

# Measuring and Assigning Accountability for Healthcare Spending

## EXECUTIVE SUMMARY



In an effort to address the high cost of health care, the federal government, commercial health plans, and other organizations are defining and using measures of health care spending for the purposes of rewarding or penalizing physicians, hospitals, and other health care providers, defining provider networks, and encouraging patients to use particular providers. For example, in the Medicare program, payments to individual physicians and hospitals will be increased or decreased based on measures of spending on the healthcare services their patients receive.

In general, the spending measures that are being used are designed to assign accountability to a *single* physician, hospital, or other provider for *all* of the spending on *all* of the health care services received by a patient during a particular period of time, regardless of which physicians, hospitals, or other providers actually delivered those services. Statistical rules are used to *retrospectively* attribute responsibility to an individual physician, physician practice, hospital, or other provider for the spending on all of the services that a patient received during either an “episode of care” or a calendar year. The spending amount attributed to each provider is divided by a “risk score” in an effort to adjust for differences in patients’ needs for services. If the risk-adjusted spending attributed to a provider is higher than the risk-adjusted spending for other providers, it is presumed that the provider is delivering services inefficiently.

## PROBLEMS WITH CURRENT APPROACHES TO MEASURING AND ASSIGNING ACCOUNTABILITY FOR HEALTHCARE SPENDING

Although most payers use similar methodologies for attribution, episode definition, and risk adjustment, the results differ significantly depending on the detailed specifications of the methodologies. Not only is there no one “best” approach, **there are six fundamental problems that exist regardless of the specifications which can make all of these methodologies unfair for evaluating providers and potentially problematic for efforts to improve the quality of patient care.**

### 1. Many Patients and the Spending on Their Care Are Not Assigned to Any Provider

In most attribution methodologies, a large number of patients are not assigned to any physician practice or other provider, and consequently, the spending associated with those patients is ignored in spending analyses. This can

cause distortions in comparisons of spending between providers and it can also create perverse incentives for the providers:

- Patients who are not receiving adequate preventive care will be excluded, and providers who take on care of these patients can be financially penalized.
- The patients most in need of care coordination will be excluded, and providers who provide coordination to complex patients may be financially penalized.
- Providers can be financially penalized for keeping their patients healthy.

### 2. Providers Cannot Control All of the Services and Spending Assigned to Them

Even when a patient’s spending is attributed to a physician or provider organization, that does not mean the physician or organization could have controlled or influenced all of the services that generated the spending. In fact, *most* of the spending that is attributed to physicians in typical methodologies results from services delivered by *other* physicians. Moreover, a physician can easily be assigned accountability for services a patient received before the physician first became involved in the patient’s care. This creates a perverse incentive for a physician not to become involved with a patient who already incurred significant healthcare spending earlier in the year, even though these are the patients who may most need additional help.

### 3. Providers Are Not Attributed the Spending For Many Services They Provide

Not only are providers assigned spending that they cannot control, most attribution systems fail to assign physicians the majority of patients they did care for or the majority of services they delivered. Spending on preventable conditions such as hospital-acquired infections may be assigned to the physicians who treated the conditions rather than those who caused them. Moreover, spending by physicians who are delivering large numbers of services inappropriately or fraudulently may not be assigned to them, making it difficult to identify them and address these problems.

In addition, many measures described as “total spending” or “total cost” frequently exclude spending on prescription medications. As a result, spending totals for patients who use more drugs but use fewer other services will appear artificially low compared to others. In addition, since some types of drugs are paid for through the patient’s medical insurance and other types of drugs are paid through prescription insurance, spending tabulations for physicians whose patients differ in the types of drugs they

need will not be comparable if the spending under prescription insurance is not included.

#### 4. Spending Measures Do Not Distinguish Appropriateness of Services

Under typical accountability systems, no distinction is made between recommended services and inappropriate services. A provider who does a better job of delivering recommended services could be measured as having higher spending than a provider who fails to deliver recommended services or a provider who delivers services that are less expensive but inappropriate for the patient. This could have the unintentional side effect of encouraging providers to stint on desirable care to patients in order to reduce the total amount of spending.

#### 5. Risk Adjustment Systems Do Not Adequately Adjust for Patient Needs

The risk adjustment methods used in most accountability systems do not effectively separate differences in patient needs from differences in the way providers deliver care.

