CHAPTER 2

Quality of care for Medicare beneficiaries

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Improving the quality of care for Medicare beneficiaries is essential. Medicare beneficiaries use the health system frequently and are often more frail and complex patients. Although the Medicare program is working to improve quality, current efforts are largely grafted onto a payment system that is neutral or negative toward quality. The Commission has concluded that it is crucial for the Medicare program to build incentives for improving quality into the payment system.

To best target these and other quality improvement initiatives, MedPAC analyzed the quality of care in hospitals, ambulatory settings, and Medicare+Choice plans. We find quality varies based on the indicators used. Although care is improving, gaps exist between care delivered and optimum care. Many beneficiaries experience adverse events in hospitals and are being admitted to hospitals for conditions that might have been prevented in ambulatory settings. On the other hand, hospital mortality rates are improving and beneficiaries rate their providers highly. These data provide direction for the Medicare program and raise questions that warrant further research.

Although the United States health care system is often said to be among the best in the world, many researchers have documented serious shortcomings. The Healthy People 2010 report showed gaps in the provision of services to prevent acute episodes (DHHS 2000). The Institute of Medicine (IOM) highlighted the consequences of medical errors in hospitals (Kohn et al. 1999). Earlier this year RAND released a study documenting the significant gap between care known to be effective and the actual care delivered on 439 indicators (McGlynn et al. 2003).

Citing concern about these shortcomings, the Congress directed the Agency for Healthcare Research and Quality (AHRQ) to prepare an annual report on the quality of health care in the United States. The first report, released in December 2003, showed that quality is improving in some areas and worsening in others.

Medicare and its beneficiaries play a large role in this system (Needleman et al. 2003). Like others, many Medicare beneficiaries receive care that is less than optimal, and in some cases unsafe. Medicare beneficiaries may even be more vulnerable to quality problems because they are often frail and have more complex medical needs. Because they are in the health system more frequently, they may experience more errors.

The Medicare program currently uses a variety of strategies to improve quality for beneficiaries—conditions of participation, accreditation, the quality improvement organization program, the public reporting initiative, and a variety of demonstration projects. MedPAC strongly supports these efforts and believes that CMS, along with its accreditor partners, has acted as an important catalyst in creating the ability to measure and improve quality.

These efforts, however, are grafted onto a system with few incentives for delivering high-quality care. The Commission is concerned that current Medicare payment systems are neutral or sometimes even negative towards quality. Providers are paid the same regardless of the quality of their services and paid more if complications occur. Furthermore, the payment systems include no incentives for providers to coordinate care among sites or episodes of care. Health plans also are paid the same regardless of their quality.

Beneficiaries and the nation's taxpayers can no longer afford a payment policy that is neutral toward quality; thus, the Commission recommended in the June 2003 report that Medicare explore the use of financial incentives for providers to improve quality. CMS and the Congress are beginning to explore such strategies. Later in this report we recommend that these types of incentives be implemented for dialysis services and in the Medicare managed care program.

To move beyond these two settings and more broadly target incentives efforts, we need to better understand the current level of quality and identify the most prevalent problems. Therefore, we are committed to answering two questions:

- What quality of care do Medicare beneficiaries receive?
- Which policies will move us in the direction of improving care for beneficiaries?

The IOM gives us a powerful description of goals for beneficiaries' care. In Crossing the Quality Chasm, IOM experts outlined specific goals for improving quality. Using these goals as a template, this chapter describes the quality of care Medicare beneficiaries experience in hospitals and ambulatory settings in both the fee-for-service (FFS) and managed care programs. (We discuss quality in skilled nursing facilities, home health agencies, and dialysis facilities in later chapters.) We focus on these two settings because many beneficiaries use these services.

The data in this chapter do not provide a comprehensive picture of quality of care. However, data from medical records, administrative claims, and beneficiary surveys can provide information on multiple dimensions of quality on a wide spectrum of conditions important to Medicare beneficiaries.

Mirroring trends in care for the entire population, trends for Medicare beneficiaries show significant gaps between care known to be effective and the care delivered. We also find that many patients are experiencing adverse events when they obtain care in hospitals. While care is improving on some indicators of quality, it is worsening on others. This is occurring at a time when the Medicare population is expected to grow dramatically. These findings suggest that it is critical for the Medicare program to leverage every opportunity to improve quality.

More in-depth analysis would help us understand the reasons why beneficiaries may not be receiving optimum

care and why quality improves on some measures but not others. Improving the quality of care for beneficiaries will require a variety of strategies, including some that may not be possible through Medicare payment or other policy reforms. We welcome further analysis of the measures we present here and hope to stimulate debate on strategies to improve quality.

Further analysis aside, our findings show that improvement is necessary, and provide guidance on where Medicare should focus its efforts. For example, our analysis suggests that incentives focused on hospitals should include measures of patient safety. The indicators we used found safety problems, but we will need to further refine these measures or develop others better able to capture hospital level differences before Medicare is able to compare individual hospitals and base rewards on these comparisons. In the ambulatory setting we found large numbers of beneficiaries are admitted to the hospital for potentially avoidable admissions. These data provide evidence that efforts to improve care in those settings—including coordinating among providers and settings—may need to focus on some of these conditions.

How did we measure quality?

In this chapter, we provide information about the quality of care provided to Medicare beneficiaries on four target areas identified by the IOM—effectiveness, safety, patient-centeredness and timeliness.

The IOM also identifies efficiency and equity as key quality goals. MedPAC is analyzing efficiency in other work focused on the relationship between cost and quality in various settings. Examining the equity of health care—whether certain groups of beneficiaries are experiencing the quality of their care differently than others—is critical for a full understanding of the quality problems experienced by Medicare beneficiaries. We have several analyses underway to evaluate the quality of care for various subpopulations.

The data in this chapter describe the quality of care delivered in both the FFS and Medicare managed care programs. We present new MedPAC analysis of data on each of these aspects of quality using three indicator sets and one beneficiary survey developed by AHRQ, and data gathered by the National Committee for Quality Assurance (NCQA) and CMS.

The goals we used from the IOM framework are that health care should be (Committee on the Quality of Health Care in America, IOM 2001):

- Effective—providing services based on scientific knowledge to all who could benefit and refraining from providing services to those not likely to benefit (avoiding underuse and overuse).
- Safe—avoiding injuries to patients from the care that is intended to help them.
- Timely—reducing waits and sometimes harmful delays for both those who receive and those who give care.
- Patient-centered—providing care that is respectful of and responsive to individual patient preferences, needs, and values and ensuring that patient values guide all clinical decisions.

The availability of data on these goals varies (Table 2-1). Information on the clinical effectiveness of care is more available than information on any other goal. Large gaps in information on the aspects of quality for Medicare beneficiaries exist in the three other goals—either little

TABLE 2-1 **Four Institute of Medicine goals for quality and associated measures used in MedPAC's analysis**

Effectiveness	Safety	Patient-centeredness	Timeliness
Inpatient mortality and mortality 30 days from admission	Adverse events in hospitals	CAHPS for ambulatory and managed care plans	CAHPS for ambulatory and managed care plans
QIO hospital measures			QIO hospital measures
QIO ambulatory care measures			QIO ambulatory care measures
Potentially avoidable hospital admissions			
CAHPS for ambulatory care			

Note: CAHPS (Consumer Assessment of Health Plans Survey), QIO (quality improvement organization).

information is available or it is only available for certain settings. Some data sets, such as the Consumer Assessment of Health Plans Survey (CAHPS) and the quality improvement organization (QIO) measure sets, provide information on several aspects of care in different settings.

