS plans who only must guarantee that they will pay Medicare FFS rates to any provider that agrees to treat plan members. If a PFFS plan pays Medicare rates, it has no network requirements.

Generally, it is easier for plans to build networks in competitive urban markets. Providers in this type of market may sometimes be more willing to take lower rates in exchange for the promise of higher volume. In such markets, plans may be able to provide better benefits in plan types with tighter networks such as HMOs. In rural areas and other areas with low provider density, plans might only be able to offer looser network or non-network options.

The law has added financial incentives to encourage regional PPOs to participate in MA, including risk sharing for 2006 and 2007, and a regional stabilization fund that CMS may use to enhance the benchmarks only for regional PPOs bidding in regions that are having difficulty attracting plans. In addition, local PPO plans can not start in 2006 and 2007 (existing local PPOs can offer new products within the existing service area). This

moratorium is intended to prompt private plans to consider participating as regional PPOs.⁵

Beneficiary perceptions

Many economists and health policy observers have concluded that beneficiaries see a trade-off between narrowing their choice of provider or submitting to more management in return for receiving a benefit package they perceive as having higher value. Plan sponsors may respond to these beneficiary trade-offs by marketing multiple products along the continuum to different subsets of beneficiaries. For example, studies have found that lower income (but not Medicare/Medicaid dual-eligible) beneficiaries are more likely to join MA HMOs than are higher income beneficiaries (Thorpe et al. 2002). Generally the lower out-of-pocket plans tend to appeal more to low-income beneficiaries and other beneficiaries who value lower cost sharing over expanded choice of providers. PPOs tend to appeal to those who want to have more flexibility in choice of providers. The regional PPOs and PFFS plans are more likely to appeal to those who want maximum choice of providers or those in rural or other low-competition areas that can not support more tightly managed options. Beneficiaries in those areas were previously likely to choose medigap. Bear in mind, these statements are generalizations; there is great variability in the benefits within each plan type and in the beneficiaries who choose them. For example, some of the PFFS plans for 2006 have generous benefits, such as low maximum out-of-pocket liability limits and zero-premium Part D benefits that could attract lower income beneficiaries.

Provider perceptions

Providers must also consider trade-offs when deciding whether to participate with a plan. The provider decides how much to give up in order to secure access to the plan's members. In competitive market areas, HMOs usually pay less than Medicare FFS and may offer capitated rates but may promise volume. Participation in local PPOs may sometimes offer similar trade-offs. Plan sponsors may offer several types of plans and providers may decide to participate in one plan in order to be able to participate in another of the sponsors' plans. In competitive areas, providers may feel pressure to give plans attractive terms or rates so that the providers can see plan members.

However, in less competitive areas, such as many rural areas, plans may have trouble attracting enough providers to guarantee an adequate network. The regional PPOs must have networks that cover entire states, so providers

**TABLE
9-1****Percent of Medicare beneficiaries with access to MA plans, 2004–2006**

	Local plans			Regional PPO	Any MA plan
	HMO or PPO	PFFS	Any local plan		
2006	80%	80%	99%	88%	100%
2005	67	45	84	N/A	84
2004	61	31	77	N/A	77

Note: MA (Medicare Advantage), HMO (health maintenance organization), PPO (preferred provider organization), PFFS (private fee-for-service), N/A (not available).

Source: MedPAC analysis of CMS Landscape Tool, October 2005.

in less competitive areas of the state may have more leverage in negotiations with plans. In fact, regional PPOs may have been having trouble convincing providers to join their networks. Providers in sparsely populated areas could get FFS rates from regional PPOs even if they do not join because the plans are required to pay those rates where their network is incomplete. Further, regional PPO representatives have indicated to us that providers would not participate in order to discourage plan entry into their local areas.

PFFS plans are not required to establish a network, as long as they pay providers at least FFS Medicare rates. Because there is no network requirement, providers do not need to decide whether to participate in a plan until a plan member requests service from the provider. As under FFS Medicare, in nonemergency situations the provider can decide whether or not to accept Medicare rates for that patient for that encounter. And as in FFS Medicare, providers can choose not to treat beneficiaries under these circumstances.

Implications for the Medicare program

The Commission wants to examine the value of the different plan types to the Medicare program. In 2006, beneficiaries in most plans likely cost the program more than they would if they were in FFS Medicare because the benchmarks are higher than FFS spending (MedPAC 2005). The regional PPOs and the PFFS plans are probably more costly relative to Medicare FFS because they are likely to attract enrollees disproportionately from areas where the benchmarks are especially high relative to Medicare FFS spending.

Different plan types may also have more or less potential to improve the quality of care for Medicare beneficiaries.

HMOs are often regarded as having the most potential to improve care through coordination and following quality standards as their providers are typically accountable to the plan. PPOs have somewhat less potential because the providers are usually less accountable to the plan and in some cases the PPOs do not collect enough information on quality to judge their performance. Currently, PFFS plans have even less ability to influence providers because they rarely maintain networks. Some plan sponsors, however, have suggested that PFFS plans could provide coordination and management through disease management programs. Pay-for-performance systems may also work to improve care quality in plans with looser networks. We have no data on whether any PFFS plans use these management techniques.

Almost all Medicare beneficiaries have access to MA plans

In 2006, almost 100 percent of beneficiaries have MA plans available to them, an increase from 84 percent in 2005 and from 77 percent in 2004 (Table 9-1). Greater availability reflects growth in participation of coordinated care plans (CCPs)—HMOs or PPOs—and PFFS plans in the MA program.⁶ In 2006, 80 percent of Medicare beneficiaries will have a local HMO or PPO plan operating in their counties of residence, up from 67 percent in 2005 and from 61 percent in 2004. Previously, the highest availability of local CCPs (74 percent) occurred in 1998.

PFFS plan availability has also increased substantially in 2006 to 80 percent of beneficiaries. In 2005, PFFS service areas included 45 percent of Medicare beneficiaries, up from 31 percent in 2004. In 2006, PFFS plans provide local plan access to almost all Medicare beneficiaries who

do not have access to a local HMO or PPO. Overall, 99 percent of beneficiaries have a local plan available in 2006.

Regional plan availability

Regional PPO plans—which must cover entire state-based regions—are new in 2006. All plans that are not regional are considered “local,” meaning that they define their own county-based local service areas. Regional PPOs must have PPO-like networks, which may sometimes be looser than the ones required of local PPOs.

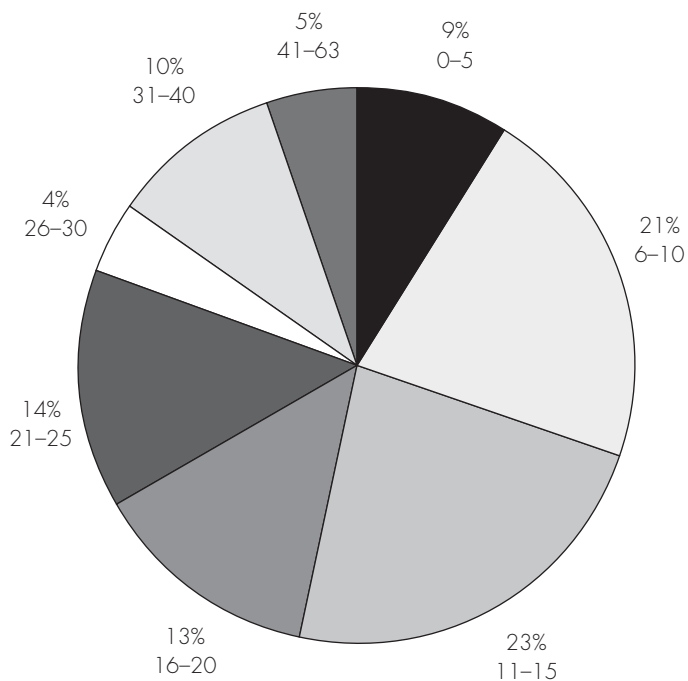
CMS established 26 bidding regions for regional PPOs. No plans bid in 5 of the regions, but CMS approved bids for 71 plans in the other 21 regions. Beneficiaries in Florida have six regional PPOs from which to choose—the most in the country. The number of plans in a region may give a false impression because most regions have only one organization that sponsors several regional plans. Of the 21 regions with regional PPOs, a single organization offers all the plans within each of 16 regions, and two organizations offer all the plans within each of the other five regions. Overall, 42 plans are offered by one sponsor—Humana. (MA organizations offer multiple local plans as well, but we highlight the regional PPO pattern because the decisions made by one or two sponsors could change the regional plan landscape significantly.)

Regional PPOs are available to 88 percent of beneficiaries, but their availability does not appreciably increase beneficiaries’ access to MA plans; 99 percent of beneficiaries have access to MA plans through the combination of local PPO, HMO, and PFFS plans. The inclusion of the regional PPOs increases beneficiaries’ range of choices. Also, regional PPOs help expand the availability of coordinated care plans; local or regional CCPs will be available to 98 percent of the Medicare population, compared with 67 percent in 2005.

Two other types of plans are eligible to participate in the Medicare Advantage program: plans with Medicare savings accounts and SNPs. Although plans with Medicare savings accounts are a permanent option under the MA program, no plans have come forward to participate for 2006. On the other hand, SNPs—first authorized in 2004—are growing rapidly, as discussed in the next section. They have increased from 11 plans in 2004, to 125 plans in 2005, and to 276 plans in 2006. They are now available in counties where 59 percent of Medicare beneficiaries live.

FIGURE 9-1

Most beneficiaries have access to 11 or more plans, 2006



Source: MedPAC analysis of CMS Landscape Tool, October 2005.

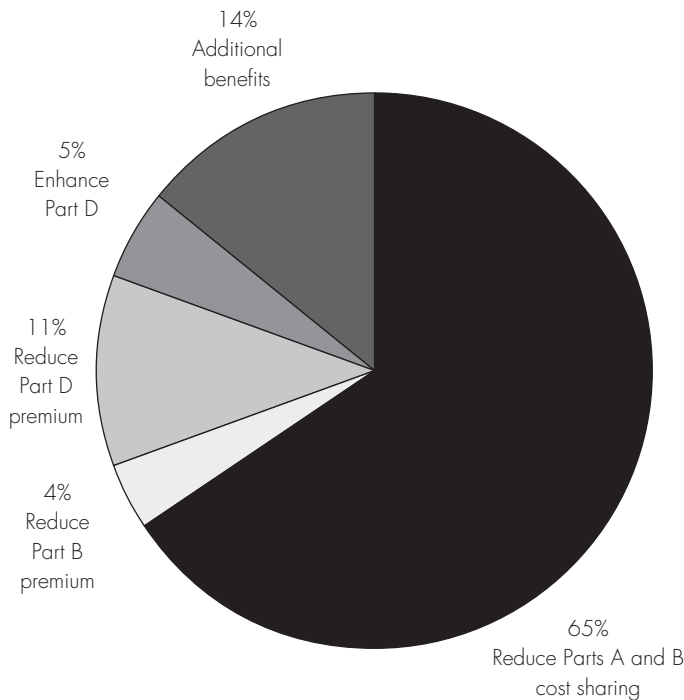
Many beneficiaries will have numerous MA choices

Virtually all (99.4 percent) beneficiaries have two or more MA plans available.⁷ Greater choice is available, not just because MA plans are entering new areas; more plans are entering already well-established MA areas potentially stimulating competition. Overall, 12 plans on average are offered per county in 2006, compared with 5 plans per county in late 2005. Beneficiaries in Broward county, Florida have the most choices available: 63 MA plans, up from 39 in 2005.

As a result of all the changes, beneficiaries have many plans from which to choose (Figure 9-1). Almost half of all beneficiaries can choose from among 16 or more MA plans and 5 percent can choose from over 40 plans. These plan choices are in addition to the stand-alone prescription drug plan offerings.

FIGURE 9-2

Medicare Advantage plans used the largest share of rebate dollars to reduce cost sharing for Medicare services



Note: Figure based on unweighted data. Additional benefits may include dental, vision, and hearing services.

Source: CMS 2006 unpublished bid data.

Preliminary information from Medicare Advantage plan bids

The Commission has been concerned that the current benchmarks are higher than average per capita spending in FFS Medicare. We have pursued a policy of financial neutrality, under which the Medicare program would be financially neutral with regard to whether a beneficiary enrolled in an MA plan or remained in FFS Medicare. If payments to private plans are too high, it aggravates Medicare’s financial problems. If plan payments are below FFS Medicare, plans may be discouraged from participating in MA even if they are more efficient than FFS Medicare.

In our June 2005 report to the Congress, the Commission recommended several changes to the benchmarks that would have resulted in lowering the benchmarks to a level equal to Medicare’s FFS costs. In addition, we

recommended that Medicare’s share of savings from bids below the benchmark be redistributed back to the plans based on quality performance measures.

Based on our preliminary analysis, plans were able to bid under their current benchmarks and had funds to rebate to their enrollees.⁸ The Medicare program retains 25 percent of the amount by which the benchmark exceeds the bid, and the plan is given the other 75 percent to rebate to its members in one of five ways: 1) reduce Medicare Parts A and B cost sharing, 2) reduce the Part B premium, 3) reduce the Part D premium, 4) enhance the Part D benefit, and 5) provide other additional benefits. Probably as a result of high benchmarks and effective management techniques, about 95 percent of bids were under the benchmark, thus almost all plans had funds to rebate to members. Most plans chose to spend rebates to improve benefits in more than one service category. Almost two-thirds of rebate dollars (65 percent) were devoted to lowering cost sharing for Parts A and B services (Figure 9-2). With 14 percent of the rebates, plans provided additional benefits—such as dental care and vision care—and lowered Part B or Part D premiums with another 15 percent of total rebates.

We have also begun examining 2006 bid data by plan type. For this analysis, we divided plans into four groups: local HMOs, local PPOs, PFFS plans, and regional PPO plans. We found that average bids differed by plan type. The local HMOs were most often able to bid below the benchmark and had the largest average rebates. Local HMO bids came in below the benchmark 98 percent of the time and when they did, the average rebate was about \$80 per month (Table 9-2). Local PPOs were not as likely to be below the benchmark, and even when they were, they received substantially lower rebates (\$50) than HMOs. PFFS plans were able to bid below the benchmark in most cases (93 percent), but their average rebates (\$40) were about half of the HMOs’ rebates. Regional PPOs were least likely to bid below the benchmarks; only 69 percent of their bids came in below them.

Because HMOs had larger average rebates to distribute, they more often could fund benefit packages that lower Parts A and B cost sharing, provide supplemental benefits, and have lower premiums. These results will generally translate to the greater availability of HMO plans with reduced cost sharing, low premiums, and enhanced drug benefits.

**TABLE
9-2**

HMOs most likely to bid below benchmark and have highest rebates

	Local plans			
	HMO	PPO	PFFS	Regional PPO
Percentage of plans bidding below benchmark	98%	86%	93%	69%
Average monthly rebate	\$80	\$50	\$40	\$30

Note: PPO (preferred provider organization), PFFS (private fee-for-service). Data are unweighted for enrollment. Benchmarks are bidding targets with which Medicare Advantage plan bids are compared. When a plan bids below its benchmark, the plan receives 75 percent of the difference to rebate to its members in the form of additional benefits, lower cost sharing, or lower premiums.

Source: CMS 2006 unpublished bid data.

Many plan choices have low premiums and include enhanced benefits

Under Medicare Advantage, plans can charge a premium for additional benefits. This premium is in addition to the Part B premium. However, many plans do not charge any premium for the additional benefits. These plans are called zero-premium plans. While a few zero-premium plans have used rebates to eliminate or reduce Part B premiums, we consider a plan to be zero-premium even if its members pay the full Part B premium and a Part D premium but no supplemental premium.

Low-premium plans are widely available

Zero-premium MA plans are available to 84 percent of Medicare beneficiaries in 2006, up from 58 percent of beneficiaries in 2005. HMOs are the most widely available zero-premium plans, with 54 percent of beneficiaries having access to one. Also, about one-third of beneficiaries have access to zero-premium PFFS plans and a similar share of beneficiaries have access to zero-premium regional PPOs in 2006 (Figure 9-3).⁹

Even where there are no zero-premium plans, low-premium plans are often available. MA plans that cost less than \$10 per month in 2006 are available to 92 percent of Medicare beneficiaries.

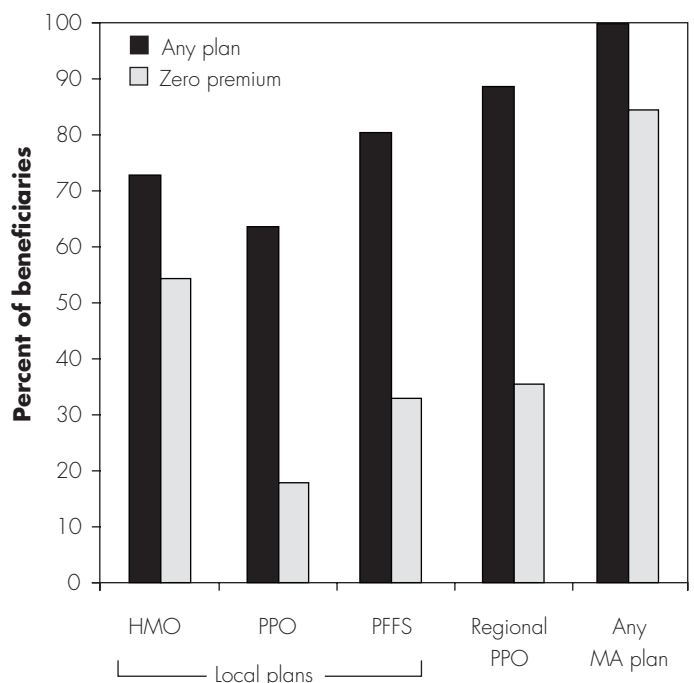
Plans that include both Part D and enhanced benefits are widely available

All MA CCP sponsors must offer at least one plan that includes Part D benefits (MA-PDs). Thus, 99 percent of beneficiaries will have access to MA-PDs. PFFS plans, which are not required to offer Part D coverage, have done so in service areas containing 70 percent of Medicare beneficiaries in 2006 (Table 9-3, p. 210).

As explained in detail in Chapter 7, the standard Part D benefit package in 2006 has a gap in coverage after a beneficiary has accrued drug expenses of \$2,250. Beneficiaries in the standard plan are responsible for all drug expenses until they reach the catastrophic portion of the benefit.¹⁰ Plans with enhanced Part D benefits

**FIGURE
9-3**

Zero-premium plans are widely available



Note: PPO (preferred provider organization), PFFS (private fee-for-service), MA (Medicare Advantage).

Source: MedPAC analysis of CMS Landscape Tool, October 2005.

**TABLE
9-3**

MA-PDs are widely available and enhanced cost-sharing protections are available in some areas

	Local plans			Regional PPO	Any MA plan
	HMO	PPO	PFFS		
MA-PD	72%	63%	70%	88%	99%
with some coverage in gap	46	34	0	14	62
with coverage of brand name drugs in gap	13	5	0	0	14
Zero premium MA-PD	48	11	25	15	68
with some coverage in gap	26	3	0	0	27
with coverage of brand name drugs in gap	13	0	0	0	13
Out-of-pocket limit:					
\$5,000 or less	53	41	75	88	98
\$2,000 or less	28	16	37	4	65
Cost sharing for 6-day hospital stay, \$500 or less	63	45	43	13	87

Note: MA-PD (Medicare Advantage–Prescription Drug [plan]), PPO (preferred provider organization), PFFS (private fee-for-service), MA (Medicare Advantage). Plans with gap coverage include some benefits in the range of beneficiary drug spending above the standard benefit’s initial coverage limit and below its out-of-pocket threshold. Part D’s defined standard benefit requires the enrollee to pay 100 percent coinsurance in this coverage gap.

