Alongside a shift toward value-based payments for populations, the US healthcare system is entering an era of precision medicine centered on tailoring treatments to individuals. Yet today, although value-based payment and insurance design encourage physicians and patients to think about cost and quality, neither payment systems nor benefit design explicitly take into account the appropriateness of a service for a given patient in a given clinical scenario.

Currently, a physician or hospital that delivers the same service to 2 patients in different clinical situations is reimbursed an identical amount. A coronary stent for a heart attack (on average, higher value) or stable angina (on average, lower value) garners the same payment, as does a magnetic resonance imaging scan for uncomplicated back pain (on average, lower value) or back pain with neurologic signs (on average, higher value). The patient also faces identical cost sharing across higher- and lower-value scenarios. However, the appropriateness of these services clearly varies by patient factors and the clinical situation.

 Appropriateness is central to value. The benefit of a given service depends not only on its quality, but also on its clinical indication. Payment systems and benefit design could be improved by building appropriateness into physician and patient incentives, allowing them to complement population-level incentives, such as financial risk, that lack individual-level nuance. Within the existing payment and benefit design infrastructure, one potential approach is the incorporation of an “appropriateness modifier” that varies payment and cost sharing based on the clinical appropriateness of a service in a given situation.

Designing an Appropriateness Modifier

For physician payment, an appropriateness modifier would adjust an existing fee upward when a service is delivered in a high-value situation or downward when it is delivered in a low-value situation. The indication can be based on patient characteristics, such as comorbidities or clinical presentation. The modifier could include only upward adjustments (analogous to “1-sided” population-based

ABSTRACT

The United States is simultaneously moving toward value-based payments for populations and precision medicine for individuals. During this evolution, innovations in payment and delivery that enhance tailoring of treatments to individuals while improving the value of care are needed. We propose one such innovation that would allow physician payment and patient cost sharing to better reflect the value of care by allowing the appropriateness of a service for a given patient in a given clinical situation to play a more meaningful role in the design of such incentives. We introduce the idea of a payment modifier, based on indication and appropriateness, and discuss its advantages and challenges to implementation.

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payment models without financial risk) or only downward adjustments (analogous to lowering fees for “never events”). Alternatively, the appropriateness modifier could include both upside and downside adjustments (analogous to “2-sided” alternative payment models with shared savings and shared risk). Because physicians tend to evaluate payment changes by their impact on income compared with a reference point, such as the prior year’s income, 2-sided incentives may be necessary to promote higher-value decisions while encouraging buy-in.

For patients, cost sharing could be adjusted to mirror the incentives in physician payment. Co-payments could be lowered to not blunt demand for certain services in highly appropriate contexts (eg, interventions during urgent situations) or raised to discourage other services in less appropriate situations (eg, elective services that lack proven benefit relative to conservative management). Combining the appropriateness modifier for physician payments with an analogous clinically nuanced modifier for patient cost sharing could be synergistic in encouraging physicians and patients to make higher-value choices. Moreover, modifying the existing structure of co-payments using clinical appropriateness would be transparent and familiar to patients, although it would need to be implemented and communicated in a simple manner.

Because the disutility of a loss (lower fee or higher co-payment) is roughly twice the utility of an equal-size gain (higher fee or lower co-payment), the former is likely a more powerful tool for affecting behavior than the latter. However, even if total physician payments or patient cost sharing remained unchanged, patients would still benefit if the proportion of services delivered in appropriate scenarios increased. How large a change in payment optimally balances budgetary effects with behavioral response is an empirical question requiring further evidence to elucidate.

As a starting point, an appropriateness modifier could be implemented among services for which clear differences in appropriateness are observable and supported by guidelines. This initial set of services may be small, given the lack of clinical detail in administrative data. However, the physician-driven Choosing Wisely recommendations offer candidate services. Examples of more appropriate and less appropriate situations, respectively, could include imaging for carotid artery stenosis in symptomatic versus asymptomatic patients, stents in unstable versus stable angina, imaging for headache or low back pain with versus without red flag signs (eg, neurologic deficits or fever), and conventional versus hypofractionated irradiation for certain malignancies where they have equal efficacy. Given that the value of a service is more likely to be a continuum rather than a binary state of high versus low, distinguishing highly appropriate and less appropriate situations for a particular service might capture a small subset of the situations in which it is delivered, leaving the remainder under status quo incentives.