- Most risk adjustment systems are designed to predict *spending* on patient care, not adjust for differences in patient *needs*. This can reinforce inappropriate spending, penalize efforts to reduce underuse, and cause providers to focus spending reduction efforts on the wrong patients.
- Most risk adjustment systems use *historical* information on patient characteristics, not the most current information on health problems that affect the services patients need. This can penalize providers who care for patients with many acute healthcare problems.
- The *same* risk score can be assigned to patients who need very *different* kinds of services from physicians in different specialties. This can distort spending comparisons for physicians, particularly primary care physicians.
- Most risk adjustment systems only use information available in *claims data* that does not completely or accurately measure differences in patient health needs.
- Most risk adjustment systems give little or no consideration to factors *other than health status* that can affect patient needs. For example, patients who have functional limitations are more likely to have higher healthcare spending, but measures of functional limitations are not included in typical risk adjustment systems.

#### 6. Inadequate Adjustments Are Made for Structural Differences in Costs

Providers in rural areas and poor communities incur higher costs to deliver the same services to their patients than do other providers. Most accountability systems make only limited adjustments for these differences, if any, which can penalize providers for factors outside of their control and potentially make it more difficult for patients to access the care they need.

## BETTER WAYS OF MEASURING AND ASSIGNING ACCOUNTABILITY FOR HEALTHCARE SPENDING

Clearly, better methods of measuring spending and assigning accountability are needed. An effective methodology needs five capabilities:

1. Identifying the services and spending that can be controlled or influenced by each provider;
2. Identifying which services represent opportunities for reducing spending without harming patients;
3. Determining which patients have greater needs for services;
4. Adjusting for structural differences in costs for different providers; and
5. Comparing providers based on both costs and outcomes of care.

### 1. Identifying the Services and Spending Providers Can Influence

The first step in more effectively identifying ways of reducing healthcare spending without rationing and identifying the healthcare providers best able to make the reductions is to divide spending into categories that reflect differing levels of provider control or influence over services. Five such categories are:

**Spending Category 1:** Services both *ordered and delivered* directly by the physician or other provider who is being measured.

**Spending Category 2:** Services delivered by *other* providers that are *integrally related* to services delivered by the provider being measured.

**Spending Category 3:** Services delivered by *other* providers that resulted from *orders or referrals* from the provider being measured, and services delivered by the provider being measured in response to orders from other providers.

**Spending Category 4:** Services delivered by other providers that were *related* to services delivered or ordered by the provider being measured.

**Spending Category 5:** All other services the patient received that are *unrelated* to services delivered or ordered by the provider being measured.

Collectively, these five categories add up to the total spending on all services a patient received. The services included in each category will differ for different providers, but in all cases, a provider will have greater influence over the lower-numbered categories than the higher-numbered categories, so this categorization will better identify which providers could actually reduce spending than current attribution methodologies which simply attribute the spending in all five categories to a single provider who happened to provide a certain proportion of the total spending. Moreover, under this approach, *every* provider will have *all* of the spending *they directly control* attributed to *them*, and *all* of the spending on *all* patients will be attributed to *at least one* provider.

## 2. Identifying Subsets of Spending That Can Be Reduced

The five spending categories better identify which providers have the ability to control or influence different aspects of spending, but they give only limited indications as to which aspects of spending could be *reduced*. To better identify opportunities to reduce spending without rationing, it is desirable to further disaggregate Spending Categories 1-4 into four subcategories:

**Subcategory (a):** Services required to meet quality standards.

**Subcategory (b):** Services that are potentially avoidable, e.g., services such as MRIs for lower back pain, cardiac stress tests, and Cesarean sections that may provide significant benefit to some patients but relatively little benefit to others and in some cases may result in harm to the patient that outweighs the benefit.

**Subcategory (c):** Services needed to address potentially preventable conditions, i.e., situations where the *health condition itself* could potentially have been prevented if additional or different services had been delivered *at an earlier point in time*.

**Subcategory (d):** All other services (“typical services”). Even if there is not enough evidence about appropriateness or preventability to classify them in the other three categories, variation among providers in the number and types of “typical” services they use for similar patients could indicate opportunities for savings and areas where research is needed to develop appropriate use criteria.