The AHRQ-developed sets we use in our analysis examine the effectiveness and timeliness of care in and out of the hospital by measuring hospital mortality and potentially avoidable admissions to the hospital. They examine safety in hospitals by measuring the rate of adverse events associated with inpatient care. AHRQ chose these indicators after extensive literature review, discussions with clinical and measurement experts, and empirical testing to explore the frequency and variation of the indicators and potential bias. AHRQ designed the indicators so that the necessary information could be gathered from hospital discharge data collected in their Healthcare Cost and Utilization Project (HCUP) and through alternative administrative data sources. Using administrative data, as opposed to measures that require chart review, alleviates the burden of data collection for individual facilities.

We applied these indicators to the administrative data for hospitals in the Medicare program. Because a few of the indicators occurred infrequently, we ran the indicators on 100 percent of the Medicare Provider Analysis and Review file (MedPAR) data, that is, all hospital claims, for the years 1995, 1998, 2000 and 2002. Therefore, all of our results from the AHRQ indicator sets are statistically significant. We risk-adjusted the data according to the AHRQ methodology.

To look at patient-centeredness of care, we used another set of AHRQ-developed indicators, CAHPS. This survey also provides information on the effectiveness and timeliness of care in both the FFS and managed care programs. Patient perceptions of care are an important component of quality measurement because they complement the technical evaluation of clinical services. Sometimes, as in the cases of access to care and provider communication skills, patients are the only reliable source of information.

CAHPS was originally developed for use with private health plans by a consortium of Harvard Medical School, RAND, and Research Triangle Institute, with support from the Agency for Healthcare Research and Quality and CMS. It was subsequently adapted for surveying beneficiaries in Medicare+Choice (M+C) plans and FFS Medicare. CMS has administered this survey to between 180,000 and 200,000 M+C beneficiaries and 168,000 to 178,000 FFS beneficiaries annually since 2000. With response rates of 70 to 80 percent, the CAHPS surveys are the largest surveys of Medicare beneficiaries.

We also include analyses from CMS published in the Journal of the American Medical Association showing the state rates for the provision of effective and timely care in hospitals and ambulatory settings. These data track the progress of providers in closing the gap between optimal care and the care delivered. CMS collected these data to guide and evaluate the efforts of each state-based QIO to help providers improve on these measures.

NCQA provided the information for comparing the Medicare scores on the Health Plan Employer Data and Information Set (HEDIS) with those of the employer-sponsored population. NCQA produces a report, the State of Health Care Quality, in which it compiles and compares these scores for Medicare, Medicaid, and employer-sponsored insurance.

What are the results?

The results are mixed: Some aspects of care improved between 1995 and 2002, while others worsened. In this section we provide a summary of our findings.

Fee-for-service Medicare

- **Hospital mortality is generally decreasing.** The good news is that rates of in-hospital mortality—an indicator of effectiveness—generally decreased between 1995 and 2002 on all conditions and procedures measured. Because 30-day mortality rates (as measured from admission) decreased at a lower pace and actually increased in one of the later time periods measured, it will be important to monitor this indicator of clinical effectiveness.

- **Appropriate processes of care are improving, but rates are still too low.** Other measures of effectiveness—the QIO program measures—also show improvement for hospitalized Medicare beneficiaries. Fourteen out of 16 measures of appropriate provision of care in hospitals improved between the periods 1998 to 1999 and 2000 to 2001 (Jencks et al. 2003). Although improvement has occurred, the measures also show that many

hospitalized Medicare beneficiaries are not receiving care known to be effective.

- **Adverse events in hospitals affect many beneficiaries.** Measures of the safety of patients in the hospital reveal that 9 out of 13 rates of adverse events for hospitalized Medicare beneficiaries increased between 1995 and 2002. Although these rates of adverse events are generally very small, 1 percent or lower, they do affect significant numbers of beneficiaries—over 300,000 adverse events affected Medicare beneficiaries in 2000 on these indicators alone. Because patient safety indicators based on administrative data cannot measure all adverse events, the true rates may even be higher.

  Although many beneficiaries are affected by adverse events, the trends may need to be viewed with some caution. These data are based on diagnosis and procedure codes in hospitals, and the accuracy or rules of thumb affecting assignment of codes may have changed over our time frame. On the one hand, some experts suggest that improved coding accuracy over this time period may have contributed to a portion of the increase in adverse events. On the other hand, fear of fraud and abuse investigations may have led to less coding of complications overall, and thus, these types of complications as well. On balance, those experts with whom we spoke thought it unlikely that all of the increases in adverse events would be due to shifts in coding.

- **Potentially avoidable admissions also affect many beneficiaries.** The AHRQ indicators of ambulatory care provide information on the effectiveness and timeliness of care provided outside the hospital. Termed the "prevention quality indicators," these measures show that significant numbers of beneficiaries are being hospitalized for conditions for which optimal ambulatory care might have prevented the admissions. Seven out of 12 indicators show increases in admissions between 1995 and 2002 for these potentially avoidable admissions. A positive finding is that the rate of admissions for beneficiaries with congestive heart failure (CHF)—the largest category of admissions for ambulatory care sensitive conditions (ACSCs)—held fairly stable over time. This could result from the many private and public efforts to better manage patients with CHF.

- **Preventive ambulatory care is improving, but rates are still too low.** Data on ambulatory care from the QIO program and the CAHPS survey show, in general, care on these measures is improving. But they also show shortcomings in the provision of effective preventive services. As measured by the QIO program data, all six measures of the provision of preventive care were lower than they should be, but showed improvement between 1998 and 2001 (Jencks et al. 2003). The rates of provision of the flu and pneumonia immunizations were similar on the CAHPS in 2002 as they were in the QIO data for 2000–2001—31 percent of beneficiaries report that they did not receive flu shots and 45 percent did not receive shots for pneumonia.

- **Beneficiaries rate highly their providers and their care.** Based on findings from the CAHPS survey, beneficiaries in FFS Medicare perceive that they receive high quality care from their health providers. Almost 80 percent of beneficiaries report long-lasting relations with their personal doctor or nurse. Ninety percent or more believe that their doctors spend enough time with, listen to, and respect them.

Medicare managed care

For Medicare managed care beneficiaries, information on quality is based on measures of clinical effectiveness collected on HEDIS and the Medicare+Choice version of the CAHPS survey. HEDIS indicators measure care both inside and outside the hospital.

- **Appropriate care in and out of the hospital is improving, but rates are still too low.** Similar to FFS beneficiaries, many beneficiaries in managed care are not receiving care known to be effective both in and out of the hospital. However, these rates have improved over the three-year period from 2000 to 2002. Furthermore, as compared with enrollees in employer-sponsored—non-Medicare—plans, Medicare beneficiaries in the managed care program, for the most part, are receiving a similar level of quality of care, though this varies by measure. On some measures, such as those for diabetes care, Medicare beneficiaries receive better care than patients with employer-sponsored plans; and on some aspects, such as mental health care, they receive worse care.

- **FFS and managed care beneficiaries both rate their care highly.** Beneficiaries in M+C plans rate some aspects of patient-centered care better and some worse compared with their FFS counterparts. For example,

beneficiaries in M+C plans are slightly more likely to report that their doctors communicate well. Those in FFS are somewhat more likely than those in M+C plans to say that they have no problem getting needed care.

