

# WHITE PAPER

**Paying Wisely: Reforming Incentives  
to Promote Evidence-Based Decisions  
at the Point of Care**

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## Paying Wisely: Reforming Incentives to Promote Evidence-Based Decisions at the Point of Care

by Eugene C. Rich, Tim Lake, and Christal Stone Valenzano

### Policy Context

Congress has invested heavily in comparative effectiveness research in order to augment the clinical information that patients and physicians need to make sound decisions at the point of care. The availability of research evidence alone, however, does not guarantee that it will be used to make decisions (Timbie et al. 2012; Esposito et al. 2010). We know, for example, that many evidence-based services are underused and that many practices persist despite a lack of evidence for their effectiveness (McGlynn et al. 2003).

In response, policymakers are looking to reform financial incentives in the fee-for-service physician payment system to encourage evidence-based care—that is, decisions based on evidence of treatment effectiveness. Although various proposals to reform provider incentives have been put forth, most focus on transforming the organization and coordination of health care at the system level rather than on how to reward an individual clinician’s use of evidence at the point of care. This paper adds an important perspective by describing how current financial incentives in the fee-for-service system lead to the overuse and underuse of services at the point of care by physicians and other clinicians. It also explores how prominent payment reform options may reward more evidence-based clinical decisions. Based on this analysis, we conclude that a combination of payment reforms—grounded in re-calibrated FFS incentives—may be the most effective way to enhance evidence-based decision making at the point of care.

### Incentives and Decisions at the Point of Care

“Fee for service” (FFS) payment is a longstanding approach to physician reimbursement (Johns 1904). To this day, it represents an important element of physician payment not only in the United States but in such diverse countries as Australia, Belgium, Canada, France, Germany, Japan, and Switzerland (Simoens and Giuffrida 2004). Nonetheless, as G.B. Shaw notably complained, physicians, as sellers of a product for a fee, may have an interest in recommending their services even if it is not in the interests of the buyer (Shaw 1911). In most markets, the buyer can adequately assess whether a service aligns with his or her own interests (*caveat emptor*), but in the case of physicians, the seller has specialized knowledge unavailable to the buyer. The patient, as a buyer of physician services, may be at a further disadvantage if he or she is distracted by pain, impaired by illness, or even unconscious.

Because of these special circumstances, medical services are usefully analyzed from the perspective of principal-agency theory, in which physicians act as patients’ agents under an agreement or contract (Pratt and Zeckhauser 1985; Robinson 2001).<sup>1</sup> Since patients’ interests are furthered when they receive services that are evidence based, the terms of the principle-agent contract will, under ideal circumstances, reward the physician or other clinician<sup>2</sup> recommending evidence-based services to the patient (through incentives that enhance the economic “margin” for such recommendations).

<sup>1</sup> In practice, the agreement is usually between the physician and another “agent” of the patient, a health insurance plan.

<sup>2</sup> Although we use the term “physician” in this paper, our analysis can apply to any clinician who serves as an independent clinical decision maker at the point of care.

## The Clinical Decision-Making Process

Figure 1 shows the decision points involved in addressing a new health concern. First, a patient who is concerned about his or her health must be able to gain the physician's attention in a timely way. Once this happens, the physician assesses and prioritizes the patient's health concerns and considers how best to make a diagnosis determining the likely cause for the patient's health concern. In this diagnostic testing process, the physician chooses a small subset of information sources drawn from the vast menu of possible diagnostic tools (from physical examination to laboratory tests, x-rays, scans, respiratory or cardiac function assessments, and so on). The physician then makes a diagnosis based on this information and recommends a treatment to alleviate the patient's symptoms and aid in recovery.

At important stages, including both diagnosis and treatment, the patient will need to adhere to physician recommendations in order for the diagnosis or treatment to occur; and the physician may or may not play active roles in ensuring adherence. The physician may also follow up with the patient to assess the response to treatment, monitor for complications or side effects, and make needed adjustments in medication dosage or treatment duration. At each of these points, the physician's actions should be guided by the best available evidence.

