

CHAPTER

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**Measuring quality of care  
in Medicare**

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# Measuring quality of care in Medicare

## Chapter summary

The Commission is considering alternatives to Medicare’s current system for measuring the quality of care provided to the program’s beneficiaries. A fundamental problem with Medicare’s current quality measurement programs, particularly in fee-for-service (FFS) Medicare, is that they rely primarily on clinical process measures for assessing the quality of care provided by hospitals, physicians, and other types of providers—measures that may exacerbate the incentives in FFS to overprovide and overuse services and contribute to uncoordinated and fragmented care. In addition, some of these process measures are often not well correlated to better health outcomes, there are too many measures overall, and reporting the data needed for the measures places a heavy burden on providers.

The Commission has been considering an alternative quality measurement approach that would use population-based outcome measures to publicly report on quality of care across Medicare’s three payment models—FFS Medicare, Medicare Advantage (MA), and accountable care organizations (ACOs)—within a local area. A population-based outcomes approach also could be useful for making payment adjustments within the MA and ACO models. However, this approach may not be appropriate for adjusting FFS Medicare payments in an area because, unlike under an ACO or MA plan, the providers under FFS Medicare do not explicitly accept responsibility for the care of a population of beneficiaries. Therefore, at least for the foreseeable

## In this chapter

- History of the Commission’s work on quality in Medicare
- Concept for a new approach to quality measurement
- How population-based outcome measures could be applied to FFS Medicare, ACOs, and MA plans in a local area
- Issues for further Commission analysis
- Conclusion

future, FFS Medicare will need to continue to rely on provider-based quality measures for the purpose of making FFS payment adjustments. Current provider-based quality measurement technology may not be sufficiently developed to support payment adjustments, particularly with respect to physician services, but there are steps that Medicare can take in the short term to improve these provider-based quality measurement programs.

In addition to population-based outcomes, another area of quality measurement that the Commission is exploring is the feasibility of measuring the potentially inappropriate use of clinical services, specifically the type of inappropriate use known as overuse. While overuse is more likely to occur in payment models such as FFS Medicare that create incentives to overprovide services with little or no benefit for patients, evidence of overuse also has been found in capitated payment arrangements. Because of the potential for harm to beneficiaries and wasteful program spending resulting from overuse, the Commission examined the potential of applying overuse measures to Medicare. The results of these analyses were encouraging, and we plan to continue to explore overuse measurement as another avenue to improve the quality of care for beneficiaries. ■

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## Introduction

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The Commission has been making quality measurement recommendations for Medicare since 2003. The Commission's initial work in this area was spurred in part by the publication of two reports by the Institute of Medicine in 1999 and 2001, which detailed poor quality of care across the U.S. health care system and proposed steps to improve it, including the development and use of evidence-based quality measures (Institute of Medicine 2001, Institute of Medicine 1999). The Commission also established a position that Medicare should no longer pay providers of care solely on the basis of the volume of services rendered, but also on the quality of the care delivered.

The Commission's recommendations on quality have followed two paths. First, Medicare should use a set of process, outcome, and patient experience measures to evaluate the quality of care of Medicare Advantage (MA) plans and of providers in fee-for-service (FFS) Medicare (each provider type (hospitals, physicians, etc.) would be evaluated separately). The set of measures should be small to minimize the administrative burden on providers and CMS. Second, Medicare should base a small portion of payments to FFS providers or MA plans on their performance on the selected quality measures. The Commission has stated that outcome measures, such as mortality and health care–associated infection rates, should be weighted most heavily in Medicare's pay-for-performance programs.

Over the past 10 years, the Congress has enacted quality reporting programs for almost all of the major FFS provider types and MA plans and has gone further to mandate pay-for-performance programs (which Medicare refers to as value-based purchasing) for hospitals, dialysis facilities, MA plans, and physicians. Pay-for-performance is also a central component of Medicare policy for accountable care organizations (ACOs).

A decade ago, most quality measurement technology, such as the Healthcare Effectiveness Data and Information Set<sup>®</sup> (HEDIS<sup>®</sup>), was designed to detect underuse of clinical services (e.g., preventive care and treatment of chronic diseases) in health plans. The Commission evaluated the feasibility of using these clinical process measures, as well as outcome measures such as inpatient mortality rates and patient experience, and made a number of recommendations about how to reliably assess quality in FFS by provider type and over time.

However, over the past few years the Commission has become increasingly concerned that Medicare's current quality measurement approach has gone off track in the following ways:

- It relies on too many clinical process measures that, at best, are weakly correlated with health outcomes and that reinforce undesirable payment incentives in FFS Medicare to increase volume of services.
- It is administratively burdensome due to its use of a large and growing number of clinical process measures.
- It creates an incentive for providers to focus resources on the exact care processes being measured, whether or not those processes address the most pressing quality concerns for that provider. As a result, providers have fewer resources available for crafting their own ways to improve the outcomes of care, such as reducing avoidable hospital admissions, emergency department visits, and readmissions and improving patients' experience of care.

In short, Medicare's quality measurement systems seem to be increasingly incompatible with the Commission's goal of promoting clinically appropriate, coordinated, and patient-centered care at a cost that is affordable to the program and beneficiaries. A description of the important steps in the evolution of the Commission's work on quality is provided in the next section. We then describe an alternative approach to measuring quality in Medicare that is more compatible with the Commission's long-term vision for the program.

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## History of the Commission's work on quality in Medicare

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In its June 2003 report to the Congress, the Commission recognized that Medicare payment systems were, at best, neutral toward quality: high-quality providers were paid no more than low-quality providers, and Medicare's payment policies could actually discourage the provision of high-quality care (Medicare Payment Advisory Commission 2003). For example, hospitals are paid more for treating readmissions for complications that resulted from low-quality care in the hospital, and if they took steps to decrease readmissions, their revenues would fall. In addition, because beneficiaries lacked information about

quality differences across providers, they had difficulty identifying high-quality providers.

