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CMS Hospital Quality Star Rating: for 762 Rural Hospitals, No Stars Is the Problem

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BACKGROUND

In April 2017, the Centers for Medicare & Medicaid Services (CMS) released their fourth Hospital Quality Star Rating list.[1] Like the first three releases, a large number of hospitals were excluded, most of which were rural. Table 1 shows the number and percent of rural and urban hospitals in each CMS star category from the April release. Twenty-three percent (1,048) of all hospitals have no score, and 73% (762) of those are rural hospitals.

Table 1: Number and Percent of Rural and Urban Hospitals in Each CMS Star Category, April 2017

CMS Star Rating	Rural	Urban	Total
★	8 (7%)	99 (93%)	107
★★	166 (25%)	502 (75%)	668
★★★	848 (48%)	915 (52%)	1,763
★★★★	422 (45%)	517 (55%)	939
★★★★★	15 (18%)	67 (82%)	82
Not rated	762 (73%)	286 (27%)	1,048
Total	**2,221**	**2,386**	**4,607**

Stakeholders have been publicly debating the star rating scale's usefulness in comparing hospital quality,[2] but little focus has been given to the large number of rural hospitals with no rating. The purpose of this brief is to look more closely at the characteristics of rural hospitals with and without quality star ratings to help inform ongoing discussions about the usefulness of the quality star rating for comparing hospital quality and possible ways to improve the star rating initiative.

KEY FINDINGS

- More than one third of rural hospitals did not receive a star rating.
- CAHs are the most likely to not receive a star rating.
- Small rural hospitals are less likely than larger rural hospitals to receive a star rating.
- Forty-three percent of the not-rated rural hospitals were in the Midwest census region.

CMS rates hospitals on a five-star scale, with more stars indicating higher quality. Hospitals are rated based on self-reported data for up to 64 quality measures that cover seven domains (mortality, safety of care, readmission, patient experience, effectiveness of care, timeliness of care and efficient use of medical imaging).[3] Because not all hospitals report data on all 64 measures, hospital ratings are determined based on available data, which ranges from an average of 40 measures to as few as nine.

To receive an Overall Hospital Quality Star Rating, a hospital must have reported data for at least three measures in each of at least three of the domains, including one outcome domain (mortality, safety or readmission).[3,4] CMS notes several possible reasons why a hospital might not have sufficient data to be rated, including small size or lack of sufficient cases. Rural hospitals are disproportionately affected by the minimum reporting requirements, and while CMS cautions that the absence of a rating does not mean that a hospital provides low quality care,[3] some consumers still may equate no rating with failure to report or with poor quality.

METHODS

Rural hospitals were defined as hospitals located outside Metropolitan Core Based Statistical Areas (CBSAs) or within Metropolitan areas but also classified with Rural-Urban Commuting Area (RUCA) codes of 4 or greater. Location and rural status were determined by combining rating data with Provider of Services,[6] Core Based Statistical Area,[7] and Rural-Urban Commuting Area[8] data files. Hospital characteristics were identified by combining rating data with Provider of Services,[6] Healthcare Provider Cost Reporting Information System,[9] and Provider Specific File data.[10]

RESULTS

CAHs are the most likely to not receive a star rating

Table 2 shows the number of rated and unrated rural hospitals by Medicare payment classification. Critical Access Hospitals (CAHs), which make up about half of all rural hospitals, were less likely to receive a quality star rating than other types of rural hospitals. Fifty-five percent of CAHs were not rated as compared to 34% of rural hospitals overall. Additionally, CAHs comprised 90% of the 762 unrated rural hospitals and 17% of the 286 unrated urban hospitals (data not shown).

Table 2: Rural Hospital Rating Status by Medicare Payment Classification, April 2017

Rural Hospital Type	Rated	Not-Rated	Total
CAH	552 (45%)	686 (55%)	1,238
IHS	6 (24%)	19 (76%)	25
MDH	128 (96%)	6 (4%)	134
PPS	283 (88%)	37 (12%)	320
RRC	222 (99%)	1 (1%)	223
SCH	268 (95%)	13 (5%)	281
Total	1,459 (66%)	762 (34%)	2,221

Source/Notes: Rural hospitals were defined as hospitals located outside Metropolitan Core Based Statistical Areas (CBSAs) or within Metropolitan areas but also classified with Rural-Urban Commuting Area (RUCA) codes of 4 or greater. Location and rural status were determined by combining ratings data with Provider of Services,[6] Core Based Statistical Area,[7] and Rural-Urban Commuting Area data files.[8] Hospital characteristics were identified by combining ratings data with Provider of Services,[6] Healthcare Provider Cost Reporting Information System,[9] and Provider Specific File data.[10]

Small rural hospitals are less likely than larger rural hospitals to receive a star rating

Consistent with the finding that CAHs were less likely than other rural hospitals to receive a star rating, small rural hospitals were also less likely than larger rural hospitals to be rated. Table 3 shows rural hospital rating status by hospital size, using net patient revenue as a proxy. Of the 892 rural hospitals with a net patient revenue of <$20 million, 629 or 71% were not rated.