Source: CMS 2006 unpublished bid data.

may offer some coverage in the gap. Almost two-thirds of beneficiaries have MA-PDs available that offer some coverage in the Part D coverage gap, mostly from local HMOs and local PPOs. Regional PPOs offer gap coverage with generic drugs to 14 percent of beneficiaries, but no PFFS plans offer any gap coverage.¹¹ While most of the coverage in the gap is for generics only, 14 percent of beneficiaries have access to MA-PDs that fill in coverage with both brand name and generic drugs.

Zero-premium MA-PD plans are also widely available. Almost 70 percent of beneficiaries have access to MA-PD plans that charge no premium for Parts A and B benefits and have a zero premium for the Part D benefits they offer. Local HMOs are the most widely available zero-premium MA-PDs, providing access to 48 percent of Medicare beneficiaries. Further, 27 percent of beneficiaries have access to a zero-premium plan with Part D that offers some coverage in the Part D coverage gap, with almost all of that coverage being offered by local HMOs. Finally, some of the zero-premium MA-PDs include brand and generic coverage throughout the gap; 13 percent of Medicare beneficiaries will have access to such a plan (all local HMOs).

Eighty percent of beneficiaries have access to MA-PDs with total premiums of \$20 or less per month in 2006 (Figure 9-4). About 11 percent of beneficiaries would have to pay at least \$40 per month to enroll in an MA-PD, and some beneficiaries would have to pay as much as \$116 per month.

Beneficiaries’ cost-sharing liability

MA enrollees face cost-sharing requirements in addition to any plan premiums. While in FFS Medicare, beneficiaries’ average cost-sharing liability (about \$1,500 in 2006) is higher than that typical for MA enrollees (CMS 2005a). The Commission found in 2004 that enrollees with certain illnesses in some plans could also face high cost sharing (MedPAC 2004a). This section discusses some of the aspects of plans’ benefit designs that affect members’ cost-sharing liability.

An out-of-pocket (OOP) limit is one way to protect beneficiaries against high cost-sharing liability. In its 2006 Medicare Advantage call letter, CMS encouraged plans to offer an OOP limit in exchange for providing greater latitude on individual services (CMS 2005b). Also, the MMA mandated that regional PPOs have an OOP limit

on beneficiary cost-sharing liability for covered Medicare services provided in-network.

Overall, 98 percent of beneficiaries have access to a plan that includes an annual OOP limit of \$5,000 or less, and 65 percent of beneficiaries have a plan available that includes an OOP limit of \$2,000 or less (Table 9-3). PFFS plans with an OOP limit no higher than \$2,000 are available to 37 percent of beneficiaries. Also, HMOs with OOP limits of \$2,000 or lower are available to 28 percent of Medicare beneficiaries, and local PPOs with these limits are available to 16 percent. We note that many plans may charge low enough cost sharing that they do not need to provide an OOP limit.

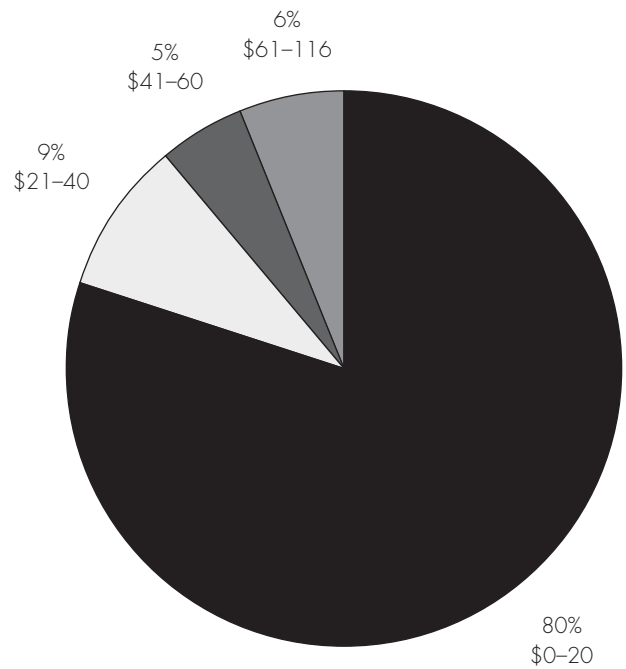
While by law all regional PPOs offer OOP limits, only 4 percent of Medicare beneficiaries live in regions where a regional plan with an OOP limit of \$2,000 or less is offered. The MMA and subsequent regulations did not set specific dollar values for the mandated OOP limit. Regional PPOs decided to offer OOP limits ranging from \$1,000 per year to \$5,000 per year, with the most common plan design having a limit of \$5,000.¹²

Cost sharing in plans varies across many different measures. An inpatient hospital stay is a relatively common and costly service in terms of cost sharing. In FFS Medicare, there is a \$952 deductible for a hospital stay for 2006. The Commission has estimated the average stay is between five and six days, and the average cost per day is around \$1,000. For this analysis, we look at the OOP costs for a beneficiary with a six-day stay. For those few plans that impose cost sharing as a percentage of cost, we assume a daily cost of \$1,000. Most plans impose a flat daily copayment and often have a limit on total cost sharing for a hospital stay or an overall OOP limit. Across all plans, cost-sharing liability for a six-day hospital stay varies from zero to over \$2,000. We focused on the availability of plans with cost sharing of \$500 or less for a six-day stay, because we view that level of cost sharing as a significant savings from FFS Medicare for an average stay.

Eighty-seven percent of Medicare beneficiaries have access to a plan with expected cost sharing of \$500 or less for a six-day hospital stay. Availability of these plans is greater for HMOs and other local plans. Only 13 percent of beneficiaries have access to a regional PPO with this level of cost sharing.

FIGURE 9-4

Most beneficiaries have access to an MA-PD with a premium of \$20 or less



Note: MA-PD (Medicare Advantage-Prescription Drug [plan]).

Source: MedPAC analysis of CMS Landscape Tool, October 2005.

Benefit differences between urban and rural areas

Additional benefits are more widely available in urban than in rural areas. Zero-premium plans are available to about 89 percent of beneficiaries living in urban areas and about 65 percent of rural beneficiaries. Availability is also wider in urban areas for zero-premium plans that include Part D benefits and for those that provide some coverage in the Part D coverage gap. Plans with annual limits on OOP liability for Medicare services of \$5,000 or less are available to 98 percent of both urban and rural beneficiaries, but plans with OOP limits of \$2,000 or less are available to 68 percent of urban beneficiaries and 55 percent of rural beneficiaries. Also, 92 percent of urban beneficiaries have access to a plan that has a \$500 or lower OOP cost for a six-day hospital stay, while only 70 percent of rural beneficiaries have access to such a plan (Table 9-4, p. 212).

The key factor in the benefit differences between urban and rural areas is that benefits tend to vary by plan type,

**TABLE
9-4****Differences in plan availability
between urban and rural areas**

	Urban	Rural
Available plan:	100%	99%
Local HMO	86	27
Local PPO	75	26
PFFS	75	96
Regional PPO	88	89
Zero premium:	89	65
with Part D	73	47
with Part D and gap coverage	34	2
Out-of-pocket limit:		
\$5,000 or less	98	98
\$2,000 or less	68	55
Cost sharing for 6-day hospital stay, \$500 or less	92	70

Note: PPO (preferred provider organization), PFFS (private fee-for-service).

Source: MedPAC analysis of CMS Landscape Tool, October 2005.

as shown earlier. Although the overall availability of plans is similar in urban (100 percent) and rural (99 percent) areas, the types of plans available tend to differ. Urban beneficiaries are much more likely to have local HMOs and local PPOs available than if they lived in rural areas. Local HMOs and PPOs are available to 86 percent and 75 percent, respectively, of urban beneficiaries and are available to only 27 percent and 26 percent of rural beneficiaries. On the other hand, PFFS plans are available to 96 percent of rural beneficiaries and only 75 percent of urban beneficiaries. Regional PPOs are available to about the same percentages of urban and rural beneficiaries. Thus, the plans in rural areas are more likely to be the regional PPOs and PFFS plans that do not generally have tight networks of providers and tend to bid higher than local managed care plans.

We see that the plans in urban areas, through the greater ability to build networks and manage care, tend to be able to bid lower relative to their benchmarks than plans in rural areas (even though benchmarks in rural areas tend to be higher relative to local FFS costs than benchmarks in urban areas). As a result, the rebates tend to be larger in urban areas, allowing the managed care plans there to offer additional benefits.

In future work, we will examine some of the broader questions about the value of private plans to the Medicare program. Such questions may focus on quality, efficiency, and payment issues.

Special needs plans

Almost since the beginning of the program, Medicare has included special plans for beneficiaries who tend to report lower health status, use more health care services, and cost the Medicare program more than other beneficiaries. These existing plans include the Program of All-Inclusive Care for the Elderly (PACE), Social Health Maintenance Organizations, Evercare, and various demonstration plans.

Plans for beneficiaries who are dually eligible for Medicare and Medicaid have faced the additional challenge of integrating services from these two payers. In theory, these plans are designed to both improve care coordination for beneficiaries and reduce program spending. However, the inherent incentive to shift costs among multiple payers raises the longstanding question of whether these plans do result in Medicare program savings.

The Commission has sought creative ways of delivering high-quality health care to dual-eligible Medicare beneficiaries. The policy and practical issues we described in the June 2004 report chapter on dual-eligible beneficiaries might be addressed through special plans (MedPAC 2004b). Special needs plans, a new type of MA plan, build on the earlier demonstrations and other existing plans. They also offer the potential to address the care needs and costliness of dual eligibles and other special needs beneficiaries. While our chapter is largely descriptive of the early days of the program, our interest is in three fundamental questions. First, do SNPs tailor benefit packages to better serve the needs of enrollees than fee-for-service Medicare or regular MA plans? Second, does risk adjustment result in an appropriate payment amount? Third, do dual-eligible SNPs merge Medicare and Medicaid benefit programs in a way that better serves beneficiaries, and is there cost shifting among payers?

Creation of special needs plans

The Congress created SNPs as a new MA plan type to provide a common framework within the regular MA program for the existing plans serving special needs beneficiaries and to expand beneficiaries' access to

and choice among MA plans. This means that many of the existing special plans, which were operating as demonstrations, could transition to become SNPs.¹³ In fact, existing demonstrations for special needs beneficiaries had to become SNPs to include the Part D prescription drug benefit. SNPs are not a permanent feature of MA. Absent congressional action, SNP authority will expire at the end of 2008.

SNP requirements

SNPs function essentially like any other MA plan, but must also provide the Part D drug benefit as well as additional services that go beyond regular Medicare services and are tailored to the special needs population. In exchange, they are allowed to limit their enrollment to their targeted population.

Payment and risk adjustment

SNPs are paid like regular MA plans, including the same risk-adjustment method.¹⁴ MA plan payments have historically been risk adjusted based on the demographic characteristics of their enrollees. Recently, CMS began phasing in a risk-adjustment system that uses diagnosis data, known as the hierarchical condition categories (HCCs). The CMS–HCC formula generally results in higher payments for special needs beneficiaries than for the general Medicare population.¹⁵ In 2006, MA plan payments are 75 percent risk adjusted using CMS–HCCs. In 2007, payments will be fully risk adjusted in this manner.

Enrollment

Special needs beneficiaries have more opportunities to join or switch MA plans than regular beneficiaries. Dual eligibles have a special election period, which begins when they become dually eligible and continues as long as they remain dually eligible. During the open enrollment period for institutionalized individuals, which is continuous beginning in 2006, beneficiaries going into, residing in, or leaving an institution can join any open MA plan. Individuals with severe or disabling chronic conditions have a special election period to enroll in a SNP designed for beneficiaries with those conditions, which begins with diagnosis of the condition and ends upon enrollment in a SNP. CMS provides a special election period for those who are no longer eligible for a SNP, such as those who lost their Medicaid eligibility, to enable them to enroll in a regular MA plan. With the implementation of “lock-in” this year, which limits beneficiaries’ ability to change

plans, special needs beneficiaries will be the largest group of beneficiaries eligible to enroll in MA plans after the regular election period.

SNP types

The MMA authorizes Medicare to contract with SNPs for three types of beneficiaries: dual eligibles, institutionalized beneficiaries, and patients with severe chronic diseases or conditions. SNPs may limit their enrollment to their targeted special needs population exclusively, or they may enroll any other beneficiaries as long as their membership includes a disproportionate percentage of their targeted population. This means that the percentage of the special needs target population in the plan must be greater than the percentage that occurs nationally in the Medicare population. Most SNPs in 2006 have chosen to limit their enrollment to their targeted population exclusively. Each of the three types of SNPs can enroll beneficiaries who fall into additional targeted populations. For example, an institutional SNP can enroll a beneficiary who resides in an institution and is also dually eligible.

Next, for each type of SNP—dual eligible, institutional, and chronic condition—we discuss the plan and target population characteristics. Because most SNPs offered this year are for dual eligibles, the discussion focuses primarily on this type.

Dual-eligible SNPs

Medicare beneficiaries can qualify for Medicaid if they meet certain income and resource requirements or have high health care bills. Each state sets its own eligibility standards and determines the scope of benefits provided to Medicaid beneficiaries within federal guidelines.

These dual-eligible beneficiaries are divided into several different categories based on their income and assets (Table 9-5, p. 214). There are more than 7 million dual eligibles; of these, about 6 million are “full duals”—they qualify to receive full Medicaid benefits. Beneficiaries with somewhat higher income and asset levels are eligible for more limited Medicaid coverage under multiple categories collectively known as the Medicare Savings Program (MSP).

Dual-eligible SNPs may choose to accept all dual eligibles or limit enrollment to the full benefit dual category. In other words, an MA organization can offer two dual-eligible SNPs in the same county—one for full-benefit duals and another for all duals. Plans can not

**TABLE
9-5**

Categories of dual eligibles

Type of dual eligible	Income limit for eligibility	Medicaid covers		
		Medicare Part B premium	Cost sharing	Full Medicaid benefits
Full benefit				
Meets low income standard	≤73% FPL ^a	yes	yes	yes
Medically needy (spend-down)	None	yes	yes	yes
Medicare Savings Program				
Qualified Medicare beneficiary	≤100% FPL	yes	yes	some ^b
Specified low-income Medicare beneficiary	Between 100% and 120% of FPL	yes	no	no
Qualifying individual	Between 120% and 135% of FPL	yes	no	no

Note: FPL (federal poverty level). All types of dual eligibles except for medically needy also have asset limits; full duals are limited to \$2,000 per individual or \$3,000 per couple, and Medicare Savings Program dual eligibles are limited to \$4,000 per individual or \$6,000 per couple. The 2006 FPL is \$9,800 for an individual and \$13,200 for a family of two. The FPL is higher in Alaska and Hawaii.
 a States set their own Medicaid eligibility levels, usually at or below the supplemental security income eligibility level of 73 percent of the FPL.
 b Some states have extended full Medicaid benefits to qualified Medicare beneficiaries.

Source: CMS. http://www.cms.hhs.gov/DualEligible/02_DualEligibleCategories.asp#TopOfPage.

limit enrollment to MSP duals alone as these tend to be healthier individuals than their full-dual counterparts. Although this policy is designed to prevent selection, there may still be opportunities for selection.

Coordination of Medicare and Medicaid The law does not mandate any Medicaid involvement in SNPs. Although dual-eligible SNPs are not required to, they may choose to contract with states to provide Medicaid benefits.¹⁶ Institutional and chronic condition SNPs that have, or plan to have, dual-eligible enrollees may also incorporate Medicaid. It is unclear how SNPs that do not integrate Medicare and Medicaid services can better coordinate the two programs. It is also unclear how these dual-eligible SNPs differ from regular MA plans.

Why integration is a good idea Having beneficiaries enrolled in one managed care plan for Medicare benefits and another for Medicaid benefits raises a variety of problems for care coordination. For example, a Medicaid managed care plan often has no incentive to manage beneficiaries' care to limit unnecessary acute care use. Similarly, the Medicare managed care plan does not have an incentive to manage beneficiaries' care to avoid spending on long-term care.

Case studies suggest that care coordination is challenging even when dual-eligible beneficiaries are enrolled in Medicare and Medicaid managed care plans (but not an integrated plan) offered by the same managed care

organization. Beneficiaries have two separate membership cards and different points of contact for the Medicare and Medicaid benefits. Plans may not be equipped to coordinate across the requirements of the two programs. Also, most Medicaid managed care plans are not responsible for long-term care services (Walsh et al. 2003).

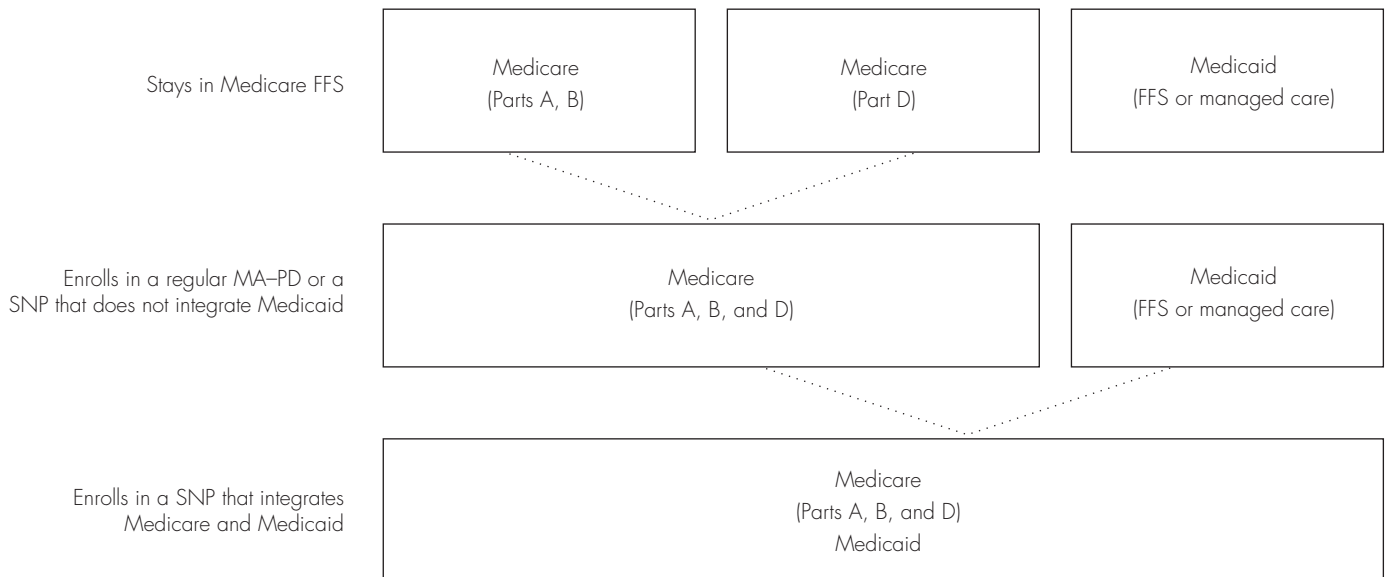
Many of these coverage and payment issues are resolved if the dual eligible is enrolled in the same plan for both Medicare- and Medicaid-covered services, and if that plan is committed to integrating benefits (Figure 9-5).

States lack incentives to partner with SNPs Medicare, whether beneficiaries are in fee-for-service or managed care plans, is the primary insurer for dual eligibles and covers medically necessary acute care services—including physician, hospital, hospice, skilled nursing facility, and home health services—and durable medical equipment. As the secondary payer, Medicaid generally covers:

- Services not covered by Medicare, such as transportation, dental, and vision.¹⁷
- Wrap-around services, such as cost sharing for services covered by Medicare as well as acute care services that are delivered after the Medicare benefits are exhausted or if certain Medicare criteria are not met. These services include inpatient hospital, skilled nursing facility, and home health care.

