UCLA
UCLA Previously Published Works

Title

Hospital Readmission Reduction Program for Heart Failure The Spread of Intended and Unintended Consequences ∗

Permalink

https://escholarship.org/uc/item/9n71979p

Journal

Journal of the American College of Cardiology, 73(9)

ISSN

0735-1097

Authors

Fonarow, Gregg C
Ziaeian, Boback

Publication Date

2019-03-01

DOI

10.1016/j.jacc.2018.12.043

Peer reviewed

eScholarship.org Powered by the California Digital Library
University of California

The Spread of Intended and Unintended Consequences of the Hospital Readmission Reduction Program for Heart Failure

Boback Ziaeian MD PhD[a,b], Gregg C. Fonarow MD[b]

[a]Division of Cardiology, David Geffen School of Medicine at University of California, Los Angeles, Los Angeles, California

[b]Division of Cardiology, Veteran Affairs Greater Los Angeles Healthcare System, Los Angeles, California

Word Count: 1695

Funding: BZ is supported by AHA SDG 17SDG33630113.

Disclosures:

BZ: none

GCF: Research: NIH; Consulting: Abbott, Amgen, Bayer, Janssen, Medtronic, and Novartis.

Corresponding Author:

Gregg C. Fonarow, MD, Ahmanson–UCLA Cardiomyopathy Center, Ronald Reagan UCLA Medical Center, 10833 LeConte Avenue, Room A2-237 CHS, Los Angeles, CA 90095-1679

E-mail: gfonarow@mednet.ucla.edu Phone: (310) 206-9112 Fax: (310) 206-9111

"Any observed statistical regularity will tend to collapse once pressure is placed upon it for control purposes" – Charles Goodhart

The economist Charles Goodhart's 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 were incentivized, huge numbers of useless pin-like nails were manufactured (1). Healthcare 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, healthcare researchers and policymakers 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 healthcare expenditures (2). The proportion of readmissions deemed preventable varied widely, but a meta-analysis suggests nearly a quarter may be avoidable (3). Policymakers suggested that effective strategies to prevent 30-day readmissions were readily available but were underutilized due to lack of financial incentives. The Centers for Medicaid and 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 though the Hospital Readmission Reduction Program (HRRP) of the Affordable Care Act (4). These incentives were intended to bolster efforts to improve transitions to home, early outpatient follow-up, and multifaceted to discharge planning approaches. While well intended, CMS implemented the policy for select conditions without prior testing, without consideration of how hospitals might 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 policymakers. 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 HF patients who are among the most vulnerable. Further, relatively few studies evaluated how other patients not targeted by HRRP were impacted.

In this issue of *JACC*, Blecker et al. 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 three large Medicare cohorts (5). As prior analyses demonstrate, preceding the passage of the ACA readmission rates were mostly flat. A shift and decline in readmissions by a modest 1% occurred during the period CMS penalties were determined based on 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 readmission rates have not been notable. The study in this Journal suggests that any impact of the HRRP program not only influenced patient outcomes with a primary discharge diagnosis of HF, but were similar for any patient with diagnostic code for HF.

While process measures and the HRRP program have only focused on patients with a primary diagnosis of HF, a much larger hospitalized population 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 a HF-related hospitalization and these patients experience similar or worse outcomes to those with primary diagnoses, but are not routinely targeted for quality improvement (6). The current distinction of primary or secondary discharge diagnoses is largely arbitrary and better identification of a cohort of hospitalized patients with HF benefiting 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 to both enhance reimbursement and achieve better calculated risk-adjusted readmission rates (7). 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 (8, 9). 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 might represent discharge prescriptions of guideline-directed medical therapies may be less prone to such gaming and encourage both receipt of evidenced-based therapies with improvements in both readmission and mortality risk (10). Even though the financial penalties were intended to incentive hospitals to