**Figure 1. Clinical Decision-Making Process**



## Problems in FFS Incentives for Point-of-Care Decision Making

Fee-for-service offers a straightforward way to encourage the delivery of medical services at various points in this clinical decision-making process. Consistent with this observation, surveys suggest that patients as well as physicians are more comfortable with FFS than they are with many other forms of payment (Kao et al. 1998; Shen et al. 2004; Pereira et al. 2001).

Nonetheless, FFS payment may not provide consistent incentives for physicians to recommend services that are evidence based. For example, without careful consideration of the relative payment rates, there may be imbalances in the margins (revenue less costs) that can be earned for alternative approaches to care of the patient's problem. Poorly calibrated FFS incentives (that is, services of limited effectiveness having a high margin relative to other more effective services) could promote deviations from evidence-based practice at various steps in the decision-making process, including over- and underuse of diagnostic testing, over- and underdiagnosis, and over- and underuse of treatment. We will illustrate this problem by considering examples of diagnostic and therapeutic services that physician professional associations have noted should be used differently from common practice (ABIM Foundation 2012).

**Overuse of diagnostic tests.** Imaging for low back pain has been identified as an overused service (American Academy of Family Physicians 2012), and it may be a good example of how FFS incentives can lead to excessive diagnostic testing. In this scenario, a patient with low back pain decides that the pain is concerning enough to consult a physician. If the financial reward for seeing the patient and using imaging to diagnose the pain greatly exceeds the cost, then the physician is likely to make himself or herself readily accessible to patients with these symptoms. Indeed, if the revenue from evaluating and managing patients with back pain exceeds the cost of doing so by a large enough margin, then the physician might even invest in marketing these services to patients. And if the cost to educate the patient about why it makes sense to forgo the imaging exceeds the revenue from doing so by a large enough margin, then the incentive to order an imaging test would be even stronger. The incentive would be stronger still if the test were an efficient way to identify patients who are candidates for treatments that bring in high revenue relative to cost.

Once an imaging study is recommended, the patient must actually adhere to the recommendation if the physician is to be paid. If the FFS incentives are strong enough, the physician may deploy additional resources, such as patient reminder calls, to encourage the patient to move forward with the recommended test.

**Underuse of diagnostic tests.** Spirometry, which measures pulmonary function, is an underused diagnostic test for patients with asthma (American Academy of Allergy, Asthma, and Immunology 2012). This offers an example of how the FFS system may discourage some diagnostic testing. While pulmonary function testing is a reimbursable service under the Medicare physician fee schedule, the payments are modest at \$35 to \$60. Furthermore, special equipment is required in addition to staff or physician time for supervising the test. In the clinical setting, the patient's medical history and physical exam can seem sufficiently informative to patients with chronic asthma. As a result, they may not see any value in spending more of their time (and money) on additional testing. When the FFS incentives for physicians are not strong enough to overcome the patient's inertia, then underutilization of spirometry occurs despite the fact that it is a billable service.

**Treatment overuse.** FFS financial incentives can lead to the overuse of treatment just as they can lead to the overuse of diagnostic testing. Physicians stand to gain by (1) making themselves readily available to patients who need treatments that promise to reward physicians well, (2) erring on the side of identifying candidates for such treatments, and (3) actively encouraging patients to adhere to scheduled treatments and procedures. A wide variety of treatments that pay physicians generously under FFS have been suspected of overuse (MedPAC 2008).