The Commission's June 2003 report considered a range of incentives to increase quality, including public reporting, quality-based payment differentials for providers and plans, cost-sharing differentials for beneficiaries, flexible oversight, shared savings, risk sharing, and capitation. Drawing on experiences in the private sector, available quality measures, and Medicare's administrative capabilities, the Commission recommended that Medicare pursue demonstrations of quality-based provider payment differentials and revise payment structures to reward quality improvements. The Commission concluded that Medicare managed care plans, dialysis providers, and certain post-acute care providers were promising areas for pay-for-performance programs.

### **Development of principles for Medicare pay-for-performance programs**

In March 2004, the Commission formally incorporated quality measures into its FFS Medicare payment adequacy discussions and examined a number of quality measures: potentially preventable admissions (PPAs), hospital mortality (including in the hospital and 30 days postdischarge), hospital processes of care, patient safety and adverse events in hospitals, preventive ambulatory care, and beneficiary experience of hospital care (as measured by results from the Hospital Consumer Assessment of Healthcare Providers and Systems<sup>®</sup> (H-CAHPS<sup>®</sup>) survey) (Medicare Payment Advisory Commission 2004). The report also included measures of Medicare managed care processes (as measured by HEDIS) and patient experience (as measured by CAHPS).

In addition, the Commission recommended implementation of pay-for-performance for Medicare managed care plans and dialysis providers. The dialysis recommendation included the following principles that the Commission has since considered essential for all pay-for-performance programs:

- Measure performance with a comprehensive scope. (For example, for dialysis services, capture performance of both the physicians and the facilities that provide those services.)
- Use evidence-based and widely accepted quality measures that are readily available.
- Ensure that quality data collection and analysis is not unduly burdensome for providers or CMS.

- Select measures that most providers can improve on (i.e., ensure that measures are not “topped out,” a situation where most providers already achieve high performance).
- For outcome measures such as mortality rates, select measures that can be risk adjusted to reflect each provider's particular case mix. Risk adjustment is essential to deter providers from avoiding patients who, because they are more clinically complex, might lower providers' quality scores.
- Reward providers for both attainment of scores exceeding an established benchmark and improvement over past performance.
- Fund quality improvement programs out of a small proportion of total provider payments.
- Redistribute to providers all of the funding that was set aside in accordance with their performance on the quality measures.

Building on these principles, in its March 2005 report, the Commission recommended pay-for-performance programs in FFS Medicare for inpatient hospitals, home health agencies, and physicians. The report also included an additional principle for pay-for-performance programs, which is that each program should include a formal process to continually evaluate and improve the quality measures used (Medicare Payment Advisory Commission 2005b).

### **Design of pay-for-performance programs for different provider types**

In its June 2007 report, the Commission described the implementation details of a pay-for-performance system for different provider types, using the example of home health care (Medicare Payment Advisory Commission 2007). The report acknowledged that underlying problems in the home health payment system needed to be addressed concurrently with the implementation of a pay-for-performance policy. In its March 2008 report, the Commission recommended establishment of a pay-for-performance program for skilled nursing facilities (SNFs) that would tie payments to patient outcomes (Medicare Payment Advisory Commission 2008b). The Commission recommended using risk-adjusted rates of discharge to the community and potentially preventable rehospitalizations as initial measures, with other measures to be added over time.

In April 2008, the Commission commented on a CMS plan for implementing value-based performance (VBP) for inpatient hospital services (Medicare Payment Advisory Commission 2008a). We noted that the planned design of the program was largely consistent with the pay-for-performance principles and criteria recommended by the Commission in its 2004 and 2005 reports. The Commission supported the small initial set of measures for processes, mortality, and patient experience and suggested that the program should evolve as quickly as feasible to include patient safety outcome measures, such as rates of surgical site infections and central-line-associated bloodstream infections. We also suggested that a resource use measure be added to the program as quickly as possible, that a public process be used to add measures to the program that would explicitly consider how to synchronize Medicare's quality measurement requirements with those in the private sector, and that CMS determine a way to address statistical challenges in measuring quality for rural and other smaller providers by using composite measures and compiling data over several years.

### **How to compare quality between fee-for-service Medicare and Medicare Advantage**

In its March 2010 report to the Congress, and in response to a directive in the Medicare Improvements for Patients and Providers Act of 2008, the Commission made a set of interconnected recommendations about how Medicare could compare quality between FFS Medicare and MA within defined geographic areas (Medicare Payment Advisory Commission 2010). The report acknowledged that in the short term it would be feasible to use only process measures to compare quality between the two payment models. The major limitation on calculating outcome measures such as mortality and potentially preventable admission and readmission rates for MA plans was (and continues to be) the lack of claims data from MA plans (known as encounter data). The report recommended that CMS move as quickly as feasible to gather the needed data and use a set of outcome measures—including population-level rates of potentially preventable hospital admissions for ambulatory care-sensitive conditions, potentially preventable visits (PPVs) to the emergency department (ED), and condition-specific mortality—to compare quality between FFS Medicare and MA. The Commission explicitly recommended that the Congress provide sufficient administrative funding to CMS to implement the report's recommendations.

The report also recommended revising the geographic unit for calculating and reporting MA quality to make the

geographic areas consistent with the Commission's June 2005 recommendation on reforming MA payment areas (Medicare Payment Advisory Commission 2005a). That recommendation stated that the Congress should establish payment areas for MA local plans that have the following characteristics: among counties in metropolitan statistical areas (MSAs), payment areas should be collections of counties in the same state and the same MSA, and among counties outside MSAs, payment areas should be collections of counties that are accurate reflections of local health care markets, such as health service areas defined by the National Center for Health Statistics.

### **Growing concern about the proliferation of process measures**

In May 2011, the Commission commented on CMS's proposed regulations for the Medicare inpatient hospital VBP program authorized in the Patient Protection and Affordable Care Act of 2010 (Medicare Payment Advisory Commission 2011). Our letter noted that many of the proposed features of the program were consistent with the Commission's 2004 and 2005 pay-for-performance recommendations. However, we also raised concerns about the process measures that CMS proposed to use in the VBP program, noting that not only would the proposed measures impose costs on hospitals for the extraction of the needed data from medical charts, but, more significantly, there might be little or no gain in health outcomes in return for that expense. We cited the substantial body of published research that found little or no association between hospitals' performance on several of the clinical process measures Medicare proposed to use and hospitals' performance on the ostensibly related mortality or readmission rates for the same conditions (Bradley et al. 2006, Fonarow et al. 2007, Fonarow and Peterson 2009, Nicholas et al. 2010, Romley et al. 2011, Ryan et al. 2009, Werner and Bradlow 2006).

