

SOCIODEMOGRAPHIC STATUS

► Results from the heart failure payment measure: **Hospitals with the highest proportions of vulnerable populations based on sociodemographic characteristics.**

The Centers for Medicare & Medicaid Services (CMS) periodically investigates issues of stakeholder interest in relation to their hospital 30-day episode-of-care payment measures. In 2015, CMS began publicly reporting the following payment measure on [Hospital Compare](#): hospital-level risk-standardized payment (RSP) associated with a 30-day episode of care for heart failure [1]. The heart failure payment measure includes admissions for Medicare fee-for-service (FFS) beneficiaries aged 65 or older [2]. The heart failure payment measure captures payments across multiple care settings, services, and supplies (this includes inpatient, outpatient, skilled nursing facility, home health, hospice, physician/clinical laboratory/ambulance services, and durable medical equipment, prosthetics/orthotics, and supplies) [2]. To isolate payment variation that reflects practice patterns rather than factors unrelated to clinical care, geographic differences and policy adjustments in payment rates for individual services are removed from the total payment for that service [2]. Standardizing the payment allows for comparison across hospitals based solely on payments for decisions related to clinical care. However, it's important to note that the heart failure payment measure results alone are not an indication of quality.

There has been much discussion about the potential impact of patient sociodemographic status (SDS) on hospital outcome measures, including measures of payment [1, 3]. We examined heart failure RSPs among hospitals identified as caring for a large proportion of vulnerable patients, as characterized by seven different SDS definitions, for hospitals with at least 25 eligible admissions. The hospitals included in this analysis are the 10% of hospitals with highest proportions of vulnerable patients as characterized by the different SDS definitions (Table 1). We compared the distribution of heart failure RSP results among the hospitals identified by the various SDS definitions and also examined the number of hospitals identified as caring for high proportion of vulnerable populations by the various definitions. Variation in heart failure RSPs reflects different patterns in care decisions and resource utilization (for example, treatment, supplies, or services) among hospitals for a hospital's patients both at the hospital and after they leave. Wider distributions suggest more variation in payments, and narrower distributions suggest less variation in payments. To ensure accurate assessment of each hospital, the heart failure payment measure uses a statistical model to adjust for key differences in patient risk factors that are clinically relevant and that have a strong relationship with the payment outcome [2]. In addition, all payments were inflation-adjusted to 2013 dollars.

Among the subgroup of hospitals identified as serving vulnerable populations as characterized by the seven SDS definitions, only 48% of hospitals were identified by more than one definition of SDS.

Out of the 1,392 hospitals that met the criteria for serving a large proportion of vulnerable patients as characterized by at least one definition of SDS, less than half (672 hospitals; 48% of hospitals) met criteria characterized by multiple definitions of SDS. There were no hospitals that met criteria characterized by all seven definitions of SDS. However, four hospitals (< 1% of 3,703 total hospitals) met the criteria for six of the definitions, 36 hospitals (1% of total hospitals) were identified by five of the definitions, 95 hospitals (3% of total hospitals) were identified by four of the definitions, and 200 hospitals (5% of total hospitals) were identified by three of the definitions.

The median heart failure RSP for all hospitals was \$15,190 and median heart failure RSPs for hospitals identified as serving high proportions of vulnerable populations were within \$757 of the overall median. We observed overlapping ranges in performance for hospitals meeting criteria based on all seven SDS definitions (Figure 1). The interquartile range of heart failure RSPs overall ranged from \$14,243 to \$16,213 and for hospitals identified as serving high proportions of vulnerable populations ranged from \$13,663 to \$16,734 (Table 2).