FFS incentives can also lead to the overuse of treatments even if physicians are not paid directly for recommending them. The overuse of antibiotics to treat uncomplicated sinus infections may be a good example (ABIM Foundation 2012). In this scenario, the patient believes that antibiotics can cure a sinus infection (Ackerman and Gonzales 2012). The physician, however, knows that using antibiotics for what is likely, but not certainly, a viral infection carries some risks and few benefits, if any at all. But FFS incentives encourage physicians to quickly settle on an approach that satisfies the patient's expectations (Robinson 2001)—in this case, writing a prescription for antibiotics—because the additional time required to explain why antibiotics may not be indicated is not an easily reimbursable expense under FFS.

**Treatment underuse and undermanagement.** Although there are many points in the decision-making process at which FFS presents incentives to overuse treatments, there can be incentives for underuse as well. If the physician's costs to treat a patient are poorly reimbursed or unreimbursed, then access to at-risk patients may not be enhanced, recognition of the problem may be blunted, diagnostic testing may not be pursued, and treatments may not be selected.

FFS incentives may also steer physicians away from adequately managing chronic illness in general as well as chronic illness in asymptomatic patients in particular. Gastro-esophageal reflux disease (GERD) illustrates this issue well. The treatment for this problem should be adjusted to the lowest possible dose that “achieve[s] therapeutic goals” (American Gastroenterological Association 2012). To do this, physicians must reach out to their asymptomatic patients on GERD medication, reduce the dose as appropriate, follow up to evaluate the patient's response, and further adjust the medication if necessary. But FFS incentives do not effectively reward physicians for making this effort, since typical FFS pays physicians only if they see their GERD patients in the office. Of course, patients untroubled by symptoms are unlikely to make (or keep) an appointment to see their physician, and physicians are unlikely to do the outreach because they are not paid for their staff's time to do this.

## Payment Reform Options and Effects on Evidence-Based Care

Several payment reform options have the potential to better reward certain evidence-based decisions made at the point of care. Some involve recalibrating payments in FFS. Others replace the FFS system altogether with episode-based “bundled” payments. Still others, known as “shared savings”<sup>3</sup> or global payment, cap all spending for care provided to a certain population of patients.

**Recalibrating FFS payment.** The first step in any reform of FFS is to recalibrate incentives to ensure that services of limited effectiveness do not provide a higher margin than those that are highly effective, removing any disincentives to evidence based decisions at the point of care. The existing Medicare fee schedule was originally designed to reflect the relative

<sup>3</sup> We included shared savings/loss in this definition.

resources of providing any service, but many experts note that fees for many services no longer achieve this goal (see, for example, MedPAC 2008, chapter 5, and Ginsburg 2012).

Some experts have proposed reforming FFS further by revising some fees to better reward evidence-based services. Here, some fees would reflect not only the relative resources associated with delivering a service but also the relative effectiveness of the services in achieving desired clinical outcomes (Pearson and Bach 2010; MedPAC 2008). If physicians are paid relatively more for services shown by the evidence to be highly effective and relatively less for services shown by the evidence to have little or no benefit, they would have a stronger incentive to make evidence-based decisions at the point of care. Examples in Medicare include adding payments to better recognize the value of access to primary care, giving tests as a means of preventive care, and providing care coordination services (MedPAC 2008).

Our analysis suggests that reforms involving the recalibration of fees (providing an equal margin of revenue over costs for all services) may work best for addressing problems of underuse. The Medicare experience indicates that if revenues for services are increased so that they exceed the cost of providing these services by a sufficient margin, physicians will respond by delivering more of these services more often (Pearson and Bach 2010; GAO 2009; Lee and Levy 2012; Christianson et al. 2011). Recalibrating how physicians are paid in FFS may therefore be an effective way to address the problem of underused services shown by the evidence to be effective.

On the other hand, reduced payment for high-margin, overutilized tests or treatments may be a less effective means of eliminating current patterns of overuse—especially without unintended consequences. Depending on the alternatives available, overuse might persist unless payments are reduced below marginal cost. In the example of imaging studies for low back pain, there are clearly patients for whom this test is warranted (American Academy of Family Physicians 2012); these individuals could be harmed by “below cost” reimbursement for back imaging. Other overuse problems (like overuse of antibiotics) are not promoted by current FFS payments and are therefore not readily addressed by revising fee schedules (see further discussion below on other options including “pay-for-quality”).

