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EDITORIAL

Editorial

County-Level Variation in Readmission Rates: Implications for the Hospital Readmission Reduction Program's Potential to Succeed

The Centers for Medicare and Medicaid Services (CMS) implemented the Hospital Readmissions Reduction Program (HRRP) in fiscal year 2013 (i.e., October 2012). This policy creates financial penalties for hospitals with higher-than-expected 30-day risk-adjusted readmission rates for adults age 65 years and older. In the program's first year, conditions included heart failure, myocardial infarction, or pneumonia (MedPAC 2013; U.S. Centers for Medicare and Medicaid Services 2014); penalties represented up to 1 percent of hospitals' aggregate Medicare payments for all discharges; and 70 percent of hospitals incurred a penalty. The mean reduction in aggregate Medicare payments among affected hospitals was 0.31 percent (MedPAC 2013), a sizeable amount given that patients with Medicare represent 40 percent of hospital discharges (AHRQ 2011), and hospitals' mean aggregate operating margins have been about 5.5 percent in recent years (American Hospital Association 2013). In 2014, the maximum HRRP penalty doubled to 2 percent. In 2015, it will increase to 3 percent (MedPAC 2013; U.S. Centers for Medicare and Medicaid Services 2014), and two categories of conditions will be added: acute exacerbations of chronic obstructive pulmonary disease and admissions for elective total hip arthroplasty and total knee arthroplasty. CMS has proposed adding coronary artery bypass grafting in future years (Department of Health and Human Services 2014).

The HRRP was implemented based on concerns that 15–20 percent of older adults are readmitted after hospitalization (Jencks, Williams, and Coleman 2009; MedPAC 2013), and that many readmissions appear discretionary

or avoidable through improvements in care. In addition to being a marker for potentially poor quality or inefficient care, readmissions are associated with risks of hospital-acquired complications, functional decline (Creditor 1993; Covinsky et al. 2003; Graf 2006), and death (Lum et al. 2012). They also contribute to avoidable health care expenditures, both in the inpatient and post-acute-care settings. Hospital care represents 31 percent of all health care expenditures (Henry J. Kaiser Foundation 2012), and, in one study, expenditures on readmissions comprised 16 percent of all expenditures on hospitalization (Chollet, Barrett, and Lake 2011).

Although reducing readmissions appears desirable because it may improve older adults' health and reduce costs, how will we know if the HRRP policy has, in fact, been successful? Marsh and McConnell offer a framework for establishing policy success based on three dimensions: success in the policy making process, political success, and programmatic success. A fair and balanced policy making process that engages stakeholders and considers a variety of alternatives may have more credibility with members of the public, and be viewed as more successful, than an arbitrary process. Similarly, when the public views a policy favorably overall, this increases the likelihood that individuals or political parties will secure or maintain elected or appointed positions in government, that is, achieve political success. Programmatic success can be based on outcomes (achieving the intended outcomes), operational success (being implemented in accordance with stated objectives), equity (benefitting, or not harming, specific subgroups, such as disadvantaged populations), and economic success (being an efficient use of resources) (Marsh and McConnell 2010). Success in the policy making process and political success are both based on perceptions by the public; therefore, policies can perform poorly on these dimensions despite being programmatic successes and vice versa. Programmatic success is generally the focus of evidence-based policy making and policy-related research. The findings of Herrin et al. (2014) in this issue of *Health Services Research*, raise important issues that pertain to the HRRP's potential for programmatic success.

As the HRRP was implemented, the intended outcome, readmissions, has already started to change. All-cause readmission rates among Medicare beneficiaries decreased from 19 to 18 percent between 2012 and 2013, a more rapid decline than during the preceding years (U.S. Department of Health and Human Services 2014). Presuming that the HRRP prompted this decline, findings of Herrin et al. (2014) suggest that individual hospitals' abilities to lower their readmission rates may reach a point of diminishing returns. The investigators found that most of the variation in readmission rates among hospitals

nationally is related to factors over which hospitals have limited control. Specifically, the county in which hospitals are located explained 58 percent of the variation across hospitals, and certain county characteristics, including access to and the quality of outpatient and postacute care, explained about half of the variation across counties. Greater availability of primary care physicians and nursing homes within a county was significantly associated with lower readmission rates in multivariate models, and lower quality nursing home care was generally associated with higher readmission rates (Herrin et al. 2014). Consequently, achieving the maximum possible reduction in readmission rates nationally would require an expanded focus that includes local health systems as well as care by individual hospitals.

CMS has already initiated a pilot program reflecting such an expanded focus, the Community-based Care Transitions Program, which will run from 2011 to 2016. It “seeks to correct these deficiencies [in care transitions] by encouraging a community to come together and work together to improve quality, reduce cost, and improve patient experience.” As of May 2014, 102 sites nationally were participating. The program is part of the Partnership for Patients, a public–private partnership seeking to reduce preventable errors in hospitals and readmissions (U.S. Centers for Medicare and Medicaid Services 2011–2016).