The Commission suggested that Medicare should give the most weight to a hospital's performance on outcome measures, such as the proposed 30-day mortality rate measure for selected conditions, in calculating each hospital's VBP total performance score. We also noted it might be necessary to use broader measures (e.g., an all-condition mortality rate) and assess hospital performance over longer performance periods (e.g., three to five years) to address "small numbers" concerns that can affect the statistical reliability of mortality rate measurements for individual hospitals. We underscored our preference for a limited number of outcomes-focused quality measures

## Growth in fee-for-service Medicare's quality measurement programs

The Congress enacted the first program-wide, incentive-driven quality measurement reporting program in fee-for-service (FFS) Medicare—for inpatient hospitals—in the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 (MMA). Since then, quality reporting programs have been enacted for almost every provider type, and quality-based payment policies (often referred to as value-based purchasing (VBP) programs) have been enacted for every major provider type (Centers for Medicare & Medicaid Services 2014).

The case of quality reporting for inpatient and outpatient hospital care under FFS Medicare illustrates the growth in the complexity of quality measurement under FFS Medicare. When the Inpatient Quality Reporting (IQR) program was enacted in the MMA, the Congress mandated that hospitals paid under the inpatient prospective payment system (IPPS) report on 10 quality measures to receive a full IPPS market basket update in a subsequent year. Today, the IQR program includes almost 60 measures for the fiscal year 2016 IPPS market basket update (Telligen 2013). Table 3-1 shows the growth in the number of measures in the IQR since it was implemented.

**TABLE  
3-1**

**Number of measures in the Medicare Inpatient Quality Reporting program, by data source, 2005–2016**

Payment update year (FY)	Total	Medical chart data	Medicare claims data	Patient survey (H-CAHPS®)	Structural
2005–2006	10	10	0	0	0
2007	21	21	0	0	0
2008	27	24	2	1	0
2009	30	26	3	1	0
2010	44	26	16	1	1
2011	45	27	14	1	3
2012	55	27	24	1	3
2013	57	29	24	1	3
2014	55	25	25	1	4
2015	59	42	12	1	4
2016	58	35	17	1	5

Note: FY (fiscal year), H-CAHPS® (Hospital Consumer Assessment of Healthcare Providers and Systems®). Examples of structural measures include reporting of participation in a systematic clinical database registry for specified conditions and safe surgery checklist use.

Source: Telligen 2013.

(continued next page)

in our March 2012 report to the Congress, in which we recommended that CMS use quality data from ambulatory surgical centers (ASCs) to implement a VBP program for ASCs that would reward high-performing providers and penalize low-performing providers (Medicare Payment Advisory Commission 2012d).

In 2012 and 2013 comment letters on CMS's proposed rules for the inpatient and outpatient hospital payment systems and the physician fee schedule, the Commission continued

to raise concerns about the directions in which quality measurement was going for those provider types in FFS Medicare (Medicare Payment Advisory Commission 2013a, Medicare Payment Advisory Commission 2012a, Medicare Payment Advisory Commission 2012c). The number of process measures in the inpatient and outpatient hospital quality reporting programs had grown rapidly since the programs' inceptions (see text box), and the Commission continued to point out that there was little evidence that

## Growth in fee-for-service Medicare's quality measurement programs (cont.)

Hospitals also must participate in the Medicare Hospital Outpatient Quality Reporting (OQR) program to receive the full annual update to their outpatient prospective payment system rates. When Medicare implemented the OQR program in 2008, it

included 11 measures; today it includes 28 measures, 17 of which require hospitals to extract data from patient medical charts. Table 3-2 shows the growth in the number of measures in the OQR program since it began. ■

**TABLE  
3-2**

**Number of measures in the Medicare Outpatient Quality Reporting program, by data source, 2009-2016**

Payment update year (CY)	Total	Medical chart data	Medicare claims data	Structural
2009	11	7	4	0
2010	11	7	4	0
2011	11	7	4	0
2012	12	7	4	1
2013	18	12	4	2
2014	24	14	7	3
2015	24	14	7	3
2016	28	17	7	4

Note: CY (calendar year). Examples of structural measures include reporting of influenza vaccination coverage among health care personnel and safe surgery checklist use.

Source: Florida Medical Quality Assurance Inc. 2014.

performance on these measures was correlated with outcomes such as mortality rates. We also noted other literature suggesting that using process measures rather than outcome measures creates an incentive for providers to focus clinical resources on ensuring good performance on the process measures while diverting resources from areas of care not being assessed (Bradley et al. 2012, Schwartz et al. 2011, Werner et al. 2008).

The Commission also commented in 2012 and 2013 on the physician value-based payment modifier that CMS is implementing under a statutory mandate (Medicare Payment Advisory Commission 2013b, Medicare Payment Advisory Commission 2012b). The value modifier will increase or decrease payments under the Medicare physician fee schedule, and it will be applied to physicians in groups of 100 or more eligible professionals (which includes physicians and other clinical professionals as defined by CMS) starting in 2015 and to all physicians starting in 2017. CMS is working to identify a sufficient number of quality measures (as of March 2014, the

agency's "measure inventory" listed 290 separate measures for the value modifier) so that each specialty has at least some applicable measures (Centers for Medicare & Medicaid Services 2014). The Commission has expressed concern that many of these measures will not address significant gaps in the quality of care for beneficiaries, either because they measure marginally effective care or because they reflect basic standards of care. In any case, by being built on top of the Medicare physician fee schedule, the value-based payment modifier itself will reinforce existing incentives in FFS reimbursement to increase the volume of services.

