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EDITORIAL

Editorial

The End of Hospital Cost Shifting and the Quest for Hospital Productivity

Although perennially relevant, investigation of the effect of Medicare hospital payment changes on hospital and health system performance has heightened salience today. The 2010 Patient Protection and Affordable Care Act (Public Law 111–148; hereafter, ACA) will permanently reduce the Medicare payments hospitals would otherwise receive. Its “productivity adjustment” will scale payments downward by the average rate at which private nonfarm businesses’ productivity increases. That rate has been estimated to be 1.1 percentage points per year (Shatto and Clemens 2011), larger than historical, annual hospital productivity gains (Cylus and Dickensheets 2007–2008). Unless hospitals become more productive, they will have to find other ways to handle lower growth in Medicare payments. How will the industry respond?

Some observers do not believe all hospitals will be able to adequately respond, or at least not in ways Congress will tolerate (Antos 2013). Actuaries for the Centers for Medicare and Medicaid Services (CMS) have estimated that by year 2040, Medicare payment rates to hospitals will be half those of the commercial market, and lower still thereafter (Shatto and Clemens 2011). If such a large divergence between Medicare and commercial market rates occurs, it may create access problems for Medicare beneficiaries, motivating Congress to moderate Medicare’s hospital payment schedule (Newhouse 2010). A premise of this scenario, and of the CMS analysis (Shatto and Clemens 2011), is that hospitals will not change private prices along with Medicare’s. Recent work, including the article in this issue by Wu and White (2013), casts doubt on this premise.

HOSPITALS’ THREE OPTIONS

The literature explores three fundamental ways hospitals might respond to Medicare payment shortfalls. They are not mutually exclusive. One

hypothesis is that hospitals will “shift costs” to other payers, that is, raise prices charged to private insurers in a (causal) response to Medicare payment shortfalls, offsetting them. If diverging Medicare and commercial market prices pose an access problem, this would exacerbate it.

Cost shifting has been and continues to be a concern of the hospital and insurance industries. Claims of large rates of cost shifting that would drive up premiums were made during the run-up to passage of the ACA (Frakt 2011) and more recently (Green Mountain Care Board 2013). However, most analysis that warns of large cost shifts confuse (static) price discrimination from (dynamic) cost shifting does not consider the counterfactual that hospitals could raise private prices commensurate with their market power in the absence of a Medicare payment shortfall, and/or presumes hospital costs are immutable (Reinhardt 2011). Although there are circumstances under which hospitals could and did cost shift at high rates (e.g., in the 1980s; see Cutler 1998), recent work suggests that it is a far less pervasive and large phenomenon today than it might have once been (Frakt 2011).

Indeed, recent studies have found no evidence of cost shifting. In their analysis of cost shifting, Dranove, Garthwaite, and Ody (2013) exploited the downward financial shock of the 2008 market collapse, arguing that hospitals would not differentiate between loss of endowment revenue and a reduction in resources from a public payer. The authors found no evidence of cost shifting by hospitals, on average. However, a subset of high-quality hospitals (<10 percent of the total treating <20 percent of all patients) did raise private payer prices, exploiting previously untapped market power.

Exploiting exogenous changes in Medicare hospital payment policy from 1995 to 2009, White (2013) found that a 10 percent reduction in the Medicare payment rate was associated with a 7.73 percent reduction in the private rate. This price spillover is the antithesis of cost shifting. Finally, He and Mellor (2012) also found evidence consistent with spillovers. In their analysis of outpatient surgical procedures at Florida hospitals during 1997–2008, they found that Medicare rate cuts were associated with an increase in volume from private insurers that paid fee-for-service prices. This volume shifting is inconsistent with cost shifting and is expected to accompany price spillovers. It suggests hospitals reduce private prices (though still keep them above

Address correspondence to Austin B. Frakt, Health Economist, VA Boston Healthcare System, Boston, MA; e-mail: frakt@bu.edu. He is also Associate Professor, Boston University School of Medicine and School of Public Health, Boston, MA, and Adjunct Senior Fellow, Leonard Davis Institute, University of Pennsylvania, Philadelphia, PA.

Medicare rates) in response to lower Medicare ones to attract a larger volume of higher paying patients (Morrisey 1994).

Thus, cost shifting by hospitals now appears to be largely infeasible. Today's insurers may possess market power that offsets that hospitals might otherwise exploit to raise prices. Put another way, hospitals may have already exploited their market power and lack further leverage to raise private prices. In light of the evidence, any continued assumptions that most or all of the shortfalls in Medicare rates can be shifted to private payers (PWC [Price Waterhouse Coopers] 2009; Dobson et al. 2009) should be relegated to the dustbin of history.

A second way hospitals might respond to shortfalls in Medicare payments is by cutting, rather than shifting, costs. Because hospital operations are typically consistent across publicly and privately insured patients, cost cutting due to shortfalls in Medicare revenue could have a spillover effect, leading to lower private prices (White 2013). Dranove, Garthwaite, and Ody (2013) found evidence of cost cutting in response to the 2008 market collapse. Hospitals reduced spending on advanced medical records and stopped offering unprofitable services like those available at trauma centers and substance use treatment facilities.