Table 3: Rural Hospital Rating Status by Net Patient Revenue, April 2017

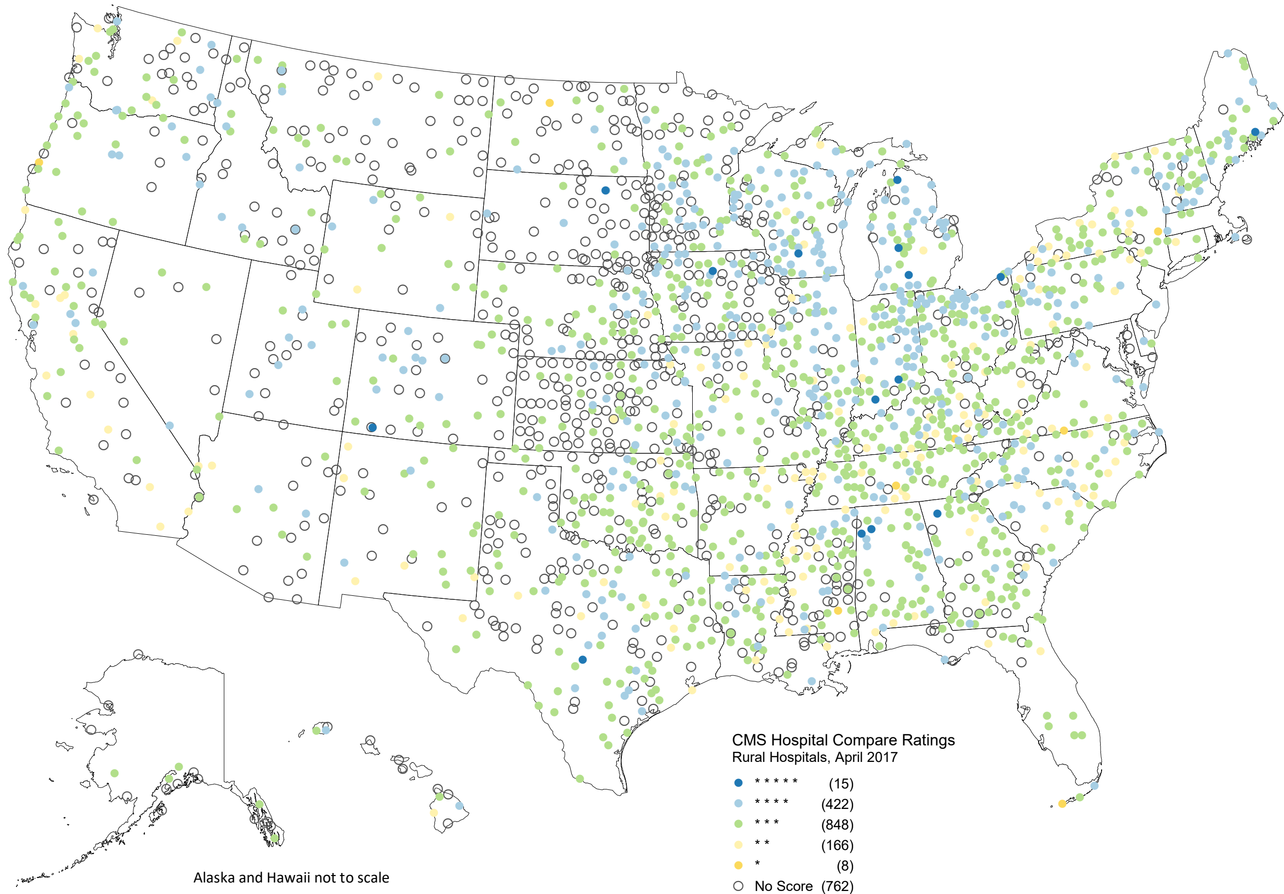
Net Patient Revenue	Rated	Not-Rated	Total
<$20 million	263 (29%)	629 (71%)	892
$20-$50 million	557 (84%)	108 (16%)	665
>$50 million	636 (97%)	23 (3%)	659
Revenue not reported	3 (60%)	2 (40%)	5
Total	1,459 (66%)	762 (34%)	2,221