### Concept for a new approach to quality measurement

The Commission is considering a new approach to measuring and reporting on the quality of care within and across the three main payment models in Medicare: FFS

**TABLE  
3-3**

**Population-based outcome measures for measuring quality in an area**

Measure	Specifications	Existing examples
Potentially preventable admissions for inpatient hospital care	Potentially preventable admissions for beneficiaries diagnosed with ambulatory care-sensitive conditions (e.g., diabetes, CHF, COPD); may also include admissions for procedures subject to clinical appropriateness criteria (e.g., spinal fusion surgery) and admissions for short-term or long-term complications of chronic diseases	<ul style="list-style-type: none"> <li>• 3M™ Potentially Preventable Admissions</li> <li>• AHRQ Prevention Quality Indicators</li> </ul>
Potentially preventable ED visits	Potentially preventable ED visits for beneficiaries diagnosed with specified ambulatory care-sensitive conditions for the treatment of that condition; visits for conditions for which beneficiary could have been treated in a community (e.g., physician office) setting	<ul style="list-style-type: none"> <li>• 3M Potentially Preventable Visits</li> <li>• Billings/New York University algorithm of potentially avoidable ED visits (Billings 2003)</li> </ul>
Mortality rates after an inpatient hospital stay	Risk-adjusted 30-day postdischarge mortality rates for condition-specific (AMI, CHF, pneumonia, stroke, and COPD) and all-condition measures	<ul style="list-style-type: none"> <li>• CMS/Yale 30-day risk-standardized mortality rates</li> </ul>
Readmission rates after an inpatient hospital stay	Risk-adjusted 30-day postdischarge readmission rates for condition-specific (AMI, CHF, pneumonia, stroke, and COPD) and all-condition measures	<ul style="list-style-type: none"> <li>• CMS/Yale 30-day risk-standardized readmission rates</li> <li>• 3M Potentially Preventable Readmissions</li> </ul>
Healthy days at home	Number of days per year (expressed as a rate, such as per thousand) that beneficiaries met specified criteria for “healthy and at home,” such as days during which a beneficiary was not an inpatient, did not have an ED visit, and was alive	<ul style="list-style-type: none"> <li>• Mortality/readmissions combined measure and variants under development by Commission staff</li> </ul>
Patient experience	Results of standardized patient experience (CAHPS®) surveys, including CAHPS Item Set for Addressing Health Literacy to assess experience of patient-provider communication and shared decision making	<ul style="list-style-type: none"> <li>• FFS CAHPS, MA CAHPS, Clinician &amp; Group CAHPS for ACOs</li> </ul>

Note: CHF (congestive heart failure), COPD (chronic obstructive pulmonary disease), AHRQ (Agency for Healthcare Research and Quality), ED (emergency department), AMI (acute myocardial infarction), CAHPS® (Consumer Assessment of Healthcare Providers and Systems®), FFS (fee-for-service), MA (Medicare Advantage), ACO (accountable care organization).

Medicare, MA, and ACOs. This quality measurement approach would deploy a small set of population-based outcome measures (such as potentially preventable hospital admissions, potentially preventable ED visits, and patient experience measures) to assess the quality of care in each of the three payment models within a local area.

We also are examining the feasibility of applying one type of measure of potentially inappropriate use of certain services—specifically, overuse measures—to measure quality in each payment model. Most of the quality measurement activity in the U.S. health care system to date has been focused on detecting underuse (“stinting”) of clinically appropriate services (Keyhani and Siu

2008, Korenstein et al. 2012). Overuse, however, is also a quality concern because of the potential for harm to beneficiaries—both directly from the tests and procedures performed on them and indirectly from unnecessary treatments for false-positive diagnoses and for clinically insignificant findings. Overuse also contributes to unnecessary program spending.

The Commission’s vision is that, over the next several years, Medicare will move away from publicly reporting on dozens of clinical process measures and toward reporting on a small set of population-based outcome measures for the beneficiary populations served by FFS Medicare, ACOs, and MA plans. For payment policy,

Medicare also could use the same population-based outcome measures to compare the quality of care in the ACOs and MA plans in a local area with the quality of FFS Medicare in the same area and to determine quality-based payment adjustments for the ACOs and MA plans. However, population-based outcome measures would not be appropriate for making payment adjustments under FFS Medicare, so Medicare would have to continue to use other, provider-based quality measures to make FFS payment adjustments—but in a much more focused and parsimonious way than it does today.

### **Reduce the size of current FFS quality programs**

The Commission maintains that quality measurement in FFS Medicare currently relies on too many clinical process measures that do not appear to be related, at least in practice, to the outcome measures of most interest to policymakers and beneficiaries, such as mortality and readmission rates (Bradley et al. 2006, Fonarow et al. 2007, Fonarow and Peterson 2009, Nicholas et al. 2010, Romley et al. 2011, Ryan et al. 2009, Werner and Bradlow 2006). Further, the reliance on these measures may create an incentive for providers to focus clinical resources on ensuring good performance on the process measures, while diverting resources from important areas of care not being assessed (Bradley et al. 2012, Schwartz et al. 2011, Werner et al. 2008). The Commission acknowledges that Medicare has begun to give greater weight to outcome measures, for example, in the readmissions and hospital VBP programs. We encourage CMS not to add any new clinical process measures to the existing hospital Inpatient Quality Reporting and VBP programs and to remove process measures that are not found to have any association with their related outcome measures (e.g., process measures for acute myocardial infarction (AMI) patients that are found to have no association with outcomes for AMI patients).

### **Focus on population-based outcome measures**

The Commission has considered using population-based outcome measures to assess the quality of care instead of relying on provider-based process measures as is current practice for FFS Medicare. Under this approach, Medicare would use a small set of population-based outcome measures to assess the quality of care provided under each of the program's three payment models—FFS Medicare, ACOs, and MA plans—within a local area. As much as possible, the areas (within which the populations of FFS

Medicare, ACOs, and MA plans would be measured) should be defined in a way that is consistent with the organization of local health care delivery markets and with Medicare payment policy, such as those that the Commission has recommended for local MA payment areas (Medicare Payment Advisory Commission 2005a). We also note that, even if Medicare were to use population-based outcome measures to evaluate and compare quality across FFS Medicare, ACOs, and MA plans in a local area, this effort would not preclude individual providers, medical groups, and health systems operating in each area from continuing to use other quality measures. The population-based outcome measures that the Commission has been considering are shown in Table 3-3.

