

## The Risks of Not Adjusting Performance Measures for Patient Sociodemographic Factors

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The National Quality Forum (NQF) recently convened an expert panel to make recommendations on a much-debated topic: whether to risk-adjust health care outcomes for sociodemographic factors present at the initiation of medical care and treatment. The Panel completed its work in early July 2014, making the following recommendation: “When there is a conceptual relationship (i.e., logical rationale or theory) between sociodemographic factors and outcomes or processes of care and empirical evidence (e.g., statistical analysis) that sociodemographic factors affect an outcome or process of care reflected in a performance measure: those sociodemographic factors should be included in risk adjustment of the performance score (using accepted guidelines for selecting risk factors) unless there are conceptual reasons or empirical evidence indicating that adjustment is unnecessary or inappropriate; and the performance measure specifications must also include specifications for stratification of a clinically-adjusted version of the measure based on the sociodemographic factors used in risk adjustment” (1).

The Centers for Medicare & Medicaid Services (CMS) has an opposing view, as reflected in the following comments from their director of quality measurement and health assessment posted on the NQF Web site after the expert panel’s release of draft recommendations in March 2014: “Currently, CMS does not adjust quality outcomes measures for patient socio-economic status (SES) because of the concerns that doing so would establish a different standard of care for providers based on the SES of the patients they care for and mask disparities in the quality of care provided . . . CMS is concerned that this recommendation could be a setback to the goal of equity within the health care system. . . . We are concerned . . . that the recommendation that is being made to risk adjust for sociodemographic factors is premature, given the lack of evidence that has been generated to warrant such a recommendation” (1).

The Expert Panel received 667 public comments from 158 organizations on this draft report: 143 supported the recommendations, 8 (including the CMS) opposed them, and 7 were mixed. Health care providers almost uniformly, along with some consumer advocates, supported the Expert Panel recommendations. They are concerned that, absent sociodemographic factor risk-adjustment methods that recognize a higher degree of difficulty and greater resource utilization in producing optimal quality outcomes for low-income and otherwise disadvantaged patients, safety-net providers are unfairly “tagged” with poorer health outcomes.

The “opposed” and “mixed” points of view came from purchasers, other consumer advocates, and measure developers. Purchasers and opposing consumer advocates are concerned about masking disparities in health outcomes, different standards of care, and the lack of transparency. Measure developers are concerned that risk adjustment for sociodemographic factors will burden their methods with added complexity and that data available in the public domain may be insufficient to do the necessary calculus and still produce reliable and valid results.

Why is adjustment for sociodemographic factors so hotly contested? All parties seem to embrace new reward and recognition programs that encourage optimal quality outcomes. Of note, however, the quality measures themselves are typically measures of *variation* in outcomes, comparing actual “observed” outcomes with “predicted” or “expected” outcomes and then making comparisons among providers by using various statistical models and methods. Under current NQF policy, the predicted or expected values are risk-adjusted for clinical factors that are present at the initiation of medical care and treatment, but not for sociodemographic factors.

The CMS and other payers have publicly signaled an intention to move billions of dollars away from physicians and hospitals receiving traditional fee-for-service payments to pay-for-performance based on health care quality outcome measures (such as hospital readmission rates), shared savings models (such as accountable care organizations), and full-risk capitation plans (such as Medicare Advantage). Under each new payment model, outcome measures are used to ensure high quality, keeping in mind that favorable variations from a predicted or expected outcome will be rewarded and unfavorable variations will be penalized. If risk adjustment of health care outcomes based on a combination of clinical and sociodemographic factors “explains away” too much of the variations in outcomes (quality and cost), the remaining variations may be insufficient to pass a test of statistical significance.

The Table shows data from BJC HealthCare in St. Louis, Missouri, that inform our position on risk adjustment for sociodemographic factors. It presents a discharge-weighted poverty rate for each BJC HealthCare adult hospital. This geographic measure of sociodemographic factors reflects the average poverty rate of the census tracts where each hospital’s patients live (not where the hospitals are located). The 4 hospitals with the highest discharge-weighted poverty rates also have the highest all-cause, all-condition readmission rates—1 is a teaching hospital (Barnes-Jewish Hospital), 2 are nonteaching safety-net hos-

**Table. Discharge-Weighted Poverty Rates by Census Tract, All-Cause Readmission Rates, and Readmission Rate Penalties of BJC HealthCare Hospitals\***