As the preceding discussion indicates, there are a variety of advantages to recalibrating FFS payments such that revenue exceeds the cost by the same margin for each service. Taking this a step further, recalibrating FFS payments such that revenue exceeds cost by a higher margin for different services based on evidence for their effectiveness might further encourage evidence-based care. But this approach raises some daunting practical challenges as well.

For example, there may be strong evidence for the effectiveness of one service, but a widely used alternative may have been subjected to relatively little study. Tying future reimbursements for services to the strength of the available evidence could influence the types of services for which a stronger evidence base is developed over time. Additional problems with this approach to FFS reform include the difficulty of adjusting FFS payments to account for the fact that many services have proven effective for one subgroup of patients but not for others. Determining the higher margin for “highly effective” services would create yet another policy challenge. In particular, how much higher should the fee for the effective service be, and what value would one place on greater effectiveness? Finally, as research on services and treatments continues, so does the body of evidence continue to change, and with it comes the challenge of regularly adjusting the fee schedule based on the latest studies.



**FFS with P4Q.** Adding payments for physicians who meet standards assessed through quality metrics—known as “pay for quality,” or P4Q—could address some of the limitations of simply recalibrating FFS payments. For example, physicians who prescribe antibiotics appropriately or manage chronic conditions like GERD in better way could be rewarded by appropriate P4Q. For imaging to diagnose low back pain, P4Q could reward evidence-based test-ordering.

For such quality measures to be effective in guiding point-of-care decisions, they need to be focused in high priority areas. Physicians make thousands of decisions in a typical day (Casalino 2010; Yarnall et al. 2003; Bates et al. 2003), so any attempt to reward every point-of-care decision through P4Q is doomed to fail. Furthermore, the conflicting signals that physicians receive from multiple payers must be eliminated to ensure that there are clear and consistent performance measures to promote evidence-based practice. Finally, appropriate risk adjustment and benchmarking are needed to ensure that the measures are fair and transparent, and that the signals promoting point-of-care decisions are clear (Cromwell et al. 2011).

**Episode-based payment.** Other approaches to physician payment reform fundamentally alter or replace the current FFS system. Prominent among them in current policy discussions is episode-based payment. Here, payments are made not for individual services but for a larger “bundle” of services expected to be provided during an episode of care or illness (Pham 2010; Hussey et al. 2012). As in current FFS, bundled payments are not inherently designed to reward specific evidence-based decisions made at the point of care. Instead, bundled payments provide incentives for constraining the overall volume of all services identified within the bundle or episode, and the incentives for constraint are strongest for the most expensive services.

Episode-based payment is often praised as a potentially effective means of revising incentives to reduce unnecessary services that would otherwise be provided during an episode of care (such as prescribing overused tests for back pain). The rationale for the approach is that with a fixed payment for an episode of illness, a physician could make evidence-based recommendations for services because he or she is no longer receiving a fee for each service delivered.

One challenge in episode-based payments is that they may increase the problem of overdiagnosis, since payments may be tied to the identification of episodes of illness. At worst, episode-based payments may provide incentives for providers to identify an increased number of episodes in a population, especially for episodes that have high overall economic margins.<sup>4</sup> In these circumstances, providers would be rewarded for increasing patient awareness of symptoms and expanding the use of tests to detect illness episodes. At the same time, and for these reasons, episode-based payments may also be an effective tool for addressing the problem of underdiagnosis of certain conditions.