As an initial study of the feasibility of calculating population-based outcome measures for Medicare, the Commission worked with a contractor to calculate rates for two of the quality measures listed in Table 3-3: potentially preventable admissions and potentially preventable visits to the ED (see text box, p. 50). The results of that initial analysis indicate that it is feasible to use FFS Medicare claims data to calculate rates of PPAs and PPVs. These rates could be used to set an FFS Medicare performance benchmark in each local area against which the PPA and PPV performance of the ACOs and MA plans in the area could be compared.

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## **How population-based outcome measures could be applied to FFS Medicare, ACOs, and MA plans in a local area**

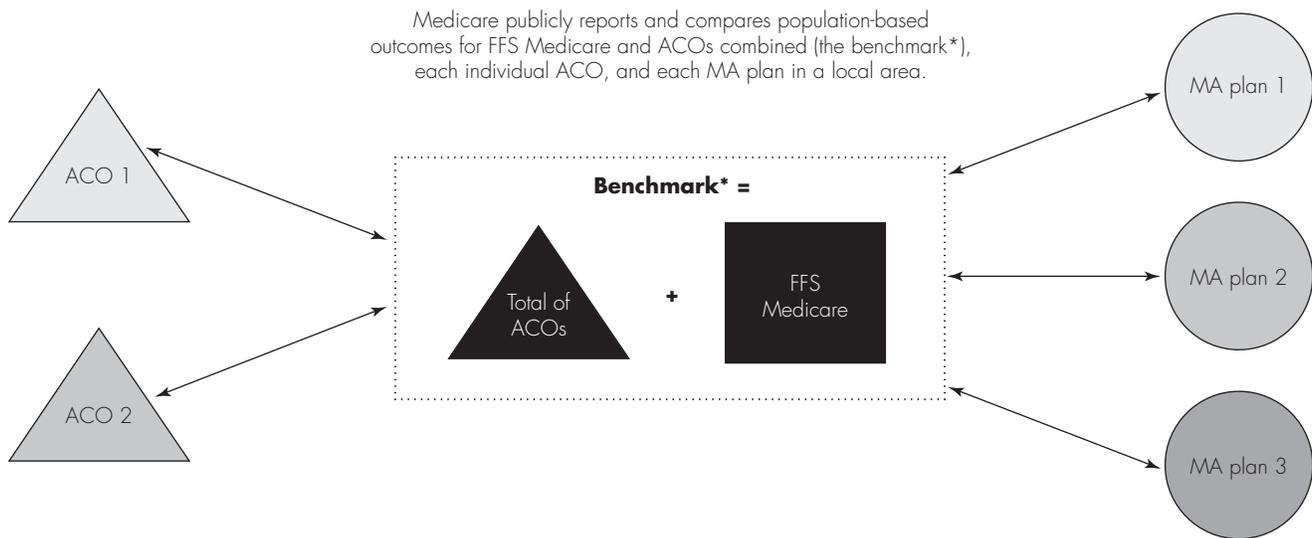
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Figure 3-1 (p. 48) depicts a simplified illustration of a local area in which all three Medicare payment models are active: FFS Medicare, two ACOs, and three MA plans. Under the Commission's concept for using population-based outcomes to measure quality, each measure described in Table 3-3 would be calculated for each entity in the local area. For example, if the local area looked like Figure 3-1, Medicare would calculate rates of potentially preventable admissions, potentially preventable ED visits, mortality, and other Table 3-3 measures for each of the three MA plans, the two ACOs, and FFS Medicare.

The Commission's vision for how Medicare would use population-based outcome measures to measure quality of care involves two distinct uses: public reporting

**FIGURE 3-1**

**Conceptual diagram of quality reporting for Medicare payment models in a local area**



Note: FFS (fee-for-service), ACO (accountable care organization), MA (Medicare Advantage).

\*The benchmark shown here includes the combined results for all ACOs and FFS Medicare. Alternatively, the benchmark could be based on FFS Medicare only. See text for discussion.

(Figure 3-1) and payment policy (Figure 3-2a and Figure 3-2b). First, Medicare would publicly report the results of each measure described in Table 3-3 (p. 46) for each ACO and MA plan in the local area and would report a reference benchmark calculated by combining data for FFS Medicare and all of the ACOs in the area.<sup>1</sup> Anyone then would be able to compare quality between each ACO and MA plan and the benchmark (Figure 3-1).

Second, for payment purposes, the benchmark would be the threshold that the ACOs and MA plans in that area would have to exceed to qualify for any quality-based bonus payment (Figure 3-2a). In parallel fashion, Medicare could penalize ACOs and MA plans that performed below the benchmark in the area. The actual amount of any quality-based bonus payments to the ACOs and MA plans would be determined by comparing relative quality among the ACOs and, separately, among the MA plans (Figure 3-2b).

However, for reasons described in the next section, the Commission believes that making payment adjustments to FFS Medicare based on population-based outcome measures is not appropriate at this time. Instead, Medicare will need to keep measuring quality in FFS Medicare

using provider-based measures to make quality-based payment adjustments. Beneficiaries in FFS Medicare also will want provider-specific quality information to inform their choices about where to seek care. Unfortunately, provider-based quality measurement will continue to be subject, at least for the near future, to the technical shortcomings that the Commission has outlined over the past several years, including gaps in measures for some types of providers and the paradox that many of the clinical process measures currently available seem to be uncorrelated with high-priority clinical outcomes such as mortality.

