



Perspective

The Hospital Readmissions Reduction Program — Time for a Reboot

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The Hospital Readmissions Reduction Program (HRRP) was established by the Centers for Medicare and Medicaid Services (CMS) in 2010 with a goal of reducing preventable hospitalizations

by imposing financial penalties on hospitals with higher-than-expected 30-day readmission rates. After the program was created, readmission rates appeared to decrease nationwide for patients hospitalized with heart failure, acute myocardial infarction, and pneumonia, the three conditions it originally targeted.

Some policymakers have pushed for the HRRP to be expanded to cover all conditions treated in inpatient settings. Others, including many clinicians and researchers, have expressed skepticism regarding the program's effects and concerns about unintended consequences. These concerns stem from three major limitations of the program.

First, the HRRP defines only

inpatient hospitalizations — not observation stays or emergency department (ED) visits — as readmissions, which has artificially inflated estimates of its success. Although readmission rates have decreased for targeted conditions, rates of observation stays and ED visits after inpatient stays have increased; as a result, the proportion of patients who return to a hospital within 30 days after discharge has not changed. This blind spot also creates strong incentives to treat patients in EDs or observation units to avoid readmissions, even if inpatient hospitalization would improve their access to appropriate care. The HRRP also doesn't include observation stays as index events, so little is known about postdischarge outcomes for

patients admitted under observation status. Since hospitals vary widely in their use of observation units, excluding these stays may create an uneven playing field for comparing hospital performance.

A second limitation is that the HRRP metric doesn't account for the competing risk of death. A patient who dies can no longer be readmitted. But because deaths aren't factored into readmission rates, hospitals that keep more patients alive and therefore discharge a sicker group of people may be penalized for having higher readmission rates rather than rewarded for having good outcomes. This problem is exacerbated by the fact that penalties for high readmission rates under the HRRP are much larger than penalties for high mortality under the Hospital Value-Based Purchasing program.

Third, risk adjustment of the readmission measure is inadequate, which encumbers fair comparisons among hospitals. Read-

mission models are notoriously poor at predicting events. Although coexisting conditions such as diabetes are well captured in risk-adjustment models, factors such as functional status and frailty, which meaningfully improve risk prediction, are not. Health care utilization patterns are also not accounted for in current models. As a result, differences in severity of illness between a person with heart failure who has one brief hospitalization for swollen ankles and another who is repeatedly hospitalized for decompensated heart failure are poorly captured. Because of their relative simplicity, current models are also easy to “game.” Growing evidence suggests that much of the reported improvement in risk-adjusted readmission rates that drove early enthusiasm for the program may have been the result of an artificial increase in coded coexisting conditions rather than improvements in care quality.

Current risk-adjustment models also omit social risk factors that are strongly related to readmissions, such as poverty, so hospitals tend to be penalized for serving poor and vulnerable patients. Safety-net hospitals are frequently penalized under the HRRP, which results in a transfer of resources away from resource-poor sites. The 21st Century Cures Act implemented a stratification scheme in the HRRP this year such that hospitals are compared only with other facilities that treat Medicare populations with similar poverty levels. This change was associated with a significant reduction in penalties for safety-net hospitals.

Finally, mounting evidence suggests that the HRRP may have had unintended consequences, particularly for patients with heart fail-

ure. Four independent studies revealed that mortality within 30 days after discharge from a hospitalization for heart failure increased significantly after implementation of the HRRP relative to earlier trends.¹⁻⁴ This increase was concentrated among patients who weren't readmitted, which raises the possibility that greater use of EDs and observation units by hospitals to reduce readmissions may adversely affect patients who would benefit from higher-level care.

Two studies have come to different conclusions, however. One investigation, by the group that developed the readmission measure, found that although 30-day postdischarge mortality among patients with heart failure increased after the HRRP was enacted, changes from previous trends were not statistically significant.⁵ A report by the Medicare Payment Advisory Commission showed that raw in-hospital-through-postdischarge mortality among patients with heart failure increased between 2008 and 2016, but risk-adjusted mortality decreased — from 13.6% to 9.4%. In contrast, studies have consistently found that mortality among patients hospitalized for myocardial infarction has not increased under the HRRP,^{1,5} which suggests that acute conditions may be better suited to the program than chronic conditions such as heart failure.