**FIGURE
9-5**

Options for dual eligibles in 2006



Note: FFS (fee-for-service), MA-PD (Medicare Advantage-Prescription Drug [plan]), SNP (special needs plan).

- Long-term care, including custodial nursing facility care, home- and community-based services, and personal care services.

States must pay Medicare's Part B premium for all dual-eligible beneficiaries and cost sharing for full duals and qualified Medicare beneficiaries (Table 9-5). States are not required to pay any MA plan premium on behalf of dual eligibles who enroll in MA plans.¹⁸ States' cost-sharing responsibility is less clear for duals who enroll in MA plans, as plans generally have different cost-sharing structures than FFS Medicare and can offer additional benefits. States generally are responsible for plans' cost sharing for services that are covered by FFS Medicare, but not for additional benefits. In addition, states may avoid paying cost sharing on services altogether. The Balanced Budget Act of 1997 allowed states to set providers' reimbursement for dual eligibles equal to the Medicaid payment rate and generally prevented providers from balance billing.¹⁹ About one-third of states have set their rates at 80 percent or less of Medicare FFS rates, which virtually eliminates their cost-sharing responsibility (Atherly 2005). States can also choose not to pay cost sharing for services if they are delivered by non-Medicaid-approved providers.

States may have little incentive to take on the administrative complexity of partnering with SNPs because now that prescription drugs are covered under Part D, their largest payment responsibility for duals is long-term care. While states may contract with SNPs to cover long-term care and other Medicaid services, few have done so.²⁰ Furthermore, given recurring state budget pressures, many state Medicaid programs have reduced or eliminated coverage for optional services and more may do so in the future, leaving even fewer services to contract out to SNPs.

Special managed care programs for dual eligibles Several programs integrate the financing and delivery of care for the full range of health care needs of dual eligibles and thereby avert some of these coordination-of-benefit issues. By aligning incentives, this integrated payment approach is also intended to help plans coordinate care for dual eligibles. The following two types of programs combine Medicare and Medicaid capitated payments to integrate care for the dual-eligible population, and thus may be models for integrated SNP plans.

Program of All-Inclusive Care for the Elderly PACE is a capitated benefit authorized by the Balanced Budget Act of 1997 that serves frail elderly beneficiaries, age 55 and older, who meet states' standards for nursing home placement and reside in areas served by the PACE organizations.²¹ Most enrollees are dually eligible. PACE plans feature a comprehensive medical and social service delivery system, an interdisciplinary team that provides services in an adult day health center setting, and in-home and referral services in accordance with participants' needs.

These plans receive separate capitated payments from Medicare and Medicaid. Until recently, the Medicare rate was equal to 2.3 times the Medicare county rate amount for MA plans, but this adjustment has been replaced with a frailty adjuster based on limitations in activities of daily living among enrollees in the plan. The PACE plan negotiates the Medicaid rate with the state Medicaid agency. Separate contracts mean that plans still have to deal with two payers with different policies.

State demonstration waivers Minnesota, Wisconsin, and Massachusetts have operated state programs that pool Medicaid and Medicare payments under Medicare demonstration authority. These plans are transitioning to SNPs.

In Minnesota Senior Health Options and Disability Health Options, Medicare and Medicaid each pay a capitated rate for their respective benefits, including home- and community-based care and nursing facility services (except for those provided beyond 180 days, which are paid on a FFS basis). Enrollment is offered to dual-eligible seniors and people with disabilities—both those who qualify for nursing home care (“nursing home certified”) and those who do not—as a voluntary alternative to Minnesota's mandatory managed care program.

The Wisconsin Partnership Program includes community-based organizations that have entered into a Medicaid managed care contract with the Wisconsin Department of Health and Family Services and a Medicare contract with CMS. They receive monthly capitated payments for each participant from which they pay for all participant services. The Wisconsin Partnership Program serves both seniors over 55 and physically disabled dual eligibles. Qualifying beneficiaries must be nursing home certified.

Massachusetts's MassHealth Senior Care Options includes organizations that contract with the state's Division of Medical Assistance and CMS to offer the full range of

Medicare and Medicaid benefits available to dual eligible beneficiaries. Senior Care Options organizations serve community-well, community-frail, and institutionalized people ages 65 and over.

Passive enrollment Medicaid managed care plans that chose to offer SNPs could apply to CMS in 2005 to “passively enroll” their members into their new SNP. Approved plans passively enrolled their dual-eligible members into their SNP effective January 1, 2006. Plans had to send affected members a letter in fall 2005 notifying them of their choices to remain in the plan, switch to another MA plan, or return to Medicare FFS. Forty-two SNPs that had operated Medicaid managed care plans passively enrolled their dually eligible beneficiaries in 13 states (McClard 2006).²²

Institutional SNPs

Institutional SNPs may enroll beneficiaries who reside or are expected to reside for 90 days or longer in a long-term care facility, including skilled nursing facilities, nursing homes, skilled nursing facilities/nursing facilities, intermediate care facilities for the mentally retarded, or inpatient psychiatric facilities. They may also enroll beneficiaries living in the community who require an equivalent level of care to beneficiaries in these facilities. With CMS approval, they may limit their enrollment and marketing to select facilities within their geographic service area.

Importance of managing institutionalized

beneficiaries From a state's perspective, it is clear that fragmented Medicare acute care can lead to nursing facility placement—paid briefly under Medicare, but ultimately leading to long-term stays that may be paid by Medicaid. Integrated Medicare and Medicaid plans that include long-term care are designed to prevent or delay disability and health deterioration that would necessitate institutional long-term care and manage the care of enrollees already in institutions to prevent recurring hospitalizations.

Chronic condition SNPs

Chronic condition SNPs are designed for beneficiaries with severe chronic diseases or conditions, which CMS has not yet defined. CMS has stated that because chronic condition SNPs are a new offering, the agency did not want to limit their potential application by specifically defining a chronic condition. Instead, the agency evaluates proposed plans on a case-by-case basis, considering

appropriateness of target population, clinical programs and expertise, and how the SNP will cover the full spectrum of the target population without discriminating against the sicker members. New chronic condition SNPs are targeted to beneficiaries with cardiovascular disease, congestive heart failure, diabetes, chronic obstructive pulmonary disease, asthma, hypertension, coronary artery disease, osteoarthritis, mental illness, end-stage renal disease, and HIV/AIDS.

Importance of managing chronic condition beneficiaries

Fully 83 percent of Medicare beneficiaries have at least one chronic condition. However, this includes conditions that are less expensive to treat, such as arthritis. Twenty-three percent of Medicare beneficiaries have five or more chronic conditions and account for 68 percent of program spending (Anderson 2005). Improving care coordination for these beneficiaries and reducing unnecessary utilization could result in significant Medicare savings. For more information, see Chapter 2 on care coordination.

SNPs have grown quickly

2006 marked a significant increase in the number of SNPs available to beneficiaries. In 2004, there were just 11 SNPs. By 2005, that number had grown to 125. This year, the total number of SNPs has more than doubled to 276 (CMS 2006b).

By January 1, 2006, CMS had signed 164 MA contracts with organizations that offer one or more SNP plans.²³ These contracts represent 91 distinct corporate entities (CMS 2006b). Most are for profit (CMS 2006a). Many of these entities offer more than one SNP. All three types of SNPs—dual eligible, institutional, and chronic condition—are available in 2006; most SNPs are for dual eligibles (Figure 9-6).

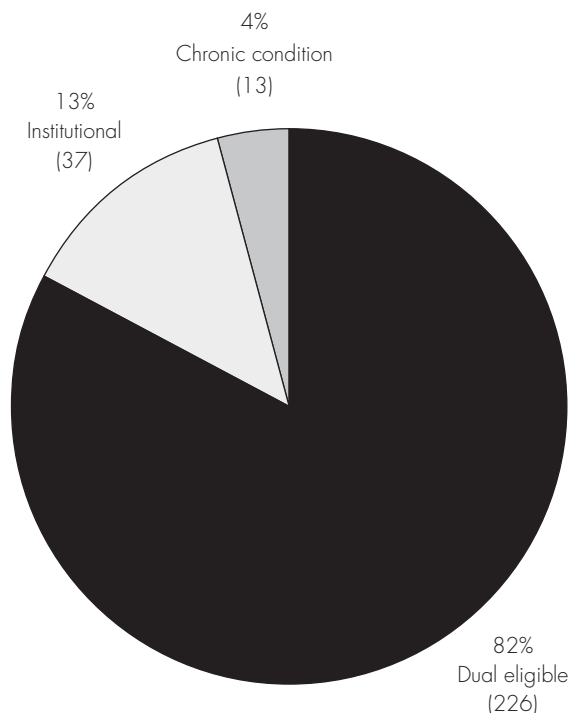
SNPs are available in at least part of 42 states, the District of Columbia, and Puerto Rico (Figure 9-7, p. 218). Eight states, the District of Columbia, and Puerto Rico have at least one SNP available throughout the entire area. Several states have multiple types of SNPs available.

Reasons for offering and joining a special needs plan

MA organizations, health care providers, beneficiaries, and federal and state governments have different levels of interest and reasons for taking part in a SNP.

FIGURE 9-6

Special needs plans available in 2006



Note: Percentages do not sum to 100 due to rounding. Number of plans is given in parentheses.

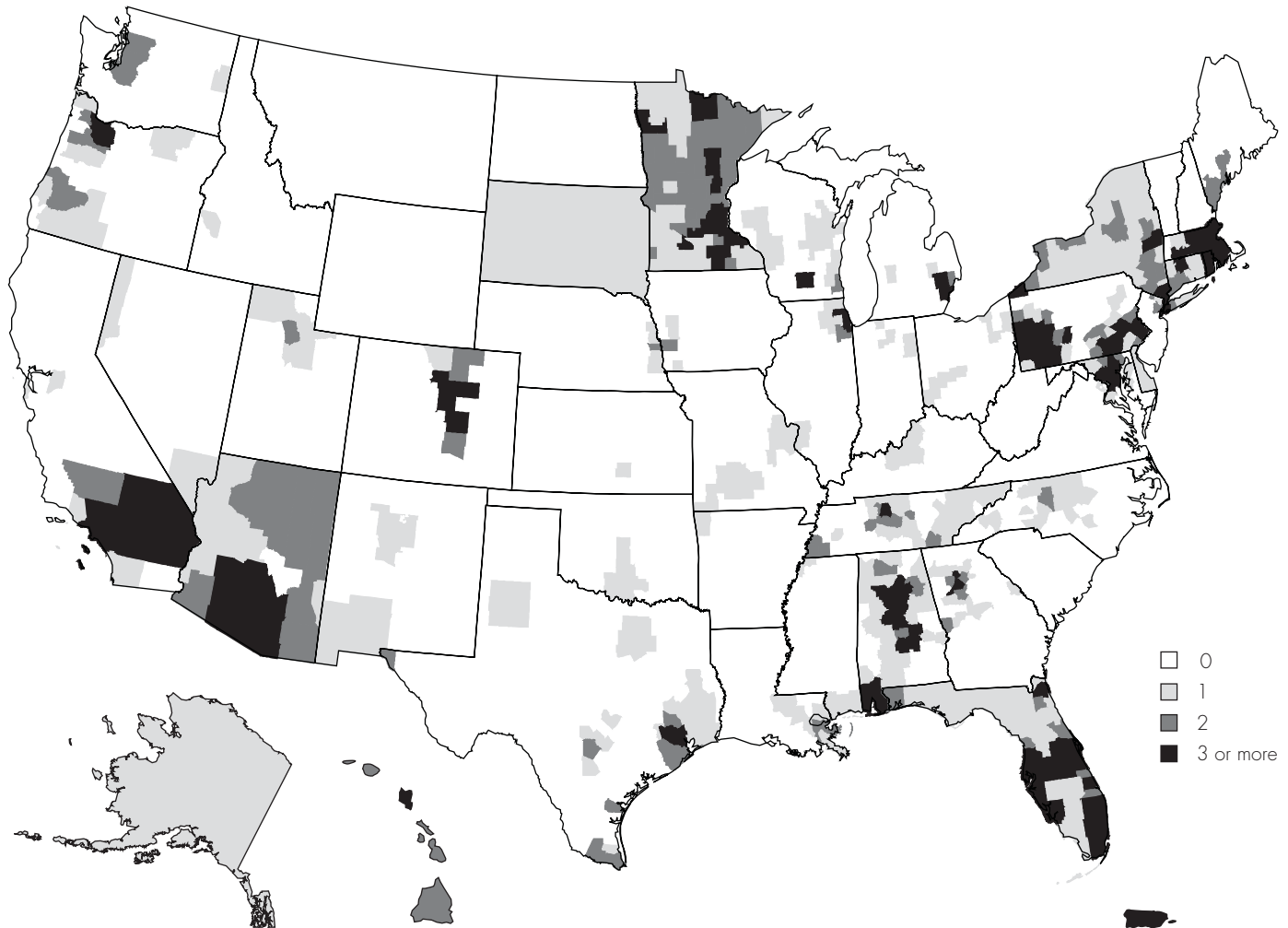
Source: CMS special needs plan fact sheet and data summary. February 14, 2006.

Plans

Organizations entering the SNP market include those with experience partnering with Medicaid and serving special needs populations, such as the Massachusetts demonstration, but also include MA organizations with little or no similar experience that have chosen to add SNPs to their menu of plans. Some organizations are offering multiple SNP plans. In fact, some offer more than one dual-eligible SNP in the same geographic area. This allows organizations to offer a plan only to full duals with a benefit and cost-sharing structure designed to appeal to these beneficiaries and potentially attract state partnerships. (States have greater cost-sharing responsibility for full duals than for Medicare Savings Program duals.) At the same time, they can offer a plan with a different structure to all duals, including MSP participants. Some observers have noted that risk adjustment has the potential to make enrollment of special needs beneficiaries more profitable than it has been.

**FIGURE
9-7**

Number of organizations offering special needs plans, by county, 2006



Source: MedPAC analysis of CMS 2006 Plan Benefit Package data.

Providers

Physicians and hospitals who have served dual eligibles through a Medicaid managed care plan may find SNP payment rates more generous. The traditional MA plans that have added SNPs may be able to build on networks already in place for their regular MA plans. However, because special needs beneficiaries tend to have greater health needs than their counterparts, SNPs will probably have to tailor their networks by including a somewhat different mix of providers. This may be difficult in areas where Medicare physicians do not want to participate in managed care. We have heard reports that some Medicare

physicians resist enrolling in SNP networks and encourage their dual-eligible beneficiaries who have been passively enrolled to switch back to FFS Medicare.

Beneficiaries

Dual eligibles' incentive to join MA plans is not as strong as for other beneficiaries. They can have their choice of provider under FFS Medicare with cost-sharing protection and additional services provided by Medicaid. In fact, the vast majority of dual eligibles have been in FFS. SNPs' advantage over FFS Medicare is that they can offer greater integration, including acute care, prescription

drugs, and possibly long-term care. SNPs must offer sufficient additional benefits or reduced cost sharing to attract beneficiaries to join. Beneficiaries' decisions will probably be largely influenced by the comparative benefits of their states' Medicaid plans and available SNPs' benefit packages.

Federal and state government

Special needs beneficiaries have high health care costs. In 2002, dual eligibles accounted for 17 percent of Medicare enrollment and 29 percent of Medicare spending as well as 14 percent of Medicaid enrollment and 42 percent of Medicaid spending (Elam 2006). Dual eligibles can be in FFS Medicare and managed care in Medicaid or vice versa. They can even be enrolled in two different managed care plans simultaneously—one sponsored by Medicare and one by Medicaid. Most duals have been enrolled in FFS in both programs. SNPs offer the potential for better care management and resulting efficiencies. However, SNP cost savings on Medicare services may be achieved by shifting some costs to Medicaid, especially if the SNP does not have a contract with the state for coverage of Medicaid services. This may have implications for the continuation of SNPs, which are scheduled to expire at the end of 2008. If some of the plans fail to demonstrably improve care for beneficiaries and deliver savings, the Congress may wish to modify the definition of SNPs—if it chooses to extend SNP authority—to better match the characteristics of effective plans.

Site visits

To learn more about SNPs, we visited some SNP organizations, state agencies, and CMS regional offices in Baltimore, Maryland; Boston, Massachusetts; Phoenix, Arizona; and Miami, Florida. Together these markets met the following selection criteria:

- a large number of competing SNPs;
- the presence of existing special plans that converted into SNPs;
- passive enrollment of Medicaid managed care enrollees into dual-eligible SNPs;
- the presence of organizations that offer multiple dual-eligible SNPs; and
- the presence of all three types of SNPs: dual eligible, institutional, and chronic care (Mathematica 2006).

SNP goals and strategy

Plans' goals and strategies for the future reflected differences in their experience with the target population, experience in local markets, relationships to Medicaid, and histories in Medicare and Medicaid. Some SNPs told us that they plan to wait before attempting to significantly increase their enrollment, alter their benefit packages, or expand their service areas. Others are considering expanding their service areas, adding new plans, pursuing partnerships with states, and increasing their marketing efforts.

SNPs are generally offered by organizations that fall into one of two groups: 1) organizations that have experience providing services to special needs beneficiaries through a Medicare demonstration, Medicaid plan, or similar specialized plan and view SNPs as a natural extension of their mission, and 2) organizations that have experience operating Medicare managed care plans and view SNPs as an opportunity to expand their selection of products.

Relationships with states

SNP relationships with states vary: Some have very close and long-established relations with states while others have none at all. Some dual-eligible SNPs receive payment from states to include some or all Medicaid benefits in their benefit package. Other SNPs are actively pursuing partnerships with states, but some SNPs have no plans to incorporate Medicaid. States may have little incentive to take on the administrative complexity of partnering with SNPs, especially now that prescription drugs are covered under Part D and about one-third of states have set their Medicaid rates at or below 80 percent of the Medicare fee schedule to limit their cost-sharing liability (Atherly 2005). The exception is for states that have or are planning Medicaid managed care programs that cover long-term care services. SNPs may offer a promising partnership option for these services.

Coordination challenges

SNPs that contracted with Medicaid noted the numerous conflicts between Medicare and Medicaid rules dealing with bidding, contracting, enrollment, marketing, complaints and grievances, reporting, monitoring, and rate setting. Plans are eager for CMS and states to work to reduce these administrative barriers to achieve better integration of the two programs.

Plans expressed frustration with CMS's lack of support of their efforts to integrate Medicare and Medicaid. For example, several plans told us that they had to deal with separate Medicare and Medicaid officials at CMS and that these two groups rarely seemed to coordinate.

Coordinating Medicare and Medicaid payment

Some dual-eligible SNPs indicated that keeping track of separate funding streams was burdensome, but other SNPs indicated this was no problem. All SNPs indicated that the accounting requirements had no effect on their clinical care coordination efforts or on their relationships with providers.

Contracting with CMS

It appears that SNP applications were reviewed and approved entirely by the CMS central office. CMS's central office is primarily responsible for reviewing and approving applications for regular MA plans. Because SNPs, especially dual-eligible SNPs, are significantly affected by state and local conditions and regional offices are responsible for overseeing SNPs' operation, it may be appropriate for regional offices to have a more active role in reviewing and approving their applications.

Some plans noted that CMS approved their applications with few changes. In contrast, other SNPs described their interaction with CMS as somewhat unpredictable and filled with last-minute changes.

Outreach and enrollment

Even before the creation of SNPs, outreach and enrollment have been an issue for special plans. If SNPs are unable to enroll a sufficient number of special needs beneficiaries, they can not act as a driver of greater integration.