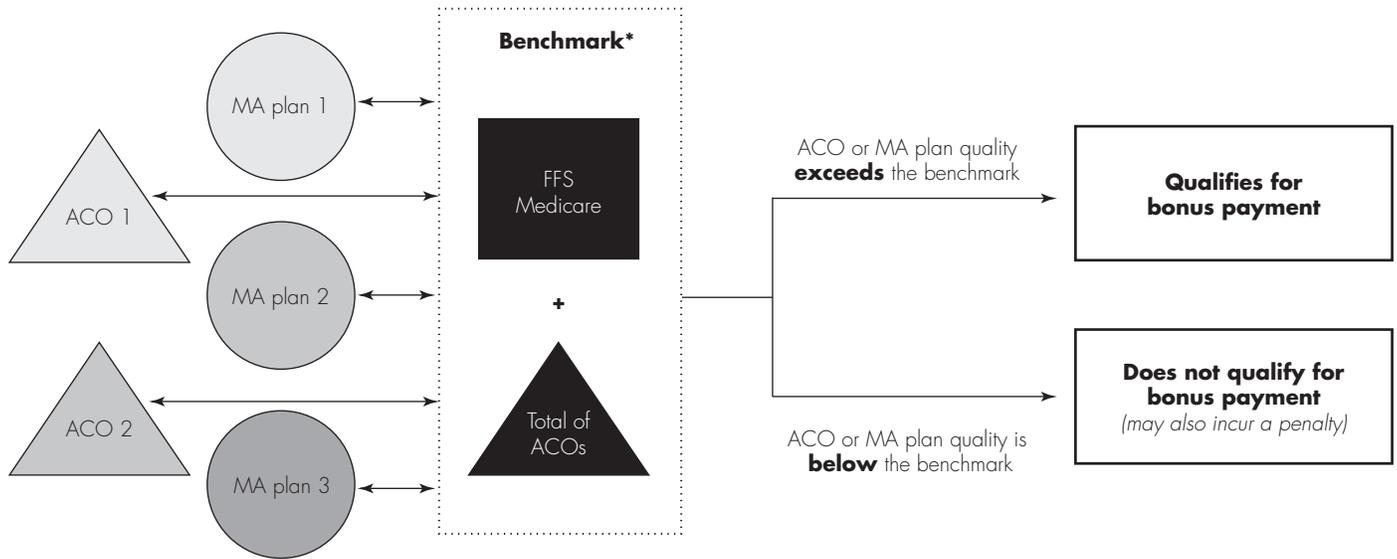
**Concerns about using population-based outcome measures to make payment adjustments in FFS Medicare**

Although population-based quality measures would have utility for public reporting on quality, the Commission believes that they are not appropriate for redistributing payments between FFS Medicare and the ACOs and MA plans in an area, nor across an area's FFS Medicare providers. Our primary concern is that, in FFS Medicare, there is no identifiable organization or agent to hold accountable for outcomes like PPAs, PPVs, and mortality rates. Under such an approach, the performance of all the

**FIGURE 3-2**

**Conceptual diagram of quality-based payment for Medicare payment models in a local area**

**Figure 3-2a: Qualifying for quality-based bonus payment or penalty**



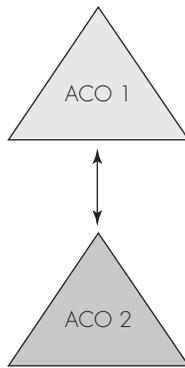
ACOs and MA plans in a local area are compared against a benchmark\* calculated by combining data for FFS Medicare and all of the ACOs in the area

**Figure 3-2b: Determining the value of quality-based bonus payment or penalty**

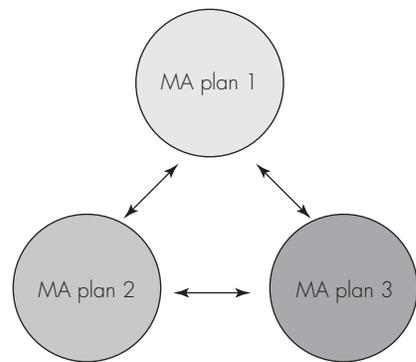
**FFS Medicare**

FFS Medicare uses **provider-based measures** to determine bonus level/penalties for FFS providers

- Measures not available for all provider types, so not all providers measured
- Each provider measured separately, if measures are available
- Provider bonus payments/penalties determined within each provider type



Each ACO that qualifies for a bonus (or penalty) is compared against other ACOs using **population-based measures** to determine bonus (or penalty) amount



Each MA plan that qualifies for a bonus (or penalty) is compared against other MA plans using **population-based measures** to determine bonus (or penalty) amount

Note: ACO (accountable care organization), MA (Medicare Advantage), FFS (fee-for-service).

\*As shown here, the benchmark includes the combined performance of all ACOs and FFS Medicare. Alternatively, the benchmark could be based on FFS Medicare only. See text for discussion.

## Measuring population-based outcomes: Potentially preventable admissions and potentially preventable emergency department visits

To explore the feasibility of calculating population-based outcome measures for fee-for-service (FFS) Medicare in local areas across the United States, the Commission contracted with 3M<sup>TM</sup> Health Information Systems to calculate rates for two of the outcome measures listed in Table 3-3 (p. 46): potentially preventable admissions (PPAs) to a hospital and potentially preventable visits (PPVs) to the emergency department (ED). While both measures use hospital utilization data, they are not hospital quality measures; rather, they are designed to assess the effectiveness of the ambulatory care delivery system within a geographic area. The premise underlying these measures is that, while not every potentially preventable event may be prevented, comparatively high rates of these potentially preventable events, when risk adjusted for variation and severity in the existing clinical conditions in the population, can identify opportunities for improvement in an area's ambulatory care systems. Other developers of quality measures have defined alternative approaches to measuring these potentially preventable events, and the Commission does not endorse any particular measurement technology. Details of the analyses are presented in online Appendix 3-A to this chapter, available at <http://www.medpac.gov>.

PPAs are hospital admissions that may be the result of inadequate ambulatory care. In these cases, patients required admission to a hospital for acute care services at the time they sought care, but the admission might have been avoided had they received appropriate ambulatory care and coordination activities. Similarly, PPVs are ED visits that reflect the effectiveness of the ambulatory care system in an area. PPVs also may reflect patient preferences for accessing care at an ED or the lack of other ambulatory care options in the community. Both PPAs and PPVs include patients with ambulatory care-sensitive conditions, such as diabetes

and asthma, for which appropriate patient monitoring, care coordination, and follow-up care (e.g., medication management) can reduce the use of much more costly hospital care.