Quality of care for FFS beneficiaries

In this section we provide the details of our analysis. We examine the trends in care received by FFS beneficiaries, first inside hospitals, and then outside hospitals.

Are FFS beneficiaries receiving high-quality care in hospitals?

In 2001, inpatient hospitals provided 14 million episodes of hospital care to Medicare beneficiaries. Inpatient hospital care represents about 40 percent of all Medicare expenditures. We can measure the quality of care for beneficiaries in hospitals in a variety of ways. In this section, data on mortality, the appropriateness of care, and adverse events provide a mixed picture of the clinical effectiveness, timeliness, and safety of care in hospitals. Based on our data, measures of effectiveness of care such as mortality and the provision of clinically appropriate services in a timely manner show improvement, while the safety of patients, as measured by the rate of adverse events, does not.

Effectiveness of care: Hospital mortality decreased between 1995 and 2002

Our first set of indicators measures the rate of death among beneficiaries in the hospital and 30 days after admission to the hospital. In-hospital mortality is more directly attributable to the quality of care in the hospital than the 30-day mortality rate because the hospital is the only provider of care during the hospital stay. Patients' outcomes 30 days from admission could be affected by several providers, such as skilled nursing facilities, rehabilitation facilities or doctors providing post-hospital care. If we only consider in-hospital deaths, however, we undercount the number of deaths that could be attributable to inpatient quality but occur shortly after discharge.

Many deaths associated with hospital admissions are inevitable. However, some of these deaths may be preventable. AHRQ chose these indicators based upon evidence that these rates of mortality are related to the quality of inpatient hospital care (Agency for Healthcare Research and Quality 2002b). For the procedure indicators, evidence suggested that facilities with higher volume had lower rates of mortality for similar populations. In other cases, observational studies suggested that if hospitals changed their procedures they could affect patient outcomes. For example, surgical teams that reduced the time to cross-clamp the aorta during a coronary artery bypass graft (CABG) procedure reduced mortality.

We risk-adjusted the rates from our analysis shown in Table 2-2 by age, sex, and severity of patients' condition based on the all patient refined diagnosis related groups (APR-DRGs). Major findings include:

- In-hospital mortality has improved across the board; the rate of mortality dropped for each procedure or condition we measured. The most substantial improvements occurred for congestive heart failure and gastrointestinal hemorrhage.
- Thirty-day mortality has also generally improved, though the rate of mortality following pneumonia, the most common precedent of mortality among those we measured, rose between 1995 and 2002. The rate of mortality following hospitalization for craniotomy also rose slightly between 1995 and 2002.
- The 30-day mortality rate and the in-hospital mortality rate diverged between 2000 and 2002. While the in-hospital mortality rates continued to decline over this period, the 30-day mortality rates increased. The relationship between the rates for different conditions and procedures remained consistent over the entire period: The rate of mortality is greater after patients leave the hospital than during their stay in the hospital, with the exception of those hospitalized for an abdominal aortic aneurysm repair and CABG.

Even though mortality in hospitals is declining, which is good news, the recent increase in 30-day mortality rates makes monitoring and exploring reasons for the trend critical. This increase could result from poor care in settings outside the hospital or could be due to hospitals' discharging patterns.

Effectiveness and timeliness of care: Hospital processes of care are improving, but rates are still too low

Like hospital mortality rates, data from the QIO program on the effectiveness and timeliness of care in hospitals also show improvement over time. Perfect performance on the process measures rates used by the QIO program would be

TABLE 2-2

Effectiveness of care: Hospital mortality decreased, 1995–2002

Diagnosis or procedure	Risk-adjusted rate per 10,000 discharges				Percent change 1995–2002	Observed deaths in 2000
	1995	1998	2000	2002		
In-hospital mortality						
Pneumonia	1,122	1,032	1,012	949	–15.4	78,999
AMI	1,670	1,477	1,414	1,309	–21.6	43,750
Stroke	1,357	1,240	1,212	1,159	–14.6	39,099
CHF	689	585	541	474	–31.2	38,828
GI hemorrhage	504	434	400	355	–29.5	11,155
CABG	580	522	482	427	–26.3	8,669
Craniotomy	1,033	963	986	931	–9.9	3,216
AAA repair	1,258	1,178	1,161	1,130	–10.2	2,632
30-day mortality						
Pneumonia	1,525	1,531	1,377	1,557	2.1	107,502
CHF	1,063	1,006	818	907	–14.6	58,678
Stroke	1,816	1,808	1,620	1,807	–0.5	52,263
AMI	1,899	1,792	1,627	1,690	–11.0	50,367
GI hemorrhage	757	718	590	649	–14.3	16,438
CABG	532	496	441	412	–22.5	7,932
Craniotomy	1,164	1,158	1,123	1,182	1.6	3,666
AAA repair	1,158	1,116	1,069	1,072	–7.4	2,423

Note: AMI (acute myocardial infarction), CHF (congestive heart failure), GI (gastrointestinal), CABG (coronary artery bypass graft), AAA (abdominal aortic aneurysm). Rate is for discharges eligible to be considered in the measure.

Source: MedPAC analysis of 100 percent of MedPAR data using Agency for Healthcare Research and Quality indicators and methods.

100 percent. Thus, although we know that care is improving, beneficiaries are still not receiving care known to be effective—all these measures are well below 100 percent.

The public-private hospital reporting initiative relies on a subset of these measures, as do the new reporting requirements from the Joint Commission on Accreditation of Healthcare Organizations (JCAHO). According to the American Hospital Association, over 2,300 hospitals have signed up to participate in this initiative and to report quality data to CMS. Ideally, these new data collection efforts will allow the Medicare program to work even more effectively with hospitals to improve care for beneficiaries. The data reported in this section were collected before the new reporting initiative began.

The measures shown in Table 2-3 (p. 38) are care processes known to be effective in preventing myocardial infarction, heart failure, pneumonia, and stroke. These data were collected first in 1998–1999 to create a baseline and then measured again in 2000–2001. Because these are measures of care that should always be given to all beneficiaries who meet certain criteria regardless of their age, sex, or comorbidities, the measures do not need to be risk-adjusted. The first two columns show the rate for the median state. The last column shows an average for all states weighted by their populations.

Major findings from CMS's analysis of data on these measures include:

- Care has improved on 14 out of 16 hospital measures used by the quality improvement organization program between the periods 1998–1999 and 2000–2001. The median improvement ranges from 1 to 13 percent.
- Because many Medicare beneficiaries are still not receiving clinically indicated services, many opportunities for further improvement exist.

TABLE 2-3

Effectiveness and timeliness of care in hospitals: Processes of care are improving but rates are still too low, 1998–2001

Process	1998–1999 Median state's rate	2000–2001 Median state's rate	2000–2001 Weighted average
Acute myocardial infarction			
Aspirin in 24 hours	84%	85%	84%
Aspirin at discharge	85	86	84
Beta blockers in 24 hours	64	69	68
Beta blockers at discharge	72	79	78
Angiotensin-converting enzyme inhibitor in acute myocardial infarction	71	74	71
Smoking cessation counseling	40	43	38
Congestive heart failure			
Evaluation of left ventricular ejection fraction	65	70	71
Angiotensin-converting enzyme inhibitor in heart failure	69	68	66
Stroke			
Afibrillation	55	57	57
Antithrombotic	83	84	83
Nifedipine	95	99	99
Pneumonia			
Antibiotic time	85	87	85
Antibiotic prescription	79	85	84
Blood culture	82	82	81
Influenza screen	14	27	24
Pneumonia screen	11	24	23

Note: The rates reflect the percentage of beneficiaries receiving clinically indicated services in a state (a perfect performance is 100 percent). These data show the median state's rate for each indicator for both time periods. The weighted average is based on the number of beneficiaries in each state.