Episode-based payments may also worsen incentives for rectifying problems of underused tests or treatments in patient management (such as the PFTs in asthma or medication adjustment in GERD). The use of episode-based payment to address the problem of overused treatments is also complex because major treatment decisions can become part of the definition of an episode. In some cases, the episode-based payment is based on a hospitalization

<sup>4</sup> As with FFS, this problem in theory could be addressed with recalibration of episodes, but appropriate pricing of episodes (as opposed to discrete services) may be especially challenging. Underpricing of episodes can have the opposite effect of providers avoiding the identification of episodes.

decision; in others, it is based on a surgical treatment decision. In others still, it is tied to the diagnosis of an illness. Generally speaking, episode-based payment can be an incentive for evidence-based decision making with respect to overused services during an illness episode, but this payment approach may also lead to the overuse of the tests or procedures that can initiate an episode of care in the first place.

Episode-based payments can also be adjusted through P4Q so that incentives for reducing the volume of services within an episode are combined with incentives for delivering evidenced-based care. P4Q adjustment may be particularly helpful for ensuring that the use of certain evidence-based services is not reduced because of the general incentive to reduce the volume of services during an episode of care. For example, payers could combine episode-based payments with P4Q rewards for the indicated use of PFTs in asthma patients (Prometheus Payment, Inc. 2008; Paulus, Davis, and Steele 2008), thus encouraging physician efforts to promote patient adherence to evidence-based recommendations.

Unfortunately, even if P4Q adjustments could address the potential problems of the underuse of diagnostic tests or treatments in bundled payments, other risks for which P4Q may not provide an answer remain. Episode-based payment, compared with FFS, may not directly reward as many physician decisions related to overdiagnosis or overuse, but it can still encourage physicians to identify problems, and choose tests and treatments. Furthermore, a physician's decisions rewarded under episode-based payments can determine very large differences in provider payment. The widespread application of robust appropriateness criteria to episode definitions might address some of the risk posed by the incentive to over-treat, but the problem that overdiagnosis identifies illness episodes might pose an ongoing challenge to controlling health care costs.

**Global payment (capitation).** In global payment, or capitation, providers receive a fixed payment per patient per year regardless of the services provided to that patient. The incentives for point-of-care decision making presented by this reform option differ dramatically from the incentives in FFS. Many of the physician behaviors that seem desirable to patients at the point of care become sources of financial loss for physicians paid on a capitated basis.

Consider again the patient with low back pain. In global payment, the physician has incentives to reduce a patient's access to expensive clinical services. If the patient nonetheless presents to the physician with this concern, capitated payment will reward the physician for perceiving a lower likelihood of conditions that require further testing or expensive treatment. The capitated physician may also perceive positive incentives for convincing patients of the risks of additional imaging or costly treatments.

Concerns about this bias toward inaction and undertreatment have long been at the core of physician and patient anxiety about capitation as a mechanism for rewarding clinical practice (Lesser and Ginsberg 2001; Christianson 2001). Consider our examples of underused tests or treatments (for spirometry in patients with asthma or medication adjustment in GERD); only if the cost savings for appropriate management are sufficient will the capitated physician's practice be motivated to invest the resources needed to manage these chronic conditions at an appropriate level.

**Summary of reform options and their effects on evidence-based decision making.** As shown in Table 1, the options for reforming physician payment vary in their ability to promote evidence-based decision making at the point of care. The check marks identify



**Table 1. Payment Reform Options**

	Revised FFS	FFS w/ P4Q	Episode-based payment	Global payment
Overused test	+/-	+/-	+/-	√
Underused test	√	√	+/-	+/-
Over DX		+/-	+/-	√
Under DX	√	√	√	+/-
Overused Rx	+/-	+/-	+/-	√
Underused Rx	√	√	+/-	+/-
Undermanaged Rx		+/-	+/-	+/-