SNPs have mostly opted for targeted marketing, with little emphasis so far on broader marketing. Few SNPs believe that television, newspapers, or other media will be effective in reaching potential members.

SNP approaches to outreach and enrollment differ significantly, depending on their target populations (dual eligibles, institutionalized, or chronic condition) and whether they kept many former members through passive enrollment. The following are broad generalizations as individual SNP's marketing strategies varied. Dual-eligible SNPs have the broadest marketing strategies aimed at physicians, hospitals, community organizations, and beneficiary advocacy groups. Institutional SNPs market primarily to nursing facilities and families of residents.

Chronic condition SNPs focus primarily on physicians, other chronic care providers, and related advocacy groups.

SNPs with passive enrollment focus on retaining their current enrollees. Organizations that offer SNPs along with other MA plans may focus on encouraging members to shift from their other plans. If they offer commercial products, they may also focus on marketing to members aging into Medicare. In most markets, the overwhelming majority of dual eligibles were auto-enrolled into stand-alone prescription drug plans. Many SNPs do not focus on marketing to these beneficiaries.

The CMS web-based plan finder tool is difficult for SNPs to take advantage of as their specialized focus and broader benefits do not fit well into the current plan finder format. SNPs are often indistinguishable from other MA plans on the plan finder. At least one SNP opted to be listed as "information not available—contact plan" rather than list inaccurate information.

Quality monitoring and improvement

To allow SNPs to continue to operate, the Congress must extend the SNP authorization beyond 2008. A CMS evaluation of SNPs is due to the Congress at the end of 2007. However, there may be limited data available upon which to evaluate SNPs. 2006 data may be muddled by start-up issues, such as incorrect enrollment data. In addition, plans designed to improve care quality and reduce unnecessary costs may not exhibit measurable differences within a year. The evaluators' task may be further complicated by challenges in gathering information from plans. For example, some plans do not maintain websites or use post office boxes instead of street addresses.

Several SNPs expressed concern that CMS's MA quality monitoring and reporting system is not as applicable to their special target populations and benefit packages because these systems were designed more for acute care than for ongoing care of chronic or disabling conditions. Some SNPs have additional significant quality monitoring and reporting systems in place to meet Medicare demonstration or state Medicaid requirements. Other SNPs do not appear to have any special quality efforts underway at this point, beyond what CMS requires. SNPs recognize the importance of quality monitoring and performance reporting systems to enable SNPs to demonstrate that they are adding value beyond what a standard MA-PD or PDP might offer.

Concluding observations

SNPs offer the opportunity to improve the coordination of care for special needs beneficiaries. Dual-eligible SNPs (or any SNP that integrates Medicare and Medicaid) also offer the opportunity to improve the coordination of Medicare and Medicaid. Although it is too early to determine whether SNPs result in improved quality and significant program savings, they may not fulfill this opportunity. For instance, many dual-eligible plans do not contract with states to include Medicaid benefits. As SNPs are a new offering, the Commission plans to continue to assist the Congress and CMS in defining what distinguishes them from other MA plans. To do so, we

will further evaluate the plans that enter the market and examine their special characteristics. For example, the goal for dual-eligible SNPs is less clear now that coverage for prescription drugs has been moved from Medicaid to Medicare, leaving much less state financial responsibility for duals who are not in institutions. Because of the rapid growth of new SNPs, we also plan to look at how the CMS–HCC risk adjuster applies to special needs beneficiaries. The results of these analyses will allow us to advise the Congress and CMS on program elements that would better support SNPs’ goal to fulfill the opportunity for better integration and care coordination. ■

Endnotes

- 1 A plan may limit its service area to a partial county if it can explain to CMS why its network is unable to serve the entire county.
- 2 Beneficiaries may sometimes also enroll in demonstration project plans and in plans reimbursed based on the cost the plan incurs while providing Medicare services to enrollees. Enrollees in the cost plans retain their Medicare FFS eligibility for services provided outside the plan.
- 3 Plan sponsors of PPO products must be licensed as risk-bearing entities.
- 4 Another difference between an HMO with a point-of-service option and a PPO is that the HMO may limit its level of financial responsibility for out-of-plan care by saying, for example, that out-of-network services are covered up to a limit of \$1,000 per year. A PPO must cover all out-of-network care; it may impose higher cost-sharing levels for out-of-network care, but it may not have a spending cap.
- 5 For more detail on these provisions, see MedPAC 2005.
- 6 A coordinated care plan is a Medicare approved plan (other than a PFFS plan) that delivers Medicare services to its members through a provider network.
- 7 Plan sponsors often offer more than one plan. For example, one plan may be a “standard” option and another may be a “high” option. Sponsors may also offer more than one type of plan. Thus, one sponsor could offer multiple HMO options and multiple PPO options in one service area.
- 8 For this analysis, we depart from past practice and show all plan bids weighted equally regardless of enrollment.
- 9 Some zero-premium plans include a supplemental benefit of a rebate of some or the entire Part B premium. Enrollees in these plans would pay a lower net Part B premium than beneficiaries remaining in FFS Medicare.
- 10 See Chapter 7 a more detailed explanation of out-of-pocket spending for Part D benefits.
- 11 Enrollees in PFFS plans without drug coverage can enroll in a stand-alone PDP.
- 12 Some regional SNPs for dual eligibles have out-of-pocket limits below \$1,000, but it is unclear whether enrollees would be responsible for the copayments anyway.
- 13 PACE is a separate integrated Medicare and Medicaid program. It is included neither in SNP nor MA authority.
- 14 MMA granted CMS the authority to waive regular MA enrollment rules, but not payment methodologies.
- 15 In addition, CMS is exploring the feasibility of implementing a frailty factor. This factor is used for PACE and demonstration plans that serve frail, community-dwelling beneficiaries and is intended to improve the accuracy of predicting costs by considering beneficiaries’ difficulties with activities of daily living for the entire MA program, but CMS has said that the earliest it could take effect is 2008.
- 16 A few SNPs are transitioning from demonstrations where their relationship with the state has already been worked out.
- 17 Until the implementation of Part D in 2006, Medicaid covered most outpatient prescription drugs.
- 18 After three consecutive months of nonpayment of premium, plans may disenroll a beneficiary. Plans can elect to charge a premium but not collect it from members who are unable to pay. However, they are not allowed to advertise that they do this.
- 19 In general, providers can not bill the dual eligible for any portion of the coinsurance unless the state charges a nominal Medicaid copayment for the service.
- 20 Long-term care is often considered to be a very expensive and difficult benefit to integrate. Even some Evercare plans targeted at institutional beneficiaries have not taken this on.
- 21 The model was tested through CMS (then the Health Care Financing Administration) demonstration projects that began in the mid-1980s. The Balanced Budget Act of 1997 established the PACE model of care as a permanent entity within the Medicare program and enabled states to provide PACE services to Medicaid beneficiaries as a state option.
- 22 CMS approved 44 SNPs’ applications for passive enrollment, but only 42 plans passively enrolled their members. The states affected were Arizona, California, Colorado, Florida, Kentucky, Minnesota, New Jersey, Oregon, Pennsylvania, Tennessee, Texas, Utah, and Washington (McClard 2006).
- 23 MA plans are offered by MA organizations, which sign contracts with CMS.

References

- Anderson, Gerard F. 2005. Medicare and chronic conditions. *New England Journal of Medicine* 353, no. 3 (July 21): 305–309.
- Atherly, Adam, and Bryan Dowd. 2005. The effect of Medicare Advantage payments on dually eligible Medicare beneficiaries. *Health Care Financing Review* 26, no. 3 (Spring) 93–103.
- Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2006a. Medicare personal plan finder. <http://www.medicare.gov/MPPF>.
- Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2006b. Special needs plans: Fact sheet & data summary. <http://www.cms.hhs.gov/SpecialNeedsPlans/Downloads/finalSNPfactsheetsum2-14-06.pdf>.
- Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2005a. Announcement of calendar year (CY) 2006 Medicare Advantage payment rates. <http://www.cms.hhs.gov/MedicareAdvtgSpecRateStats/Downloads/Announcement2006.pdf>.
- Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2005b. Medicare Advantage 2006 call letter. Baltimore: CMS. April. <http://www.cms.hhs.gov/BenePriceBidFormPlanPackage/Downloads/2006CallLetter.zip>.
- Elam, Linda. 2006. *Dual eligibles*. Kaiser Commission on Medicaid and the Uninsured. http://www.kaiseredu.org/tutorials/Duals/Duals_Elam.ppt.
- Mathematica Policy Research, Inc. 2006. *Medicare Advantage: Special needs plans site visits*. www.medpac.gov. Forthcoming.
- McClard, Jane. 2006. Telephone message to author, May 2.
- Medicare Payment Advisory Commission. 2005. *Report to the Congress: Issues in a modernized Medicare program*. Washington, DC: MedPAC.
- Medicare Payment Advisory Commission. 2004a. *Report to the Congress: Benefit design and cost sharing in Medicare Advantage plans*. Washington, DC: MedPAC.
- Medicare Payment Advisory Commission. 2004b. *Report to the Congress: New approaches in Medicare*. Washington, DC: MedPAC.
- Thorpe, K. E., A. Atherly, and K. Howell. 2002. *Medicare+Choice: Who enrolls?* www.bcbshealthissues.com/relatives/19526.pdf.
- Walsh, E. G., A. M. Greene, S. Hoover, et al. 2003. *Case studies of managed care arrangements for dually eligible beneficiaries*. RTI International, contract no. CMS–500–95–0048, September 26.

CHAPTER 10

**Medicare's use of clinical and
cost-effectiveness information**

Medicare's use of clinical and cost-effectiveness information

Chapter summary

Policymakers are looking for ways to use Medicare's resources more efficiently and to address the long-term sustainability of the program. Cost-effectiveness analysis is a technique for comparing the costs and health outcomes of various clinical strategies. It shows the relative value of alternate services, including drugs, devices, diagnostic and surgical procedures, and medical services. Cost effectiveness has the potential to promote care that is more efficient and of higher quality.

Some researchers contend that the benefits from technological innovations more than justify the rising costs of health care (Cutler and McClellan 2001). By contrast, other researchers question whether spending more on medical care always leads to improved outcomes (Fisher et al. 2003). Skinner and colleagues (2006) found that regions experiencing the largest spending gains were not realizing the greatest improvements in patient outcomes. For at least one condition (acute myocardial infarction), survival gains have stagnated while spending has continued to increase since 1996.

In this chapter

- Do cost-effectiveness ratios vary for colorectal cancer screening and ICDs?
- Improving the comparability of cost-effectiveness analyses
- Future issues

CMS considers clinical effectiveness information when making national coverage decisions and paying for some services. By contrast, Medicare does not consider the cost effectiveness of a new service. The variability of the methods used in cost-effectiveness studies was one of several issues that stakeholders raised when CMS unsuccessfully tried to include a service's cost effectiveness or value in the national coverage process in 1989 and 2000.

Different methods used in cost-effectiveness studies can produce disparate results from evaluations of the same services and illnesses (Pignone et al. 2002). Published recommendations for conducting and reporting such evaluations do not cover every aspect of a study's design. In the Commission's June 2005 report, we concluded that before Medicare could routinely use cost-effectiveness analysis, policymakers would need to address concerns about its methods, such as how to measure outcomes and costs (MedPAC 2005).

In this chapter, we consider the variability of the results across cost-effectiveness studies for the same service. We provide results of a review of the methods and findings from cost-effectiveness studies published in the medical literature for two Medicare-covered services—screening for colorectal cancer and implantable cardioverter defibrillators (ICDs) (Cohen et al. 2006).

This review shows some challenges and opportunities for the use of cost-effectiveness information by Medicare. Although some of the assumptions used across studies are consistent, differences in the models used, populations and comparators studied, and the clinical data and costs considered all contribute to the variation in the cost-effectiveness ratios for both services.

Despite the variation in the cost-effectiveness ratios for colorectal cancer screening, the literature suggests the service's clinical effectiveness and good value. By contrast, the literature for ICDs does not provide a clear indication

of the service's cost effectiveness because the results vary substantially across studies. The main reasons for this variation for this service are differences in the clinical characteristics of patients and the effectiveness of ICDs as measured by major clinical trials.

The Commission plans to explore ways for the Secretary to develop the infrastructure to consider information on both the clinical and cost effectiveness of a service. We will look at issues such as whether Medicare should solely sponsor and fund the research or whether a public-private partnership is appropriate. We will also examine how Medicare would set priorities for which cost-effectiveness analyses to sponsor.

The Commission also intends to explore other ways Medicare can use this information. Among these are: 1) providing cost-effectiveness information to beneficiaries and health professionals; 2) using cost-effectiveness analysis to prioritize pay-for-performance, screening, and disease management initiatives; and 3) using cost-effectiveness information in Medicare's rate-setting process. We also plan to explore the use of cost-effectiveness information by other payers in the United States and internationally. ■

Considering evidence about the clinical and cost effectiveness of health services might increase the return on society's investment in health care. Cost effectiveness evaluates the clinical effectiveness and resource costs of two or more alternate services, including drugs, medical devices, surgical and diagnostic procedures, and medical treatment strategies.

In this chapter, we consider the variability of results across cost-effectiveness studies for colorectal cancer screening and implantable cardioverter defibrillators (ICDs). Although some of the assumptions used across studies are consistent, differences in the models used, populations and comparators studied, and the clinical data and costs considered result in variation in the findings across studies. The two case studies help us understand why such variation occurs and assists us in thinking about how Medicare might use cost-effectiveness information.

The Commission plans to explore ways for the Secretary to develop an infrastructure to consider information on both the clinical and cost effectiveness of a service. We will look at issues such as whether Medicare should solely sponsor and fund the research or whether a public-private partnership is appropriate.

Background

Cost-effectiveness analysis involves estimating the costs and health outcomes of a service and its alternatives, which may include no treatment. Researchers usually summarize their results in a series of cost-effectiveness ratios that show the cost of achieving one unit of health outcome for different kinds of patients and alternate services. Services include drugs, devices, diagnostic and surgical procedures, and medical treatment.

Researchers can use different methods to assess the cost effectiveness of a service, which results in variation in cost-effectiveness ratios across studies. The term "methods" includes researchers' choice of:

- the costs and outcomes to be measured;
- the overall assessment approach (trial-based or modeling);
- the patient populations to be analyzed;
- the services and comparators to be analyzed;

- the time horizon to measure services' costs and outcomes; and
- the sources of clinical effectiveness, outcomes, and cost information.

The different design methods are not the only reason cost-effectiveness ratios for a specific service may vary across studies. The variation also stems from how analysts model the clinical course of an illness and from differences in the research questions. Finally, researchers' discretion may bias the results of studies when choices favor a pre-existing point of view.

Researchers have discretion in how they measure costs. They can count only those costs associated with medical treatment or define costs more broadly by including those associated with nonmedical services (e.g., transportation costs) and the value of lost productivity. Lost productivity measures the costs associated with lost or impaired ability to work or to engage in leisure activities and lost economic productivity due to death. The researcher's viewpoint influences the method of defining costs. A societal perspective includes all costs—medical, nonmedical, and indirect costs. By contrast, an analysis from an insurer's perspective includes only those health costs that affect that particular insurer.

Researchers often measure health outcomes in terms of life years gained or health-related quality-adjusted life years (QALYs). QALY is a measure of health outcome that assigns to each time period of a patient's expected remaining years of life a weight, ranging from 0 (death) to 1 (perfect health), that corresponds to the quality of life during that period. QALYs provide a common currency to assess the benefits that patients gain in terms of health-related quality of life and survival. Some issues remain about the use of QALYs to inform resource allocation decisions (Dolan et al. 2006). For example, some analysts question the robustness and stability of respondents' stated preferences.

There are two basic approaches to conducting a cost-effectiveness analysis. In trial-based studies, researchers collect economic data on resource use and quality of life in a clinical study, such as a controlled clinical trial. In modeling studies, researchers combine evidence from a range of sources in order to answer the research question. Modeling studies appear more frequently in the medical literature partly because they are less expensive to conduct than trial-based studies.

A simple modeling approach (a “statistical comparison”) directly compares the costs and clinical outcomes of two services. More complex approaches extrapolate beyond the period during which data are reported and extend results to a broader population by combining costs and outcomes with other assumptions. A Markov model is one such approach that specifies a set of health states (e.g., healthy, early cancer, late cancer, dead) and uses observed results to quantify the probability that people will move from one state to another during a given period of time. By assigning costs and outcomes to each of these states, Markov models can tabulate costs and outcomes for a population over time.

The incremental cost-effectiveness ratio shows the trade-offs and the value involved in choosing among services. For example, the cost-effectiveness ratio of a service is \$25,000 per year of life gained if that service costs an additional \$50,000 and extends life span by two years compared with its alternative. Services with low ratios are thought to provide greater value than services with higher ratios. If a service is less costly and improves outcomes compared with its alternative, then it “dominates” the alternative. Vaccinating beneficiaries for influenza dominates a strategy of not vaccinating (Coffield et al. 2001).¹

Other methodological issues that researchers must address when designing cost-effectiveness studies include:

- ***The patient population.*** Researchers can include all patients in an analysis or a subset of interest to a payer—such as Medicare beneficiaries.
- ***The services and comparators to be analyzed.*** Researchers compare the service of interest to all or a subset of existing standards of care, which can include no treatment.
- ***The time horizon.*** Researchers must choose the period of time to measure a service’s costs and outcomes.
- ***The discounting of costs and outcomes.*** When the time horizon of the analyses extends into the future, researchers must convert future costs and outcomes to their current (present) value. In doing so, researchers adjust the cost-effectiveness ratio for the different timing of costs and outcomes. Researchers frequently use a discount rate of 3 percent to 5 percent.
- ***The sources of clinical outcomes and costs.*** Sources for clinical outcomes include randomized clinical

trials, comparative effectiveness studies, patients’ medical records, health care claims, and health care surveys. Sources for costs include health care claims submitted to a payer, charges of an individual provider, and health care surveys.

- ***The uncertainty of key variables.*** Sensitivity analysis varies the assumptions of the clinical events, costs, and other key variables.

Do cost-effectiveness ratios vary for colorectal cancer screening and ICDs?

On behalf of the Commission, Cohen and colleagues (2006) reviewed the extent to which the assumptions, methods, and results varied across studies assessing the cost effectiveness of colorectal cancer screening and ICDs. We selected these two services because we identified many studies that assessed their cost effectiveness.

Even though there is some variation in the results for colorectal cancer screening, the cost-effectiveness ratios across all studies are relatively low, suggesting that screening is both clinically effective and provides good value compared with no screening. By contrast, the literature for ICDs does not provide a clear indication of the service’s cost effectiveness compared with pharmaceutical treatment because the results vary more widely across studies. This variation is due to differences in the clinical effectiveness reported in clinical trials of this service. The different populations and comparators examined across the cost-effectiveness studies also contributed to the variation in the results. Nonetheless, the literature on ICDs collectively sheds light on key areas of uncertainty where additional data collection might be helpful.

Cost-effectiveness ratios for colorectal cancer screening show some variation across studies

Cohen and colleagues (2006) reviewed 26 studies that evaluated the use of colorectal cancer screening. The majority of the studies used similar assumptions to 1) model the discount rate for both costs and benefits (at 3 percent), 2) quantify benefits in terms of years of life gained, and 3) analyze the sensitivity of the model’s results. The studies used different modeling approaches to compare the effectiveness of colorectal cancer screening with no screening.² In addition, the studies modeled

different screening frequencies (every 2 years, 3 years, 5 years, and 10 years). They also compared different screening services (no screening to colonoscopy, virtual colonoscopy, double barium contrast enema, fecal occult blood testing, and sigmoidoscopy). Most studies conducted a univariate sensitivity analysis in which the researchers assessed the effect of varying values of key variables one at a time. Only one study conducted a multivariate sensitivity analysis.

