SOCIODEMOGRAPHIC STATUS

▶ Performance on the acute myocardial infarction readmission measure: **Hospitals with the highest proportions of vulnerable populations based on sociodemographic characteristics.**

The Centers for Medicare & Medicaid Services (CMS) periodically investigates select hospital practices that may impact a hospital's performance on the following readmission measure: hospital-level 30-day risk-standardized readmission rate (RSRR) following acute myocardial infarction (AMI) [1]. The AMI readmission measure includes Medicare fee-for-service (FFS) and Veterans Health Administration (VA) beneficiaries aged 65 or older [2]. The AMI readmission measure assesses the occurrence of unplanned readmission for any cause within 30 days after discharge from hospitalization for AMI [2]. The AMI readmission measure has been publicly reported on Hospital Compare since 2009 and has been included in the Hospital Readmissions Reduction Program (HRRP) since 2012 [3].

There has been much discussion about the potential impact of patient sociodemographic status (SDS) on hospital outcome measures, including measures of readmission [3, 4]. We examined AMI RSRRs 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 discharges. 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 AMI RSRRs 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 RSRRs reflects differences in performance among hospitals; lower RSRRs suggest better quality, and higher RSRRs suggest worse quality. To ensure accurate assessment of each hospital, the AMI readmission 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 readmission outcome [2]. Please note that VA hospitals are not included in this analysis.

Among the subgroup of hospitals identified as serving vulnerable populations as characterized by the seven SDS definitions, only 46% of hospitals were identified by more than one definition of SDS.

Out of the 839 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 (390 hospitals; 46% 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, eight hospitals (< 1% of 2,326 total hospitals) met the criteria for six of the definitions, 31 hospitals (1% of total hospitals) were identified by five of the definitions, 59 hospitals (3% of total hospitals) were identified by four of the definitions, and 96 hospitals (4% of total hospitals) were identified by three of the definitions.

