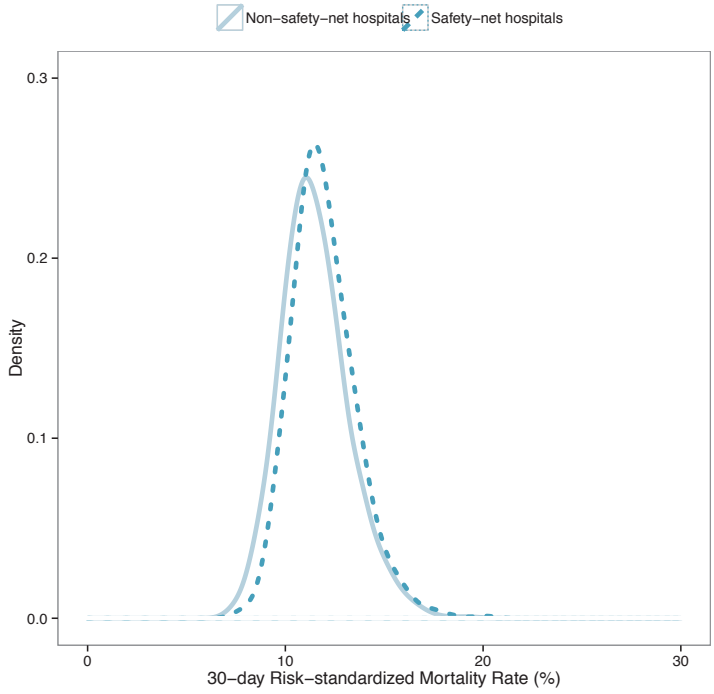
Performance on the pneumonia mortality measure by hospital characteristics: **safety-net status, teaching status, and urban or rural location.**

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 pneumonia [1]. The pneumonia mortality measure includes Medicare fee-for-service (FFS) and Veterans Health Administration (VA) beneficiaries aged 65 or older [2]. The pneumonia mortality measure assesses death from any cause within 30 days of a hospital admission for pneumonia, regardless of whether the patient dies while still in the hospital or after discharge from the hospital [2]. The pneumonia mortality measure has been publicly reported on Hospital Compare since 2008 and has been included in the Hospital Value-Based Purchasing (HVBP) Program since 2013 [3].

FIGURE I *Distributions of hospital RSMRs (%) for pneumonia 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 pneumonia RSMRs for a total of 4,165 hospitals by comparing 1,206 safety-net hospitals against 2,959 non-safety-net hospitals, 1,126 teaching hospitals against 3,039 non-teaching hospitals, and 3,155 urban hospitals against 1,010 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 pneumonia 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 pneumonia by teaching status, July 2011-June 2014.*