The cost-effectiveness ratios of strategies of screening asymptomatic individuals for colorectal cancer compared with no screening show some variation across studies (Table 10-1). The cost-effectiveness ratios measuring the number of life years gained ranged from about \$1,400 to more than \$42,000 per life year gained. One study found that screening is both more effective and less costly than no screening because of lower medical spending over the study population's remaining life.

It is not surprising that the cost-effectiveness ratios vary across studies given that researchers assessed different populations and approaches to screen colorectal cancer. Researchers also assessed the cost effectiveness of screening for colorectal cancer for different time periods. Yet even with these different approaches, it is notable that the results are somewhat consistent across studies.

The coefficient of variation (CV), which is the ratio of the standard deviation of cost-effectiveness ratios across studies divided by the mean, suggests some consistency among the study findings. The CVs for colonoscopy screening every 10 years, fecal occult blood test screening every year, and fecal occult blood test screening every two years were 0.37, 0.44, and 0.45, respectively. CVs less than 1.0 imply that the standard deviation is less than the mean, which indicates the results do not vary substantially.

Differences in the cost-effectiveness ratios also stem partly from the assumptions used to model the effectiveness of a screening strategy, including the biological behavior of colon cancer, the effectiveness and adverse effects associated with each screening strategy, and the likelihood that patients will actually complete the tests required for a given screening strategy. For example, assumptions about the duration of the precancerous and early cancer detectable phases (dwell time) affect the results. If the dwell time is long, strategies that involve a highly accurate test at a less frequent interval (e.g., screening colonoscopy every 10 years) will appear to perform well compared with

**TABLE
10-1**

Cost-effectiveness ratios for colorectal cancer screening compared with no screening vary across studies

Screening strategy	Frequency	Cost-effectiveness ratio (Dollars per life year)	
		Low end	High end
Colonoscopy	Every 3 years	\$21,763*	
	Every 5 years	17,316	\$36,612
	Every 10 years	10,633	26,693
Fecal occult blood testing	Annually	4,643	25,860
	Every 2 years	2,942	10,861
Sigmoidoscopy	Annually	1,391*	
	Every 3 years	16,318	20,727
	Every 5 years**	14,384	42,310
	Every 10 years	24,226*	

Note: The cost-effectiveness ratio is given in 2004 dollars per life year gained.
 *Based on the results of one study.
 **One study reported that sigmoidoscopy screening every 5 years was dominant (lower costs and better outcomes) compared with no screening.

Source: Cohen et al. 2006.

a more frequent but less accurate test, such as annual fecal occult blood testing.

Cost-effectiveness ratios vary substantially across ICD studies

Cohen and colleagues (2006) reviewed 14 studies assessing the cost-effectiveness of ICDs. The majority of studies used similar assumptions to 1) conduct the analysis from the perspective of the health care payer; 2) model the discount rate for both costs and benefits (at 3 percent); 3) quantify benefits in terms of life years gained; and 4) analyze the sensitivity of the model's results. The studies varied somewhat in the modeling approaches they used to estimate the incremental benefits and costs of ICDs versus pharmaceutical treatment or no treatment.³ Most studies conducted either a univariate or multivariate sensitivity analysis; 4 of the 14 studies did not analyze the effect of varying the assumptions of key variables.

The cost-effectiveness ratios vary widely across studies. The cost-effectiveness ratios of ICDs versus pharmaceutical treatment range from \$18,000 to \$569,000 per year of life gained (Cohen et al. 2006). Three studies found that the use of ICDs was less effective and more

costly than pharmaceutical treatment. The ratios of ICDs versus no treatment range from \$60,000 to \$258,000 per life year gained. One study found that ICDs reduce costs and improve outcomes compared with no treatment.

It is not surprising that the range of cost-effectiveness ratios is large because these studies analyzed patient populations with different clinical characteristics obtained from multiple clinical trials. The costs and benefits of ICDs vary depending on patients' risk of mortality. Factors affecting risk include:

- whether the patient has experienced a life-threatening arrhythmia (secondary prevention patients) or not (primary prevention patients);
- the extent of heart damage as measured by the pumping capacity of the heart's left ventricle—the ejection fraction; and
- other factors, such as whether the patient was undergoing concomitant bypass surgery or had an acute myocardial infarction.

For example, among primary prevention patients, the cost effectiveness of ICDs varied based on the patient's ejection fraction. ICDs were more cost effective for patients with an ejection fraction of less than 30 percent than for patients with an ejection fraction greater than 40 percent (\$53,000 versus \$230,000 per year of life gained (Hlatky et al. 2005)).⁴ Another study showed that ICD therapy had higher costs and worse clinical outcomes compared with non-ICD medical therapy among primary prevention patients who were also undergoing concomitant bypass surgery or who had an acute myocardial infarction (Sanders et al. 2005).

The disparity in the results from multiple clinical trials is due to differences in their design. There are at least 10 major trials comparing ICDs to a control group (Hlatky et al. 2005). Sanders and colleagues (2005) linked the variability in ICD clinical trial results to: 1) differing characteristics of the populations studied, 2) differing quality of the non-ICD medical therapy given to the control groups, and 3) differing competing risks of death from causes not due to ICD implantation. Clinical trials of ICDs in patients with a higher mortality risk will show a worse incremental cost-effectiveness ratio (higher costs and poorer outcomes) for the ICD strategy compared with clinical trials of ICDs in patients that have a lower mortality risk.

Improving the comparability of cost-effectiveness analyses

Not all researchers follow the existing standards for conducting cost-effectiveness studies. Still, the methods that researchers employ have improved over the past 15 years. Nevertheless, stakeholders have raised concerns about the variability and lack of transparency in the methods.

The Panel on Cost-Effectiveness in Health and Medicine developed standards for conducting and reporting cost-effectiveness analysis (Gold et al. 1996). The U.S. Public Health Service convened a panel of 13 nongovernment scientists and scholars in 1993. The panel recommended the use of a reference case (a standard set of methods and assumptions) to improve the comparability, reporting, and transparency of cost-effectiveness analyses. For example, they recommended that the reference case:

- discount costs and health outcomes at the same rate,
- use quality-adjusted life years to measure the effectiveness of the service,
- use a time horizon that is long enough to capture all relevant future effects of the service,
- reflect the marginal costs consumed, and
- use a micro-costing approach to determine health care costs.

Despite the panel's recommendation for a reference case, variation in the methods, results, and reporting persists across studies as evidenced by Cohen's review and others (Drummond and Sculpher 2005, Jefferson et al. 2002). Valid comparisons of cost-effectiveness ratios across studies require that researchers derive the numerators and denominators of the ratios using comparable methods and assumptions and report them in similar terms. The reference case lays out the broad assumptions that researchers should use to construct these models. As already mentioned, researchers have discretion in designing the analysis. The text box provides some common methodological and reporting flaws of cost-effectiveness analyses.

Consider the discretion researchers have in modeling the clinical course of an illness. The lack of consistency of the clinical assumptions can result in economic evaluations of the same disease showing different results. Eddy (2005)

Common methodological and reporting flaws of cost-effectiveness analyses

Drummond and Sculpher (2005) noted 11 methodological and reporting shortcomings of cost-effectiveness analyses, focusing on those flaws that are likely to be most important when deciding on payment for, or coverage of, a service:

- omitting important costs and outcomes,
- omitting one or more alternate services,
- imprecisely comparing the clinical effectiveness of alternate services by using information from more than one clinical trial,
- not using all available clinical evidence,
- incorrectly modeling outcomes beyond the period observed in clinical studies,
- relying on assumptions rather than data,
- inadequately assessing the impact of uncertainty on the results,
- not sufficiently reporting all of the results such as the costs and health effects of each service,
- reporting average cost-effectiveness ratios (total costs divided by total health effects for the two services being compared) rather than the incremental ratio (the difference of the total costs divided by the difference of the total health effects between two services),
- not sufficiently reporting on the generalizability of the results, and
- selectively reporting results and placing undue emphasis on certain results. ■

found that 5 models produced widely different estimates of the likelihood a diabetic would have a heart attack in 20 years. Even though each model used the same medical treatment costs and quality weights, the cost-effectiveness ratios varied substantially (–\$10,000 to nearly \$40,000 per QALY) because of the different ways each evaluation modeled the clinical course of diabetes.

The variation in the methods and potential bias of researchers is not unique to cost-effectiveness studies. The design of randomized clinical trials—including the population of patients studied, the method of randomizing patients, and the study time frame—can vary across studies for any given service. Consequently, the clinical effectiveness found in clinical trials can vary. Some researchers are also concerned that the reporting of randomized clinical trials in the literature is not transparent and needs improvement (Moher et al. 2001). For example, a review of 122 recently published randomized clinical trials found that only one paper described randomization adequately (Hotopf et al. 1997). Bekelman and colleagues (2003) showed that industry-sponsored studies were significantly more likely to reach conclusions that were favorable to the sponsor than were nonindustry-sponsored studies.

While the methods of cost-effectiveness studies vary, the quality of some studies has improved over time. Neumann and colleagues (2005) noted improvement in the methods used in studies published between 1998 and 2001 compared to studies published from 1976 to 1997. Studies published in the later period presented the study perspective more clearly, discounted both costs and outcomes, and reported incremental ratios. Jefferson and colleagues (2002) concluded that modest improvements occurred in the quality and methods of studies published from 1990 to 2001.

The variability of the methods and assumptions is not the only concern that stakeholders have raised about Medicare's use of cost-effectiveness information. Some stakeholders are concerned that Medicare's use of cost-effectiveness information might:

- impair beneficiaries' access to certain services,
- ration care rather than promote appropriate care,
- slow innovation, and
- interfere with the practice of medicine.

Some researchers contend that resistance to cost-effectiveness analysis may be cultural: Americans do not believe that resources are limited, accept limits imposed upon them by payers, or want to consider the trade-offs between health costs and benefits (Ginsburg 2004, Neumann 2004).

Potential strategies to improve the comparability of results across studies

Cost-effectiveness analysis will be most useful to policymakers when the results are comparable across studies and services. The Commission highlights four strategies that may improve the comparability of results across studies:

- improving transparency in the reporting of studies,
- validating clinical models against real-world outcomes,
- using validated and accepted instruments for quality assessments, and
- increasing the availability of information about the effectiveness of alternate services.

Improving the transparency in the reporting of both publicly and privately funded studies might alleviate concerns about methods and potential biases. One option is for researchers to post their economic models and data on the internet (Rennie and Luft 2000). Doing so would permit all interested users to test the sensitivity of results to different assumptions and data. Posting the models might permit users to change multiple elements by inserting their own data. The Academy of Managed Care Pharmacy's guideline for submission of clinical and economic data calls for manufacturers to submit an electronic version of their cost-effectiveness model (AMCP 2005). However, some researchers may be concerned about the public availability of their models because of proprietary reasons. Mandatory posting might undercut researchers' incentive to develop new models.

Validating clinical models used in cost-effectiveness analyses against real world outcomes might reduce some of the variability of the results across studies. Some of the variation in cost-effectiveness ratios stems from researchers using different clinical models that use different assumptions about the course of disease progression. Posting validated clinical models on the internet would provide access to all users and might reduce

the variability of clinical models used in cost-effectiveness studies.

Using validated and accepted instruments for measuring health outcomes, such as QALYs, might also reduce some of the variability of the results across studies for the same service. Differences in the methods used to estimate QALYs could lead to variation of the findings across cost-effectiveness studies for the same illness.

Increasing the availability of evidence about the effectiveness of alternate services may enhance the quality of cost-effectiveness research. Comparative effectiveness reviews assess the clinical effectiveness of one treatment compared with its alternatives by reviewing the medical literature. One valuable source of this information is the Agency for Healthcare Research and Quality (AHRQ). The Medicare Prescription Drug, Improvement, and Modernization Act of 2003 (MMA) required that AHRQ conduct and support research with a focus on outcomes, comparative clinical effectiveness, and appropriateness of pharmaceuticals, devices, and health care services. AHRQ is currently studying 10 conditions that affect Medicare beneficiaries including arthritis, cancer, chronic obstructive pulmonary disease, asthma, diabetes, and dementia (e.g., Alzheimer's disease).⁵

Another group conducting comparative effectiveness reviews is Oregon's Center for Evidence-Based Policy. The Center's Drug Effectiveness Review project is a collaborative effort of 15 organizations (13 of them are states) to obtain the best available effectiveness comparisons between drugs in the same class through reviews of the existing medical literature.

Another promising data source for effectiveness information is Medicare's administrative claims database. Medicare's inpatient, outpatient, and drug claims together offer analysts the ability to: 1) focus on the elderly and disabled populations, 2) compare real-world outcomes across different providers and settings, and 3) analyze side effects that may go underreported in small clinical trials (Hunter 2006). Analysts will need to address limitations and general lack of limited clinical information available within administrative claims data. For some analyses, analysts may also need to obtain additional information not reported on claims, such as lifestyle factors that may affect treatment outcomes. One concern about using administrative claims data is that patients who received a specific service may have different demographic or clinical characteristics than patients who received one of

the comparators studied. Researchers can use statistical methods (e.g., multivariate regression) to control for differences in characteristics between treatment groups.

Head-to-head clinical trials are important sources of effectiveness information, but they are not conducted as frequently as placebo-controlled trials. To gain approval to market a drug or device by the Food and Drug Administration (FDA), most manufacturers conduct trials of a service's efficacy by comparing it with a placebo (an inactive treatment), which is not evidence of a service's effectiveness relative to another service. The National Institutes of Health is the largest federal sponsor of head-to-head trials. Other federal agencies that fund these trials include AHRQ and the Veterans Health Administration. Manufacturers of medical products also sponsor these trials. However, conducting head-to-head trials is not the primary mission of any public or private organization (Tunis 2003). The Commission plans to examine total spending and the share of each agency's budget devoted to conducting head-to-head trials.

CMS is beginning to gather information about a service's effectiveness in the national coverage process. Under coverage with evidence development (CED), CMS extends national coverage to a service that, in the past, the agency might not have covered due to lack of data about its clinical appropriateness. National coverage of a service may be limited to providers who participate in and beneficiaries who enroll in a prospective data collection activity. The goal of CED is to ensure that patients are receiving care that is reasonable and necessary given their specific clinical condition (CMS 2005).⁶ CED may ultimately provide patients, providers, and researchers an opportunity to learn about a service's value in real-world settings. The agency may require CED for services:

- that are in new classes with new mechanisms;
- that may be effective for only certain types of patients;
- that have demonstrated major advances over prior treatments, suggesting that they could benefit patients with other conditions; and
- that may have substantial consequences for treating the wrong patients.

Services for which CMS has required CED include ICDs; carotid artery stenting; off-label, unlisted uses of drugs approved for colorectal cancer; and certain types of imaging services for cancer diagnosis, staging, and monitoring.

Increasing the availability of comparative effectiveness data would overcome one potential limitation of cost-effectiveness studies—using data from more than one randomized clinical trial to estimate the clinical effect of alternate services (Drummond and Sculpher 2005). Researchers use data from multiple clinical trials because comparative effectiveness information is not always available. Using information from more than one clinical trial might lead to inaccurate comparisons if 1) patients enrolled in the various trials are not equivalent in terms of baseline risk, 2) the settings for the trials are not comparable, and 3) the clinical endpoints are measured differently. Thus, an apparent superiority for one service versus another, derived from using data from more than one clinical trial, might be due to differences in the trials rather than differences between the therapies.

Future issues

The Commission plans to consider the issues associated with Medicare sponsoring new research and developing the infrastructure needed to review cost-effectiveness information from the existing literature. Key questions include:

- Who would sponsor the research?
- Who should pay for the research?
- What services could Medicare focus on?
- What methodological issues might Medicare consider?
- How could Medicare use cost-effectiveness information?
- Are there any lessons to learn from other payers and providers in the United States and from other countries that are using cost-effectiveness information?

Who would sponsor the research?

Medicare, alone or with other public payers and private groups, may need to sponsor additional research. This additional research could entail reviewing the medical literature and designing studies (models and head-to-head trials) assessing services' cost effectiveness.

One option is for the Department of Health and Human Services (HHS) to sponsor effectiveness research. Potential agencies include CMS and AHRQ. Both agencies

already sponsor and conduct reviews about the clinical effectiveness of services. AHRQ has taken some steps in looking at cost effectiveness through its evidence-based practice centers.

Alternatively, HHS, other public payers (e.g., the Veterans Health Administration and state Medicaid agencies), and private plans, payers, and purchasers could jointly sponsor clinical and cost-effectiveness studies. Private sector groups already sponsor comparative clinical effectiveness studies. For example, the Blue Cross Blue Shield Evaluation Center, which provides technology assessments to subscribing commercial health plans and provider groups, uses an evidence-based process for assessing the clinical effectiveness of services (Garber 2001).

The increased role of the federal government in sponsoring clinical and cost-effectiveness research may be warranted because this research is a public good. Effectiveness research has generally not been forthcoming from private health plans and providers. Sponsoring this research may not be in any single plan's or payer's interest because it is problematic to keep the information proprietary, and it might be difficult to capture the full return on the investment (Neumann 2005). Cost-effectiveness analysis may have a more important role for Medicare because the program covers patients over a longer time period (from age 65 to death) than do most private payers.

A public-private partnership may more effectively address concerns raised by stakeholders about the use of cost-effectiveness analysis than a noncollaborative process. Private payers may be reluctant to make extensive use of cost-effectiveness information out of fear that patients will criticize them about being more concerned about profits than about patients' health. Litigation risks may also dissuade some private payers from using cost-effectiveness information (Jacobson and Kanna 2001). As discussed earlier, stakeholders raised a number of concerns about Medicare's use of cost-effectiveness analysis, including that it could harm beneficiaries' access to care and reduce innovation of new services. Public payers may also be reluctant to use cost-effectiveness information out of fear that beneficiaries will perceive their care as being second rate. A public-private partnership may also be advantageous because it would send a clear and effective signal to researchers to improve their methods and develop valid and transparent cost-effectiveness analyses.

Federal agencies or independent groups could conduct cost-effectiveness analyses

CMS already assesses the clinical effectiveness of services when making national coverage decisions and paying for some services.⁷ In some cases, CMS supplements its research by sponsoring outside groups, such as AHRQ, to conduct technology assessments and consulting with the Medicare Coverage Advisory Committee (MCAC). A technology assessment studies the medical, social, ethical, and economic implications of the development, diffusion, and use of services. The MCAC advises CMS on whether a specific service is reasonable and necessary under Medicare by reviewing and evaluating medical literature, reviewing technology assessments, and examining data and information on the effectiveness and appropriateness of the service under consideration (CMS 2006a).⁸

AHRQ has taken several steps in constructing an infrastructure to conduct comparative effectiveness reviews of health care services. AHRQ created evidence-based practice centers in 1997 to synthesize existing scientific literature about health care topics and to promote evidence-based practice and decision making. There are currently 13 centers, which include academic institutions and private research organizations.⁹ The centers are conducting comparative effectiveness reviews of 10 health conditions affecting older people including dementia, arthritis, and diabetes. This research fulfills the MMA mandate that AHRQ conduct and support research with a focus on outcomes, comparative clinical effectiveness, and appropriateness of pharmaceuticals, devices, and health care services.

AHRQ has also developed the infrastructure to conduct technology assessments that CMS requests when making national coverage decisions. These technology assessments examine the clinical outcomes of one or more health care services. AHRQ conducts technology assessments in-house or collaborates with its evidence-based practice centers.

