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Considering the Role of Socioeconomic Status in Hospital Outcomes Measures

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Our research group developed readmission measures for the Centers for Medicare & Medicaid Services with the goal of illuminating hospital performance in order to stimulate efforts to improve patient care. We believed such efforts could reduce the occurrence of post-discharge adverse health events that were severe enough to require rehospitalization. We developed these measures using data from administrative claims and validated them against data abstracted from medical records.(1) We demonstrated that national readmission rates within 30 days of hospital discharge were exceedingly high for common diagnoses such as acute myocardial infarction, heart failure and pneumonia and revealed variation in performance by hospital that was not explained by differences in patient populations. The measures, approved by the National Quality Forum, were publicly reported and subsequently incorporated into the Affordable Care Act as part of the Hospital Readmission Reduction Program, which imposed penalties on hospitals with higher than average risk-standardized readmission rates.

The introduction of the measures and their integration into the legislation was accompanied by national and regional efforts to reduce readmission rates. The Centers for Medicare & Medicaid Services supported the Partnership for Patients, which provides \$500 million in support to community-based organizations that partner with hospitals and other providers to improve transitional care services. The Institute for Healthcare Improvement organized the STate Action on Avoidable Rehospitalizations (STAAR) initiative in three states. The American College of Cardiology established the Hospital-to-Home (H2H) Program. Concomitant with these and other initiatives, readmission rates dropped markedly, saving tens of thousands of Americans annually from health events that would require readmission within 30 days of discharge.(2)

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Disclosures

Drs. Krumholz and Bernheim work under contract with the Centers for Medicare & Medicaid Services to develop and maintain performance measures. Dr. Krumholz is the recipient of research grants from Medtronic and from Johnson & Johnson, through Yale University, to develop methods of clinical trial data sharing and chairs a cardiac scientific advisory board for United Healthcare.

Despite the measures' success in revealing opportunities to improve and in stimulating positive change, concern arose regarding the lack of consideration of patients' socioeconomic status (SES).(3, 4) Some hospitals with large numbers of patients with lower SES feel that they were disadvantaged by the measures. Many believe that patients with a lower SES have an intrinsically higher risk that is presumed to be unrelated to quality of care. These concerns, which emanate from the real-world experience of seeing patients without resources who face considerable challenges in their recovery, are worthy of attention and should not be dismissed lightly.

In this issue of *Annals*, two articles add information to this topic. Kind and colleagues used Medicare administrative data to show the association of neighborhood SES with readmission risk,(5) which is consistent with a recent article that showed that neighborhood SES may be even more important than individual SES.(6) What is still unknown is whether this risk is mediated entirely or in part by quality of care or other factors related to the health care system. The other article, by Keyhani and colleagues, used data from the Veterans Health Administration to determine, among other factors, whether social risk factors had an important influence on readmission risk. Their finding that the additional information did not change the assessment of individual hospital performance (7) does not preclude the possibility that SES adjustment could be important for particular institutions. Thus these articles, while useful contributions, fail to tilt the debate.

The development of performance measures always involves choices that merit discussion. In our development of the readmission measures, we had difficult decisions about which variables to include in the models, what length of time to evaluate for outcomes, which outcomes to count, and what type of mathematical approaches to use. We engaged national experts and stakeholders, had public comment periods, used trial runs, and submitted the measures to scrutiny through the National Quality Forum and peer review in the course of scientific publication. It may be useful to recall why we decided not to include SES in these models.

First and foremost, the purpose of the outcomes measures was to promote the best interests of patients. In addition to drawing attention to the national performance of hospitals on outcomes that matter to patients, there was intent to promote equity and eliminate disparities. We considered it important to reveal differences in outcomes that might exist for low SES and minority patient populations based on the hospitals they use. Adjustment for these characteristics could obscure these differences and possibly create the impression that the disparities in outcomes did not exist. We were also aware that race and SES had been linked to the quality of health care and that it would be difficult to determine the extent to which worse quality of care for these populations contributed to worse outcomes.(8) To adjust for race or SES would attribute higher risk to the patients themselves and not account for the extent to which inferior quality may be contributing to the risk of worse outcomes. With this approach, a hospital that provided inferior care to poor and minority patients would be given credit for caring for higher risk patients, even if the hospital itself had contributed to that higher risk. It might mislead patients who based their choices on the publicly reported results.

We understood that the additional risk of poor outcomes for poor and minority patients could be associated with a lack of resources within the healthcare institutions commonly caring for such patients. This critical issue likely contributes to disparities – patients who may have greater need for support in the post-discharge period are commonly cared for at institutions with little financial margin. However, our premise was that quality assessment should reflect how well each hospital cared for its patient population irrespective of financial circumstances.

Other considerations included the challenges inherent in measuring SES. There is no consensus on the best approach and most methods require imprecise estimates based on patients' residence zip codes. Moreover, SES is a complex attribute likely moderated by a host of factors. Perhaps even more daunting, we consistently found that race seemed to have a stronger effect on readmission risk than SES, yet it is difficult to suggest that hospitals with more patients of a certain race are expected to have worse outcomes and, with confidence, not attribute it to differences in quality when the nation's history suggests otherwise.

Meanwhile, the effect of race or SES appeared modest in all our analyses compared with the huge opportunities to address quality gaps in transitional care and reduce the marked disruptions in the hospital as a means to reduce post-discharge risk. We also saw consistent evidence of marked heterogeneity in performance among safety-net hospitals, many of which performed as well as the best hospitals caring for populations with higher SES.⁽⁹⁾ The conceptual pitfalls of adjustment combined with empiric evidence that the impact of adjustment was small and the opportunity for improvement great, even among safety-net institutions, led us away from adjustment for race or SES.

As the new legislation put financial pressure on hospitals to reduce readmission risk, concerns about measure fairness flared. The Medicare Payment Advisory Commission suggested that the measures should not adjust for SES for reasons stated above, but also indicated that the payment policy might want to compare safety-net hospitals with each other so that the brunt of the penalty would not be imposed on hospitals with tenuous financial circumstances.⁽¹⁰⁾ It seems likely that hospitals short on financial resources that care for patients whose payments provide little margin cannot afford to invest competitively in quality of care. To impose financial penalties on these institutions might not improve the situation for patients.

In the end these measures should serve the public, and the evidence suggests that hospitals and communities have made tremendous strides in reducing readmissions for all patients. It remains our view that the strongest response to concerns about the impact of penalty programs on safety-net hospitals is to address the financial impact of these programs on vulnerable hospitals directly through payment policies rather than through changes in the measures. When the intervention is at the measure level, policy options are restricted. If the nation is to address disparities in outcomes, any existing disparities should be fully transparent. The payment policy should focus on ensuring that the incentives improve, and certainly not worsen, the situation for patients. Meanwhile, we need to continue our commitment to face and eliminate these disparities and provide the care and support that

each person needs so that the recovery period is more successful for everyone, regardless of race or SES.

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