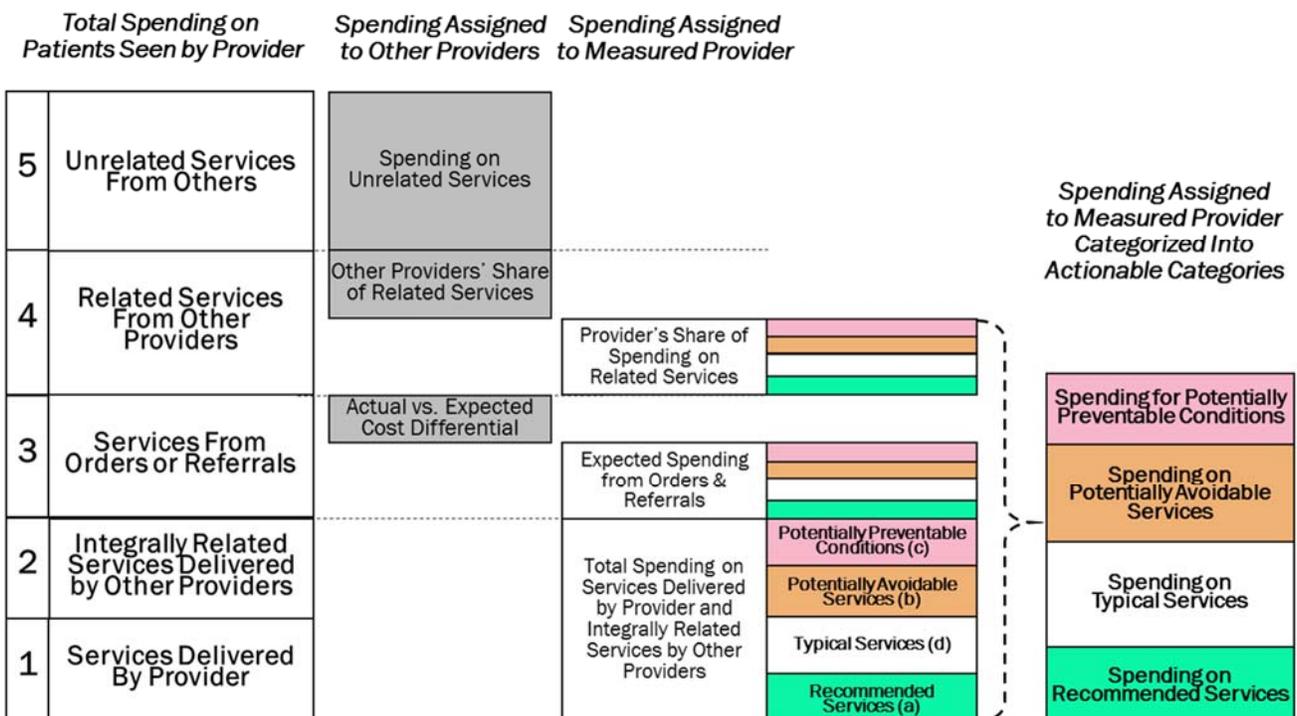
Figure 1 illustrates how the total spending on patients seen by a provider would be divided into the five spending categories based on the level of the provider’s control and influence over the services delivered to the patient and then further divided into the four subcategories. For most providers, a significant share of the total spending for their patients will be assigned to other providers, but the spending that is assigned to them will be based on the services they can control or influence.

## 3. Adjusting for Differences in Patient Needs

Even with these better categorizations, comparisons among providers will not be meaningful unless they distinguish differences in spending that were associated with differences in the needs of the patients for whom the providers were providing care. The methods used to do this should address the many weaknesses of current risk adjustment systems in the following ways:

- **Disaggregating Spending into Subgroups of Patients with Similar Health Conditions.** Instead of using a *single* risk score to *adjust* spending, a better approach is to *compare* spending separately for *different subgroups* of patients, with each subgroup defined such that patients in that subgroup would be expected to need similar levels of services. Some risk adjustment systems have methods for grouping patients into clinically similar subgroups that can be used in this way for all types of spending.
- **Using Concurrent Risk Adjustment.** The patient categories should be based on complete information about the patients’ health problems that occurred

**FIGURE 1**  
Identifying the Spending For Which a Healthcare Provider Can Be Accountable



during the time period in which spending is being measured, rather than only the kinds of historical information used in purely prospective risk adjustment systems.