### Advantages of an Appropriateness Modifier

The appropriateness modifier would offer several advantages. First, the definition of “appropriateness” would derive from practice guidelines based on the clinical literature. It builds on the progress of value-based insurance design (which focuses on the average value of a service) by considering the situation-specific value of a service for a given individual. Unlike the blunt overarching nature of population-level financial risk, this clinically nuanced tool that reflects the scientific evidence generated by the physician community itself may more easily garner physician support.

Second, the appropriateness modifier can be built into fee-for-service without requiring downside risk, although it could be similarly implemented in the fee schedule underneath a risk contract. Unlike the new Merit-based Incentive Payment System under the Medicare Access and CHIP Reauthorization Act, which increases or decreases all of a physician’s fees by a certain percentage, the appropriateness modifier impacts only those services for which evidence and guidelines can distinguish higher- from lower-value scenarios.

Third, unlike bundled payments, which have an unintended consequence of rewarding bundles triggered in lower-risk patients or less appropriate situations, thus increasing revenue and raising quality scores that are easier to achieve with lower-risk patients, the appropriateness modifier directly focuses on the clinical indication and reduces the incentive to generate volume in less appropriate situations. At the same time, unlike some managed care techniques that seek to directly constrain utilization, the value modifier retains the patient’s and physician’s freedom of choice among treatment options—indeed, even the lower-value options—while allowing spending to reflect the value of the clinical situation.

Fourth, the appropriateness modifier would enable specialists to have greater control over value through their own decisions rather than relying on primary care physicians to drive value through

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**TAKEAWAY POINTS**

As the United States moves toward value-based payments for populations and precision medicine for individuals, innovations in payment and delivery that enhance tailoring of treatments to individuals while improving the value of care are needed.

- Incorporating the appropriateness of a service into physician payment and patient cost sharing may encourage the delivery of higher-value care.
- Building appropriateness into incentives has advantages, including reliance on evidence-based practice guidelines, coexistence within fee-for-service and prospective payment models, and maintaining physician and patient autonomy.
- Incentives for appropriateness could be implemented using a payment modifier, which has advantages and limitations in the current healthcare system.
referral decisions, a process that could create tension between colleagues. Because the modifier can live within and be synergistic with alternative payment models, aligning specialist incentives with primary care physician incentives may enhance behavior change. Furthermore, aligning physician incentives with patient incentives could facilitate shared decision making.

Lastly, incorporating the appropriateness modifier into physician fees could have beneficial spillover effects outside of physician services. These include spending on facility-based services (which generate separate facility fees) and on pharmaceuticals (which often have separate costs, such as the bonus Medicare pays to physicians prescribing chemotherapy).

Challenges of an Appropriateness Modifier

Implementing an appropriateness modifier involves some challenges. Because diagnosis codes help determine appropriateness, an incentive to “upcode” patients into highly appropriate situations (through, for instance, the addition of diagnosis codes) would exist. Although upcoding is similarly a concern under population-based payment models with risk-adjusted spending targets, it could be mitigated by the inclusion of clinical data in determining appropriateness—data that are less susceptible to subjectivity.

The appropriateness modifier may complicate decision making. Physicians frequently find prior authorization burdensome, and any additional documentation required to justify higher-value situations may seem similarly unappealing. However, if implemented as a type of decision support tool (eg, with electronic prompts at the point of order entry), payers or physicians could render this complexity an advantage and provide a compelling alternative to prior authorization or other blunt utilization management techniques.9

Finally, the set of services for which appropriateness is clearly distinguishable using existing administrative data today is limited. Yet with greater detail in diagnosis codes through International Classification of Diseases, Tenth Revision and greater availability of clinical data through electronic health records, payers and physicians could likely expand the set of services for which appropriateness is discernible, potentially influencing clinical areas thus far untouched by value-based insurance design.

Moving American medicine toward value for populations, yet precision for individuals, will require innovations in payment and delivery. Incorporating a clinically nuanced measure of appropriateness into payment and benefit design could offer a meaningful next step. ■

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Author Affiliations: Department of Health Care Policy, Harvard Medical School (ZS), Boston, MA; Department of Medicine, Massachusetts General Hospital (ZS), Boston, MA; Department of Medical Ethics & Health Policy, Perelman School of Medicine (ASN, EJE, KGV), and Center for Health Incentives and Behavioral Economics, Leonard Davis Institute (ASN, EJE, KGV), University of Pennsylvania, Philadelphia, PA; Center for Health Equity Research and Promotion, Philadelphia Veterans Affairs Medical Center (ASN, KGV), Philadelphia, PA.

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Address Correspondence to: Zirui Song, MD, PhD, Department of Health Care Policy, Harvard Medical School, 180A Longwood Ave, Boston, MA 02115. Email: zirui_song@post.harvard.edu.

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