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Time to Revisit the Hospital Readmissions Reduction Program for Patients Hospitalized for Chronic Obstructive Pulmonary Disease Exacerbations

In 2008, a report from the U.S. Medicare Payment Advisory Commission recommended incentives for hospitals to improve hospital-to-home care transitions by publicly reporting readmission rates and reducing payments to hospitals with relatively high readmission rates (1). On March 23, 2010, the 111th Congress of the United States passed the Patient Protection and Affordable Care Act (often shortened to the “Affordable Care Act”) (2), which included provisions to establish the Hospital Readmissions Reduction Program (HRRP) within the Centers for Medicare and Medicaid Services (CMS). The HRRP was designed to reduce healthcare costs among Medicare fee-for-service beneficiaries 65 years or older while simultaneously improving the quality of care by implementing financial penalties for hospitals with greater than expected 30-day hospital readmissions (3). In other words, HRRP is an effort to promote high-value care by reducing healthcare costs and utilization.

Under the HRRP, hospitals with higher than expected readmissions of patients recently hospitalized for heart failure, pneumonia, or myocardial infarction received reduced Medicare reimbursements starting in October 2012. Chronic obstructive pulmonary disease (COPD) exacerbations were added to the list of HRRP penalty-sensitive conditions in October 2014. Patients, front-line clinicians, and administrators have raised concerns about the appropriateness of 30-day readmissions as a quality measure for hospitals because hospital-based care is only one of many factors that contribute to posthospital outcomes (4). For example, limited access to high-quality posthospital care and

patients’ socioeconomic resources (e.g., social support, stable housing, transportation, and food) also contribute to readmissions (5). In addition, the published literature about how hospitals can safely prevent hospital readmissions is limited and contradictory, the International Classification of Diseases codes used for administrative purposes (e.g., reimbursement) may not be sufficiently sensitive nor specific to reliably identify hospitalizations for COPD exacerbations, and, perhaps most importantly, it is unclear whether decreasing readmissions after a COPD exacerbation leads to excess postdischarge mortality (6).

It is in this context that the study in this issue of the *Journal* by Puebla Neira and colleagues (pp. 437–446) offers important new information (7). Puebla Neira and colleagues conducted a retrospective cohort study of Medicare fee-for-service beneficiaries age 65 years or older using administrative billing codes from over 4.5 million COPD hospitalizations from 2006 to 2017. In this population, they report an all-cause in-hospital mortality rate of 3% and an all-cause 30-day posthospital mortality rate of 5.3%. The authors report the mean hospital-level risks of readmission and mortality after hospital discharge in the following three periods: the “preannouncement” period before the Affordable Care Act (December 2006–March 2010), the “announcement” period when the HRRP was announced (April 2010 to August 2014), and the “implementation” period when hospitalization for COPD exacerbation was added as a penalty-sensitive HRRP condition (October 2014–November 2017).

Findings from the study by Puebla Neira and colleagues (see Table 3 and Figure 3 in Reference 7) suggest that 30-day all-cause hospital readmission rates dropped from 20.5% to 18.7% over the 11-year period from 2006 to 2017. Nearly all of the improvement in 30-day hospital readmissions among patients with an index hospitalization for a COPD exacerbation occurred before the inclusion of COPD in HRRP in October 2014, presumably because changes in transitional care services from hospital-to-home for patients hospitalized for heart failure, pneumonia, or myocardial

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infarction also benefited patients hospitalized for COPD exacerbations. Importantly, the 30-day postdischarge mortality rates from 2006 to 2017 form a U-shaped curve, in which they decrease from 6.9% (December 2006–July 2008 in the preannouncement period) to 6.6% (April 2010–November 2011 in the announcement period) but then increase to 7.3% (May 2016–November 2017 in the implementation period).

The report by Puebla Neira and colleagues offers new evidence to refute the hypothesis that efforts to reduce 30-day readmissions will also improve other clinically meaningful 30-day postdischarge outcomes and builds on the results of a previous study that demonstrated an increase in 30-day mortality after hospital admission for COPD after it became an HRRP penalty-sensitive condition (8). Others have reported that the implementation of the HRRP was associated with a significant increase in 30-day postdischarge mortality in patients hospitalized for heart failure or pneumonia; however, this pattern was not observed in patients hospitalized for myocardial infarction (9). Taken together, we believe it is now time for CMS to reexamine the HRRP's focus on reducing readmissions among patients hospitalized for COPD exacerbations as a means of promoting value-based U.S. healthcare. Reductions in readmissions after the expansion of HRRP to include hospitalizations for COPD have now been shown to be associated with an increase in 30-day all-cause mortality after hospital admission and 30-day all-cause mortality after hospital discharge.

Many questions remain. First, the authors acknowledge that they were not able to fully exclude patients admitted from hospice from the analyses; the extent to which such patients contribute to an overestimation of the number of postdischarge deaths is unclear. Second, the study was not designed to understand the factors that contribute to the observed tradeoff between hospital readmissions and postdischarge mortality. It is therefore unclear which, if any, aspects of hospital-based or posthospital transitional care services reduce readmissions while also increasing the risk of postdischarge death. Also, the analyses focused on the average risk of readmissions and postdischarge deaths across thousands of hospitals; it is unclear whether the inverse relationship between the risk of readmission and postdischarge mortality is consistent across different hospital or patient characteristics.

Patients recently hospitalized for a COPD exacerbation, their caregivers, and clinicians are likely to choose a readmission if it can save a life. The CMS HRRP should be redesigned to support such decisions. ■

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