Access and quality outside the hospital may affect the degree to which the HRRP can achieve its intended outcome, fewer readmissions, but other factors are likely to determine whether the policy is an operational success. For the HRRP, operational success could be defined as whether hospitals respond in a manner consistent with the underlying motivations of improving quality of care and reducing costs. In terms of improving quality, a recent meta-analysis of randomized trials found that interventions designed to prevent readmissions tended to be moderately effective (relative risk of 30-day readmission 0.82, 95 percent CI, 0.73–0.91). The studied interventions addressed care both during and after hospitalization, such as through case management, patient education, home visits, and patient self-management support, among other activities. Multifaceted interventions were more common and were 30–40 percent more effective than one-dimensional ones (Leppin et al. 2014), yet they may also be more challenging to implement and more costly. The degree to which hospitals nationwide are implementing quality improvement interventions that target readmissions does not appear to have been described.

As well as improving quality, a second potential response by hospitals is curtailing discretionary readmissions, and Herrin et al. (2014) provide indirect evidence that discretionary readmissions may be common at some hospitals.

The investigators observed that having more hospital beds per capita was significantly associated with higher readmission rates in multivariate models. For example, readmission rates were an absolute 0.51 percent higher in the counties with the most beds per capita compared to the counties with the fewest beds (Herrin et al. 2014). A positive association between bed availability and readmission rates raises the possibility of supply-sensitive care (Wennberg 2002), sometimes called provider-induced demand. “A built bed is a filled bed,” observed Roemer (1961). Further, geographic variation in the utilization of health care services has often been taken as evidence that some of the services being provided are discretionary (Guadagnoli et al. 2001; Wennberg 2002; Fisher et al. 2003; Landrum et al. 2008). As noted above, Herrin et al. (2014) found that half of the sizeable variation in readmission rates across counties could be explained by the county characteristics included in their models. What could explain the other half? One possibility is geographic differences in the clinical criteria that providers use to admit patients. Previous investigators have found that, across hospital referral regions, admission rates were the strongest predictors of readmission rates (Epstein, Jha, and Orav 2011).

In addition to improving quality and curtailing discretionary readmissions, hospitals may respond in other ways: avoiding high-risk patients, placing patients under observation status instead of admitting them, or postponing readmissions until after 30 days. The use of such strategies, if widespread, would probably not be considered evidence of operational success.

Along with attaining operational success and intended outcomes, ensuring equity is another concern under the HRRP. The policy calls attention to vulnerable Medicare beneficiaries because readmission is more likely when patients have more medical comorbidities, have lower functional status, live alone, lack self-management skills, or are of low socioeconomic status. Previous studies have also linked gender, age, race, and ethnicity to risk of readmission (Marcantonio et al. 1999; Lafata et al. 2004; Jiang et al. 2005; Arbaje et al. 2008; Ross et al. 2008; Kansagara et al. 2011; Depalma et al. 2013; Hoyer et al. 2013). The HRRP adjusts hospital penalties for case mix, but not for race, ethnicity, or socioeconomic status, to avoid obscuring the possibility of inequitable treatment (National Quality Forum 2014). Yet vulnerable populations are likely concentrated in areas where access and quality outside the hospital setting are limited (Gu et al. 2014). Herrin et al. (2014) found that low educational attainment in the country, higher numbers of Medicare beneficiaries per capita, and smaller size communities were associated with higher readmission rates. However, the investigators seem to have missed an opportunity

to interact other county-level measures of vulnerability (particularly race, ethnicity, and income) with measures of access and quality of care, and to thereby estimate their combined effects on readmissions. If synergistic effects exist, hospitals in such communities would both have particularly limited abilities to reduce readmissions and be disproportionately penalized under the HRRP. Such hospitals are also likely to have lower operating margins, due to lower reimbursement rates by Medicare and Medicaid (American Hospital Association 2013).

In summary, the findings of Herrin et al. (2014) have important implications for the likelihood of programmatic success under the HRRP. Although readmission rates appear to have declined since the HRRP was implemented in 2012, Herrin et al. (2014) found that much of the variation in readmission rates is due to factors over which hospitals have limited control, particularly access and quality of care outside of the hospital setting. This suggests that focusing on the performance of individual hospitals may lead to a small reduction in readmissions, as compared with a broader focus on community health systems. Given the intent of the HRRP, as currently designed, is to improve quality and reduce costs, two promising responses by individual hospitals include implementing quality improvement interventions and curtailing discretionary readmissions. Herrin et al. (2014) found indirect evidence that discretionary admissions may be common in that readmission rates vary geographically and are higher in communities with more beds. Finally, the investigators observed that readmission rates are associated with geographic variation in socioeconomic variables, which when taken together with previous research, starts to raise questions about whether hospitals in socioeconomically disadvantaged and underserved communities may have little control over readmission rates yet be disproportionately penalized by the policy. Future research should reevaluate these issues as additional data become available as hospitals respond to the HRRP.

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