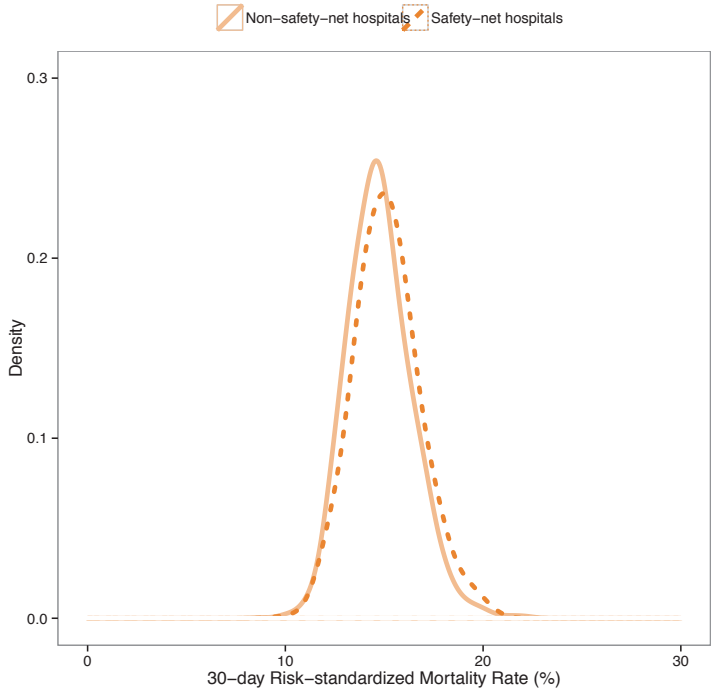
Performance on the stroke mortality measure by hospital characteristics: **safety-net status, teaching status, and urban or rural location.**

The Centers for Medicare & Medicaid Services (CMS) periodically investigates select hospital characteristics that may impact a hospital's performance on the following mortality measure: hospital-level 30-day risk-standardized mortality rate (RSMR) following acute ischemic stroke [1]. The stroke mortality measure includes Medicare fee-for-service (FFS) beneficiaries aged 65 or older [2]. The stroke mortality measure assesses death from any cause within 30 days of a hospital admission for acute ischemic stroke, regardless of whether the patient dies while still in the hospital or after discharge from the hospital [2]. The stroke mortality measure has been publicly reported on Hospital Compare since 2014 [3].

FIGURE I *Distributions of hospital RSMRs (%) for stroke by safety-net status, July 2011-June 2014.*



Variation in RSMRs reflects differences in performance among hospitals; lower RSMRs suggest better quality, and higher RSMRs suggest worse quality. To understand the impact of hospital safety-net status, teaching status, and urban or rural location, we examined RSMRs among hospitals with these characteristics with 25 or more qualifying admissions. Therefore, we evaluated the stroke RSMRs for a total of 2,773 hospitals by comparing 564 safety-net hospitals against 2,209 non-safety-net hospitals, 1,000 teaching hospitals against 1,773 non-teaching hospitals, and 2,517 urban hospitals against 256 rural hospitals for the July 2011 – June 2014 reporting period.

Safety-net hospitals are defined as those committed to caring for populations without stable access to care, specifically public hospitals or private hospitals with a Medicaid caseload greater than one standard deviation above their respective state's mean private hospital Medicaid caseload [4]. Teaching Hospitals provide post-graduate education for physicians completing residency and fellowship [4]. Urban and rural hospitals are defined by hospital self-identification [4].

To ensure accurate assessment of each hospital, the stroke mortality 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 mortality outcome [2].

FIGURE 2 *Distributions of hospital RSMRs (%) for stroke by teaching status, July 2011-June 2014.*