Source: CMS data from the quality improvement organization program (Jencks et al. 2003).

Safety of care in hospitals: Adverse events affect many beneficiaries

Patient safety indicators (PSIs) developed by AHRQ identify the incidence of possibly preventable adverse events resulting from hospital care. We provide data on 13 of these PSIs for Medicare beneficiaries in hospitals (Table 2-4).

Most of the rates are relatively rare events with rates under 100 per 10,000 discharges; hence, small absolute changes can result in large percentage differences. However, collectively they affect many beneficiaries. Over 300,000 adverse events occurred in 2000. In addition, because it is impossible to measure the occurrence of all adverse events using administrative data, beneficiaries may be experiencing other types of adverse events that are not counted in this analysis. For example, adverse events due to medication error—one of the largest sources of errors in the hospital setting—are difficult to observe using claims data.

In a recent article published in the Journal of the American Medical Association, the authors Zhan and Miller analyze the impact of these type of events on patients from all payers and on the health system as a whole (Zhan and Miller 2003). Their study evaluated the impact on mortality, length of stay, and charges of patients who had any one of the AHRQ-developed 18 indicators of patient safety.[1] The study concluded that these 18 types of medical events may account for 2.4 million extra hospital days, $9.3 billion in excess charges, and almost 32,600 attributable deaths in the United States annually. The authors discuss the limitations of their work, including factors that may also affect the results presented here and subsequent policy options. It is unclear whether these patient safety indicators can be used to compare individual

TABLE 2-4

Safety of care: Adverse events affect many beneficiaries, 1995–2002

Patient safety indicator	Risk-adjusted rate per 10,000 discharges eligible				Change in rate 1995–2002	Percent change 1995–2002	Observed adverse events 2000
	1995	1998	2000	2002			
Decubitus ulcer	237	273	297	319	82	34.5	128,774
Failure to rescue	1,772	1,683	1,652	1,511	–261	–14.7	57,491
Postoperative PE or DVT	98	108	120	123	25	24.5	36,795
Accidental puncture/laceration	28	31	32	36	8	30.7	34,171
Infection due to medical care	24	27	28	30	6	28.5	24,524
Iatrogenic pneumothorax	10	12	11	11	1	4.8	10,985
Postoperative respiratory failure	43	66	75	87	44	99.6[b]	8,184
Postoperative hemorrhage or hematoma	N/A	27	26	24	–3[a]	–11.2	8,056
Postoperative sepsis	89	112	127	135	46	50.7	6,739
Postoperative hip fracture	18	18	18	13	–5	–24.2	3,707
Death in low-mortality DRGs	39	30	31	30	–9	–23.6[c]	3,453
Postoperative wound dehiscence	38	41	37	38	0	0.4	2,043
Postoperative physiologic and metabolic derangement	11	12	13	14	3	31.8	1,952

Note: PE (pulmonary embolism), DVT (deep vein thrombosis), N/A (not available), DRG (diagnosis related group).
[a]change from 1998–2002.
[b]Some of this increase may be due to the introduction of a new code in 1998 for acute and respiratory failure.
[c]Agency for Healthcare Research and Quality researchers identified low-mortality DRGs for all payers, not Medicare beneficiaries only.

Source: MedPAC analysis of 100 percent of MedPAR data using Agency for Healthcare Research and Quality indicators and methods.

hospitals, or to fully distinguish complications that could have been prevented.

These indicators give a risk-adjusted rate per 10,000 discharges that were eligible to be counted for the measure. The rates are risk-adjusted by age, sex, and comorbidities. Whether a particular condition was counted as an adverse event depended on the circumstances of the specific beneficiary. Only certain discharges were considered at risk for the adverse event. For example, the decubitus ulcer indicator includes in the denominator only patients with stays longer than five days. Also, some discharges were excluded for other reasons; for example, it might be impossible to tell if the complication observed was a result of hospital error or present at admission. In the case of decubitus ulcer, the AHRQ researchers excluded patients with major skin disorders or those admitted from a long-term care facility so that, to the extent possible, only adverse events due to care in the hospital were included in the rates.

Major findings include:

- From 1995 to 2002, 9 out of 13 rates of adverse events experienced by Medicare beneficiaries increased.
- Four of the indicators have seen decreasing rates; these include failure to rescue, one of the most common and, because it results in death, most severe. The other indicator related to mortality—death in low-mortality diagnosis related groups (DRGs)—also decreased.

These rates show that not only are many Medicare beneficiaries experiencing adverse events, but they are doing so at increasing rates. As noted in the text box (p. 40), because these data are based on administrative data, they may be affected by changes in coding definitions or practices.[2] However, those coding experts with whom we spoke believed it unlikely that, with the two exceptions noted in the text box, the observed increases in adverse events were due to shifts in coding alone.

Are beneficiaries receiving high-quality care outside the hospital?

Many settings of care outside the hospital affect the quality of patient care. Care provided by physicians within offices or clinics is important, as are services provided by various post-acute providers, such as home health agencies and skilled nursing facilities. Because care provided outside the hospital relies on a multitude of settings as well as beneficiary initiative to seek care or to care for themselves, it is hard to assign accountability for performance on the measures of quality we present in this section. In some cases poor performance may signal access problems. Nonetheless, this analysis provides insight into the types of conditions toward which Medicare may want to target improvement efforts.

Using administrative data to measure patient safety

Is information on patient safety from administrative data valid? That is, do these data measure what they are supposed to measure, and do changes in coding definitions or practices affect the trends?

More work needs to be done to answer this question more definitively. Variation in coding among facilities and physicians exists (as discussed below) and could affect the trends. But even if all hospitals and physicians coded the same way, an increase or decrease in the types of complications included in this chapter could be due to factors other than the safety of care.

Alternatives to administrative data, however, are also imperfect (Weingart and Iezzoni, 2003). In a recent article Weingart and Iezzoni discuss the relative merits of data sources for measuring safety in hospitals. Alternatives to administrative sources for data on safety include individual facility reporting and clinical chart review. Facility reporting might provide a more detailed picture of safety problems, but is subject to bias. Chart review might also provide a more detailed picture of safety problems in hospitals. However, it is expensive, may miss events that occurred but were not documented in the record, and, similar to administrative data, may limit reviewers' ability to ascertain preventable complications. The authors conclude by suggesting that "creative combinations of administrative data elements" could yield insight into clinical events or conditions that might represent safety problems. The Agency for Healthcare Research and Quality (AHRQ) recognized this opportunity when they worked with researchers at the University of California at San Francisco and the Stanford Evidence-based Practice Center to develop these indicators.

How would changes in coding practices or definitions result in increased reports of patient safety problems? Regarding coding definitions, a recent article reported that the introduction of a new ICD–9–CM code for "acute and chronic respiratory failure" in 1998 may have led to the increase in the rate of postoperative respiratory failure (Romano et al. 2003). Also, the zero rate reported on postoperative hemorrhage or hematoma in 1995 is probably due to a new code being introduced in this clinical area in 1996.