Cost cutting raises the concern that what is cut will harm patient care. For example, if they cut nursing staff, will the hospitals deliver the same quality of care (Needleman et al. 2011)? The cuts in advanced medical records, trauma centers, and substance use treatment facilities found by Dranove, Garthwaite, and Ody (2013) could be reductions in quality. So, though hospitals may not cost shift, it is not necessarily wrong to presume that patient welfare could be affected by reduced revenue.

A third possibility is that hospitals will respond to revenue shortfalls with a reduction in overall profit margins. Loss of profitability increases the possibility of closures, mergers, and acquisitions (Sloan, Ostermann, and Conover 2003). These could ultimately impact patient care and private prices to the extent that markets lose hospitals and through consolidation that concentrates market power in fewer hospitals (Gaynor and Town 2012).

WU AND WHITE

The article in this issue by Wu and White (2013) is a timely and rigorous analysis of hospitals' long-run response to changes in Medicare payments for inpatient services. Complementing their prior work (Wu 2010; White 2013), Wu

and White (2013) largely focused on hospital cost cutting and profit loss in response to Medicare payment shortfalls.

Exploiting exogenous changes in Medicare hospital payment policy, as each author did in earlier work (Wu 2010; White 2013), the authors examined their effect on hospital total revenue, operating expenses, profits, assets, and staffing over the years 1996–2009. Their findings are inconsistent with cost shifting: a \$1 reduction in Medicare inpatient revenue is associated with an even larger reduction (\$1.55) in total revenue, consistent with price spillovers (White 2013). In part, this undermines the assumptions of CMS actuaries discussed above (Shatto and Clemens 2011). If changes in private prices mirror those of Medicare, divergence between the two sets of prices develops more slowly.

Wu and White found that nearly all of the reduction in total revenue (90 percent) was offset by lower operating expenses. Of that, nearly 60 percent was in personnel, and the remaining was in non-personnel expenses. Reduced Medicare payments did not result in statistically significant reductions in profits among not-for-profit hospitals, because they fully offset lost revenues with reduced operating expenses. However, for-profit hospitals offset nearly all of Medicare inpatient revenue reductions with lower profit, suggesting they were operating closer to minimum cost than not-for-profit hospitals. Hospitals that lost Medicare revenue over the period of study offset 12 percent of total revenue losses with reduced profit, but hospitals that gained Medicare revenue over the period of study retained almost 30 percent of total revenue gains in profit. This highlights an asymmetry in favor of profit protection: When hospitals lose revenue, they offset most of it by cutting costs. When they gain revenue, relatively more of it is absorbed as profit.

Turning to implications of the ACA, Wu and White simulated the effect of the annual 1.1 percent productivity adjustments over 10 years. The strength of this simulation is that magnitudes are similar to those observed in their sample. They estimated that the productivity adjustments would result in a reduction in hospital revenue of \$207 per discharge equivalent (DCEQ, a measure that accounts for hospital outpatient as well as inpatient services), close in magnitude to the reduction observed in their data over 1996–2009. The resulting loss of profits, about \$30 per DCEQ, implies an increase in hospitals operating at a loss of 15 percentage points. This is consistent with the concern expressed by Richard Foster, the former Chief Actuary of Medicare, that 15 percent of hospitals would become unprofitable in 10 years (Foster 2011).

CUTTING FAT OR MUSCLE?

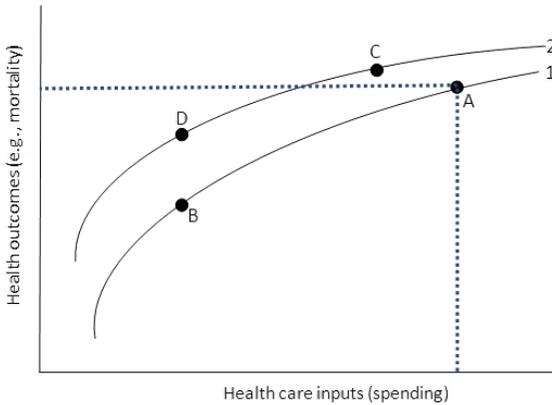
When hospitals cut costs, do they cut fat or muscle? That is, do they cut unimportant amenities and waste (fat), making themselves more efficient at converting resources to health? Or do they trim services in such a way that harms care (muscle)? Put another way, to what extent can hospitals become more productive at converting resources to health?

Recent literature on this question suggests hospitals cut some muscle when they cut costs. Wu and Shen (2011) found that hospitals that faced large payment cuts from the 1997 Balanced Budget Act (Public Law 105-33; hereafter BBA) cut operating costs and staff and experienced increased mortality rates of heart attack patients relative to those seen at hospitals that faced smaller cuts. They calculated that a 1 percent cut in payment results in a 0.4 percent increase in heart attack mortality rates. Using Medicare data from 1997, 2001, and 2005, Lindrooth et al. (2013) found that decreases in hospital service line Medicare profitability was associated with an increase in risk-adjusted 30-day mortality and the relationship was stronger for unprofitable services than profitable ones. They concluded that payment policies that were more sensitive to the distribution of profitability across services could lead to up to 13,000 fewer deaths per year.