- **Using Clinical Information from Electronic Health Records (EHRs) and Registries in Addition to Claims Data.** In many cases, the key information that distinguishes differences in patient needs is not captured at all in claims data, and so clinical data is also needed.
- **Disaggregating by Non-Health Factors to Identify Impacts on Spending.** Factors such as functional limitations can have a significant impact on the type and costs of healthcare services patients will need. *Disaggregating* spending into different categories of patients is also preferable to *adjusting* overall spending based on patient characteristics because it enables disparities between different groups to be measured and acted upon, rather than hidden inside a risk adjustment formula.

#### 4. Comparing Providers That Are Comparable

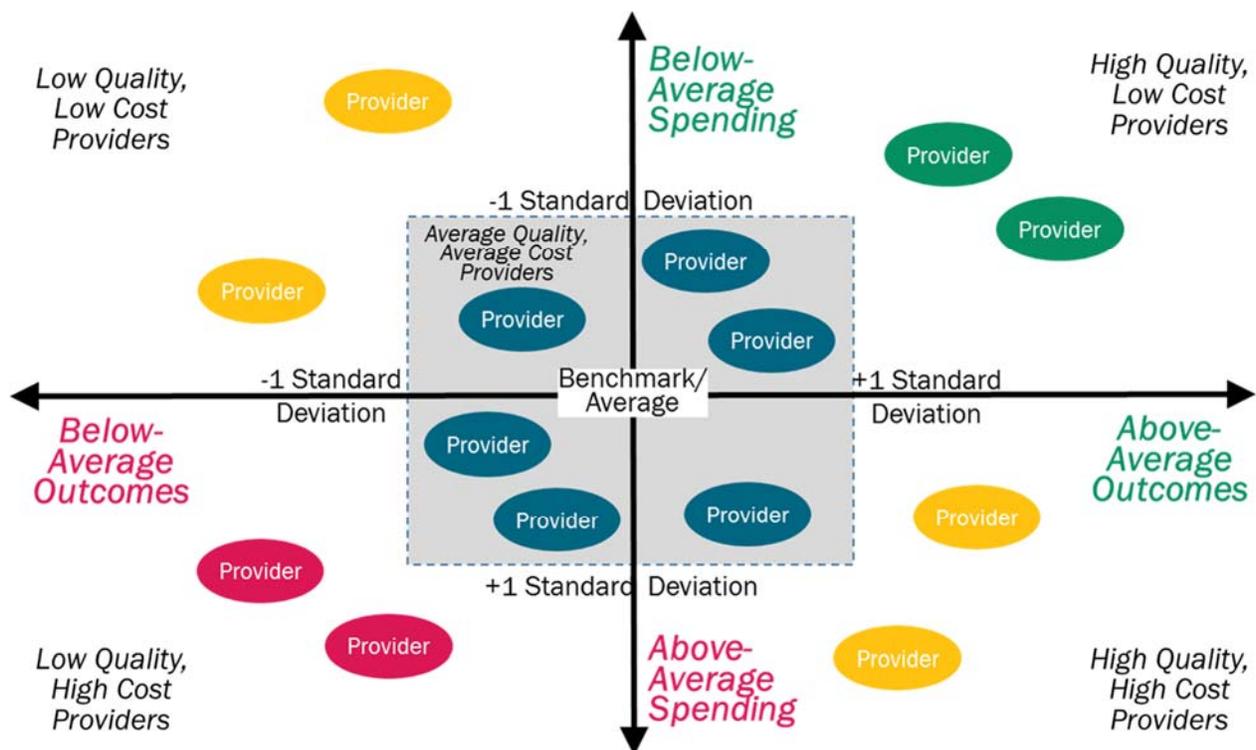
Additional steps must be taken if comparisons are going to be made between providers who face structural differences in costs, e.g., comparing physician practices and hospitals in both urban and rural areas. One approach is to adjust the spending of each provider for their relative differences in costs, if these differences can be estimated; an alternative approach is to only compare spending

between providers with similar structural characteristics (e.g., only comparing rural providers to other rural providers).