Several trends in coding practices may have affected the calculations of changes in the prevalence of adverse events. However, coding experts told us they did not believe that these changes in coding would be significant enough by themselves to account for the increases in adverse events shown in our data analyses. Experts noted that the accuracy of coding has improved over the time period reflected in our data. This new level of accuracy may mean that complications would have been coded more frequently, thus increasing the rates of adverse events. On the other hand, some noted that concern over heightened enforcement of fraud and abuse statutes may have led to fewer coded cases of complications; therefore, our analysis would have undercounted adverse events. Because coding practices vary between individual hospitals, we were warned about relying too heavily on these data to compare individual hospital performance.

More research is needed to better understand how variation in coding practices among settings of care and over time affects these trends. CMS, in tandem with AHRQ, is evaluating several of the patient safety indicators to determine whether other sources of data confirm the level of adverse events found through administrative data. ■

Analyses of the quality of care delivered in skilled nursing facilities, home health agencies, and dialysis facilities are included in subsequent chapters in this report for purposes of determining payment adequacy. For dialysis patients and M+C enrollees, the Commission also includes recommendations for the Congress to use pay-for-performance strategies to improve their care.

Effectiveness and timeliness of care: Potentially avoidable admissions increase for many beneficiaries

AHRQ developed the indicators displayed in Table 2-5 to assess the quality of the health care system as a whole, especially the quality of ambulatory care outside the hospital. These conditions were chosen because evidence suggests that admissions for these ambulatory care sensitive conditions could have been avoided, at least in part, through better care outside the hospital. High rates of admission for these conditions could be due to problems accessing care, inappropriate care management even if the beneficiary sees a practitioner, or lifestyle changes over which the beneficiary has primary control. Increasing prevalence of conditions such as diabetes or congestive heart failure could also affect these trends, as could outbreaks of influenza.

Another factor that could affect this analysis is the overall trend in admissions of Medicare beneficiaries. The number of beneficiaries in the Medicare program increased by 7 percent between 1995 and 2001; over this same time period, the overall number of admissions for Medicare beneficiaries increased 16 percent. Because these types of conditions are a significant proportion of all Medicare admissions, their growth helps explain why admissions grew faster than the number of beneficiaries over this time period.[3]

Some of these conditions, such as urinary tract infections and bacterial pneumonia, are also likely to develop when patients are in other settings of care, such as nursing homes. To ensure that only beneficiaries admitted from the community were counted in these indicators, the AHRQ indicators exclude beneficiaries admitted to the hospital from other institutions from the analysis.[4] The rates are risk-adjusted by age and sex.

Major findings from the analysis include:

- The top five most prevalent ACSCs in Medicare are CHF, bacterial pneumonia, chronic obstructive pulmonary disease, urinary infection, and dehydration.
- Rates of admissions for 7 out of 12 conditions increased between 1995 and 2002.

TABLE 2-5

Effectiveness and timeliness of care outside the hospital: The change in the rate of potentially avoidable hospital admissions is mixed, 1995–2002

	Risk-adjusted rate per 10,000 beneficiaries					
Conditions	**1995**	**1998**	**2000**	**2002**	**Percent change 1995–2002**	**Observed admissions in 2000**
Congestive heart failure	241	257	244	238	–1.0	703,012
Bacterial pneumonia	154	182	193	192	24.1	567,995
COPD	104	121	122	118	13.6	368,674
Urinary tract infection	60	64	67	66	9.4	209,550
Dehydration	50	55	58	65	30.2	181,785
Diabetes long-term complication	35	38	39	41	18.5	125,053
Adult asthma	24	21	20	23	–6.3	65,680
Angina without procedure	50	24	19	14	–71.4	59,983
Hypertension	9	10	11	13	38.3	37,334
Lower extremity amputation	15	16	15	14	–2.1	24,224
Diabetes short-term complication	7	7	7	7	2.1	22,425
Diabetes uncontrolled	10	8	7	6	–38.1	22,416

Note: COPD (chronic obstructive pulmonary disease).

Source: MedPAC analysis of 100 percent of MedPAR data using Agency for Healthcare Research and Quality indicators and methods.

- One important exception to this trend is CHF—the condition representing the most potentially avoidable admissions. Given that admissions for beneficiaries with CHF decreased 1 percent between 1995 and 2002, ambulatory care (including drug therapy) may have improved slightly.
- The rates of admissions for beneficiaries with angina who did not subsequently undergo a procedure also decreased significantly. This may be due to improvements in ambulatory care. It is possible that beneficiaries are receiving better revascularization therapies in outpatient settings which would reduce all angina admissions, including those for patients who do not need procedures. Alternatively, this finding may be due to increases in the percent of patients admitted with angina who receive a procedure.

Regardless of alternative explanations, the trend towards increased ACSC admissions points to worsening management of beneficiaries' chronic conditions. Provisions in the recently enacted Medicare Prescription Drug, Improvement, and Modernization Act (MMA) that require CMS to develop and implement a program to improve care for beneficiaries with these types of conditions could, over time, help decrease these rates.

Effectiveness and timeliness of care: Provision of effective care outside hospital is improving, but rates are still too low

The data on potentially avoidable admissions provide information on the quality of ambulatory care by looking at outcomes. Data from the QIO program provide information on the effectiveness and timeliness of care directly by measuring the percentage of beneficiaries who receive effective treatment or preventive services (Table 2-6). These results show that although improvement has occurred, the health system is failing to provide many beneficiaries care known to be effective.

While the previous section looked at admissions for certain preventable acute episodes, these measures represent care processes known to be effective in preventing and managing (including preventing hospitalizations for) influenza, pneumonia, breast cancer, and diabetes. These data were collected first in 1998–1999 to create a baseline and again in 2000–2001. Because these measures represent care that should always be given to all beneficiaries who meet certain criteria, it is not necessary for them to be risk-adjusted.

TABLE 2-6

Effectiveness and timeliness of care outside the hospital: Effective care processes are improving, but rates are still too low, 1998–2001

Process	1998–1999 Median state's rate	2000–2001 Median state's rate	2000–2001 Weighted average
Adult immunization			
Influenza	67	72	71
Pneumonia	55	65	64
Breast cancer			
Mammography	55	60	77
Diabetes			
HgbA1c	70	78	70
Eye exam	68	70	74
Lipid profile	60	74	76

Note: HgbA1c (hemoglobin A1c). The rates reflect the percentage of beneficiaries receiving clinically indicated services (a perfect performance is 100 percent). These data show the median state's rate for each indicator for both time periods. The weighted average is based on the number of beneficiaries in each state.

Source: CMS data from the quality improvement organization program (Jencks et al. 2003).

The major findings include:

- Care has improved on all six measures of ambulatory care used by the quality improvement organization program between 1998–1999 and 2000–2001. The median improvement ranges from 1 to 16 percent.
- Because significant numbers of Medicare beneficiaries are still not receiving services necessary to manage a chronic condition or prevent acute episodes, many opportunities for further improvement exist.

The CAHPS survey also provides information on whether beneficiaries are receiving preventive care. The CAHPS data show rates of flu and pneumonia immunizations similar to those of the QIO program. In 2002, 69 percent of beneficiaries reported that they received flu immunizations, and 61 percent said that they received a pneumonia shot. Both data sets show that 30 percent or more of beneficiaries do not receive immunizations known to help prevent illness and hospitalizations. These data provide examples of treatment that could help prevent hospital admissions for beneficiaries with some of the ambulatory care sensitive conditions described in the previous section.

