

EDITORIAL COMMENT

# Hospital Readmission Reduction Program for Heart Failure

## The Spread of Intended and Unintended Consequences\*

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*“Any observed statistical regularity will tend to collapse once pressure is placed upon it for control purposes.”*

—Charles Goodhart (1)

The economist Charles Goodhart observed that a metric of production or performance, once operationalized with financial incentives, no longer serves its original purpose. One classic example is that of government targets for factory production in the former Soviet Union. When the number of nails was incentivized, huge numbers of useless pin-like nails were manufactured (2). Health care policies that feature financial incentives for performance measures or outcomes that are not prone to manipulation and benefit patient-centered outcomes remain a largely elusive goal. More than a decade ago, health care researchers and policy makers observed that patients discharged with primary diagnoses of select conditions had high rates of unplanned readmission within 30 days and that these readmissions were associated with substantial health care expenditures (3). The proportion of readmissions deemed preventable varied widely, but a meta-analysis suggests that nearly one quarter may be avoidable (4). Policy makers suggested that effective strategies to prevent 30-day readmissions were

readily available but were underused because of a lack of financial incentives. The U.S. Centers for Medicaid & Medicare Services (CMS) thus sought to reduce early readmissions for common medical conditions among Medicare beneficiaries through the use of public reporting of 30-day readmission metrics and financial incentives, penalizing hospitals with excessive readmission rates through the Hospital Readmission Reduction Program (HRRP) of the Affordable Care Act (5). These incentives were intended to bolster efforts to improve transitions to home, early outpatient follow-up, and multifaceted discharge planning approaches. Although this program was well intended, CMS implemented the policy for select conditions without prior testing, without consideration of how hospitals could respond to such metrics, and without monitoring the potential unintended consequences of such a substantial financial penalty.

The introduction of HRRP was associated with reductions in readmissions among the initially targeted conditions of heart failure (HF), acute myocardial infarction, and pneumonia nationally, and the program was declared a success by policy makers. Yet, the initial studies evaluating the impact of HRRP reported on temporal changes in readmissions rates without fully evaluating how those reductions were achieved or whether there were any unintended consequences, particularly for patients with HF, who are among the most vulnerable. Further, relatively few studies evaluated how other patients not targeted by HRRP were affected.

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In this issue of the *Journal*, Blecker et al. (6) report that observed trends in readmission rates are similar for patients with a primary diagnosis of HF, a secondary diagnosis of HF, or any history of HF across 3 large Medicare cohorts. As prior analyses demonstrate,

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before passage of the Affordable Care Act readmission rates were mostly flat. A shift and decline in readmissions by a modest 1% occurred during the period when CMS penalties were determined on the basis of risk-adjusted readmission rates, from July 2010 to June of 2013. With the implementation of financial penalties instituted in October 2012 with 1% of all Medicare reimbursements at risk, readmission reductions remained flat. Financial penalties increased to 3% of Medicare reimbursements for the fiscal year of 2015, but further improvements in readmission rates have not been notable. The study by Blecker et al. (6) suggests that any impact of the HRRP program not only influenced outcomes in patients with a primary discharge diagnosis of HF, but also led to similar outcomes for any patient with diagnostic code for HF. Although process measures and the HRRP program have focused only on patients with a primary diagnosis of HF, a much larger hospitalized group of patients with HF is outside of the scope of any current quality improvement programs. Prior work has shown that a secondary discharge diagnosis is specific for an HF-related hospitalization, and these patients experience outcomes that are similar to or worse than those in patients with primary diagnoses, but they are not routinely targeted for quality improvement (7). The current distinction of primary or secondary discharge diagnoses is largely arbitrary, and better identification of a cohort of hospitalized patients with HF who benefit from quality improvement efforts is needed.

There remains uncertainty regarding whether the reported improvements in risk-adjusted HF readmission rates during the implementation of HRRP reflect actual improvements in hospital care and transition planning. There is evidence that the announcement of the policy led directly to a sudden increase in coding comorbidities both to enhance reimbursement and to achieve better calculated risk-adjusted readmission rates (8). Other gaming under HRRP incentivized coding diagnoses as secondary issues to reduce the number of index events. Additionally, hospitals with better readmission rates have been more aggressive about triaging emergency room visits to home or observational status to limit the number of calculated readmissions (9,10). With substantial financial incentives at stake, shifts in coding are often the most expeditious to implement for administrators, rather than hiring more clinicians or deploying resources that may improve the actual quality of care delivered. Process measures that could represent discharge prescriptions of guideline-directed medical therapies may be less prone to such gaming and encourage receipt of evidenced-based therapies with improvements in

both readmission and mortality risk (11). Even though the financial penalties were intended to incentive hospitals to invest in improved transitions of care, it now appears that these penalties may have instead encouraged restriction of clinically indicated inpatient care and inappropriate triage strategies.

One of the anticipated and observed consequences of the HRRP is that financial penalties are a substantial regressive tax on the most vulnerable patients treated within strained health care systems. Because the program is implemented using only administrative coding without any racial or ethnic or socioeconomic adjustments in the adjusted risk-adjustment models, hospitals serving larger proportions of dual-eligible patients have endured the greatest financial penalties (12). How the removal of dollars and resources from strained health care systems is likely to benefit patients with greater complexity and fewer community resources is unclear, and this is a potentially dangerous policy decision. CMS plans to address this criticism in 2019 with stratification of the HRRP risk adjustment by the proportion of dual-eligible patients served by hospitals. Whether this will mitigate the current state of inequitable HRRP penalties remains to be seen.

Of greatest concern have been studies that suggest that implementation of HRRP has been associated with increased mortality among patients with a primary discharge diagnosis of HF. Several studies now describe the increasing short-term and long-term mortality rates for patients discharged with a primary diagnosis of HF (13,14). Evaluation of Medicare data revealed a 1.3% absolute increase in 30-day risk-adjusted mortality post-HRRP starting in 2010 in HF patients, whereas 30-day unadjusted and risk-adjusted mortality rates had previously been declining (14). This would suggest that as many as 5,200 to 10,400 extra deaths occur annually in patients with a primary discharge diagnosis of HF. If the impact of HRRP had spread to patients with secondary diagnoses in terms of readmission reduction, then the potential unintended harm associated with HRRP in terms of increased mortality would have potentially affected an even greater number of patients. The National Center for Health Statistics highlighted the abrupt shift in HF-related mortality during the same period HRRP was implemented for HF hospitalizations (15).

Prioritizing our understanding of why HF mortality is worsening despite the increase in the number of evidence-based therapies that reduce both mortality and hospitalization risk is needed. Developing payment policies that reflect the relative value that patients place on averting mortality over hospital days

may make for a more coherent patient-centered policy. For HRRP, the evidence for potential harms and gamification of health care metrics should give us pause. Any experimental health policies require close monitoring for adverse consequences. If and when they emerge, corrective action is needed to avoid the trap of Goodhart's law.

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