#### 5. Assessing Differences in the Outcomes of Services and Spending

Since healthcare spending is not an end in itself, but a means to achieve better health and a higher quality of life for patients, it is important to distinguish physicians, hospitals, and other providers that spend more and achieve better health outcomes from those providers that spend more but do not achieve better outcomes and from those providers that spend less but achieve significantly poorer outcomes. This cannot be done through simplistic calculations such as dividing a measure of quality by a measure of spending. Since health outcomes and spending are measured on different scales and since different people may place different dollar values on the same outcome, the best approach is to show how providers differ on both measures, similar to the chart in Figure 2, so that individual patients and payers can make their own judgments about which providers are “better.” Because there will be small variations in quality and spending from year to year and provider to provider based on variations in patient needs and other factors which cannot be accurately measured, only providers whose performance is *significantly* better or worse than others should be identified as delivering higher or lower value care.

**FIGURE 2**  
Comparing Providers on Both Spending and Outcomes



## AN EXAMPLE OF MORE ACTIONABLE ANALYSIS

To see how spending analyses using the categories and subcategories defined above would differ from current methods, consider a hypothetical patient who receives the following health care services during the course of a year:

- In January, the patient visits his primary care physician (PCP) complaining of mild chest pain while exercising. The primary care physician orders a cardiac stress test to help determine if the patient is at risk of a heart attack.
- In February, the stress test is performed and the cardiologist who reviews the results determines there is no indication of significant coronary artery blockage. The cardiologist sees the patient in his office to explain the results, determines that the patient has risk factors for a future heart attack, and orders recommended medications.
- The patient has also been having lower back pain. The patient does not consult with the PCP about this problem, but contacts a neurosurgeon directly and schedules an appointment in March. The neurosurgeon evaluates the patient and recommends spinal surgery.
- In April, the neurosurgeon performs the surgery on the patient at a medical center fifty miles from where the patient lives. An anesthesiologist is also involved in the case.
- After discharge, the patient decides to go to a local skilled nursing facility for physical therapy and rehabilitation rather than for outpatient physical therapy, and the patient's insurance approves that service.
- The patient develops an infection at the site of the surgery and is admitted to a community hospital in May. A hospitalist successfully treats the infection and the patient is discharged.
- The hospitalist recommends that the patient see a primary care physician regularly in the future. The patient decides to use a different primary care physician than the one he had seen in January.
- The patient visits the new primary care physician in June and again in October, and the new PCP makes sure that the patient is up to date on all preventive care. The PCP finds that the patient has not had recommended screening for colon cancer and orders a colonoscopy.
- A gastroenterologist performs the colonoscopy in November and finds no evidence of cancer. The gastroenterologist performs the colonoscopy at the community hospital and uses an anesthesiologist to administer sedation.

This patient has received services from a total of eight different physicians and two hospitals. As shown in Figure 3, accountability systems that attribute spending based on primary care visits would attribute all of those services to the patient's new primary care physician (because the PCP had the largest number of visits with the patient), including the stress test, the back surgery, and the hospital readmission after the surgery, even though those services occurred before the new primary care physician had met the patient for the first time. None of the services would be assigned to the other physicians who actually delivered or ordered them.

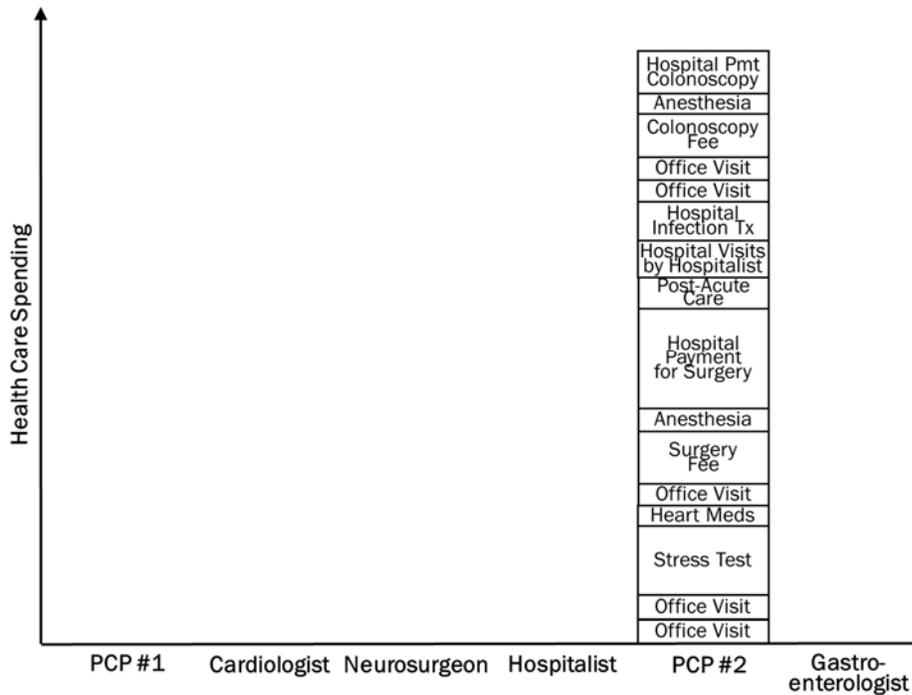
As shown in Figure 4, the spending category system described above would assign individual components of spending to each of the physicians who had control over each service, rather than assigning total spending to a single physician or to no physician at all:

- The visit in January to the patient's first primary care physician would be placed in Spending Category 1(d) for that PCP. A portion of the cost of the stress test the PCP ordered would be included in Spending Category 3(b) for that PCP, since stress testing is often overused for low risk patients.
- The remaining portion of the cardiac testing would be included in Spending Category 3(b) for the cardiologist. The office visit with the cardiologist would be included in Spending Category 1(d) for the cardiologist, and the full cost of the heart medications ordered for the patient would be included in Spending Category 3(a) for the cardiologist, since they are recommended by guidelines.
- The neurosurgeon's fees would be included in Spending Category 1(b) for the neurosurgeon since spinal surgery for back pain is a frequently overused procedure. The spending for the anesthesiologist and the hospitalization would be included in Spending Category 2(b) for the neurosurgeon since they were integrally related services. The cost of the post-acute care would be included in Spending Category 4(b) for the neurosurgeon, since it was related to the procedure the physician performed in the hospital, even though the surgeon did not order inpatient rehabilitation or choose which facility was used.
- The admission to the community hospital was a complication of the surgery, so the hospital and hospitalist payments are included in Spending Category 4(c) for the neurosurgeon and the teaching hospital, as well as in Spending Category 1(d) for the community hospital and hospitalist.
- The two office visits with the second PCP are included in Spending Category 1(d) for that PCP. A portion of the cost of the colonoscopy ordered by the PCP is included in Spending Category 3(a) for the PCP.
- The remainder of the cost of the colonoscopy, including the cost of the anesthesiologist and the hospital, is included in Spending Category 3(b) for the gastroenterologist, who is responsible for the fact that the colonoscopy is performed in a hospital using an anesthesiologist, making it more expensive than if it were done in the gastroenterologist's office using an alternative form of sedation.

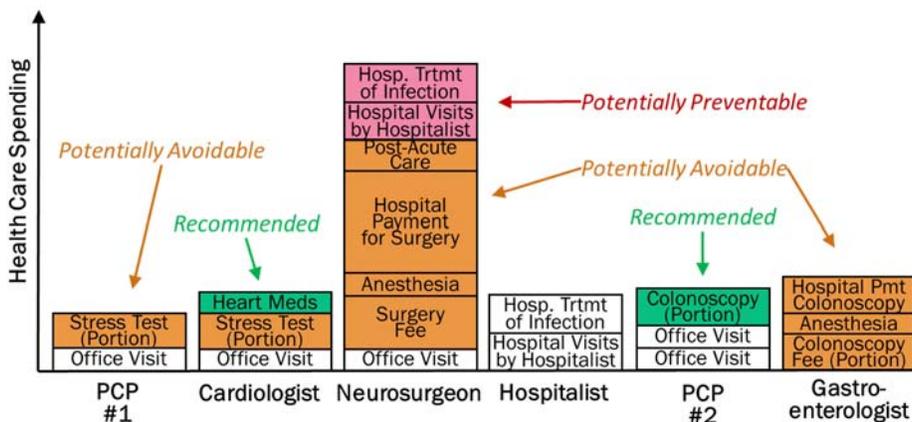
This approach shows which of the physicians and hospitals are in the best position to reduce potentially avoidable services and potentially preventable conditions, and it enables comparisons of each of the physicians to peers based on the services they are able to control or influence. In this example, it is clear that the potentially avoidable spinal surgery had the single biggest impact on total spending for the patient during the course of the year, and it also involved the largest amount of potentially preventable spending as a result of the infection that re-

quired the patient to be hospitalized a second time. The neurosurgeon was responsible for all of this spending; neither of the patient's primary care physicians had any involvement in the patient's decision to see the neurosurgeon or in the neurosurgeon's decision to perform spinal surgery. Other, smaller opportunities to reduce spending include the potentially avoidable stress test ordered by the first PCP, and the appropriate but more-expensive-than-necessary colonoscopy delivered by the gastroenterologist.