The median AMI RSRR for all hospitals was 17.0% and median AMI RSRRs for hospitals identified as serving high proportions of vulnerable populations were within 0.6 percentage points 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 AMI RSRRs overall was 16.3% to 17.7% and for hospitals identified as serving high proportions of vulnerable populations the interquartile range was 16.5% to 18.2% (Table 2).
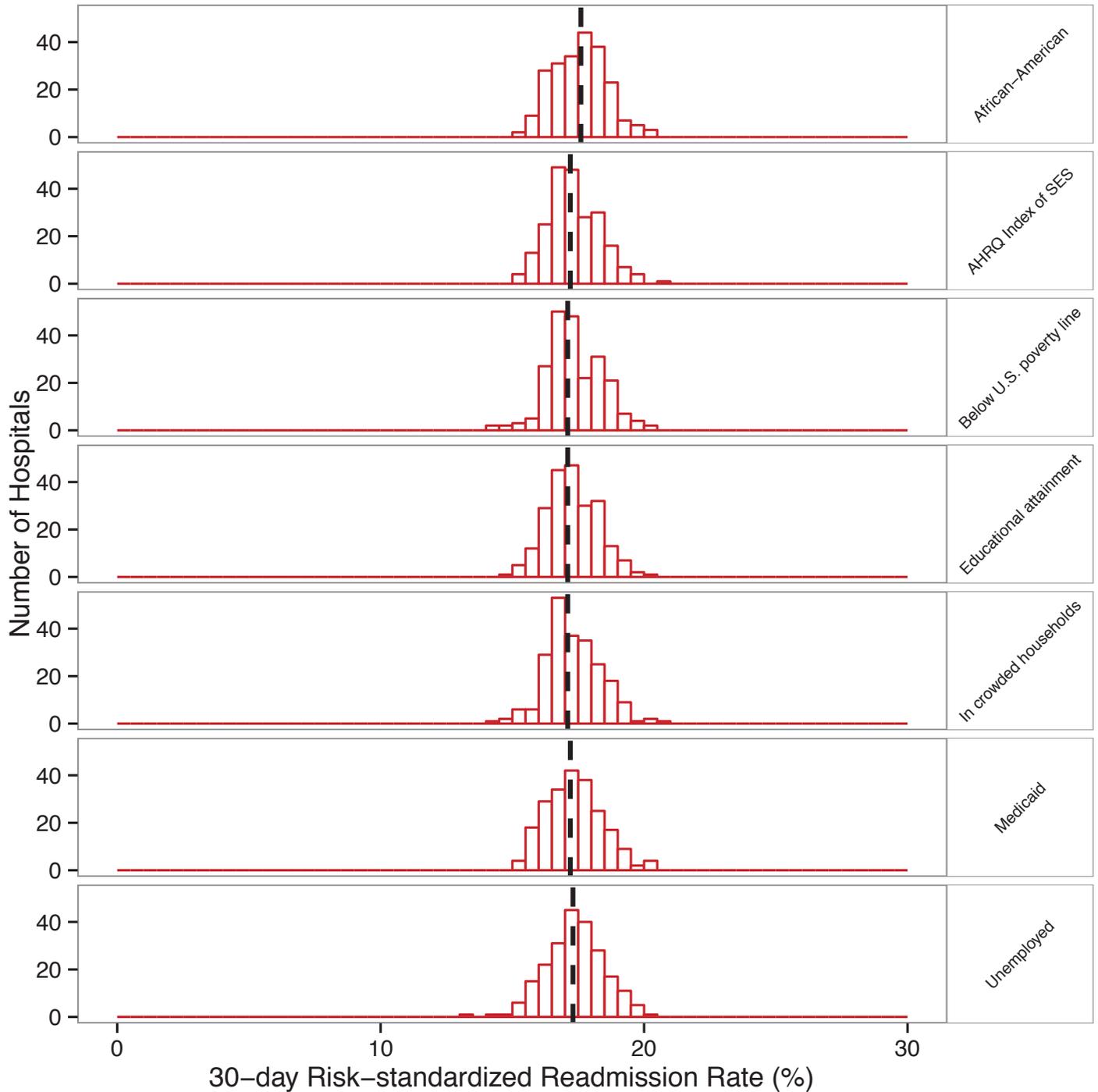
TABLE I *Definitions and data sources for the following sociodemographic characteristics: living below the U.S. poverty line; an educational attainment below high school; unemployed; living in crowded households; African-American; receiving Medicaid; and residing in a zip-code with a low AHRQ Index of 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 55.8% 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 65.0% 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 61.6% 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 69.5% 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 23.6% of Medicare FFS patients identified as African-American	Medicare Part A Inpatient Claims 2013
Medicaid	Patients that have Medicaid coverage	Hospitals with more than 30.4% of patients with Medicaid coverage	American Hospital Association (AHA) Survey 2013 [5]
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 68.7% of Medicare FFS patients that meet the vulnerable patient definition	AHRQ SES index [6] ACS 2008 – 2012 5 year estimate Medicare Part A Inpatient Claims 2012

FIGURE I *Distributions and medians of AMI RSRRs (%) 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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3

TABLE 2 *Distributions of AMI RSRRs (%) 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.*

AMI RSRRs (%) for hospitals with the highest proportions of patients:

	All hospitals; n=2,326	Below U.S. poverty line; n=224	Educational attainment below high school; n=224	Unemployed; n=224	In crowded households; n=225	African-American; n=224	Medicaid; n=222	Low AHRQ Index of SES score; n=225
Maximum	20.8	20.1	20.0	20.0	20.5	20.4	20.1	20.6
75%	17.7	18.0	17.9	18.1	17.9	18.2	18.0	18.0
Median (50%)	17.0	17.1	17.1	17.3	17.1	17.6	17.2	17.2
25%	16.3	16.7	16.6	16.6	16.6	16.8	16.5	16.6
Minimum	13.3	14.0	14.8	13.4	14.0	15.2	15.1	15.0

The median AMI RSRR for all hospitals was 17.0% and median AMI RSRRs for hospitals identified as serving high proportions of vulnerable populations were within 0.6 percentage points of the overall median. Similarly, the interquartile range of AMI RSRRs overall was 16.3% to 17.7% and for hospitals identified as serving high proportions of vulnerable populations the interquartile range was 16.5% to 18.2%.

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