Hospital stays can pose risks to patients, particularly the elderly. Adverse events represent a prominent risk, including iatrogenic infections, medication errors, device failures, and pressure injuries such as decubitus ulcers. According to researchers at the Centers for Disease Control and Prevention, health care-associated infections in hospitals are a significant cause of morbidity and mortality in the United States (Klevens et al. 2007). In addition, the inpatient environment itself can lead to a reduction in elderly patients' independence as they cope with functional loss that can stem from several factors, including extended bed rest.

Similarly, for several reasons, EDs are not the ideal venue for treatment of nonurgent acute conditions, management of chronic conditions, and primary care. First, care provided in EDs is more costly than care provided in ambulatory care settings for beneficiaries and taxpayers. Second, nonurgent utilization detracts from EDs' resources for providing emergency and lifesaving care (National Research Council 2007). Third, medical practitioners in the ED typically lack a relationship with the patient, are unfamiliar with the patient's baseline state, often lack complete medical records, and have little means of patient follow-up, all of which can reduce the efficacy of treatment. Overtreatment may pose another threat to the quality of ED care, particularly for nonurgent conditions. Because they are expected to make an accurate diagnosis and provide effective treatment based on a single visit, emergency physicians may err on the side of doing too much rather than too little (Moskop 2010). In addition to the high costs, diagnostic studies and invasive treatments may pose a risk of side effects and injury. ■

individual FFS providers in an area would be combined to determine the total performance score for FFS Medicare in that area. This process would combine the quality of both the high- and the low-performing providers in an area and thereby unfairly reward low performers and penalize high performers (Institute of Medicine 2013). Although holding

all FFS providers in an area accountable for population-based quality could eventually encourage high-performing providers to leave FFS Medicare and either join or form an ACO or contract with one or more MA plans in their area—a goal that the Commission supports—we believe that such an approach is not appropriate at this time.

Of course, it also is true that each provider participating in an ACO or contracting with an MA plan also contributes to the aggregate performance of that ACO or MA plan (to the extent they actually provide care to beneficiaries attributed to the ACO or enrolled in the MA plan). However, a critical difference between MA plans and FFS Medicare is that MA plans choose the providers for the networks they offer to beneficiaries. This capability allows MA plans to limit their provider networks to the providers they believe to be efficient (i.e., low cost and high quality). In effect, Medicare is holding the MA plan accountable for the combined performance of the contracted individual providers in its network. This capability to decide which providers to include and exclude from the plan's provider network is a critical distinction between FFS Medicare and MA plans.

ACOs occupy a middle ground between the other two payment models in that they can choose the providers who are members of the ACO, but they cannot restrict beneficiaries' choice of providers. Their quality performance, therefore, is the aggregate performance of all providers, whether they are ACO participants or not, that have cared for their attributed beneficiaries. In this instance, the ACO is the organizing entity that is held accountable and takes responsibility for the collective performance of its affiliated and nonaffiliated providers.

### **Concerns about using provider-based quality measures to make payment adjustments in FFS Medicare**

Given the challenges of population-based measurement for FFS Medicare, provider-based quality measurement may continue to be necessary in FFS Medicare. But the Commission remains concerned that provider-based measurement has its own significant drawbacks, including the following:

- There are significant administrative costs for providers if Medicare uses quality measures that require providers to extract and transmit data from patients' medical charts. One possible solution would be to use measures that do not rely on data from medical charts, but the trade-off is a loss of clinical detail that may present a less-accurate assessment of a provider's performance. Also, as the Commission noted in its 2010 report to the Congress, the proliferation of electronic health records (EHRs) should eventually make it less costly to extract and use clinical detail from patient medical records for quality measures (Medicare Payment Advisory Commission 2010).

- For physicians and other health care professionals, it may be difficult to define clinically meaningful and statistically robust quality measures for some specialties (for example, certain surgical subspecialties and hospital-based specialties such as radiologists, pathologists, and anesthesiologists). Without such measures, the default assumptions about quality typically are that each provider's performance is sufficient and that quality does not vary across providers; such assumptions render moot a policy to redistribute some portion of payments on the basis of quality variations across providers. For the foreseeable future, it is likely that gaps will persist in Medicare's ability to measure quality for some physician specialties.<sup>2</sup> As long as this situation persists, it will create a policy question: Will some physicians be eligible for quality-based bonuses and penalties while others will not?
- Providers that do not treat a large number of Medicare beneficiaries may not have a sufficient number of cases to establish a reasonable degree of statistical reliability for the results. This "small numbers" problem can be a particular challenge when calculating outcome measures. As long as a provider does not have a sufficient number of Medicare patients to calculate statistically reliable quality measures, the default assumption typically is that the provider's performance is at the average of the distribution for all providers. One possible solution would be to focus on persistent statistical outliers; for example, CMS could identify providers whose performance is consistently in the worst performing decile of all providers. Potential concerns that the population of providers being evaluated is too heterogeneous (which could contribute to wider variation in performance) could be addressed by using groupings of providers that are based on shared characteristics among the providers (for example, physician specialty) and within a reasonably cohesive area, such as an MSA.
- Accurate risk adjustment for provider-based outcome measures, such as mortality rates, is essential. Without accurate risk adjustment, providers may be discouraged from treating clinically complex patients out of concern that caring for such patients will make providers' quality look worse due to factors that are beyond their control.

## Measuring potentially inappropriate use of services: Overuse

In addition to population-based outcome measures, another area of quality that the Commission is exploring is the feasibility of measuring potentially inappropriate use of services, specifically overuse. While potentially inappropriate service use includes both underuse and overuse (Chan et al. 2013), most of the quality measurement activity in the U.S. health care system to date has been focused on detecting underuse (Keyhani and Siu 2008, Korenstein et al. 2012). Most of the measures in the Healthcare Effectiveness Data and Information Set<sup>®</sup>, which is used by Medicare and many other payers to measure health plan quality, are specifically designed to assess underuse (Keyhani and Siu 2008). Overuse is more likely to occur in payment models such as fee-for-service (FFS) that create incentives to overprovide services with little or no benefit for patients, but evidence of overuse has been found in both FFS and managed care payment arrangements (Keyhani et al. 2013).