Source/Notes: Rural hospitals were defined as hospitals located outside Metropolitan Core Based Statistical Areas (CBSAs) or within Metropolitan areas but also classified with Rural-Urban Commuting Area (RUCA) codes of 4 or greater. Location and rural status were determined by combining ratings data with Provider of Services,[6] Core Based Statistical Area,[7] and Rural-Urban Commuting Area data files.[8] Hospital characteristics were identified by combining ratings data with Provider of Services,[6] Healthcare Provider Cost Reporting Information System,[9] and Provider Specific File data.[10]

There are geographic differences among rural hospitals that did not receive a star rating

The map (Figure 1) shows clusters of rural hospitals with no rating (denoted by colorless circles) in the center of the U.S. – across Minnesota, Iowa, Nebraska, Kansas, and Oklahoma – and in Mississippi. The majority of unrated rural hospitals were found from these states to the West coast.

Figure 1. Geographic Variation of Rural Hospitals with Quality Star Rating, April 2017



Source: North Carolina Rural Health Research and Policy Analysis Center, Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill, June 2017
http://www.shepscenter.unc.edu/programs-projects/rural-health/

Source/Notes: Rural hospitals were defined as hospitals located outside Metropolitan Core Based Statistical Areas (CBSAs) or within Metropolitan areas but also classified with Rural-Urban Commuting Area (RUCA) codes of 4 or greater. Location and rural status were determined by combining ratings data with Provider of Services,[6] Core Based Statistical Area,[7] and Rural-Urban Commuting Area data files.[8]

Table 4 shows that between 27% and 49% of rural hospitals in three census regions were not rated. The West census region had the highest percent of rural hospitals that were not rated (nearly 50%) followed by the Midwest census region (38%) and the South census region (27%). Among the hospitals with no rating, 43% were in the Midwest census region, followed by 29% and 26% in the South and West census regions, respectively.

Table 4: Rural Hospital Rating Status by U.S. Census Region, April 2017

Census Region	Rated Hospitals	Not-Rated Hospitals	Total
West	200 (51%)	195 (49%)	395
South	589 (73%)	223 (27%)	812
Midwest	525 (62%)	326 (38%)	851
Northeast	145 (89%)	18 (11%)	163
Total	1,459 (66%)	762 (34%)	2,221

Source/Notes: Rural hospitals were defined as hospitals located outside Metropolitan Core Based Statistical Areas (CBSAs) or within Metropolitan areas but also classified with Rural-Urban Commuting Area (RUCA) codes of 4 or greater. Location and rural status were determined by combining ratings data with Provider of Services,[6] Core Based Statistical Area,[7] and Rural-Urban Commuting Area data files.[8] Hospital characteristics were identified by combining ratings data with Provider of Services,[6] Healthcare Provider Cost Reporting Information System,[9] and Provider Specific File data.[10]

DISCUSSION

The data in this brief highlight a limitation in using the Hospital Quality Star Rating to compare quality either among rural hospitals or between rural and urban hospitals. More than one third of rural hospitals did not receive a star rating, compared with 12% of urban hospitals. Among rural hospitals, CAHs and very small hospitals (lowest net patient revenue) were least likely to receive a star rating. Rural hospitals without a star rating were clustered across the West, Midwest, and South Census Regions.

While the data do not provide the specific reasons hospitals are not rated, several explanations are possible. First, rural hospitals, particularly very small hospitals such as CAHs, may not have a sufficient volume of patients to produce statistically valid results. Second, rural hospitals which often provide a more limited scope of services, may not provide the services that are measured by CMS quality reporting programs. Third, many CMS quality initiatives systematically exclude some rural hospitals from participation because they are paid differently than other providers or because of other measurement challenges. For example, Critical Access Hospitals do not participate in Medicare's Hospital Readmission Rate Reduction Program, but readmission is one of the top three domains in the CMS Hospital Quality Star Rating system. Finally, some hospitals may elect not to report quality data. While CAHs are not statutorily required to report, the Federal Office of Rural Health Policy, through its Medicare Rural Hospital Flexibility Grant program, has made voluntary reporting a key activity through the Medicare Beneficiary Quality Improvement Program (MBQIP).[11] To date, 84.2% of CAHs reported data to Hospital Compare on at least one inpatient measure.[12] MBQIP's measures are designed to be rural-relevant and thus appropriate for rural hospitals with lower volumes, unlike some of the measures behind the star rating.