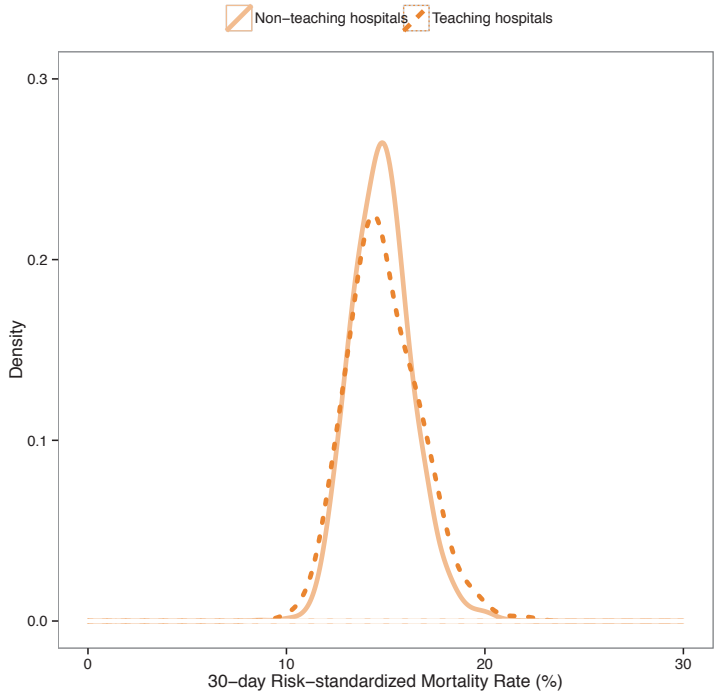
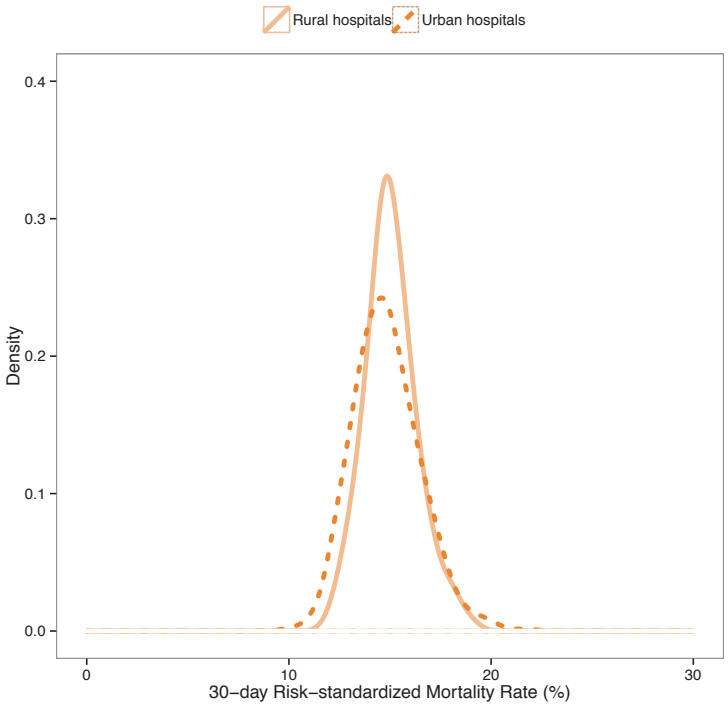


TABLE I *Distributions of hospital RSMRs for stroke overall, by safety-net status, teaching status, and urban or rural location, July 2011-June 2014.*

	Stroke RSMR (%)						
	Overall; n=2773	Safety-net hospitals; n=564	Non-safety-net hospitals; n=2209	Teaching hospitals; n=1000	Non-teaching hospitals; n=1773	Urban hospitals; n=2517	Rural hospitals; n=256
Maximum	22.3	20.5	22.3	22.3	21.3	22.3	19.0
90%	17.0	17.4	16.9	17.4	16.8	17.1	16.7
75%	15.9	16.2	15.8	16.1	15.7	15.9	15.8
Median (50%)	14.7	15.1	14.7	14.7	14.8	14.7	14.9
25%	13.7	13.9	13.6	13.7	13.7	13.7	14.3
10%	12.8	13.1	12.8	12.7	12.9	12.8	13.5
Minimum	8.7	10.0	8.7	9.8	8.7	8.7	11.9

The median stroke RSMR for all hospitals was 14.7% (interquartile range [IQR]: 13.7%-15.9%; Table 1). The median stroke RSMR for safety-net hospitals was 15.1% (IQR: 13.9%-16.2%) and for non-safety-net hospitals was 14.7% (IQR: 13.6%-15.8%; Figure 1 and Table 1). The median stroke RSMR for teaching hospitals was 14.7% (IQR: 13.7%-16.1%) and for non-teaching hospitals was 14.8% (IQR: 13.7%-15.7%; Figure 2 and Table 1). The median stroke RSMR for urban hospitals was 14.7% (IQR: 13.7%-15.9%) and for rural hospitals was 14.9% (IQR: 14.3%-15.8%; Figure 3 and Table 1).

FIGURE 3 *Distributions of hospital RSMRs (%) for stroke by urban or rural location, July 2011-June 2014.*



Safety-net hospitals had a median stroke RSMR that was 0.4 percentage points higher than non-safety-net hospitals, teaching hospitals had a median stroke RSMR that was 0.1 percentage points lower than non-teaching hospitals, and urban hospitals had a median stroke RSMR that was 0.2 percentage points lower than rural

1. Medicare Hospital Quality Chartbook 2014: Performance Report on Outcome Measures. Prepared by Yale New Haven Health Services Corporation Center for Outcomes Research and Evaluation for the Centers for Medicare and Medicaid Services 2014; http://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HospitalQualityInits/Downloads/Medicare-Hospital-Quality-Chartbook-2014.pdf. Accessed 16 June 2015.

2. Dorsey K, Grady J, Desai N, et al. 2015 Condition-Specific Measures Updates and Specifications Report Hospital-Level 30-Day Risk-Standardized Mortality Measures: Acute Myocardial Infarction – Version 9.0, Heart Failure – Version 9.0, Pneumonia – Version 9.0, Chronic Obstructive Pulmonary Disease – Version 4.0, Stroke – Version 4.0; https://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier4&cid=1163010421830. Accessed 26 June 2015.

3. "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.

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