Patient-centeredness of care: Fee-for-service beneficiaries rate primary care and specialist providers highly

One of the least well understood and measured dimensions of quality identified by the IOM is the patient-centeredness of care. To better understand this dimension of quality AHRQ developed a tool to measure how beneficiaries perceived their access to and quality of care. This survey—CAHPS—was first designed to capture enrollee perception of private health plans.

Beneficiaries rate their Medicare providers high on patient-centeredness. Many beneficiaries have an established and multiyear relationship with either a personal doctor or nurse, and specialists are generally available when care is needed. Beneficiaries also report that providers listen to them and are respectful.

Policymakers often find it hard to reconcile the apparent dichotomy between beneficiaries' high ratings of their care and other measures of clinical effectiveness and safety that reveal significant gaps in the quality of care. They also worry about the subjective nature of beneficiary surveys. However, these ratings capture an important dimension of quality that is not available otherwise. Consumer assessments measure the interpersonal component of quality and can provide a valuable supplement to more traditional sources of data (Davies and Ware 1988).

In addition, the seemingly contradictory findings may be reconciled by considering beneficiaries' knowledge. Most patients do not usually know whether their physicians or other providers are following clinical guidelines or whether an adverse event could have been prevented with better care. Thus, they may not know whether the care they receive is the most clinically effective or safe.

A high percentage of beneficiaries have a personal doctor or nurse and have had that relationship for more than two years (Table 2-7). Most beneficiaries report that they see a primary care physician (86 percent in 2002). However, 12 percent identify their specialist as their personal doctor, and 2 percent, and 1 percent, respectively, report a physician's assistant or nurse as their personal caregiver. A large proportion have no or a small problem finding a specialist.

- Beneficiaries' access to personal doctors or nurses appears to be consistently good, and almost 80 percent of beneficiaries report that they have been going to their personal doctors or nurses for two or more years.

TABLE 2-7

Patient-centeredness of care: Continuity and access to providers is stable

Question	2000	2001	2002
Do you have one person you think of as your personal doctor or nurse (the health provider who knows you best)?			
Yes	N/A	89.0%	89.0%
No	N/A	11.0	11.0
How many months or years have you been going to your personal doctor or nurse?			
2 years or more	N/A	79.2	78.9
Less than 2 years	N/A	20.8	21.1
In the last 6 months, how much of a problem, if any, was it to see a specialist that you needed to see?			
None or small problem	93.6	94.8	94.3*
Big problem	6.4	5.2	5.7*

Note: N/A (not available).
*Indicates a statistically significant change between 2000 and 2002, at a 95% confidence level ($p<0.05$).

Source: MedPAC analysis of 2000–2002 Consumer Assessment of Health Plans Survey (CAHPS) data for fee-for-service Medicare from CMS.

- In 2002, about 50 percent of beneficiaries reported that they needed to see specialists; of those beneficiaries, 94 percent said that it was a small or no problem to see the specialists. Only five percent said that it was a big problem.

In addition to access to health care providers, we examined the type of interactions beneficiaries reported having with their personal doctor or nurse. We found that a large proportion of Medicare beneficiaries highly rate their interactions with their personal doctor or nurse (Table 2-8, p. 44).

- More than 80 percent of beneficiaries gave a rating of 8 or higher on a scale of 1 to 10 (10 being the highest) to their personal doctor or nurse and the specialist that they saw most often in the last 6 months. The same was true for all the health care they received in the last 6 months.

TABLE 2-8

Patient-centeredness of care: Beneficiaries rate interactions with health care providers highly

Question	2000	2001	2002
Care			
How would you rate your personal doctor or nurse?	84.7%	83.5%	83.7%*
How would you rate the specialist you saw most often in the last 6 months, including a personal doctor if he or she is a specialist?	85.5	83.3	84.4*
How would you rate all the health care you got in the last 6 months from all doctors and other health providers?	85.4	84.8	85.2
Quality of interactions			
In the last 6 months, did doctors or other health providers:			
Usually or always listen carefully to you?	94.8	94.8	94.6
Usually or always explain things in a way you could understand?	93.4	93.7	93.8*
Usually or always show respect for what you had to say?	94.9	94.7	94.8
Usually or always spend enough time with you?	91.1	90.9	90.6*

Note: The first section shows the percentage of beneficiaries who rated care as 8, 9, or 10 on a scale from 1–10.
*Indicates a statistically significant change between 2000 and 2002, at a 95% confidence level ($p<0.05$).

Source: MedPAC analysis of 2000–2002 Consumer Assessment of Health Plans Survey (CAHPS) data for fee-for-service Medicare from CMS.

- They also highly rate the quality of interactions with their doctor or other health provider. For example, between 93 and 95 percent of beneficiaries reported that their doctors or other health care providers usually or always listened carefully to them, explained things in a way that they could understand, and showed respect for what they had to say.
- Beneficiaries are slightly less satisfied with the amount of time spent with their personal doctor or nurse; but still, over 90 percent are satisfied with this aspect of their health care.

Quality of care for Medicare beneficiaries in managed care

Quality of care is improving in Medicare managed care plans. Medicare beneficiaries in managed care report a similar level of quality compared with their employer-sponsored counterparts and with FFS Medicare beneficiaries. The trends and comparisons of managed care quality in Medicare provide good news; nonetheless, these rates, on the whole, show room for improvement. Similar to the FFS population, many beneficiaries in managed care plans in Medicare are not receiving care known to be effective.

The analysis in this section is based on data from HEDIS and the CAHPS survey for Medicare+Choice plans. Through plan reporting on HEDIS, the Medicare program collects clinical effectiveness and timeliness data both in and out of the hospital on over 80 measures, with specific focus on 18 measures.[5] The CAHPS M+C survey provides information on beneficiaries' perception of the quality of and access to care on questions similar to those answered by FFS beneficiaries.

On the measures of beneficiary perceptions, scores are relatively high. Scores for M+C plans and FFS Medicare are similar, and both programs score more favorably than employer-sponsored plans.

Effectiveness and timeliness of care: Health plan process-of-care measures improve, but some are still too low

Data in this section show that the clinical effectiveness of care in M+C plans is improving over time. However, they also reveal gaps between care known to be effective and the care provided. The level of quality is similar or better compared with employer-sponsored plans and Medicaid. Only in one area—mental health—is the quality of care in Medicare managed care lower than for employer-sponsored plans.

Data on these HEDIS measures are collected from the plans by reviewing administrative claims and medical charts. They are audited by an NCQA-accredited auditor and then reported directly to NCQA. Under contract with CMS, NCQA then prepares a report on each health plan on HEDIS and other measures.[6]

These data show the rate at which members eligible for the clinical care being measured receive that care. For

example, the measure for provision of beta blocker after heart attack tracks the number of beneficiaries with a heart attack who received a prescription for a beta blocker upon discharge.

Care on almost all of the 16 measures reported improved over the last three years (Table 2-9). Rates of provisions of two services decreased. Given that diabetes care has been the focus of many of CMS's and others' improvement efforts, improvement in the provision of preventive services for diabetes may be a sign that these efforts are working.

To understand how Medicare managed care plans compared to employer-sponsored plans, we compared the national average for 2002 for 15 measures (Figure 2-1, p. 46). Although M+C plan scores are comparable to those for plans serving employer-sponsored members on most HEDIS measures, their performance is higher on measures of good diabetes care. This difference might reflect the emphasis CMS places on the treatment of diabetics in the Medicare program. CMS identified care for diabetics as the first national quality project for its managed care plans in 1999 and has also made it a focus of the QIO program. On measures of the quality of care provided to the mentally ill, however, Medicare managed care plans score lower than their employer-sponsored counterparts. Fewer Medicare beneficiaries receive appropriate follow-up after hospitalization for mental illness and effective management after an acute episode or on an ongoing basis.