These studies suggest that hospitals that cut costs in response to Medicare payment shortfalls are unable to do so in productivity enhancing ways. This is illustrated in Figure 1, which shows two hypothetical hospital production functions relating health care inputs (spending) to health outcomes (like mortality) (Chandra, Jena, and Skinner 2011). Consider a hospital operating at point A on curve 1 (the lower curve) that is then faced with a cut in inputs (Medicare payment reductions). If the hospital is unable to change its production function, it can only move along curve 1. If it then addresses the shortfall by cutting costs, it necessarily leads to worse outcomes (higher mortality): point B on curve 1. Because B is on the same production function as A, the hospital has not become more productive in converting spending to health.

Lindrooth et al.'s (2013) simulation of a more targeted reform that cuts Medicare payment without increasing mortality as much suggests cost cutting need not be so detrimental to health outcomes. Analysis of Blue Cross Blue Shield of Massachusetts' Alternative Quality Contract (AQC) does as well (Song et al. 2011, 2012). The AQC, which incorporates global budget and pay-for-performance principles, began in 2009 with 7 physician organizations in Massachusetts and had 15 participating groups by 2012 (Song et al. 2013). Investigators found that the AQC was associated with spending reductions of

Figure 1: Movements of and along Hospital Production Functions



Notes. Shifting the hospital input–outcome operating point from A to B is a large, downward movement along a hospital production function. As the production function has not shifted, it does not represent a change in productivity. It is associated with a large decrease in spending and a substantial worsening of outcomes. Shifting from A to C is an upward shift in production function (curve 1 to curve 2)—an increase in productivity—along with a small downward movement along it. The result is a small decrease in spending and a small improvement in outcomes. Shifting from A to D is also an increase in productivity, but combined with a large, downward movement along the production function. It is a trade-off of a large reduction in spending for a small degradation of outcomes.

1.9 and 3.3 percent in its first and second years, respectively, along with evidence of improvements in quality. Although not a hospital-specific payment innovation, the AQC is evocative of the type of productivity gains one might hope hospitals would achieve with similar incentives called for by the ACA, such as accountable care organizations (ACOs) and bundled payments (Frakt and Mayes 2012). Early evidence is encouraging that ACOs can improve quality without increasing costs to Medicare (Gold 2013). However, the implications of ACOs and the consolidation they encourage on private prices have not yet been directly assessed (Frakt, Pizer, and Feldman 2013).

Returning to Figure 1, reductions in cost and improvements in quality such as those achieved by the AQC are consistent with a movement from point A on curve 1 to point C on curve 2. In other words, they are a combination of an

upward shift in the productivity function and a downward movement along it. The former is a productivity enhancement. The latter is a trade of lower spending for poorer outcomes, holding the production function fixed.

The ACA includes both a blunt Medicare payment cut (the predicted 1.1 percent annual productivity adjustment) and designs for incentives for higher quality and better outcomes (like ACOs). Evidence suggests the former is not productivity enhancing, but hope remains that the latter may be. A key question is how the two work together. Will they move a hospital from point A to point B (lower spending with much worse outcomes) or C (lower spending with better outcomes)? Another possibility is a trade-off of substantially lower spending (relative to trend) for somewhat poorer outcomes, like point D.

Such a trade-off calls to mind what Mark Pauly expressed in a 2011 paper in *Health Affairs*, “Perhaps a little less quality for a lot less money might be acceptable to consumers and taxpayers, as we work to keep medical spending from siphoning off funds required for other needs” (Pauly 2011). Whether it is acceptable or not, it may be what consumers and taxpayers get.

CONCLUSION

It is not a foregone conclusion that our health system may suffer worse outcomes as we moderate health spending. Policies in place or new ones could put enough emphasis on productivity enhancements to avoid that result. Comparative effectiveness research holds great promise in this regard (Frakt and Carroll 2013), provided payers are able to put in place and sustain value-based incentives to discourage use of technologies and services identified as low value and encourage ones of high value (Chernew, Rosen, and Fendrick 2007; Pearson and Bach 2010; Thomson, Schang, and Chernew 2013).

A fundamental truth is that we do not yet know how to reliably drive the system toward higher productivity or whether existing, promising models can be generalized (Frakt and Mayes 2012). Nevertheless, as encouraged by the ACA and through private-sector initiatives like the AQC, the hope is that new, successful models will emerge.

Meanwhile, another fundamental truth has emerged from the literature: As public payments to hospitals are moderated, private ones do not increase. The era of hospital cost shifting appears to be over. Chapin White wrote, “My hope is that the dynamic cost-shifting theory is hereby put to rest” (White 2013). In light of recent work, including that of Wu and White (2013), it is my conclusion that, for now, it has been.

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Austin B. Frakt

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