How can we strengthen the HRRP to mitigate potential unintended consequences and ensure that the program improves care quality and patient outcomes?

Rather than using only inpatient readmission rates to evaluate hospital performance, the HRRP could use a “return-to-hospital” metric that also includes rates of ED visits and observation-unit

stays within 30 days after discharge. These outcomes wouldn't have to be weighted equally. Such a measure would strengthen hospitals' incentive to focus on improving care transitions and postdischarge care to reduce unnecessary returns to the hospital. It would also encourage hospitals to make more considered care decisions for patients who do return and permit a fairer assessment of hospitals' performance. Furthermore, treating both inpatient and observation-unit stays as index events could provide a more comprehensive picture of hospital-based encounters after discharge.

In addition, we believe the metric used in the HRRP should account for the competing risk of death, both during and after hospitalization. One potential approach would be to evaluate performance during the period patients are alive within 30 days after discharge. Another possibility would be to create a joint outcome measure that combines hospital returns and deaths within 30 days. CMS could also ensure that financial incentives to reduce mortality are greater than incentives to reduce readmissions.

The HRRP's risk-adjustment methods could also be improved. The evidence that social risk factors influence readmission rates is incontrovertible. Directly adjusting for dual-enrollment status (coverage under both Medicare and Medicaid) in risk models would allow all hospitals to receive similar “credit” for caring for vulnerable patients. Although dual status is a somewhat limited measure of social risk, a growing body of evidence suggests that adding more detailed social-risk data adds little to risk prediction. On the other hand, adding covariates such

as prior hospital utilization, functional status, and frailty meaningfully improves risk models, particularly for poor and disabled populations. By focusing on more holistic risk adjustment, such changes might also make the metric less gameable.

In the long run, CMS could consider using revenue generated from the HRRP to assist resource-poor hospitals that consistently have high readmission rates in improving discharge planning or care coordination services. Since many factors that drive readmissions act outside hospital walls, assistance might be most valuable if used to improve postdischarge primary and specialty care, address social determinants of health, and create linkages between hospitals and community partners. Pairing penalties with resources to encourage implementation of innovative programs focused on resource-poor settings could help ensure that the HRRP's net effect is positive.

More broadly, the ongoing de-

bate about the HRRP underscores the consequences of implementing national policies with no control group and no plan for iterative improvement. For this reason, we believe any change to the HRRP should be made in the context of a robust evaluation effort to determine its effect on patient experience, care quality, and outcomes. Throughout the process, we believe it is imperative that policymakers seek input from frontline clinicians and patients who understand the real-world effects of this program. Together, these improvements could reboot the HRRP and transform it from a regressive penalty program to a progressive program that improves patient care.

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1. Wadhwa RK, Joynt Maddox KE, Wasfy JH, Haneuse S, Shen C, Yeh RW. Association of the Hospital Readmissions Reduction Program with mortality among Medicare beneficiaries hospitalized for heart failure, acute myocardial infarction, and pneumonia. *JAMA* 2018;320:2542-52.
2. Huckfeldt P, Escarce J, Sood N, Yang Z, Popescu I, Nuckols T. Thirty-day postdischarge mortality among black and white patients 65 years and older in the Medicare Hospital Readmissions Reduction Program. *JAMA Netw Open* 2019;2(3):e190634.
3. Gupta A, Allen LA, Bhatt DL, et al. Association of the Hospital Readmissions Reduction Program implementation with readmission and mortality outcomes in heart failure. *JAMA Cardiol* 2018;3:44-53.
4. Huckfeldt P, Escarce J, Wilcock A, et al. HF mortality trends under Medicare Readmissions Reduction Program at penalized and nonpenalized hospitals. *J Am Coll Cardiol* 2018;72:2539-40.
5. 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(5):e182777.

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