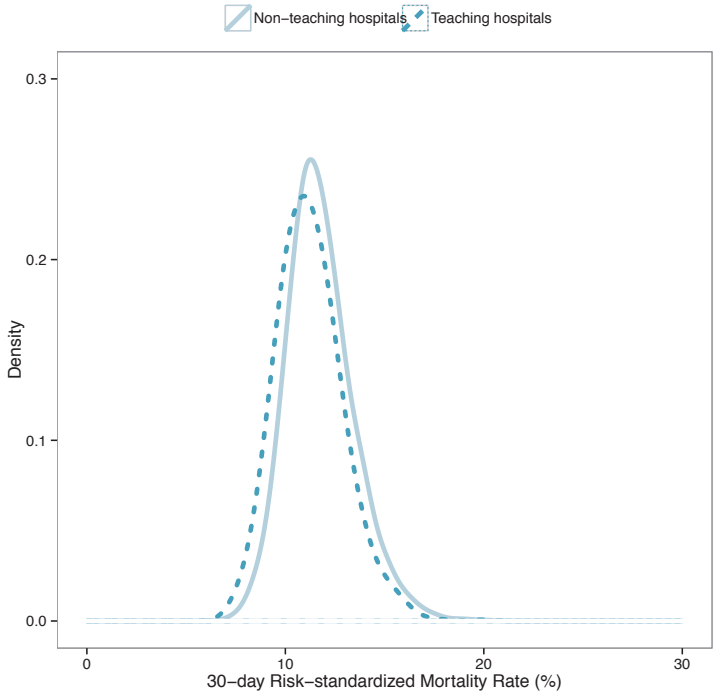
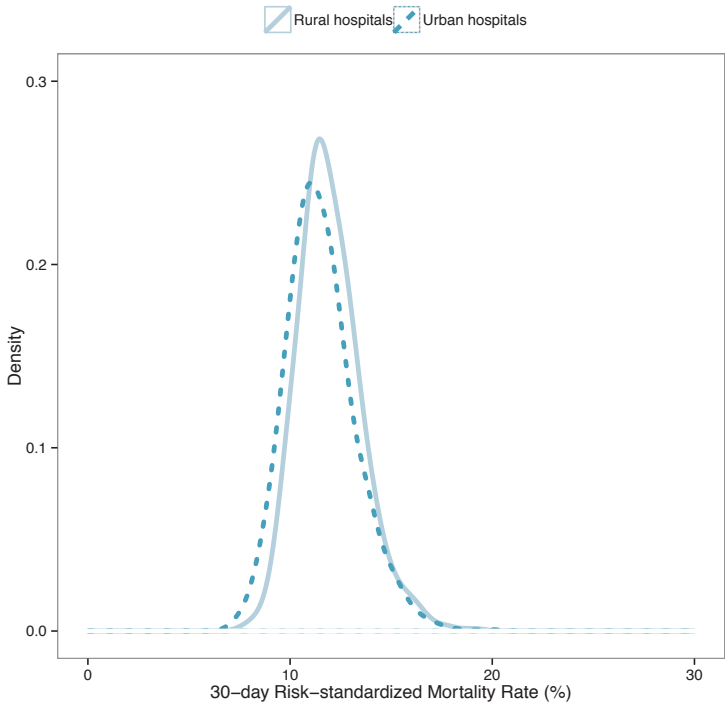


TABLE I *Distributions of hospital RSMRs (%) for pneumonia overall, by safety-net status, teaching status, and urban or rural location, July 2011-June 2014.*

	Pneumonia RSMR (%)						
	Overall; n=4165	Safety-net hospitals; n=1206	Non-safety-net hospitals; n=2959	Teaching hospitals; n=1126	Non-teaching hospitals; n=3039	Urban hospitals; n=3155	Rural hospitals; n=1010
Maximum	20.3	20.3	19.8	19.9	20.3	20.3	19.3
90%	13.9	14.0	13.8	13.5	14.0	13.8	14.0
75%	12.6	12.9	12.5	12.2	12.7	12.5	12.9
Median (50%)	11.5	11.8	11.3	11.1	11.6	11.3	11.8
25%	10.5	10.9	10.3	10.0	10.7	10.3	10.9
10%	9.6	10.1	9.5	9.2	9.8	9.5	10.1
Minimum	6.9	7.5	6.9	7.1	6.9	6.9	7.7

The median pneumonia RSMR for all hospitals was 11.5% (interquartile range [IQR]: 10.5%-12.6%; Table 1). The median pneumonia RSMR for safety-net hospitals was 11.8% (IQR: 10.9%-12.9%) and for non-safety-net hospitals was 11.3% (IQR: 10.3%-12.5%; Figure 1 and Table 1). The median pneumonia RSMR for teaching hospitals was 11.1% (IQR: 10.0%-12.2%) and for non-teaching hospitals was 11.6% (IQR: 10.7%-12.7%; Figure 2 and Table 1). The median pneumonia RSMR for urban hospitals was 11.3% (IQR: 10.3%-12.5%) and for rural hospitals was 11.8% (IQR: 10.9%-12.9%; Figure 3 and Table 1).

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



Safety-net hospitals had a median pneumonia RSMR that was 0.5 percentage points higher than non-safety-net hospitals, teaching hospitals had a median pneumonia RSMR that was 0.5 percentage points lower than non-teaching hospitals, and urban hospitals had a median pneumonia RSMR that was 0.5 percentage points lower than rural hospitals.

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.