invest in improved transitions of care, it now appears 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 populations treated within strained healthcare systems. Since the program is implemented using only administrative coding without any race/ethnic or socioeconomic adjustments in the adjusted risk-adjustment models, hospitals serving larger proportions of dual eligible patients have endured the greatest financial penalties (11). How the removal of dollars and resources from strained healthcare systems is likely to benefit patients with greater complexity and less community resources is unclear and 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 has been studies that suggest that implementation of HRRP has been associated with increased mortality among patients with a primary discharge diagnosis of HF. A number of studies now describe the increasing short-term and long-term mortality rates for patients discharged with a primary diagnosis of HF (12, 13). 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 (16). This would suggest as many as 5,200 to 10,400 extra deaths annual in patients

with a primary discharge diagnosis of HF. If the impact of HRRP had spread to patients with secondary diagnoses in terms of readmissions reduction, then the potential unintended harm associated with HRRP in terms of increased mortality may have potentially and 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 (14).

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 are needed. Developing payment policies that reflect the relative value that patients place on averting mortality over hospital days might make for a more coherent patient-centered policy. For HRRP, the evidence for potential harms and gamification of healthcare metrics should give us pause. Any experimental health policies require close monitoring for adverse consequences and if they emerge rapid corrective action to avoid the trap of Goodhart's law.

References

1. Heilbroner R. Reflections: After Communism. New Yorker 1990:91–100.

2. Dharmarajan K, Strait KM, Lagu T, et al. Acute Decompensated Heart Failure Is Routinely Treated as a Cardiopulmonary Syndrome. PLoS One 2013;8:1–11.

3. van Walraven C, Jennings A, Forster AJ. A meta-analysis of hospital 30-day avoidable readmission rates. J. Eval. Clin. Pract. 2012;18:1211–8.

4. Kocher RP, Adashi EY. Hospital readmissions and the affordable care act: Paying for coordinated quality care. JAMA - J. Am. Med. Assoc. 2011;306:1794–1795.

5. Blecker S. Trends in readmissions for patients with heart failure in the Medicare population.

6. Goff DC, Pandey DK, Chan F a., Ortiz C, Nichaman MZ. Congestive heart failure in the United States: is there more than meets the I(CD code)? The Corpus Christi Heart Project. Arch. Intern. Med. 2000;160:197–202.

7. Ibrahim AM, Dimick JB, Sinha SS, Hollingsworth JM, Nuliyalu U, Ryan AM. Association of Coded Severity With Readmission Reduction After the Hospital Readmissions Reduction Program. JAMA Intern. Med. 2018;178:290–292.

8. Bhatia RS, Austin PC, Stukel T a., et al. Outcomes in patients with heart failure treated in hospitals with varying admission rates: population-based cohort study. BMJ Qual. Saf. 2014;23:981–8.

9. Sabbatini AK, Wright B. Excluding Observation Stays from Readmission Rates - What Quality Measures Are Missing. N. Engl. J. Med. 2018;378:2062–2065.

10. Ziaeian B, Fonarow GC. The Prevention of Hospital Readmissions in Heart Failure. Prog. Cardiovasc. Dis. 2015;58:379–85.

11. Joynt KE, Jha AK. Characteristics of Hospitals Receiving Penalties Under the Hospital Readmissions Reduction Program. JAMA 2013;309:342.

12. Gupta A, Allen LA, Bhatt DL, et al. Association of the hospital readmissions reduction program implementation with readmission and mortality outcomesin heart failure. JAMA Cardiol. 2018;3:44–53.

13. Khera R, Dharmarajan K, Wang Y, et al. Association of the Hospital Readmissions Reduction Program With Mortality During and After Hospitalization for Acute Myocardial Infarction, Heart Failure, and Pneumonia. JAMA Netw. Open 2018;1:e182777.

14. Ni H, Xu J. Recent Trends in Heart Failure-related Mortality: United States, 2000-2014. NCHS Data Brief 2015:1–8.