BJC HealthCare Hospitals	Discharge-Weighted Poverty Rate by Census Tract	All-Cause Readmission Rate	2013 Readmission Rate Penalty, \$
Barnes-Jewish Hospital	14.37	14.69	2 200 895
Christian Hospital	13.53	12.89	448 456
Parkland Health Center	13.53	12.28	16 444
Alton Memorial Hospital	11.45	12.36	0
Boone Hospital Center	11.11	9.46	0
Missouri Baptist Sullivan Hospital	10.72	8.90	0
Barnes-Jewish West County Hospital	7.90	8.39	0
Missouri Baptist Medical Center	7.88	11.22	440 564
Progress West Hospital Center	4.25	9.72	10 969
Barnes-Jewish St. Peters Hospital	3.91	11.90	141 926

\* All-cause readmission rates from 1 March 2012 to 1 March 2014. Readmission rate penalties for Federal fiscal year 2013.

pitals (Christian Hospital and Alton Memorial Hospital), and 1 is a rural hospital (Parkland Health Center).

For individual hospitals, such as Christian Hospital or Parkland Health Center, the absence of risk adjustment for sociodemographic factors has consequences. Both hospitals disproportionately serve Medicaid recipients and uninsured patients. Christian Hospital and Parkland Health Center operate with negative margins of \$28 million and \$6 million, respectively. The imposition of readmission rate penalties that are not risk-adjusted for sociodemographic factors exacerbates these losses and financial challenges.

Although some safety-net providers across the United States are able to keep readmission rates below national averages, policymakers should not assume that all safety-net providers are equally resourced at the local level so that the playing field is, indeed, level. It is not. Some of these hospitals receive substantial economic support from local taxing jurisdictions; others receive no local funding. The former may well have the necessary patient care infrastructure to manage discharged patients in an outpatient or home setting; the latter probably do not. In the example of BJC HealthCare, Christian Hospital and Parkland Health Center are private, not-for-profit hospitals that receive no local funding to support their safety-net missions.

With so much money riding on these comparisons of outcome measures, providers are keenly invested in the risk-adjustment methods used to determine the numerical value of the “predicted” or the “expected” outcome. The already resource-constrained providers who disproportionately serve disadvantaged patients may be incurring an unfair proportion of financial penalties based on outcome measures.

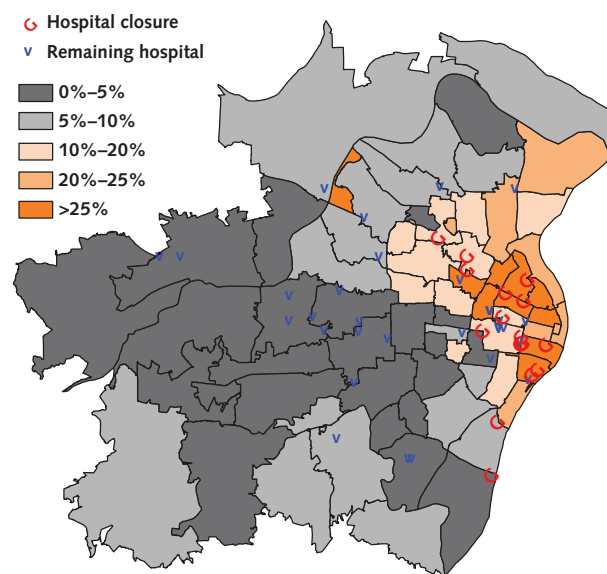
Medicare has already reduced payments to these hospitals under provisions of the Patient Protection and Af-

fordable Care Act of 2010, the Budget Control Act of 2011 (the “sequester”), and the Taxpayer Relief Act of 2013 (the “fiscal cliff”). Furthermore, the U.S. Supreme Court ruling in 2012 leaves many safety-net hospitals to continue serving substantial numbers of uninsured patients in states that have opted not to expand their Medicaid programs (2, 3). Safety-net providers also must worry about reputational harm with potential consequent economic harm associated with attributed health outcomes that reflect sociodemographic disparities rather than disparities in the care that they deliver.

The peer-reviewed literature (4–7) and the media (8, 9) have written much about this difference of opinion and its effect. Congress is also engaged in the debate. Two pieces of legislation have now been introduced to mandate risk adjustment of hospital readmission rate measures for sociodemographic factors and variables. Representative Jim Renacci (R-OH) introduced the Establishing Beneficiary Equity in the Hospital Readmissions Program Act of 2014, H.R. 4188. Senator Joe Manchin (D-WV) introduced the Hospital Readmissions Program Accuracy and Accountability Act of 2014, S. 2501, which is cosponsored by Senators Roger Wicker (R-MS), Mark Kirk (R-IL), and Bill Nelson (D-FL).