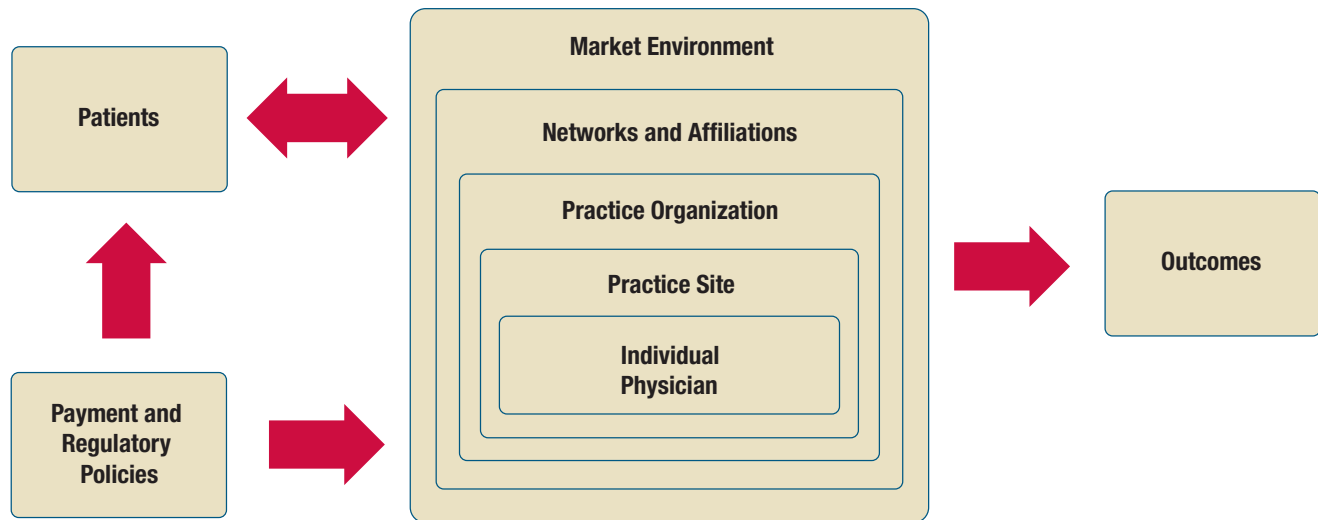
reforms that, compared with FFS, consistently address a particular problem. A {+/-} identifies reforms that can sometimes address a problem.

As discussed, recalibrated FFS incentives can most readily and consistently address the problems of underused services (tests or treatments) and the underuse of diagnostic testing; global payment is most likely to effectively address the overuse of diagnostic tests and services. Although episode-based payment can address the overuse of diagnostic testing within episodes, it can promote the overuse of diagnostic testing for conditions associated with an episode. The role of episode-based payment in the overuse of tests and treatment is fully contingent on how decisions about these services are incorporated into the definition of an episode. The P4Q strategies can be added to FFS, episode-based, and global payment to dilute the disincentives to evidence-based decision making, but in order to be effective, they will need to be carefully prioritized and executed.

### Physicians in Organizations: Implications for Evidence-Based Decisions

We have discussed episode-based payment and global payment as if individual physicians or their practices would receive these payments directly. In theory, solo physicians (or practices) could control all the resources (imaging centers, hospitals, post-acute care facilities) relevant to managing an episode of illness or a population of patients. In practical terms, however, most physicians operating under episode-based or global payment systems would be paid by a larger provider entity that receives such payments from payers and manages all clinical resources and personnel. The incentives presented to this larger entity would therefore be translated through internal management down to the physician or other clinician making decisions at the point of care.

As shown in Figure 2, organizations have the potential to influence physicians on a variety of levels regardless of whether the physicians are employees or contractually affiliated with the organization in other ways. In this complex environment, organizations can use various tools to transmit incentives to physician “employees” that promote or discourage evidence-based decision making. Of course, direct financial incentives can be incorporated into the compensation of physician employees or built into subcontracts with affiliated physicians not directly employed (Kralewski et al. 2000). Since physicians employed by organizations may have substantially less direct control over resources and care processes than do

**Figure 2. Organizational Influences on Point-of-Care Decisions**

Source: Lake et al. 2012

owners of solo practices or small partnerships (Town et al. 2004), there are also important indirect incentives that can reward evidence-based decision making at the point of care. For instance, physician workload can be an important influence on decision making (Town et al. 2004), so the policies and assignments set by physician employers can be powerful incentives. Examples include numbers of scheduled patients, on-call assignments, and other burdensome professional responsibilities.