Regardless of the reason, it is important for consumers, policy makers, and other stakeholders to know that the disproportionate amount of missing data limits the conclusions that can be drawn from comparisons of the rural hospital quality star ratings. It is also important for consumers to avoid automatically interpreting no stars as zero stars (low quality) or a signal that a hospital is "hiding something." The challenges in healthcare performance measurement for rural providers were addressed by the National Quality Forum Rural Health Committee in 2015. The Committee's overarching recommendation was to "make participation in CMS quality measurement and quality improvement programs mandatory for all rural providers but allow a phased approach for full participation across program types and address low case volume explicitly." More specifically, the committee recommended funding development of rural-relevant measures to develop and/or modify measures to address low case volume explicitly, consider rural-relevant sociodemographic factors in risk adjustment, and to create composite measures that are appropriate for rural (particularly low-volume) providers.[5] It might be prudent for CMS to reconsider the recommendations in the Committee's report as a solution to the missing star problem of rural hospitals.

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REFERENCES AND NOTES

1. Hospital Compare Data Archive. U.S. Department of Health and Human Services, Centers for Medicare & Medicaid Services [Internet]. Baltimore, MD: 2017 Apr [cited 2017 Jun 2] Available from: https://data.medicare.gov/data/archives/hospital-compare.
2. Xu S, Grover A. CMS' Hospital Quality Star Ratings Fail to Pass the Common Sense Test. Health Affairs Blog [Internet] 2016 Nov 14. Available from: http://healthaffairs.org/blog/2016/11/14/cms-hospital-quality-star-ratings-fail-to-pass-the-common-sense-test/.
3. Overall Hospital Quality Star Rating Frequently Asked Questions for Hospital [Internet]. Baltimore, MD: QualityNet; 2016 Oct [cited 2016 Nov 15]. Available from: https://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=1228775183434.
4. The measures are categorized into seven groups. For more information on the measures, see Overall Hospital Quality Star Rating Frequently Asked Questions for Hospital (October 2016) cited above.
   1. Outcomes – Mortality (7 measures, 22% weight)
   2. Outcomes – Safety of Care (8 measures, 22% weight)
   3. Outcomes – Readmissions (8 measures, 22% weight)
   4. Process – Patient Experience (11 measures, 22% weight)
   5. Process – Effectiveness of Care (18 measures, 4% weight)
   6. Process – Timeliness of Care (7 measures, 4% weight)
   7. Process – Efficient Use of Outpatient Imaging (5 measures, 4% weight)
5. Performance Measurement for Rural Low-Volume Providers, Final Report [Internet]. Washington, DC: National Quality Forum, Rural Health Committee; 2015 Sept 14 [cited 2016 Nov 15]. Available from: http://www.qualityforum.org/Publications/2015/09/Rural_Health_Final_Report.aspx.
6. Provider of Services (POS) data file for the 2nd Quarter of 2016; U.S. Department of Health and Human Services, Centers for Medicare & Medicaid Services, Office of Information Services.
7. Core based statistical areas for 2013; U.S. Office of Management and Budget (OMB) and U.S. Census Bureau; 2013.
8. Rural-Urban Commuting Area (RUCA) Codes for 2013; U.S. Department of Agriculture, Economic Research Service; 2013.
9. Hospital Cost Report data file for the 2nd Quarter of 2016; Healthcare Provider Cost Reporting Information System (HCRIS); U.S. Department of Health and Human Services, Centers for Medicare & Medicaid Services.
10. Provider Specific File (PSF) for the 2nd Quarter of 2016; Healthcare Provider Cost Reporting Information System (HCRIS); U.S. Department of Health and Human Services, Centers for Medicare & Medicaid Services.
11. The Medicare Beneficiary Quality Improvement Project (MBQIP) is a quality improvement activity under the Federal Office of Rural Health Policy's (FORHP) Medicare Rural Hospital Flexibility (Flex) grant program. Implemented in 2011, the goal of MBQIP is to improve the quality of care provided in critical access hospitals (CAHs) by increasing quality data reporting by CAHs and then driving quality improvement activities based on the data.
12. Casey M, Swenson T, Evenson A. Hospital Compare Quality Measure Results for CAHs, 2015. Data Report #22. Flex Monitoring Team. University of Minnesota, Minneapolis, MN. 2017 Feb [cited 2017 May 18]. Available from: http://www.flexmonitoring.org/wp-content/uploads/2017/02/DSR-22-Hospital-Compare-2017.pdf.

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