We encourage everyone to read the NQF expert panel report (1) and consider the consequences of not adjusting performance metrics for sociodemographic factors. Many

**Figure. St. Louis metropolitan area hospital closures by poverty level of ZIP code, 1978–2013.**



Percentages represent the 2013 poverty rate obtained from the Nielsen Company, Nielsen Pop-Facts, 2013. Adapted with permission from Reidhead MC. St. Louis metro area hospital closures over time. Accessed at [www.mhanet.com/hidiimages/Hospital\\_Closures.pdf](http://www.mhanet.com/hidiimages/Hospital_Closures.pdf) on 16 July 2014. Copyright 2013 by the Missouri Hospital Association and the Hospital Industry Data Institute.

safety-net providers have already succumbed to financial pressures. The **Figure** shows the dramatic reduction in St. Louis metropolitan area hospital providers over the past 40 years, largely due to their inability to remain viable under challenging economic circumstances.

Safety-net hospitals and providers will fail in increasing numbers under the financial burden of new federal laws and programs aimed at reducing costs, improving quality, and increasing access—including pay-for-performance programs that do not risk-adjust outcome measures for sociodemographic factors. If safety-net providers fail, disparities in outcomes and access will only worsen for low-income and disadvantaged patients.

From From BJC HealthCare, St. Louis, Missouri.

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## References

1. **National Quality Forum.** Risk adjustment for sociodemographic factors. 2014. Accessed at [www.qualityforum.org/Risk\\_Adjustment\\_SES.aspx](http://www.qualityforum.org/Risk_Adjustment_SES.aspx) on 8 July 2014.
2. **Neuhausen K, Davis AC, Needleman J, Brook RH, Zingmond D, Roby DH.** Disproportionate-share hospital payment reductions may threaten the financial stability of safety-net hospitals. *Health Aff (Millwood)*. 2014;33:988-96. [PMID: 24889948] doi:10.1377/hlthaff.2013.1222
3. **Council of Economic Advisers.** Missed Opportunities: The Consequences of State Decisions Not to Expand Medicaid. Washington, DC: Executive Office of the President of the United States; 2014. Accessed at [www.whitehouse.gov/sites/default/files/docs/missed\\_opportunities\\_medicare.pdf](http://www.whitehouse.gov/sites/default/files/docs/missed_opportunities_medicare.pdf) on 9 July 2014.
4. **Casalino LP, Elster A, Eisenberg A, Lewis E, Montgomery J, Ramos D.** Will pay-for-performance and quality reporting affect health care disparities? *Health Aff (Millwood)*. 2007;26:w405-14. [PMID: 17426053]
5. **Joynt KE, Jha AK.** A path forward on Medicare readmissions. *N Engl J Med*. 2013;368:1175-7. [PMID: 23465069] doi:10.1056/NEJMp1300122
6. **Hu J, Gonsahn MD, Nerenz DR.** Socioeconomic status and readmissions: evidence from an urban teaching hospital. *Health Aff (Millwood)*. 2014;33:778-85. [PMID: 24799574] doi:10.1377/hlthaff.2013.0816
7. **Nagasako EM, Reidhead M, Waterman B, Dunagan WC.** Adding socioeconomic data to hospital readmissions calculations may produce more useful results. *Health Aff (Millwood)*. 2014;33:786-91. [PMID: 24799575] doi:10.1377/hlthaff.2013.1148
8. **Pear R.** Health law's pay policy is skewed, panel finds. *The New York Times*. 28 April 2014:A13. Accessed at [www.nytimes.com/2014/04/28/us/politics/health-laws-pay-policy-is-skewed-panel-finds.html?\\_r=0](http://www.nytimes.com/2014/04/28/us/politics/health-laws-pay-policy-is-skewed-panel-finds.html?_r=0) on 7 July 2014.
9. **Thomas L.** Poor Health special report: Hospitals, doctors moving out of poor city neighborhoods to more affluent areas. *Milwaukee Journal Sentinel*. 14 June 2014. Accessed at [www.jsonline.com/news/health/hospitals-doctors-moving-out-of-poor-city-neighborhoods-to-more-affluent-areas-b99284882z1-262899701.html](http://www.jsonline.com/news/health/hospitals-doctors-moving-out-of-poor-city-neighborhoods-to-more-affluent-areas-b99284882z1-262899701.html) on 9 July 2014.

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