Can Public Reporting Cure Healthcare? The Role of
Quality Transparency in Improving Patient-Provider
Alignment

1 Introduction

Government and private organizations are increasing efforts to measure and publicly report clinical outcomes, a practice known as “public reporting.” For example, in 2005 the Center for Medicare and Medicaid Services (CMS) launched the website Hospital Compare to provide information about the quality of care at over 4,000 Medicare-certified hospitals. In 2011, the U.K. Prime Minister David Cameron pledged that the National Health Service (NHS) would make performance data publicly available, and announced that “Information is power, and by sharing it, we can deliver modern, personalized, and sustainable public services” (Henke et al. (2011)). Other examples of increasing transparency of healthcare outcomes include CalHospitalCompare.org, the ProPublica Surgeon Scorecard, the Compare Hospitals site by the Leapfrog Group, and the hospital rating websites of Healthgrades, Consumer Reports, Yelp, and U.S. News.

Despite the common sense appeal of increasing quality transparency, the macro level data suggest that the reality of public reporting initiatives has fallen short of the promise. The simplest explanation for this is that patients are not aware of (or able to understand) the information being provided. If this is the only obstacle, then it is reasonable to assume that policymakers will eventually figure out how to make publicly reported healthcare information usable (e.g., by improving websites and/or engaging health care professionals to help patients interpret the data). It is possible, however, that more fundamental issues in the healthcare sector may be impeding progress toward quality-based decision-making by patients. The first is that quality may not be as easily measurable in healthcare as is in other industries, and that the healthcare sector uses wrong measures of quality. However, a recent study by Doyle et al. (2017) concluded that CMS and other scoring systems do measure quality in a meaningful way. The second is that healthcare is exceptional and contains idiosyncratic factors that prevent typical market forces from leading consumers to choose higher quality providers (see, e.g., Cutler (2011), Skinner (2012), and Chandra et al. (2016)). But recent studies suggest that healthcare is not as exceptional as previously thought. For example, Chandra et al. (2016) reported robust evidence that the healthcare sector has much in common with other sectors, and that higher quality hospitals do indeed gain market share over time. This bolsters earlier empirical studies by Dranove et al. (2003) and Dranove and Sfekas (2008) that found evidence that patients do respond to quality information of the type provided through public reporting initiatives.

Taken together, these studies support the view that increasing quality transparency will eventually alter patient decisions and the healthcare market. Our goals are to understand the implications of this impending shift and to use this understanding to identify policy options for leveraging quality transparency to improve societal outcomes. We also seek to shed light on some potential reasons behind the failure of previous public reporting efforts, and discuss ways to improve the effectiveness of future efforts.
2 Methodology

We consider three decision-makers that influence alignment of patients and hospitals: patients, hospital administrators, and policymakers. We assume that a patient needing treatment chooses the hospital that maximizes his/her perceived utility. However, when hospital outcomes are not fully transparent, perceived utility will be a distorted approximation of actual utility. We use multi-variate regression to model the association between perceived patient utility of choosing a particular hospital and various main covariates that affect this choice including distance to the hospital, hospital volume, actual (risk-adjusted) quality, and perception of quality that can be influenced by marketing (or similar) activities. We assume hospital administrators compete to maximize their gains from patients’ contributions by investing in quality improvements and/or marketing efforts to attract patients. Finally, we assume that policymakers seek to maximize social welfare, and also to reduce inequality among patients, by promoting transparency and correcting potential alignment distortions via incentives to patients and/or hospitals. We use our framework both analytically and via simulation analyses calibrated with CMS data on Medicare Part A claims for patients with Heart Failure (HF) or Acute Myocardial Infarction (AMI).

3 Main Contributions and Key Results

Our results suggest that increased transparency has the largest impact on the decisions of younger, more affluent, or urban (i.e., high hospital density area) patients, or those with diseases that can be deferred. Furthermore, increasing quality transparency will induce hospitals to direct a greater portion of their budget toward quality improvement investments, as opposed to marketing investments. Another finding from our analyses is that as transparency increases, hospitals tend to shift their process/quality improvement investments toward their strength and away from their weakness. Increasing transparency can also decrease the total investment made by a hospital in marketing and process/quality improvement. We also find that increasing transparency promotes increased medical specialization by encouraging hospitals to focus on particular treatment and/or patient types. Furthermore, we observe that the effect of increasing transparency on medical specialization is stronger for patients that have a higher willingness to travel (e.g., AMI patients compared to HF patients). To the extent that hospitals increase their medical specialization (as quality transparency increases), they will decrease their geographic specialization by attracting more distant patients. This, in turn, increases the mean in distance travelled by patients.

With respect to social welfare impact of increasing transparency, we find that increasing quality transparency unambiguously serves the common good in the short-term by increasing social welfare and decreasing inequality among patients, but it does so at a diminishing rate. Because higher levels of transparency will become increasingly expensive (e.g., due to the need for educational efforts beyond posting ratings on websites to enable some patients to make effective use of the posted results), this suggests that something less than full transparency is socially optimal. In the long term, however, we find that economies-of-scale in care delivery will prevent even a fully transparent healthcare system from achieving a socially optimal outcome. The reason is that some hospitals will receive patient volumes below the level needed to achieve high quality outcomes. Importantly, we find that it is possible for increasing
transparency to harm social welfare in the long term. However, policymakers (and possibly payers) can correct this failure of the market to converge to the socially optimal structure by accompanying increased transparency with policy interventions that provide corrective incentives to either hospitals or patients. Hence, we make use of our model to identify and evaluate such policies. While it is possible to modify the market allocation by providing incentives to patients and/or hospitals, we find that incentivizing hospitals is typically more effective than incentivizing patients. Finally, the calibration of our model with CMS data suggests a quality transparency level for AMI and HF patients in 2008 that is roughly halfway between no transparency and full transparency. This implies that there is significant room for improved public reporting efforts to increase healthcare quality transparency.

These findings imply three potential explanations for the mixed success of public reporting efforts, which in turn imply ways to make such efforts more effective in the future: (1) Public reporting efforts failed to increase transparency to the levels anticipated by researchers and policy analysts. Our estimate based on Medicare data suggests that the actual transparency level was indeed lower than previously thought, which means that at least some of the mixed evidence is due to the fact that public reporting efforts were not as effective as anticipated in improving transparency. This suggests that policymakers need to find better ways to make outcome information both more accessible and more comprehensible to patients. Options for achieving this include improving public reporting websites, translating outcome information for consumers without statistical training, reporting patient-centric level information as opposed to average patient data, and developing and delivering training to both patients and primary care providers. (2) Policymakers aimed public reporting efforts at the entire population rather than at specific groups of patients. We find that increasing transparency can be more effective if it is targeted at specific categories of patients that are most responsive to outcome information such as younger, urban and/or more affluent patients, as well as patients whose treatment can be deferred. (3) Public reporting efforts were not accompanied by other policy interventions. Our results indicate that policy interventions such as pay-for-performance plans that incentivize hospitals to invest in process improvements are needed to ensure that societal outcomes improve as transparency increases.

References