Patient-centeredness of care: Medicare managed care beneficiaries rate highly their access to and relationships with both primary care and specialist providers

Beneficiaries' ratings of satisfaction with FFS and M+C are generally similar (Table 2-10, p. 46). Beneficiaries report obtaining care when they need it and do not report long waits. Some 84 percent of beneficiaries in both programs give their health care high ratings.

Enrollees in employer-sponsored plans have a lower opinion of the care they receive than do Medicare beneficiaries. Understanding this finding more fully might explain whether the Medicare population is answering the questions differently or whether gaps in quality between those in Medicare and in the under-65 employer-sponsored population are real.

TABLE 2-9

Effectiveness and timeliness of care: Plans improve, but rates are still low on some measures, 2000–2002

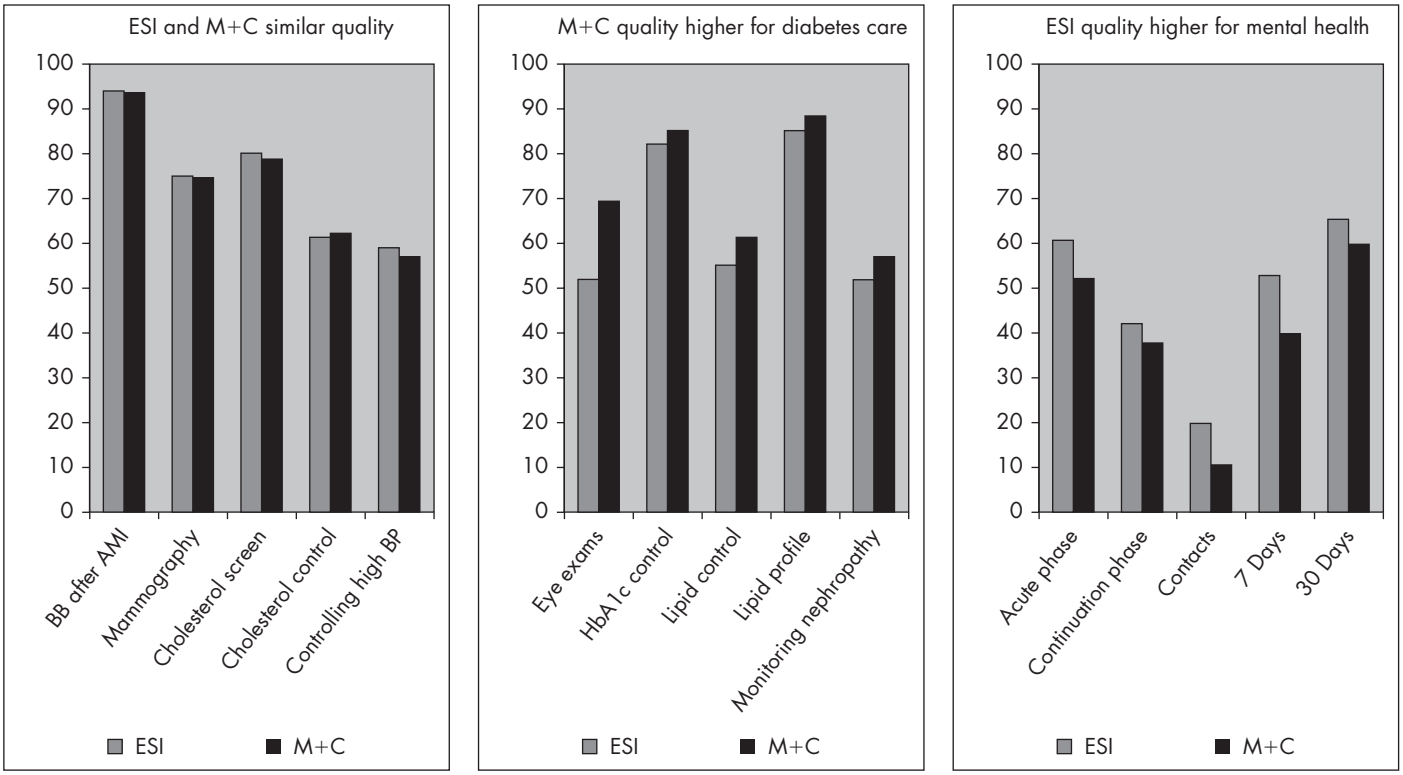
Measure	2000	2001	2002
Beta-blocker treatment after heart attack	89.3	92.9	93.0
Breast cancer screening	73.9	75.3	74.5
Cholesterol management			
Control	52.9	58.4	62.3
Screening	70.6	75.5	77.7
Controlling high blood pressure	46.7	53.6	56.9
Comprehensive diabetes care			
Eye exams	62.8	66.0	68.4
HbA1c control	82.5	85.7	85.0
Lipid control	50.9	57.5	62.6
Lipid profile	80.5	85.7	87.9
Monitoring diabetic nephropathy	45.0	51.9	57.3
Poor HbA1c control*	33.4*	26.8*	24.5*
Antidepressant medication management**			
Acute phase	N/A	51.3	52.1
Continuation phase	N/A	36.8	37.7
Contacts	N/A	11.9	10.8
Follow-up after hospitalization for mental illness			
Less than 7 days	37.5	37.2	38.7
Less than 30 days	59.3	60.6	60.6

Note: HbA1c (hemoglobin A1c). Rates refer to patients who received the clinically indicated treatment.
*Lower rates are better than higher ones for this measure.
** Acute phase refers to the percent of patients receiving effective treatment after a new episode. Continuation refers to the percent of patients remaining on antidepressants continuously for six months after initial diagnosis. Contacts refers to the percent of patients who received at least three follow-up office visits in a 12-week acute phase.

Source: Health Plan Employer Data and Information Set data, 2000–2002, from National Committee for Quality Assurance.

FIGURE 2-1

Effectiveness and timeliness of care: M+C and employer-sponsored plans' performance varies by process measure, 2002



Note: ESI (employer-sponsored insurance), M+C (Medicare + Choice), BB (beta blocker), AMI (acute myocardial infarction), BP (blood pressure), HbA1c (hemoglobin A1c).

Source: Health Plan Employer Data and Information Set data, 2002, from National Committee for Quality Assurance.

TABLE 2-10

Patient-centeredness of care: Medicare programs rate higher than employer-sponsored plans in 2001

Measure	FFS	M+C	Employer-sponsored
No problem getting care when needed	89%	82%	77%
Usually or always got care without long waits	87	87	79
Doctors usually or always communicate well	94	93	91
Rated health care overall 8–10	84	84	73
Rated plan 8–10	78	77	62

Note: FFS (fee-for-service), M+C (Medicare+Choice). The ratings on the last two indicators show the percentage of beneficiaries who gave ratings of 8, 9, or 10 on a scale of 1–10.

Source: MedPAC analysis of 2001 Consumer Assessment of Health Plans Survey (CAHPS) data for fee-for-service and Medicare+Choice plans from CMS; and 2001 CAHPS data on employer-sponsored plans from the National Committee for Quality Assurance.