The agency also assists other federal agencies with developing cost-effectiveness analyses. For example, CMS requested that AHRQ assess the cost effectiveness of drugs used to treat rheumatoid arthritis and multiple sclerosis under a MMA-mandated demonstration (CMS 2006b). This demonstration, which began on September 1, 2004, and ended on December 31, 2005, paid for selected drugs for cancer, multiple sclerosis, and rheumatoid arthritis that replaced drugs covered under Part B. (In 2006, the Part D

program provides coverage for the drugs paid for under the demonstration.) As another example, in 2003 AHRQ completed an assessment of the cost effectiveness of fecal occult blood tests for CMS.

Since 1985, almost 10 percent of AHRQ’s extramural research grants have included a clinical economic component (AHRQ 2006). For example, AHRQ funded a study to determine the cost effectiveness of lung-volume reduction surgery for patients with severe emphysema. This study paralleled a trial sponsored by CMS and the National Heart, Lung, and Blood Institute comparing lung-volume reduction surgery to medical therapy for severe emphysema.

Alternatively, sponsoring entities could create an independent agency to conduct the effectiveness analyses. The National Institute for Health and Clinical Excellence (NICE) in the United Kingdom is an independent group that develops guidance for the National Health Service (NHS) in England and Wales on the clinical and cost effectiveness of medical services. Established in 1997, NICE relies on academic centers to assess the effectiveness of drugs, medical devices, diagnostic techniques, medical and surgical procedures, and the clinical management of specific conditions (Sculpher 2005).

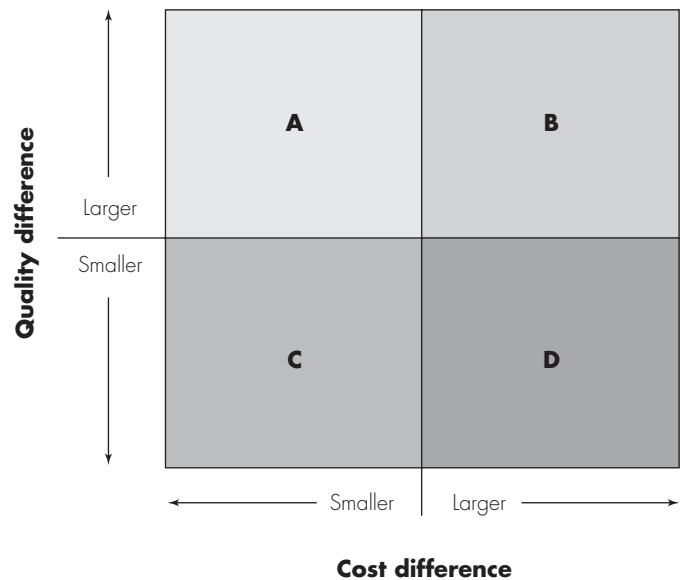
Who should pay for the research?

One option for funding is for the Congress to appropriate funds to a public agency (e.g., HHS) to conduct clinical and cost-effectiveness analyses. Doing so would require policymakers to annually consider the priority of such research compared with other health programs. However, variations in the level of federal appropriations may reflect the budget cycle rather than the priority of the research. Another option is to dedicate some percentage of general revenues to fund effectiveness research.

Discretionary funding from private groups—such as private plans and payers and manufacturers of drugs, biologics, and medical devices—could also be vulnerable to budget uncertainties. Private sponsors might decide to withhold or withdraw funding for any number of reasons, such as disagreeing with the selection of a service for consideration. In addition, this mechanism might be open to conflict of interest. The influence of private groups who directly fund the research on a study’s design and findings could be a concern.

FIGURE 10-1

Selecting services for cost-effectiveness analysis based on differences in their costs and quality



Another alternative is a method that is not linked to either annual federal appropriations or discretionary funding from private groups. For example, one analyst suggested that a specified percentage of sales from drug manufacturers, health plans, and pharmacy benefit managers may be an appropriate and available mechanism for funding needed effectiveness research (Reinhardt 2004).

Which services could Medicare focus on?

Medicare could select services based on disease prevalence, high per unit cost, high expenditures, or other factors. One option is to use the same criteria that CMS uses in its national coverage process. CMS initiates such a review if the service: 1) represents a significant advance, and no similar service is currently covered under Medicare; 2) is the subject of controversy among medical experts as to its medical effectiveness; 3) is currently covered but is widely considered ineffective; and 4) may be either significantly underutilized or overutilized.

Another option is to consider both the differences in cost and quality of alternate services (Figure 10-1). Medicare could begin to look at groups of services used to treat a specific illness that have small differences in quality but large differences in cost (quadrant D in Figure 10-1). Focusing on these services might increase the return on

society's investment in health care. By contrast, formal cost-effectiveness analyses may not be as needed for services with small differences in quality and costs. Medicare may find it most difficult to consider the cost-effectiveness of services with large differences in cost and quality. It may be a matter of judgment to decide where given services fall in the continuum of cost and quality differences.

It is worth noting that cost-effectiveness analysis may not save the Medicare program money. Wider use of cost-effective, underutilized services might result in increased Medicare spending, which might not be offset with savings elsewhere. For example, McGlynn and colleagues (2003) reported on the underuse of clinically effective treatments. Promoting the use of such services could increase Medicare spending. On the other hand, over the long run, cost effectiveness could save the Medicare program money if it encourages manufacturers to develop services that are more cost effective than current ones or helps inform providers and influences their patterns of care.

What methodological issues might Medicare consider?

Medicare will need to consider the procedures for evaluating cost-effectiveness information and the methods for conducting cost-effectiveness analyses. For example, should studies limit the population to Medicare beneficiaries or patients of all ages? Should costs be limited to Medicare payments? Should the model include all costs—taking the societal perspective? Should the analysis measure outcomes using QALYs or another method such as life years gained?

To help frame the methodological issues, Medicare—along with other public and private groups—could review the guidelines developed by the Panel on Cost-Effectiveness in Health and Medicine. It might also be useful to examine current standards developed by other groups such as the formulary guideline developed by the Academy of Managed Care Pharmacy for submission of clinical and economic data (AMCP 2005). The goal of the academy's guideline is to standardize the set of clinical and economic evidence that manufacturers submit to health plans. The guideline includes the layout for the submission of clinical and economic data to health plans and recommends that manufacturers include unpublished studies, data on off-label indications, related disease management strategies, and an economic model to provide evidence of the product's value.

Bringing together users and researchers might foster a more collaborative relationship between all parties. Nonetheless, different payers may have different perspectives and needs, which may result in variations in some aspects of the design of studies across payers. For example, a payer may ultimately decide to limit the study population to the patients it covers (not all patients) and only include the costs of services that it pays for (not societal costs).

How could Medicare use cost-effectiveness information?

Cost effectiveness has the potential to identify medical services that are more likely to improve patient outcomes and discourage the use of services with fewer benefits. As the field of cost effectiveness evolves and as Medicare and others address methodological issues, Medicare could use cost-effectiveness information in a variety of ways.

The program could use cost-effectiveness information to cover a service for all Medicare beneficiaries or for beneficiaries with specific clinical or demographic characteristics. However, the coverage process may not be the area to begin to use this information. As we mentioned earlier, stakeholders raised many concerns when CMS tried to use the information in the national coverage process. Rigid use of cost-effectiveness information in the coverage process may not be consistent with Americans' fear of limits set by public and private organizations and affinity for new medical technology (Neumann 2005, Neumann 2004). Rather, Medicare might want to begin to use cost effectiveness to inform providers and patients about the value of services and to develop payment policies that account for a service's value.

Medicare could provide cost-effectiveness information to beneficiaries and health professionals. Both are potential audiences for information about the relative value of treatment alternatives. Currently, the traditional Medicare program does not encourage providers and beneficiaries to weigh the costs and benefits of a service when making health care decisions. The program does provide some clinical effectiveness information about certain providers—dialysis facilities, hospitals, home health agencies, and nursing homes—but not cost-effectiveness information.

There is some evidence that providers and patients might consider cost-effectiveness information as they weigh treatment options. A consortium of health-related organizations conducted a project in which consumers

participated in discussion groups and physicians responded to a survey and participated in discussion groups on the use of cost effectiveness. The results suggest that the former are interested in obtaining better information and that the latter consider cost effectiveness when making clinical decisions (Ginsburg 2004, Sacramento Healthcare Decisions 2001). Anecdotal reports also suggest that some physicians examined both the cost and outcomes of lung-volume reduction surgery when considering this procedure for their patients (Kolata 2006).

Medicare might use the information to prioritize pay-for-performance measures, target screening programs, or prioritize disease management initiatives. A pay-for-performance program could link providers' bonuses to the provision of cost-effective services. Medicare might weight performance bonuses higher for the most cost-effective services furnished by providers. Medicare could consider cost effectiveness when choosing measures for pay-for-performance programs; there are usually more potential measures than are practical to use.

Cost-effectiveness analysis could measure the value of alternative screening strategies in different patient populations in order to focus provider education or performance incentives. Cost-effectiveness analyses could help inform policymakers about which subpopulations to target for screening, such as screening diabetics for chronic kidney disease. Medicare already varies coverage of certain screening tests (e.g., colorectal cancer and glaucoma) according to the risk of developing the illness. Covered colorectal cancer screening tests for prevention include: 1) an annual fecal occult blood test for beneficiaries age 50 and older, 2) flexible sigmoidoscopy every 4 years for beneficiaries age 50 and older, 3) colonoscopy for high-risk beneficiaries every 2 years and for other beneficiaries every 10 years, and 4) screening barium enemas every 4 years for beneficiaries age 50 and older who are not at high risk of developing colorectal cancer or every two years for beneficiaries who are at high risk.

Once the analyses become more rigorous, Medicare could use cost-effectiveness information in the payment and rate-setting processes. For example, Medicare might require manufacturers to enter into a risk-sharing agreement, which links actual beneficiary outcomes to the payment of a service based on the service's cost effectiveness. Manufacturers might rebate the Medicare program for services that do not meet expectations for their effectiveness. The program is already holding some

providers at risk for their performance. Under Medicare's Chronic Care Improvement Program, contractors assume risk for achieving savings and quality targets. CMS is adjusting contractors' fees based on whether they achieve targets for program savings, clinical outcomes, and satisfaction.

Alternatively, Medicare could base the payment for a service at the level that the cost-effectiveness analysis suggests that the service is effective and provides value to the program and beneficiaries. In its comparison of the cost effectiveness of fecal occult blood tests conducted for CMS, AHRQ determined the payment level for which the cost effectiveness of two tests would be equal. Medicare could also consider a tiered cost sharing structure that requires higher cost sharing for those services that show less value to the program and includes a beneficiary appeal process. Many drug formulary programs tier copayments. Part D plans also could use the results of these studies in this way.

How do other payers and providers within the United States and internationally use cost-effectiveness information?

The Commission will review in greater detail the different ways that other payers and providers within this country and elsewhere use cost-effectiveness information. The approaches vary from group to group, as we show in the three examples in the rest of this section by summarizing the use of cost-effectiveness information by the Veterans Health Administration (VHA), in England and Wales, and in Washington state. We are interested in looking at the different ways other groups select services for review and how they use the information (e.g., vary the level of payment of services). We anticipate that this review will inform us about the advantages and disadvantages of different approaches for Medicare.

Use of cost-effectiveness information by the VHA

The VHA has recently emphasized the use of cost-effectiveness information for newer, costly drugs for inclusion in its formulary (Aspinall et al. 2005). Since 1994, the VHA has required a formal cost-effectiveness analysis from manufacturers of drugs that have small differences in quality but large differences in cost compared with their alternatives. The VHA routinely requests manufacturers to submit clinical and economic data using the Academy of Managed Care Pharmacy

format and incorporates this information into the drug reviews used in the formulary decision making process.

The VHA reviews a drug's clinical and cost effectiveness to determine its status on the drug formulary. The VHA also uses effectiveness studies to develop criteria for patients who are most likely to benefit clinically from a drug. The VHA does not use a cost-effectiveness threshold to determine whether to include a drug in the formulary because of the controversy about trying to determine what constitutes good value.

Use of cost-effectiveness in England and Wales

NICE develops guidance for the NHS in England and Wales on the clinical and cost effectiveness of medical services. NICE's process for developing recommendations takes about 14 months to complete. The Secretary of State for Health formally refers technologies for guidance to NICE. Advisory committees identify potential services using criteria that include 1) high clinical need, 2) potential for significant health gain, and 3) potential for significant cost impact. The NHS uses a National Horizon Scanning Centre to identify significant new and emerging health technologies.

NICE commissions independent academic groups to conduct technology assessments, which are usually completed in six months. Technology assessments include 1) a systematic review of clinical and economic evidence, 2) a cost-effectiveness analysis, and 3) a review of the manufacturer's submission. An independent committee—the Appraisal Committee—prepares NICE's recommendations about the use of services within the NHS. Manufacturers, patients, and health professionals can comment on the scope and findings of the technology assessment, submit evidence to the Appraisal Committee, comment on the Appraisal Committee's draft recommendation, and appeal the Appraisal Committee's final decision.

The Appraisal Committee does not use a threshold to guide its recommendations. Nevertheless, NICE's "Guide to the Methods of Technology Appraisal" states that for services with an incremental cost-effectiveness ratio greater than £30,000 (about \$53,000) per QALY, "the case for supporting the service has to be increasingly strong" for the Appraisal Committee to recommend its use. The Appraisal Committee does consider factors other

than clinical and cost effectiveness, such as equity, in its recommendations.

Use of cost-effectiveness information in Washington state

The governor of Washington state signed into law on March 29, 2006, a health technology assessment program to consider evidence about the safety, efficacy, and cost effectiveness of services. The Commission intends to track the implementation of this program.

The administrator of the Washington State Health Care Authority, consulting with participating agencies and a health technology clinical committee, will select services that the health technology committee will review. The newly passed law gives priority to the review of services for which:

- concerns exist about safety, efficacy, or cost effectiveness—especially relative to existing alternatives—or significant variations in use;
- actual or expected state expenditures are high due to demand, cost, or both; and
- adequate evidence is available to conduct the review.

The health technology committee will consist of six practicing physicians and five other health professionals. The administrator of the Washington State Health Care Authority, consulting with participating agencies, selects the committee's members. The committee will review the safety, efficacy, and cost effectiveness of up to six services the first year of the program and up to eight services thereafter. Evidence-based practice centers (designated by AHRQ or another appropriate organization) will conduct the technology assessments. The committee will determine the conditions under which the service will be included as a covered benefit in programs of participating agencies, and if covered, the criteria that the participating agency administering the program must use to decide whether the technology is medically necessary or proper and necessary treatment.¹⁰ Finally, the law requires that the administrator develop a centralized internet site that provides information about the technology assessment.

Other issues to consider

Policymakers will need to consider a number of overarching issues when setting up the infrastructure for Medicare to consider clinical and cost-effectiveness information: ensuring transparency of the study methods

and results to stakeholders and the timing of assessing a service's cost effectiveness.

Some stakeholders mistrust cost-effectiveness analysis because the methods of some studies are not transparent and the results are not reproducible. Ensuring the transparency of the process will be a key issue for policymakers to consider if Medicare begins to use cost-effectiveness information. It will be important that Medicare offer stakeholders the opportunity for comment and participation in the process.

In recent years, CMS has developed a more open and predictable process for scrutinizing clinical evidence on which to base national coverage decisions. This process

could be a model for future deliberations on the use of cost-effectiveness analysis.

Another key issue is the timing of assessing a service's cost effectiveness. Researchers could study a service when it is not widely used by providers (before or at FDA approval for devices and drugs) or wait until it diffuses into medical practice. The results of a cost-effectiveness analysis could change as providers adopt the service into their practice. On the one hand, providers may become more proficient in furnishing a service over time, which would lower its costs while still resulting in the same outcome. Or, researchers may become more aware of the side effects of a service over time, which would increase its costs and result in poorer outcomes. ■

Endnotes

- 1 If a service is more costly than its alternative but not does improve outcomes, then it is “dominated” by the alternative.
- 2 The types of models used to assess the cost effectiveness of colorectal screening include Markov models and static models.
- 3 Some studies assessed the cost effectiveness of ICDs by statistically comparing the experience of cohorts receiving ICDs to the experience of control groups, while other studies used a Markov model or a static model.
- 4 A normal ejection fraction ranges from 55 percent to 70 percent.
- 5 The other conditions are: depression and other mood disorders, ischemic heart disease, peptic ulcer disease and dyspepsia, pneumonia, stroke, and hypertension.
- 6 CMS issued draft guidance for national coverage determinations with evidence development in 2005.
- 7 Currently, CMS considers patient’s hematocrit level when paying for erythropoietin and darbepoetin alfa for dialysis patients. In 2003, CMS set the payment rate for a new biologic at the same rate as an existing biologic after concluding that both were functionally equivalent. The Medicare Prescription Drug, Improvement, and Modernization Act of 2003 limits the use of the functional equivalence standard in the hospital outpatient setting.
- 8 The MCAC meets about six times each year. The MCAC functions on a committee basis by reviewing and evaluating medical literature, reviewing technology assessments, and examining data and information on the effectiveness and appropriateness of medical items and services that are covered or are eligible for coverage under Medicare. Each committee generally includes 13 to 15 members.
- 9 The 13 evidence-based practice centers are Duke University; ECRI; Tufts University–New England Medical Center; the Blue Cross Blue Shield Technology Evaluation Center; John Hopkins University; McMaster University; Oregon Health & Science University; RTI International–University of North Carolina; Southern California–RAND; Stanford University–University of California, San Francisco; University of Alberta, Edmonton, Alberta, Canada; University of Minnesota; and University of Ottawa. The first three centers (Duke, ECRI, and Tufts) focus on technology assessments for CMS.
- 10 Participating agencies include the Department of Social and Health Services, the state health care authority, and the Department of Labor and Industries.