Because of the potential for harm to beneficiaries—both directly from the initial test or procedure and indirectly because an initial test may lead to further tests and procedures that may not be necessary—

and the wasteful program spending that results from overuse, the Commission conducted and contracted for two types of analyses to examine the feasibility of measuring overuse in FFS Medicare. The first analysis adapts three measures currently used by CMS for public reporting of imaging use in hospital outpatient departments and applies them to national FFS Medicare claims data. The purpose of these measures is to limit unnecessary exposure to radiation and contrast materials, improve adherence to evidence-based guidelines, reduce unnecessary spending by the Medicare program and beneficiaries, and ensure that patients get the right service the first time (National Quality Forum 2012). The second analysis examines rates of repeat testing among FFS Medicare beneficiaries, and the results were published in the *Archives of Internal Medicine* (now *JAMA Internal Medicine*) and the *Annals of Internal Medicine*. Commentaries accompanying the articles expressed the view that the repeat testing found represented “unjustified testing” or “overuse” (Kassirer and Milstein 2012, Shaheen 2014). The analyses are presented in detail in the online Appendix 3-B to this chapter, available at <http://www.medpac.gov>. ■

### Issues for further Commission analysis

Although the Commission has described a vision for the evolution of quality measurement in Medicare, there are several complex and interrelated issues that the Commission will continue to analyze over the coming year. The Commission also plans to continue to explore overuse measurement as another way to improve quality, because of the potential for harm to beneficiaries and wasteful program spending that result from overuse (see text box).

#### Defining the population for provider-based quality measurement in FFS Medicare

An important technical issue to be resolved is whether the population for FFS Medicare provider-based quality measures should include only FFS Medicare beneficiaries or include all Medicare beneficiaries who are treated by the provider, that is, also include beneficiaries who are attributed to an ACO or enrolled in an MA plan in the

local area. It may be argued that only FFS beneficiaries should be included in the provider-based measures because the ACO or MA plan should be held accountable for the quality of care received by their attributed or enrolled beneficiaries. However, it also may be argued that the outcomes of treatment by a provider are ultimately the responsibility of that provider, regardless of whether the beneficiary is attributed to an ACO, enrolled in an MA plan, or covered under FFS Medicare. Further, restricting the measurement population to only the FFS Medicare beneficiaries treated by a provider would exacerbate the statistical small numbers problem, meaning that the resulting rates would be a less reliable basis for making payment adjustments.

#### Redistributing funding between ACOs and MA plans by directly comparing quality of ACOs and MA plans

The Commission has discussed the possibility of comparing the performance of ACOs and MA plans

in terms of population-based outcomes to redistribute funding between the ACOs and MA plans in an area, but this idea requires further development. ACOs are relatively new to Medicare, and it is likely that it will take time for them to begin affecting the quality and cost of care for their attributed beneficiaries (and there also is the possibility that ACOs may not be successful in accomplishing this kind of quality improvement). Therefore, it may not be appropriate yet to compare performance on population-based outcomes between the ACOs and MA plans in a local area, unless and until ACOs have become an established Medicare payment model.

### **Adjusting payments for geographic variation in quality of care across local areas**

Quality varies widely across geographic areas in the United States. An ACO or MA plan in one area of the country may perform well relative to FFS Medicare in that area, but its performance may be poor relative to the average performance of ACOs, MA plans, or FFS Medicare in other areas. The Commission will continue to examine the issue of whether Medicare should compare and make payment adjustments on the basis of quality comparisons across geographic areas.

### **Identifying the funding source for quality-based payments**

Assuming funding for quality-based bonuses and penalties would come from current program spending, quality-based payments could be funded by redistributing a percentage of base payments across FFS Medicare, ACOs, and MA plans, or alternatively by redistributing a percentage of base payments within each payment model separately. We also acknowledge that new funding for a bonus-only program, for example, could come from new revenue or non-Medicare funding offsets, but these options are beyond the purview of the Commission.

### **Transitioning from Medicare's current quality measurement programs**

The Commission assumes that the transition to a quality measurement system using population-based outcome measures would take several years. Some of these steps include:

- having independent third parties—rather than provider groups themselves—develop the provider-based measures that would be used in FFS Medicare;

other key stakeholders also could be included in the measure development and approval process, such as representatives of beneficiaries (as consumers of care) and private payers (to increase the synchronization of quality measurement between Medicare and private payers);

- reducing the number of measures used by FFS Medicare for each type of provider and exercising restraint when adding any new measures;
- retiring clinical process measures when research finds they have no association with performance on provider-based outcome measures;
- developing outcome measures, including risk-adjustment methods, that take advantage of the more complete and more easily accessible clinical detail in EHRs; and
- focusing provider-based quality measurement on outcome measures.

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## **Conclusion**

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The Commission believes it may be desirable and feasible to transition Medicare over the next decade to a quality measurement system that uses a small number of population-based outcome measures to evaluate, compare, and publicly report on quality within a local area across Medicare's three payment models—FFS Medicare, MA, and ACOs. The same population-based measures also could be used to make payment adjustments within or across the MA and ACO models, but would not be appropriate for adjusting FFS Medicare payments in an area because FFS providers have not explicitly agreed to be responsible for a population of beneficiaries. Therefore, at least for the foreseeable future, FFS Medicare will need to continue to rely on provider-based quality measures to make payment adjustments. While current technology to measure provider-based quality may not be sufficiently developed to support payment adjustments, especially with respect to physician services, there are steps that Medicare can take in the short term to improve its provider-based quality measurement programs. ■

## Endnotes

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- 1 Defining the benchmark in this way may be necessary to create an ongoing incentive for the ACOs and MA plans in a local area to continue quality improvement over time. If the benchmark were defined to include only beneficiaries in traditional FFS Medicare—which may become smaller and less representative of the local market over time, as ACOs and MA plans continue to grow—the resulting “FFS-only” benchmark could be an increasingly unrepresentative and unreasonable standard against which to evaluate the relative quality of the area’s ACOs and MA plans.
- 2 Some stakeholders have suggested that medical societies could be a source of new physician quality measures, but this process could create an incentive for the developers of such measures to design them to be relatively easy to perform well on.

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