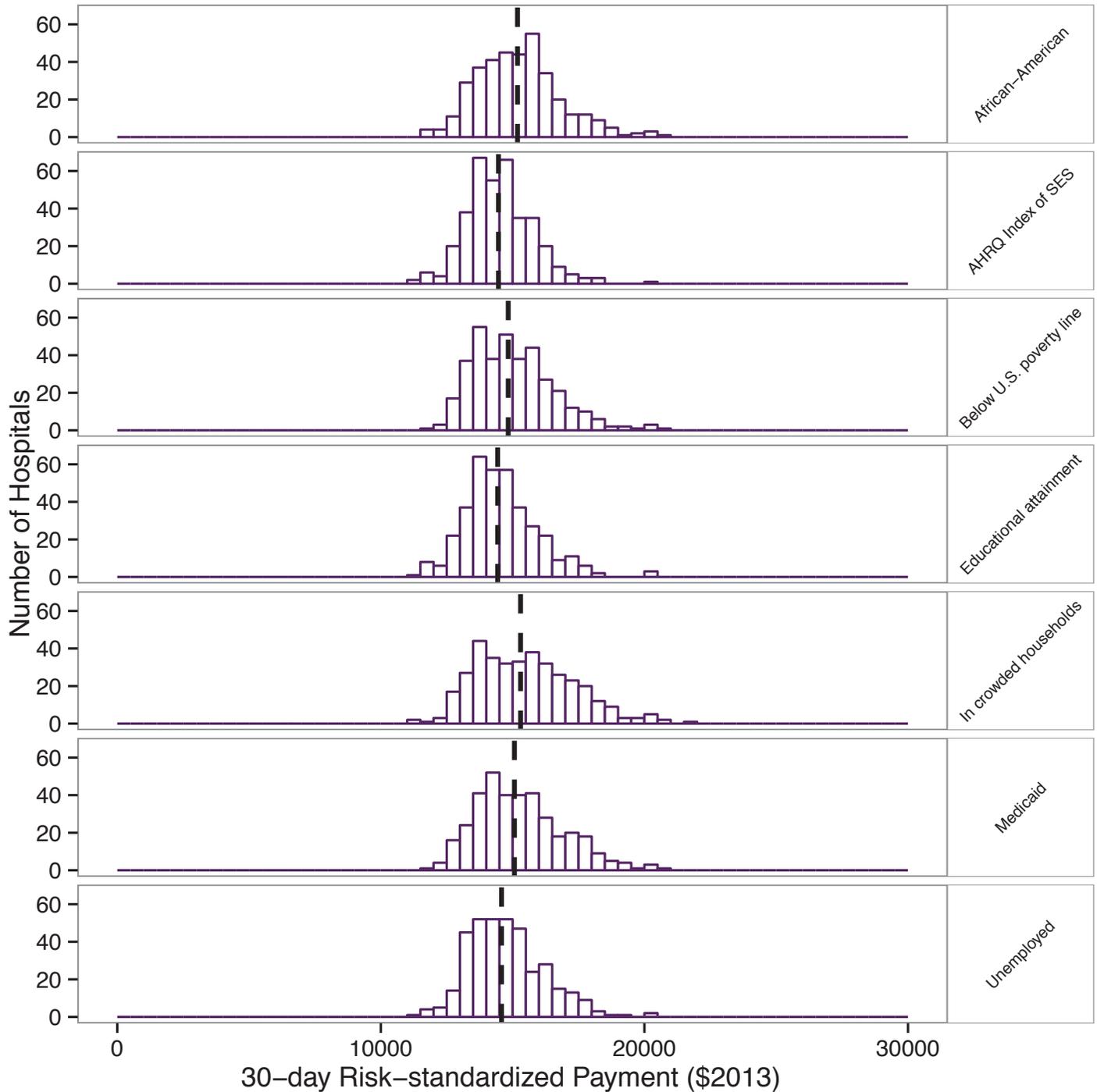
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TABLE I Definitions and data sources for the following sociodemographic characteristics: living below the U.S. poverty line; an educational attainment below high school; unemployed; living in crowded households; African-American; receiving Medicaid; and residing in a zip-code with a low AHRQ Index of SES score.

Sociodemographic characteristics	Definition of vulnerable patients based on sociodemographic characteristics	Identification of hospitals with the highest proportion of vulnerable patients	Source
Below U.S. poverty line	Patients from zip codes where more than 29.7% of the residents are below the United States (U.S.) poverty line	Hospitals with more than 63.5% of Medicare FFS patients that meet the vulnerable patient definition	American Community Survey (ACS) 2008 – 2012 5 year estimate Medicare Part A Inpatient Claims 2012
Educational attainment below high school	Patients from zip codes where more than 18.6% of the residents aged ≥ 25 years have less than a 12th-grade education	Hospitals with more than 85.4% of Medicare FFS patients that meet the vulnerable patient definition	ACS 2008 – 2012 5 year estimate Medicare Part A Inpatient Claims 2012
Unemployed	Patients from zip codes where more than 11.5% of the residents aged 16 years or older in labor force who are unemployed and actively seeking work	Hospitals with more than 70.2% of Medicare FFS patients that meet the vulnerable patient definition	ACS 2008 – 2012 5 year estimate Medicare Part A Inpatient Claims 2012
Crowded households	Patients from zip codes where more than 3.2% of the residents live in households containing one or more person per room	Hospitals with more than 72.8% of Medicare FFS patients that meet the vulnerable patient definition	ACS 2008 – 2012 5 year estimate Medicare Part A Inpatient Claims 2012
African-American	African-American patients	Hospitals with more than 23.3% of Medicare FFS patients identified as African-American	Medicare Part A Inpatient Claims 2013
Medicaid	Patients that have Medicaid coverage	Hospitals with more than 29.6% of patients with Medicaid coverage	American Hospital Association (AHA) Survey 2013 [4]
AHRQ Index of SES scores	Patients from zip codes with an Agency for Healthcare Research & Quality (AHRQ) socioeconomic status (SES) index score below 31.8	Hospitals with more than 91.4% of Medicare FFS patients that meet the vulnerable patient definition	AHRQ SES index [5] ACS 2008 – 2012 5 year estimate Medicare Part A Inpatient Claims 2012