References

- Academy of Managed Care Pharmacy. 2005. The AMCP format for formulary submissions. Version 2.1. http://www.fmcenet.org/data/resource/Format~Version_2_1~Final_Final.pdf.
- Agency for Healthcare Research and Quality. 2006. Fact sheet. Focus on cost-effectiveness analysis at the Agency for Healthcare Research and Quality. <http://www.ahrq.gov/RESEARCH/costeff.htm>.
- Aspinall, S. L., C. B. Good, P. A. Glassman, et al. 2005. The evolving use of cost-effectiveness analysis in formulary management within the Department of Veterans Affairs. 2005. *Medical Care* 43, no. 7 (suppl July): II-20–II-26.
- Bekelman, J. E., Y. Li, and C. P. Gross. 2003. Scope and impact of financial conflicts of interest in biomedical research. A systematic review. *Journal of the American Medical Association* 289, no. 4 (January 22/29): 454–465.
- Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2006a. Medicare coverage advisory committee. http://www.cms.hhs.gov/FACA/02_MCAC.asp.
- Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2006b. Overview of the evaluation of the section 641 demonstration. http://www.cms.hhs.gov/DemoProjectsEvalRpts/downloads/MMA641_Demo_Evaluation_p.pdf.
- Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2005. *Factors CMS considers in making a determination of coverage with evidence development*. Draft guidance for the public, industry, and CMS staff. April 7.
- Coffield, A. B., M. V. Maciosek, J. M. McGinnis, et al. 2001. Priorities among recommended clinical preventive services. *American Journal of Preventive Medicine* 21, no. 1 (July): 1–9.
- Cohen, J., E. Alhun, and P. J. Neumann. 2006. Review and analysis of cost-effectiveness analysis for two Medicare-covered services. Presentation at MedPAC public meeting, March 10, Washington, DC.
- Cutler, D. M., and M. McClellan. 2001. Is technological change in medicine worth it? *Health Affairs* 20, no. 5 (September/October): 11–29.
- Dolan, P., A. Tsuchiya, C. Armitage, et al. 2006. A protocol to determine the relative value of a QALY according to various health and nonhealth characteristics. http://www.pcpoh.bham.ac.uk/publichealth/nccrm/PDFs%20and%20documents/Publications/PD_QALY_report_Feb03.pdf.
- Drummond, M., and M. Sculpher. 2005. Common methodological flaws in economic evaluations. *Medical Care* 43, no. 7 (July): II-5–II-14.
- Eddy, D. 2005. The role of cost-effectiveness analysis in decision making for CMS. Presentation at MedPAC public meeting, March 11, Washington, DC.
- Fisher, E. S., D. E. Wennberg, and T. A. Stukel. 2003. The implications of regional variations in Medicare spending. Part 1: The content, quality, and accessibility of care. *Annals of Internal Medicine* 138, no. 4 (February 18): 273–287.
- Garber, A. M. 2001. Evidence-based coverage policy. *Health Affairs* 20, no. 5 (September–October): 62–82.
- Ginsburg, M. E. 2004. Cost-effectiveness: Will the public buy it or balk? *Health Affairs* (May 19): W297–W299.
- Gold, M. R., J. E. Siegel, L. B. Russell, et al. 1996. *Cost-effectiveness in health and medicine*. New York: Oxford University Press.
- Hlatky, M. A., G. D. Sanders, and D. K. Owens. 2005. Evidence-based medicine and policy: The case of the implantable cardioverter defibrillator. *Health Affairs* 24, no. 1 (January–February): 42–51.
- Hotopf, M., G. Lewis, and C. Normand. 1997. Putting trials on trial—the costs and consequences of small trials in depression: A systematic review of methodology. *Journal of Epidemiology and Community Health* 51, no. 4 (August): 354–358.
- Hunter, D. 2006. First, gather the data. *New England Journal of Medicine* 354, no. 4 (January 26): 329–331.
- Jacobson P. D., and M. L. Kanna. 2001. Cost-effectiveness analyses in the courts: Recent trends and future prospects. *Journal of Health Politics, Policy and Law* 26, no. 2 (April): 291–395.
- Jefferson, T., V. Demicheli, and L. Vale. 2002. Quality of systematic reviews of economic evaluations in health care. *Journal of the American Medical Association* 287, no. 21 (June 5): 2809–2812.
- Kolata, G. 2006. Medicare says it will pay, but patients say ‘no thanks.’ *The New York Times*. March 3.
- McGlynn, E. A., S. M. Asch, J. Adams, et al. 2003. The quality of health care delivered to adults in the United States. *New England Journal of Medicine* 348, no. 26 (June 26): 2635–2645.

- Medicare Payment Advisory Commission. 2005. *Report to the Congress: Issues in a modernized Medicare program*. Washington, DC: MedPAC.
- Moher, D., K. F. Schulz, and D. G. Altman for the CONSORT Group. 2001. The CONSORT statement: Revised recommendations for improving the quality of reports of parallel-group randomized trials. *Annals of Internal Medicine* 134, no. 8 (April 17): 657–662.
- Neumann, P. J. 2005. The arrival of economic evidence in managed care formulary decisions. The unsolicited request process. *Medical Care* 43, no. 7 suppl (July): II-27–II-32.
- Neumann, P. J., D. Greenberg, N. V. Olchanski, et al. 2005. Growth and quality of the cost-utility literature, 1976–2001. *Value Health* 8, no. 1 (January–February): 3–9.
- Neumann, P. J. 2004. Why don't Americans use cost-effectiveness analysis? *The American Journal of Managed Care* 10, no. 5 (May): 308–312.
- Pignone, M., S. Somnath, T. Hoerger, et al. 2002. Cost-effectiveness analyses of colorectal cancer screening: A systematic review for the U.S. preventive services task force. *Annals of Internal Medicine* 137, no. 2 (July 16): 96–104.
- Reinhardt, U. E. 2004. An information infrastructure for the pharmaceutical market. *Health Affairs* 23, no. 1 (January/February): 107–112.
- Rennie, D., and H. S. Luft. 2000. Pharmacoeconomic analyses. Making them transparent, making them credible. *Journal of the American Medical Association* 283, no. 16 (April 26): 2158–2160.
- Sacramento Healthcare Decisions. 2001. *Cost-effectiveness as a criterion for medical and coverage decisions*. <http://www.sachealthdecisions.org/vf.html>.
- Sanders, G. D., M. A. Hlatky, and D. K. Owens. 2005. Cost-effectiveness of implantable cardioverter-defibrillators. *New England Journal of Medicine* 353, no. 14 (October 6): 1471–1480.
- Sculpher, M. 2005. Technology appraisal at the National Institute for Health and Clinical Excellence. May 13.
- Skinner, J. S., D. O. Stalger, and E. S. Fisher. 2006. Is technological change in medicine always worth it? The case of acute myocardial infarction. *Health Affairs* (February 7): W34–W37.
- Tunis, S. R., D. B. Stryer, C. M. Clancy. 2003. Practical clinical trials. Increasing the value of clinical research for decision making in clinical and health policy. *Journal of the American Medical Association* 290, no. 12 (September 23): 1624–1632.

A P P E N D I X



**Review of CMS's preliminary
estimate of the physician
update for 2007**



Review of CMS's preliminary estimate of the physician update for 2007

CMS's preliminary estimate of the 2007 payment update for physician services is -4.6 percent, the maximum negative update permitted under a formula defined in statute (Kuhn 2006). This is the third consecutive estimate of such a large negative update, although a negative update has not occurred since 2002 as the Congress has overridden the formula.

In communicating the estimate to the Commission, CMS reminds us that an important reason the formula continues to call for negative updates is that the volume of physician services is growing rapidly. In this context, physician services include services paid for under Medicare's physician fee schedule as well as laboratory services and physician-administered drugs. For 2005, CMS's estimate is that the volume and intensity of physician services per beneficiary grew by 7.5 percent. While that estimate is preliminary and so may change, it is higher than the average for the previous five years, which was 6.1 percent.¹ The estimate also exceeds the growth in any of the previous five years except 2004, when spending grew by 8.0 percent. CMS is working with physicians and other stakeholders to review and understand this growth with a goal of helping Medicare beneficiaries receive better and more efficient care.

The Commission shares CMS's concern about volume growth. In March 2006, we recommended changes in the way services are valued in the physician fee schedule

(MedPAC 2006). The concern is that misvaluing services could create financial incentives that lead to increases in volume. Our other work on mispricing includes consideration of the data and methods for determining payments for physicians' practice expenses (see Chapter 4). We are also exploring ways to give physicians feedback on how their volume of services compares with that of their peers (see Chapter 1).

This appendix fulfills the Commission's requirement to review CMS's estimate of the update. In reviewing the technical details involved in estimating the update, we find that CMS used estimates in calculating the update that are consistent with recent trends. Note that our purpose in reviewing CMS's estimate is not to assess the adequacy of the update.² In Congressional testimony and reports to the Congress, we have discussed several problems with the physician update formula (Hackbarth 2005a, Hackbarth 2005b, MedPAC 2005, MedPAC 2002). We consider the current formula to be a flawed, inequitable mechanism for volume control and will consider alternatives to it in a report that is due in March 2007.

Calculating the update

Calculating the physician update is a two-step process. First, CMS estimates the sustainable growth rate (SGR). The SGR is the target rate of growth in spending for

**TABLE
A-1****Preliminary sustainable
growth rate, 2007**

Factor	Percent
Change in:	
input prices	2.6%
traditional Medicare enrollment	-2.9
real GDP per capita	2.2
Change due to law and regulations	-1.0
Sustainable growth rate	0.7

Note: GDP (gross domestic product). Percents are converted to ratios and multiplied, not added, to produce the sustainable growth rate.

Source: Kuhn 2006.

physician services and is a function of projected changes in:

- input prices for physician services;³
- real gross domestic product (GDP) per capita, an allowance for growth in the volume of services;⁴
- enrollment in traditional fee-for-service Medicare; and
- spending attributable to changes in law and regulation.

For 2007, CMS's preliminary estimate of the SGR is 0.7 percent (Table A-1).

Second, CMS calculates the update, which is a function of:

- the change in input prices for physician services,⁵ and
- an update adjustment factor 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 2007 is 2.6 percent (Table A-2). The part of the update calculation that has the bigger effect, however, is the update adjustment factor, which CMS estimates at -7.0 percent. That is the maximum negative adjustment permitted under current law. When we combine this adjustment with the estimated change in input prices, the result is an update of -4.6 percent.

The update adjustment factor is negative because actual spending for physician services started to exceed the target in 2001 (Figure A-1). Since then, volume growth has kept spending above the target. In addition, overrides of

the formula (where the Congress has changed the law to prevent negative updates) have kept payment rates above the level necessary to align actual spending and the target. The result is that the update adjustment factor would be -28.0 percent, if not for the -7.0 percent limit.

Reviewing CMS's estimates

Because an update adjustment factor of -28.0 percent is well beyond the statutory limit, the Commission anticipates no changes in CMS's estimates that would be large enough to bring the factor within the limit and, therefore, alter the update. In the 2007 SGR, the estimate of the change in input prices, as measured by the Medicare Economic Index (MEI), is similar to changes in the MEI for earlier years.⁶ The change in real GDP per capita of 2.3 percent equals the 10-year moving average of real GDP estimates from the Bureau of Economic Analysis (BEA), adjusted for population growth (BEA 2006).

In the 2007 SGR, the change in spending due to law and regulation is noteworthy in that it is negative. Usually, this component of the SGR is positive to account for spending increases that occur when legislation expands benefits under Medicare Part B. For 2007, CMS expects law and regulation to have a negative effect on spending for two reasons. First, payment rates will fall in some geographic areas when the floor on the geographic practice cost index for physician work expires. The floor was established by the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 (MMA) and ends on December 31, 2006. Second, payment rates for certain imaging services will go down under provisions of the Deficit Reduction Act of 2005 (DRA).

**TABLE
A-2****Estimate of the update for
physician services, 2007**

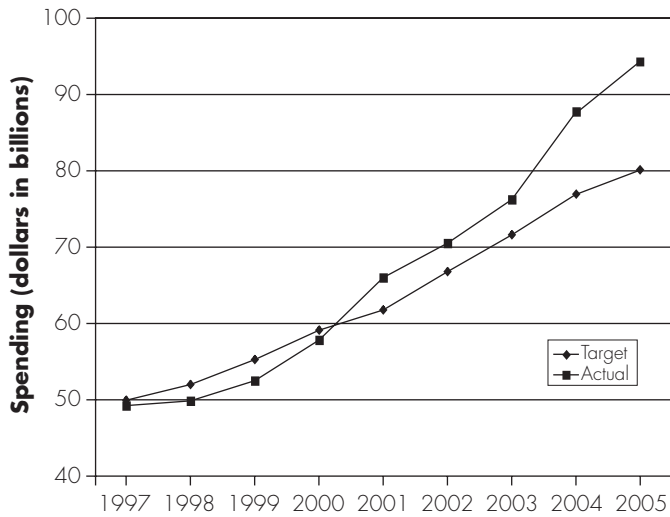
Factor	Percent
Change in:	
input prices	2.6%
adjustment factor	-7.0
Update	-4.6

Note: Percents are converted to ratios and multiplied, not added, to produce the update.

Source: Kuhn 2006.

**FIGURE
A-1**

Through 2005, actual spending for physician services exceeded target



Note: The estimates shown are preliminary and so may change.

Source: Office of the Actuary 2006 and Kuhn 2006.

A physician specialty society, the American College of Radiology, has raised a question about the magnitude of the change in spending due to law and regulation that will occur in 2007. CMS's estimate of an average change in payment rates of -1.0 percent is consistent with the Congressional Budget Office's (CBO's) budget scoring of the MMA and DRA provisions. The American College of Radiology believes that CBO has underestimated the payment reductions that will occur under the DRA by more than 50 percent (ACR 2006). While we can not assess the magnitude of these estimates, we note that CMS reviews and validates estimates in SGRs as data become available and that the agency has two years to revise an SGR with better data.⁷ In addition, CMS will learn more about the effects of the DRA provisions through work on proposed rules for the physician fee schedule and the prospective payment system for outpatient hospital care to be published in the summer of 2006.

The remaining factor in the 2007 SGR—the change in fee-for-service enrollment—is the least certain. CMS assumes a decrease of 2.9 percent. This figure differs from CBO's enrollment projection, which is an increase in fee-for-service enrollment of 0.3 percent for fiscal year 2007. CMS and CBO projections of total Medicare Part B enrollment are similar (1.5 percent and 1.8 percent, respectively), so the difference in the fee-for-service

projections is due to the size of the shift in enrollment from Medicare fee-for-service to Medicare Advantage (MA). CMS may be better able to project any such shift when MA plans submit bids and identify market areas in June 2006. CMS can then revise the enrollment projection, if necessary, before the update becomes final in November 2006. Even then, CMS will have limited information on changes in enrollment in 2007, but the agency will have another two years to revise the enrollment estimate if better data become available, just as the agency does with changes in spending due to law and regulation.

The only remaining issue concerns CMS's estimates of actual spending for 2005 and 2006. Data on actual spending are nearly complete through the first three quarters of 2005 but are less complete for the last quarter of that year. Therefore, the estimate of actual spending in 2005 may increase or decrease somewhat before CMS issues a final rule on the update in November 2006. Of course, the uncertainty regarding 2006 estimates is greater than for 2005 because CMS currently has very little information on actual spending for 2006.

Regardless of what happens with the various estimates that determine the physician update, it is very unlikely that any change in them will overcome an update adjustment factor of -28.0 percent. For this reason, we anticipate that CMS will revise the update calculations this fall, in preparation for implementing the 2007 update on January 1, and that the calculations will show the maximum reduction that the statute permits: the change in input prices reduced by an update adjustment of -7.0 percentage points. ■

Endnotes

- 1 To illustrate the preliminary nature of CMS's estimate, note that last year the initial estimate of spending growth in 2004 was 15.2 percent. Since then, the agency has substantially revised the estimate downward to 11.4 percent.
- 2 The Commission recommended an update for 2007 equal to the projected change in input prices less an expectation for productivity growth (MedPAC 2006).
- 3 For the SGR, physician services include services commonly performed by a physician or performed in a physician's office. In addition to physician fee schedule services, these services include diagnostic laboratory tests and most of the drugs covered under Medicare Part B. To estimate this factor, CMS uses a weighted average of the MEI, a measure of changes in input prices for physician services, the change in payment rates for laboratory services legislated by the Congress, and a weighted average of the change in payment rates for Part B-covered drugs. The MEI is the change in input prices for physician services less an adjustment for productivity growth.
- 4 As required by the MMA, the real GDP per capita factor in the SGR is a 10-year moving average.
- 5 For the update, physician services include only those services in the physician fee schedule.
- 6 Historical changes in the MEI are published by the CMS Office of the Actuary (2006). Since 1991, they have ranged from 2.0 percent to 3.2 percent.
- 7 For further discussion of changes in spending due to law and regulation, see MedPAC's *Report to the Congress: Growth in the volume of physician services* (2004).

References

American College of Radiology. 2006. ACR joins other medical organizations, manufacturers, and patient advocacy groups in letter to Capitol Hill opposing Deficit Reduction Act imaging cuts. March 2. http://www.acr.org/s_acr/sec.asp?CID=3140&DID=18881.

Bureau of Economic Analysis, Department of Commerce. 2006. *Current-dollar and real gross domestic product*. Washington, DC: BEA. March 30. <http://www.bea.gov/bea/dn/gdplev.xls>.

Hackbarth, Glenn M., Medicare Payment Advisory Commission. 2005a. Medicare payment to physicians. Oral testimony before the Subcommittee on Health of the Committee on Energy and Commerce, U.S. House of Representatives. 109th Cong., 1st sess. November 17.

Hackbarth, Glenn M., Medicare Payment Advisory Commission. 2005b. Medicare payment to physicians. Oral testimony before the Subcommittee on Health of the Committee on Ways and Means, U.S. House of Representatives. 109th Cong., 1st sess. February 10.

Kuhn, H. B., Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2006. Letter to Glenn M. Hackbarth, Medicare Payment Advisory Commission. April 7. http://www.cms.hhs.gov/SustainableGRatesConFact/Downloads/MedPAC_Letter_Estimated_2007.pdf.

Medicare Payment Advisory Commission. 2006. *Report to the Congress: Medicare payment policy*. Washington, DC: MedPAC.

Medicare Payment Advisory Commission. 2005. *Report to the Congress: Medicare payment policy*. Washington, DC: MedPAC.

Medicare Payment Advisory Commission. 2004. *Report to the Congress: Growth in the volume of physician services*. Washington, DC: MedPAC.

Medicare Payment Advisory Commission. 2002. *Report to the Congress: Medicare payment policy*. Washington, DC: MedPAC.

Office of the Actuary, Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2006. Estimated sustainable growth rate and conversion factor, for Medicare payments to physicians in 2007. Baltimore: CMS. <http://www.cms.hhs.gov/SustainableGRatesConFact/Downloads/sgr2007p.pdf>.