**FIGURE 3**  
**Attributing Total Spending to the Primary Care Physician with the Plurality of Visits**



**FIGURE 4**  
**Assigning Components of Spending to the Providers Best Able to Control Them**



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## MOVING FROM MEASUREMENT TO ACCOUNTABLE PAYMENT

Developing more actionable information on health care spending is a critical first step in trying to reduce or control health care spending. However, fee-for-service payment systems create significant barriers to reducing spending without harming patients, such as failing to pay or paying inadequately for services that could lower overall spending, and financially penalizing physicians and hospitals for reducing unnecessary services and improving quality.

These barriers cannot be solved by merely adding bonuses or penalties based on health care spending measures on top of the *current* fee-for-service payment system. Moreover, if the measures used for the bonuses and penalties are flawed, they can create perverse incentives for providers to avoid caring for patients who could benefit the most from improved care.

Instead, *different* payment systems are needed to truly overcome the barriers. True payment reforms – bundled payments, warrantied payments, episode payments for a procedure, condition-based payments, and global payments – give physicians, hospitals, and other providers the *flexibility* to redesign care in more efficient and effective ways, but also the *accountability* for ensuring that the care is delivered in the highest quality, most affordable way.

The structure for aggregating and disaggregating data described earlier provides data in exactly the format that is needed for defining and pricing better payment systems:

- Distinguishing between services delivered or ordered by a provider versus those delivered or ordered by other providers enables payment systems to give providers accountability for aspects of spending they can control or influence as well as the flexibility to change the way services are delivered in order to impact spending, while avoiding penalizing providers for services and spending they cannot control.
- Accurately determining which types of patients will need more services ensures that payment systems will pay adequately for patients with more serious health problems, and it will encourage providers to take on the care of such patients, rather than discourage them from doing so.
- Identifying areas of overuse and underuse in spending enables prices to be set at levels that are financially feasible for providers while avoiding creating pressure to stint on needed care.

## OBTAINING THE DATA NECESSARY FOR IMPLEMENTATION

In order to develop better spending measures and better payment systems, investments will need to be made in effective data collection and analytics, including:

- All-payer claims data on the services patients are receiving and the amounts being spent on those services;
- Clinical data on patients, particularly data from patient registries; and
- Data on patient outcomes.

A growing number of states and communities are working to assemble these types of data and use them to create information on the quality and cost of care that can help providers, purchasers, and patients to redesign healthcare delivery and payment systems. These state and local efforts are more likely to be successful than a one-size-fits-all national approach. Multi-stakeholder Regional Health Improvement Collaboratives can represent the most efficient and effective way to collect and analyze information in a way that all stakeholders can trust. However, all stakeholders will need to contribute sufficient funding to ensure there are adequate resources available to support this important but complex work.

## CONCLUSION

Controlling healthcare spending without harming patients will depend on active engagement and strong leadership from physicians, hospitals, and other providers. Poorly designed measurement, attribution, and accountability systems not only fail to provide the actionable information providers need, they can discourage providers from making feasible changes by demanding they control services and spending that are beyond their range of influence. Pay for performance and shared savings programs based on spending measures not only fail to resolve the barriers to change created by fee-for-service payment, they can further discourage action by penalizing providers based on flawed systems of assigning accountability.

Fortunately, there are better ways to analyze spending that can help physicians, hospitals, and other providers identify opportunities to achieve better outcomes at lower costs. There are also better ways to pay providers that will enable them to redesign care to implement those opportunities in ways that are financially feasible for them. Although significant investments of time and money will be needed to create better analyses of spending and to design and implement better payment systems, the potential savings from reducing healthcare spending provide the opportunity for a significant return on investment for all stakeholders. Many states and regions already have laid the foundation for this through initiatives to assemble data, create analytic capability, pursue innovative payment reforms, and facilitate collaboration among payers, providers, and other stakeholders. These communities can lead the way for the rest of the country if they receive the necessary support to do so.