Organizations that employ physicians can manipulate the work environment in other ways that reward certain clinical decisions; these tactics include allocating (or withdrawing) talented support staff and making it easy or difficult to order tests or consultations. Other mechanisms to influence desired point-of-care decisions include procedures for recruiting and/or retaining affiliated physicians, allocating professional amenities (access to state-of-the-art medical technology, opportunities for travel and advancement), and the specialty focus and practice style of the physicians chosen for leadership positions in the organization.

Large provider organizations will not necessarily be more committed to evidence-based decision making than will solo practices. Even among academic medical centers, which are committed to both research and the application of science to medical care, clinical practices can deviate substantially from current available evidence (Ayanian and Weissman 2002). Policymakers should therefore assume that large provider organizations, like any other large enterprise, will respond to the incentives presented to them and act to influence their employees' decisions at the point of care according to their own interests.

### The Path Forward

FFS payment will likely remain an element of physician reimbursement for years to come (Ginsberg 2012). Therefore, recalibrating fees to reflect true physician cost is an important first step and should provide the basis for any additional reforms to better reward evidence-based decision-making.

In addition to a needed initial recalibration of physician fees, efforts to reform how physicians are paid will be aided by ongoing assessment of emerging practice trends relevant to diagnosis and management. Where there are signs that services of unclear value are being overused, current fee schedules should be reassessed for the emergence of unrecognized overpayment; recent research has demonstrated several mechanisms whereby this may occur (MedPAC 2007, 2011; Hayes, Pettengill, and Stensland 2007). Where there is persistent underuse of highly effective services, fees must be re-evaluated as well. Special circumstances might even justify additional incentives to “jump-start” more evidence-based practice. Payment strategies currently used to reward primary care practices in several medical home demonstrations are examples of what could be done. Enhanced FFS payment could reward access and comprehensive physician assessment, P4Q payments could promote timely provision of key evidence-based services, and per-patient care management payments could encourage the development of the care coordination and information technology infrastructure needed to improve chronic disease care (Berenson and Rich 2010a, 2010b).

However, re-calibrating FFS will not address all the current problems. For persistent service overuse, other incentives may be needed to promote more evidence-based decision making at the point of care. P4Q rewards (or penalties) tied to overuse measures could be one approach. Targeted use of the bundling of existing physician fees (like the “global surgical fee”) or broader episode-based payments could also be helpful in managing some overuse. Variations of population-based payment (capitation, for example) provide the most reliable incentive to reduce services, but they do not reliably promote evidence-based care. For some chronic conditions, the intermediary receiving the capitated payment can realize near-term financial gains through improved chronic disease management. However, in many patients, more evidence-based point-of-care decisions confer near-term costs, with savings realized only many years afterwards or not at all (Bloomenthal and Ferris 2004; Town et al. 2004).

Thus, a blending and targeting of payment reforms may ultimately be the best strategy to increase the use of evidence-based clinical decision making. Policymakers and other stakeholders can start with a recalibration of FFS incentives as the foundation for any reform. The use of further incentive reforms can be guided by an assessment of patterns of care relative to evidence-based practice. Armed with this information, stakeholders can make targeted use of additional reforms such as P4Q, episode-based payments, or global payment to address persistent deviations from evidence-based care. Our analysis demonstrates that no single payment reform will consistently reward evidence-based decision making at the point of care. Nonetheless, through appropriate blending and targeting, stakeholders can make use of each payment reform’s strengths and mitigate its weaknesses to achieve the desired goal.

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