How does Medicare move closer to high-quality care for beneficiaries? MedPAC's agenda on quality

Discussing all of these data together in this chapter provides a multidimensional picture of the quality of care our health system provides Medicare beneficiaries. To improve quality, we must first identify quality problems, understand why they occur, and find strategies to address them. These data provide a basis for discussion and further research, and insight into key areas for targeting Medicare quality improvement efforts. In some cases the data provide clear guidance, in others the guidance is more ambiguous.

Questions for further analysis include:

- Are improvements in hospital care responsible for decreasing mortality rates?
- How can we better determine whether certain adverse events in hospitals are preventable and which practices lead to their prevention?
- How do we reconcile hospital mortality decreasing, while adverse events appear to be increasing?
- Are the high rates of admission for potentially avoidable episodes due to quality, access, or patient compliance issues?
- What is the best way to use these data to target improvements for the chronically ill?
- Can Medicare policies or programs improve care for those often frail beneficiaries who end up with dehydration or urinary infections at home?
- What do the generally high ratings beneficiaries provide tell us about the overall quality of care?

Answering these questions is critical. The Medicare program provides care for some of the most vulnerable Americans. The data presented in this chapter do not, however, only raise questions. They also document quality problems that must be addressed. This work provides guidance to the Congress, CMS, and the Commission on how to better target policies to improve quality. CMS has already developed a broad set of tools for addressing some of these quality problems. It has tools to collect and measure care (various assessment instruments and other data sets), encourage improvement (regulatory requirements and public reporting), assist providers and plans to improve (the QIO program), and explore new options to improve quality (demonstrations and pilot projects). CMS could use these data, along with its own knowledge and experience of quality problems to:

- develop priorities for the QIO program's next scope of work;
- update the conditions for participation in Medicare to recognize safety problems;[7]
- target the newly mandated chronic illness improvement program at conditions responsible for large numbers of potentially avoidable admissions; and
- determine which quality problems and measures should be targeted in its various pay-for-performance demonstrations and programs. For example, safety measures may be added to the data collected for hospitals.

The Commission has three major priorities to address quality:

- using financial incentives to improve quality;
- using disease and care management to better address the needs for coordination of care for those with chronic conditions; and
- exploring the relationship between cost and quality.

The data in this chapter identify the types of quality problems these analyses and subsequent policy options could target.

- **Using financial incentives to improve quality.** The Congress, CMS, and MedPAC have stated their commitment to using financial incentives to improve quality. The recently enacted MMA included several provisions linking payment with either quality performance or information. CMS has demonstrations underway for dialysis patients, group practices, and hospitals to test pay-for-performance strategies.

  In its June 2003 report, the Commission found that Medicare should take a lead role in adopting pay-for-performance strategies. Two key criteria for success are that ready measures and standardized data collection exist to compare individual organizations. Because physicians and facilities that deliver dialysis services and M+C plans have been reporting on their

quality for some years and have achieved some improvement, they meet these criteria.

In later chapters in this report, we recommend that, as a first step, Medicare base a portion of payment on performance for M+C plans and dialysis physicians and facilities. M+C plans could use their leverage with providers to help address the lack of coordination and appropriate management of chronic conditions and to improve their providers' quality of care. Although care has improved on some measures over the last few years, policymakers are still concerned about the quality of care for the vulnerable beneficiaries who receive dialysis. Basing a portion of dialysis payment on quality of care should further improvement.

The analysis in this chapter identifies additional important target areas for pay-for-performance strategies. Of note is the finding that patient safety is a growing problem in hospitals. While CMS, in cooperation with hospital organizations, is building the foundation for standardized data collection of measures of care effectiveness, incentives strategies will also need to emphasize patient safety improvement. Hospital-specific safety measures are needed. Given the level of potentially avoidable admissions, incentives in the ambulatory sector are also needed. Perhaps other strategies, such as the chronic illness improvement program mandated in the MMA will help, but if an incentives program is established without a focus on ambulatory care quality, an important opportunity for improving care may be missed.

More and better data on quality to be used in pay-for-performance programs is needed. Administrative data paint a broad picture of the level of quality beneficiaries receive. These data are, in some cases, difficult to use in evaluating individual providers. Although these data may indicate safety problems, it is unclear whether they provide usable measures for rewarding individual hospital performance. Such measures need to be developed. Although not highlighted here, safety is also an issue in the ambulatory setting, but much less work has been done to document the scope of the problem or develop measures useful for improvement strategies.

- **Using disease management as a quality improvement tool.** The large number of potentially avoidable admissions should prompt Medicare to identify ways to manage conditions more effectively in the ambulatory setting. In the recently enacted MMA, the Congress established a program focused on finding ways to better manage care for the chronically ill, who account for a large proportion of these potentially avoidable admissions. Passage of a prescription drug benefit also makes it possible for the Medicare program to develop improved measures of quality for managing particular chronic conditions.

  One strategy used in the private sector is disease management.[8] MedPAC is exploring the evidence on disease management and considering its potential for beneficiaries who are chronically ill. However, the data in this chapter also show that other conditions cause hospital admissions that might have otherwise been avoided. Of the top five conditions, three are not chronic conditions—bacterial pneumonia, dehydration, and urinary tract infections. The Medicare program should consider strategies to help beneficiaries and their providers prevent beneficiaries' health from deteriorating to the extent that hospitalization is required for those types of conditions.

- **Clarifying the relationship between cost and quality in various settings.** These data raise questions about the quality of care, but only provide national data. To design policies that encourage improvement in specific facilities or settings, it is important to understand what drives quality at that level. One factor could be the cost of care. In our June 2003 report, we asked whether a relationship exists between the cost of care and the quality of care in dialysis facilities. We found that low-cost providers were as likely as high-cost providers to perform well on quality measures. The Commission wants to learn more about the relationship between the cost and quality of care in different settings. ■

Endnotes

1 We present a subset of 13 of these 18 indicators. We excluded pediatric and birth indicators, and several that rarely occurred.

2 As explained in the text box, increases in coding complications over this time period may have had some effect on these results. However, not all complications are adverse events. Many are due to factors other than safety. Those included in this indicator set represent, to the best ability of AHRQ researchers, complications that should not occur. Because these data rely on tracking certain types of complications, coding practices for all types of complications could affect these data.

3 Even though the trends in the growth of the Medicare population and the overall increase in admissions are calculated from 1995–2001, and our analysis of potentially avoidable admissions uses the time frame 1995–2002, the relationship is similar without the additional year.

4 Although the intent was to exclude patients admitted from other facilities, the reliability of admission source data is somewhat questionable. Our analysis excluded the following types of discharges based on the MedPAR admission source variable: transfer from other hospital and transfer from another facility, including long-term care.

5 CMS requires HMOs, preferred provider organizations (PPOs), and private fee-for-service (PFFS) plans to report data on clinical effectiveness, timeliness, and patient-centeredness of care delivered through their plans. Because of the difficulty PPO and PFFS plans might have obtaining data from medical records and working with providers to improve upon the measures, the Congress directed CMS to exempt those types of plans from reporting on all the measures.

6 NCQA is a private sector organization that accredits health plans for commercial and Medicare markets. It was instrumental in the development of HEDIS and continues to work with health plans and private and public sector purchasers to continually update the measures.

7 JCAHO has included requirements in its accreditation standards for hospitals to further address safety problems. CMS may want to include some of these requirements in the conditions of participation.

8 In this discussion, the term disease management is used to refer to a variety of concepts; for example, care coordination and care management for the seriously chronically ill.

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