Acronyms

Acronyms

AHRQ	Agency for Healthcare Research and Quality	FFS	fee-for-service
AIDS	acquired immunodeficiency syndrome	FOTO	Focus On Therapeutic Outcomes, Inc.
AMA	American Medical Association	FPL	federal poverty level
AM-PAC	Activity Measure for Post-Acute Care	FY	fiscal year
APR-DRG	all patient refined diagnosis related group	GAO	Government Accountability Office
APTA	American Physical Therapy Association	GDP	gross domestic product
AQA	Ambulatory Quality Alliance	GIC	general inpatient care
ASC	ambulatory surgical center	GME	graduate medical education
BBA	Balanced Budget Act of 1997	HbA1c	hemoglobin A1c
BBRA	Balanced Budget Refinement Act of 1999	HCC	hierarchical condition category
BEA	Bureau of Economic Analysis	HCFA	Health Care Financing Administration
BETOS	Berenson-Eggers Type of Service	HCPCS	Healthcare Common Procedure Coding System
BLS	Bureau of Labor Statistics	HHS	Department of Health and Human Services
CABG	coronary artery bypass graft	HIV	human immunodeficiency virus
CAD	coronary artery disease	HMO	health maintenance organization
CAT	computer adaptive technology	ICD	implantable cardioverter defibrillator
CBO	Congressional Budget Office	ICD-9-CM	International Classification of Diseases, Ninth Revision, Clinical Modification
CCIP	Chronic Care Improvement Program	ICR	International Communications Research
CCM	chronic care model	IDTF	independent diagnostic testing facility
CCP	coordinated care plan	IME	indirect medical education
CED	coverage with evidence development	IOM	Institute of Medicine
CHC	continuous home care	IPA	independent practice association
CHF	congestive heart failure	IPPS	inpatient prospective payment system
CMS	Centers for Medicare & Medicaid Services	IRC	inpatient respite care
CMS-HCC	CMS-hierarchical condition category	IT	information technology
COPD	chronic obstructive pulmonary disease	LDL	low-density lipoprotein
CORF	comprehensive outpatient rehabilitation facility	LIS	low-income subsidy
CPEP	Clinical Practice Expert Panel	LOS	length of stay
CPO	care plan oversight	LTC	long-term care
CPT	Current Procedural Terminology	LTCP	long-term care pharmacy
CT	computed tomography	MA	Medicare Advantage
CV	coefficient of variation	MACIE	Medicare Ambulatory Care Indicators for the Elderly
CY	calendar year	MA-PD	Medicare Advantage-Prescription Drug [plan]
DCG	diagnostic cost group	MCAC	Medicare Coverage Advisory Committee
DRA	Deficit Reduction Act	MDS	Minimum Data Set
DRG	diagnosis related group	MedPAC	Medicare Payment Advisory Commission
E&M	evaluation and management	MedPAR	Medicare Provider Analysis and Review file
ERG	episode risk group	MEG	Medstat Episode Group
ESI	employer-sponsored insurance	MEI	Medicare Economic Index
ETG	Episode Treatment Group	MHS	Medicare Health Support
FDA	Food and Drug Administration	MHSO	Medicare Health Support organization
FEHB	Federal Employees Health Benefits [Program]		

MMA	Medicare Prescription Drug, Improvement, and Modernization Act of 2003	PE	practice expense
MRI	magnetic resonance imaging	PEAC	Practice Expense Advisory Committee
MSA	medical savings account	PERC	Practice Expense Review Committee
MSA	metropolitan statistical area	PFFS	private fee-for-service
MSP	Medicare Savings Program	PGP	physician group practice
N/A	not applicable	PPI	proton pump inhibitor
N/A	not available	PPRC	Physician Payment Review Commission
NCHS	National Center for Health Statistics	PPO	preferred provider organization
NDC	national drug code	PPS	prospective payment system
NHPCO	National Hospice and Palliative Care Organization	PT	physical therapy
NHS	National Health Service (United Kingdom)	QALY	quality-adjusted life year
NICE	National Institute for Clinical Excellence (United Kingdom)	QMB	qualified Medicare beneficiary
NLA	national limitation amount	RDS	retiree drug subsidy
NMEP	National Medicare Education Program	RHC	routine home care
NOMS	National Outcomes Measurement System	RHHI	regional home health intermediary
NORC	National Opinion Research Center	RRS	relative risk score
NQF	National Quality Forum	RUC	Relative Value Scale Update Committee
OACT	Office of the Actuary	RUG	resource utilization group
OIG	Office of Inspector General	RVU	relative value unit
OOP	out-of-pocket	SGR	sustainable growth rate
OPTIMAL	Outpatient Physical Therapy Improvement and Assessment Log	SHIP	State Health Insurance Assistance Program
ORF	outpatient rehabilitation facility	SLMB	specified low-income Medicare beneficiary
OSCAR	Online Survey, Certification, and Reporting system	SLP	speech-language pathology
OT	occupational therapy	SMS	Socioeconomic Monitoring System
P4P	pay for performance	SNF	skilled nursing facility
PACE	Program of All-Inclusive Care for the Elderly	SNP	special needs plan
PBM	pharmacy benefit manager	SSA	Social Security Administration
PDP	prescription drug plan	UPIN	Unique Physician Identification Number
		USP	the U.S. Pharmacopeia
		VA	Department of Veterans Affairs
		VHA	Veterans Health Administration

More about MedPAC

Commission members

Glenn M. Hackbarth, J.D., chairman

Bend, OR

Robert D. Reischauer, Ph.D., vice chairman

The Urban Institute

Washington, DC

Term expired April 2006

Autry O. V. "Pete" DeBusk

DeRoyal

Powell, TN

Glenn M. Hackbarth, J.D.

Alan R. Nelson, M.D.

American College of Physicians

Washington, DC

Robert D. Reischauer, Ph.D.

David A. Smith, M.Ed.

Demos

New York, NY

Ray E. Stowers, D.O.

Lincoln Memorial University

College of Osteopathic Medicine

Harrogate, TN

Term expires April 2007

**John M. Bertko, F.S.A.,
M.A.A.A.**

Humana Inc.

Louisville, KY

**Sheila P. Burke, M.P.A.,
R.N., F.A.A.N.**

Smithsonian Institution

Washington, DC

Francis J. Crosson, M.D.

The Permanente Federation, LLC

Oakland, CA

Arnold Milstein, M.D., M.P.H.

Pacific Business Group on Health

San Francisco, CA

Ralph W. Muller, M.A.

University of Pennsylvania

Health System

Philadelphia, PA

William J. Scanlon, Ph.D.

Health policy consultant

Oak Hill, VA

Term expires April 2008

Nancy-Ann DeParle, J.D.

JPMorgan Partners

Washington, DC

David F. Durenberger, J.D.

National Institute of Health Policy

University of St. Thomas

Minneapolis, MN

**Jennie Chin Hansen, R.N.,
M.S.N., F.A.A.N.**

AARP

San Francisco, CA

Nancy M. Kane, D.B.A.

Harvard School of Public Health

Boston, MA

Nicholas Wolter, M.D.

Billings Clinic

Billings, MT

Commissioners' biographies

John M. Bertko, F.S.A., M.A.A.A., is vice president and chief actuary for Humana Inc., where he manages the corporate actuarial group and directs the coordination of work by actuaries in Humana's major business units, including public programs, commercial, individual, and TRICARE. Mr. Bertko has extensive experience with risk adjustment and has served in several public policy advisory roles, including prescription drug benefit design. He served the American Academy of Actuaries as a board member from 1994 to 1996 and as vice president for the health practice area from 1995 to 1996. He was a member of the Actuarial Board for Counseling and Discipline from 1996 to 2002. Mr. Bertko is a fellow of the Society of Actuaries and a member of the American Academy of Actuaries. He has a B.S. in mathematics from Case Western Reserve University.

Sheila P. Burke, M.P.A., R.N., F.A.A.N., is the Smithsonian Institution's deputy secretary and chief operating officer. Before joining the Smithsonian, she was executive dean and lecturer in public policy at the John F. Kennedy School of Government, Harvard University, Cambridge. From 1986 to 1996, Ms. Burke was chief of staff for former Senate Majority Leader Bob Dole and was elected secretary of the Senate in 1995. She currently serves as the chair of the board of the Kaiser Family Foundation and is a member of the Kaiser Commission on Medicaid and the Uninsured, the American Board of Internal Medicine Foundation, WellPoint Health Networks, Chubb Insurance, and the University of San Francisco. She is a member of the National Academy of Public Administration and the Institute of Medicine (IOM) and chairs the IOM Committee on the Restructuring of the Food and Drug Administration. She is currently an adjunct lecturer in public policy at Harvard, a fellow of the Wiener Center, and an adjunct faculty member at Georgetown University. She has chaired the National Academy of Social Insurance's project on Restructuring Medicare for the Long Term. Ms. Burke holds a B.S. in nursing from the University of San Francisco and an M.P.A. from Harvard University.

Francis J. Crosson, M.D., is executive director of the Permanente Federation of medical groups that make up the physician component of Kaiser Permanente. He also cochairs the Kaiser Permanente Partnership Group, the organization's management committee. He joined Kaiser Permanente in 1977. In 1988, he was appointed associate executive director of the Permanente Medical Group and

served in that position until his current appointment. He also has experience with prescription drug arrangements and has led efforts on comprehensive public report cards on clinical quality, management of a drug formulary, and adoption of a state-of-the-art electronic medical record. He currently is chair-elect of the Board of Directors of the American Medical Group Association. Dr. Crosson received his undergraduate degree in political science from Georgetown University and his M.D. degree from Georgetown's School of Medicine.

Autry O.V. "Pete" DeBusk is chairman, chief executive officer, and founder of DeRoyal, a global supplier of medical products and services in the acute care, patient care, wound care, and original equipment manufacturing markets. Mr. DeBusk formed his first company in 1970 with a patent he received on an orthopedic product. In 1976, he consolidated his many product lines into one company, DeRoyal Industries. A member of several community organizations, Mr. DeBusk is also chairman of the Board of Trustees at Lincoln Memorial University in Harrogate, TN, as well as a founder of the Autry O.V. DeBusk facility, Boys and Girls Club, Powell, TN. As an innovative leader in the medical industry, he received a prestigious award from Duke University in 2000 recognizing his original contributions to orthopedic surgery. He received his B.S. degree from Lincoln Memorial University and attended graduate school at the University of Georgia.

Nancy-Ann DeParle, J.D., is a senior adviser to JPMorgan Partners, LLC, and adjunct professor of health care systems at the Wharton School of the University of Pennsylvania. From 1997 to 2000, she served as administrator of the Health Care Financing Administration (HCFA), which is now the Centers for Medicare & Medicaid Services. Before joining HCFA, Ms. DeParle was associate director for health and personnel at the White House Office of Management and Budget. From 1987 to 1989, she served as the Tennessee Commissioner of Human Services. She has also worked as a lawyer in private practice in Nashville, TN, and Washington, DC. She is a trustee of the Robert Wood Johnson Foundation and a board member of Cerner Corporation, DaVita, Guidant Corporation, Triad Hospitals, and the National Quality Forum. Ms. DeParle received a B.A. degree from the University of Tennessee; B.A. and M.A. degrees from

Oxford University, where she was a Rhodes Scholar; and a J.D. degree from Harvard Law School.

David F. Durenberger, J.D., is president of Policy Insight, LLC; senior health policy fellow at the University of St. Thomas in Minneapolis, MN; and chairman of the National Institute of Health Policy. He is also president of the Medical Technology Leadership Forum and a member of the Kaiser Foundation Commission on Medicaid and the Uninsured, the Board of the National Committee for Quality Assurance, and the National Commission for Quality Long-Term Care. From 1978 to 1995, he served as the senior U.S. Senator from Minnesota, as a member of the Senate Finance Committee, and chairman of its health subcommittee. He was a member of the Senate Environment Committee; the Government Affairs Committee; and the committee now known as the Health, Education, Labor, and Pensions Committee. He chaired the Senate Select Committee on Intelligence. Senator Durenberger is a graduate of St. John's University, received his J.D. degree from the University of Minnesota, and served as an officer in the U.S. Army.

Glenn M. Hackbarth, J.D., chairman of the Commission, lives in Bend, OR. He has experience as a health care executive, government official, and policy analyst. He was chief executive officer and one of the founders of Harvard Vanguard Medical Associates, a multispecialty group practice in Boston that serves as a major teaching affiliate of Harvard Medical School. Mr. Hackbarth previously served as senior vice president of Harvard Community Health Plan. From 1981 to 1988, he held positions at the U.S. Department of Health and Human Services, including deputy administrator of the Health Care Financing Administration. Mr. Hackbarth received his B.A. from Pennsylvania State University and his M.A. and J.D. from Duke University.

Jennie Chin Hansen, R.N., M.S.N., F.A.A.N., of San Francisco, is president-elect of AARP; a senior fellow at the University of California, San Francisco, chairing the Integrated Nurse Leadership Project; and a part-time nursing faculty member at San Francisco State University. Ms. Hansen was executive director of On Lok Senior Health Services, the prototype for the Program of All-Inclusive Care for the Elderly (PACE). She has practiced nursing in both urban and rural settings and taught in undergraduate programs. She currently serves in leadership roles with the AARP Foundation, the Agency for Healthcare Research and Quality's Effective Healthcare

Stakeholders Group, Lumetra (California's Quality Improvement Organization), the Advisory Board of the Institute for the Future of Aging Services, the Robert Wood Johnson Executive Nurse Fellows Program, and the California HealthCare Foundation Health Care Fellows Program. She was a delegate to the 2005 White House Conference on Aging. Ms. Hansen received her B.S. from Boston College and her M.S.N. from the University of California, San Francisco.

Nancy M. Kane, D.B.A., is professor of management in the Department of Health Policy and Management at the Harvard School of Public Health. Dr. Kane directs the Masters in Healthcare Management Program, an executive leadership program for mid-career physicians leading health care organizations. She has taught health care accounting, payment systems, financial analysis, and competitive strategy. Her research interests include measuring hospital financial performance, quantifying community benefits and the value of tax exemption, the competitive structure and performance of hospital and insurance industries, and nonprofit hospital governance. Professor Kane consults with federal and state agencies involved in health system design, oversight, and payment. She is an outside director of the Urban Medical Group, a nonprofit physician group practice providing care to frail elderly in institutional and home settings. Prior to obtaining her business training, she practiced as a hospital-based physical therapist. Dr. Kane earned her Masters and Doctor of Business Administration degrees from Harvard Business School.

Arnold Milstein, M.D., M.P.H., is medical director of the Pacific Business Group on Health (PBGH) and U.S. health care thought leader at Mercer Human Resource Consulting. PBGH is the largest employer health care purchasing coalition in the United States. Dr. Milstein focuses on health care purchasing strategy, clinical performance measurement, and the psychology of clinical performance improvement. He cofounded both the Leapfrog Group and the Consumer-Purchaser Disclosure Project, and heads performance measurement activities for both initiatives. Previously a Rosenthal Lecturer at the Institute of Medicine, the *New England Journal of Medicine* described Dr. Milstein as a "pioneer" in efforts to advance quality of care. In 2004 and 2005, World-at-Work, the largest global organization of human resource managers, awarded him its highest annual award, and the National Business Group on Health recognized him for innovation and successful implementation of health

care cost reductions and quality gains. He is an associate clinical professor at the University of California at San Francisco. Dr. Milstein has a B.A. in economics from Harvard, an M.P.H. in health services planning from the University of California at Berkeley, and an M.D. degree from Tufts University.

Ralph W. Muller, M.A., is chief executive officer of the University of Pennsylvania Health System, one of the largest academic health systems in the country. Most recently he served as managing director of Stockamp & Associates, a hospital consulting firm, and as a visiting fellow at the King's Fund in London. From 1985 to 2001, he was president and chief executive officer of the University of Chicago Hospitals and Health Systems. Before joining the hospital, he held senior positions with the Commonwealth of Massachusetts, including deputy commissioner of the Department of Public Welfare. Mr. Muller is past chairman of the Association of American Medical Colleges and the Council of Teaching Hospitals and Health Systems, and past vice chairman of the University Health System Consortium. He is past chairman of the National Opinion Research Center, a social service research organization, and serves on the board of the National Committee for Quality Assurance. Mr. Muller received his B.A. in economics from Syracuse University and his M.A. in government from Harvard University.

Alan R. Nelson, M.D., is an internist-endocrinologist who was in private practice in Salt Lake City until he became chief executive officer of the American Society of Internal Medicine (ASIM) in 1992. After the merger of ASIM with the American College of Physicians (ACP) in 1998, Dr. Nelson headed the Washington office of ACP-ASIM until his semi-retirement in January 2000 and now serves as special adviser to the executive vice president and chief executive officer of ACP. He was president of the American Medical Association from 1989 to 1990. Dr. Nelson also serves as an advisor to the Board of Trustees of Intermountain HealthCare, a large integrated health system whose headquarters are in Salt Lake City. A member of the Institute of Medicine (IOM) of the National Academy of Sciences, he serves on the IOM Committee on Payment and Performance Improvement and was chairman of the Committee on Understanding and Eliminating Racial and Ethnic Disparities in Health Care. Dr. Nelson received his M.D. from Northwestern University.

Robert D. Reischauer, Ph.D., is vice chairman of the Commission and president of the Urban Institute. Previously, he was a senior fellow with the Brookings Institution, and from 1989 to 1995 he was the director of the Congressional Budget Office. Dr. Reischauer currently serves on the boards of the Academy of Political Sciences, the Center on Budget and Policy Priorities, and the Committee for a Responsible Federal Budget. He also is a member of the Institute of Medicine, the National Academy of Public Administration, and Harvard Corporation. Dr. Reischauer received his A.B. degree from Harvard College and his M.I.A. and Ph.D. from Columbia University.

William J. Scanlon, Ph.D., is a senior policy advisor with Health Policy R&D. He is a consultant to the National Health Policy Forum and is a research professor with the Institute for Health Care Research and Policy at Georgetown University. Dr. Scanlon is a member of the National Committee on Vital and Health Statistics, the National Commission for Quality Long-Term Care, and the White House Conference on Aging Advisory Committee. Before his current positions, Dr. Scanlon was the managing director of health care issues at the U.S. Government Accountability Office. Previously, he was codirector of the Center for Health Policy Studies, an associate professor in the Department of Family Medicine at Georgetown University, and a principal research associate in health policy at the Urban Institute. Dr. Scanlon has a Ph.D. in economics from the University of Wisconsin-Madison.

David A. Smith, M.Ed., is a senior fellow at Demos, a New York-based public policy research center. He previously served as director of the Public Policy Department at the AFL-CIO. Prior to joining the AFL-CIO, he served as senior deputy budget director and as commissioner of economic development for the City of New York. Mr. Smith spent most of the 1980s in Washington as an aide to Massachusetts Senator Edward M. Kennedy and as a senior economist at the Joint Economic Committee. Mr. Smith has taught economics and public policy at the University of Massachusetts and the New School for Social Research, and he is a senior fellow at the Century Foundation. He is a member of the Board of Directors of Public Campaign and a fellow of the National Academy of Social Insurance. Mr. Smith attended Tufts University and received an M.Ed. from Harvard University.

Ray E. Stowers, D.O., is vice president and dean of the College of Osteopathic Medicine at Lincoln Memorial University in Harrogate, TN. Previously, he was director of the Oklahoma Rural Health Policy and Research Center as well as associate dean of rural health in the Department of Family Medicine at Oklahoma State University Center for Health Sciences. He was in private rural practice for 25 years at Family Medicine Clinics, Inc., in Medford, OK, and serves on the Policy Board of the National Rural Health Association. Dr. Stowers is a member of the Board of Trustees of the American Osteopathic Association and has served that organization in many capacities, including several related to physician coding and reimbursement issues. He has been on the Physician Payment Review Commission and was a founding member of the American Medical Association's Relative Value Update Committee. Dr. Stowers received his B.S. and B.A. degrees from Phillips University in Oklahoma and his D.O. degree from the University of Health Sciences College of Osteopathic Medicine in Kansas City, MO.

Nicholas Wolter, M.D., is a pulmonary and critical care physician who serves as chief executive officer for Billings Clinic in Billings, MT. Billings Clinic is a regional, nonprofit medical foundation consisting of a multispecialty group practice, a tertiary hospital, critical access hospital affiliates, a health maintenance organization, a research division, and a long-term care facility that serves a vast rural area in the northern Rockies. Dr. Wolter began his Billings Clinic practice in 1982 and served as medical director of the hospital's intensive care unit from 1987 to 1993. He began his leadership role with the successful merger of the clinic and hospital in 1993. Dr. Wolter is a diplomate of the American Board of Internal Medicine and serves on the boards of many regional and national health care organizations. He has a B.A. degree from Carleton College, an M.A. degree from the University of Michigan, and an M.D. degree from the University of Michigan Medical School.

Commission staff

Mark E. Miller, Ph.D.

Executive director

Sarah Thomas, M.S.

Deputy director

Analytic staff

.....
Jack Ashby, M.H.A.

Jill Bernstein, Ph.D.

Cristina Boccuti, M.P.P.

Niall Brennan, M.P.P.

Sharon Bee Cheng, M.S.

David V. Glass, M.S.

Timothy F. Greene, M.B.A.

Scott Harrison, Ph.D.

Kevin J. Hayes, Ph.D.

Sally Kaplan, Ph.D.

Kathryn Linehan, M.P.H.

Craig K. Lisk, M.S.

Karen Milgate, M.P.P.

Anne Mutti, M.P.A.

Jennifer Podulka, M.P.Aff.

Nancy Ray, M.S.

Rachel Schmidt, Ph.D.

Joan Sokolovsky, Ph.D.

Jeffrey Stensland, Ph.D.

Ariel Winter, M.P.P.

Daniel Zabinski, Ph.D.

Research assistants

.....
Sarah Friedman

Sarah Kwon

Special assistant to the

executive director

.....
Annisia McDonald

Administrative staff

.....
Reda H. Broadnax, B.S.,

Executive officer

Wylene Carlyle

Diane E. Ellison

Timothy Gulley

Tina Jennings, MTESL

Plinie (Ann) Johnson

Jason McMahon

Cynthia Wilson

Staff consultants

.....
Carol Carter, Ph.D.

Dana K. Kelley, M.P.A.

Julian Pettengill