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FIGURE I Distributions and medians of heart failure RSPs (\$2013) for hospitals with the highest proportion of patients with one of the following sociodemographic characteristics: living below the U.S. poverty line; an educational attainment below high school; unemployed; living in crowded households; African-American; receiving Medicaid; and residing in a zip-code with a low AHRQ Index of SES score, July 2011-June 2014.



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TABLE 2 Distributions of heart failure RSPs (\$2013) for hospitals with the highest proportion of patients with one of the following sociodemographic characteristics: living below the U.S. poverty line; an educational attainment below high school; unemployed; living in crowded households; African-American; receiving Medicaid; and residing in a zip-code with a low AHRQ Index of SES score, July 2011-June 2014.

Heart Failure RSP (\$2013) for hospitals with the highest proportions of patients:

	All hospitals; n=3,703	Below U.S. poverty line; n=369	Educational attainment below high school; n=369	Unemployed; n=368	In crowded households; n=368	African- American; n=369	Medicaid; n=366	Low AHRQ Index of SES score; n=369
Maximum	21,867	20,833	20,116	20,127	21,867	20,833	20,804	20,116
75%	16,213	15,909	15,339	15,539	16,734	16,087	16,211	15,261
Median (50%)	15,190	14,833	14,433	14,580	15,301	15,185	15,068	14,465
25%	14,243	13,830	13,663	13,753	13,978	14,092	14,028	13,727
Minimum	11,086	11,545	11,086	11,086	11,086	11,603	11,695	11,086

The median heart failure RSP for all hospitals was \$15,190 and median heart failure RSPs for hospitals identified as serving high proportions of vulnerable populations were within \$757 of the overall median. Similarly, the interquartile range of heart failure RSPs overall ranged from \$14,243 to \$16,213 and for hospitals identified as serving high proportions of vulnerable populations ranged from \$13,663 to \$16,734.

1. "Hospital Inpatient Prospective Payment Systems for Acute Care Hospitals, Final Rule." Federal Register / 22 August 2014; <http://federalregister.gov/a/2014-18545>. Accessed 16 June 2015.

2. Kim N, Ott L, Hsieh A, et al. 2015 Condition-Specific Measure Updates and Specifications Report Hospital-Level 30-Day Risk-Standardized Payment Measures: Acute Myocardial Infarction – Version 4.0, Heart Failure – Version 2.0, Pneumonia – Version 2.0; <https://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier4&cid=1228774267858>. Accessed 26 June 2015.

3. National Quality Forum. Risk Adjustment for Socioeconomic Status or Other Sociodemographic Factors, Technical Report, August 15, 2014; http://www.qualityforum.org/Publications/2014/08/Risk_Adjustment_for_Socioeconomic_Status_or_Other_Sociodemographic_Factors.aspx. Accessed 9 July 2015.

4. AHA Annual Survey Database Fiscal Year 2013; <http://www.ahadataviewer.com/book-cd-products/aha-survey/>. Accessed 26 June 2015.

5. U.S. Department of Health & Human Services, AHRQ Agency for Healthcare Research and Quality archive; Publication # 08-0029-EF, Chapter 3: Creation of New Race-Ethnicity Codes and SES Indicators for Medicare Beneficiaries - Chapter 3: Creating and Validating and Index of Socioeconomic Status; <http://archive.ahrq.gov/research/findings/final-reports/medicareindicators/medicareindicators3.html>. Accessed 30 June 2015.