RUPRI Center for Rural Health Policy Analysis
Rural Policy Brief

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Medicare Accountable Care Organizations: Quality Performance by Geographic Categories

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Purpose

This policy brief continues the work of the RUPRI Center analyzing the performance of Medicare Accountable Care Organizations (ACOs) serving rural areas. In this brief, we examine the differences in performance on four domains of quality measures and the overall quality score among Medicare Shared Savings ACOs with different levels of rural presence.

Key Findings

- ACOs located in rural counties performed better than those in urban counties on Care Coordination/Patient Safety, Preventive Health, and At-Risk Population domain scores and the overall quality score in 2014.
- Urban ACOs performed better than ACOs in other geographic categories on the Patient/Caregiver Experience score in 2014.
- ACOs in all geographic categories improved their quality performance between 2014 and 2015.

Background

As of January 2016, there were 434 ACOs in the Medicare Shared Savings Program (MSSP) serving over 7.7 million Medicare fee-for-service beneficiaries.[1] The Centers for Medicare & Medicaid Services (CMS) released quality and financial performance data for 2014 and more recently for 2015 showing that collectively Medicare ACOs continue to improve the quality of care while achieving cost savings.[2] In Performance Year 2014, MSSP ACOs that reported quality measures in both 2013 and 2014 reached improvements on 27 of 33 quality measures (82 percent).[3] In 2015, MSSP ACOs that reported quality measures in both 2014 and 2015 improved on 84 percent of the quality measures that were reported in both years.[4]

Previous studies have compared the performance of Medicare ACOs with non-ACO providers[5] and with benchmarks.[6] The relationship between the ACOs' performance and their geographic categories (e.g., urban vs. non-urban service areas), however, has not been fully explored. Recent reports show the continued spread of ACO operation in non-urban counties.[7] This policy brief provides an analysis of the differences in ACO performance on the quality measures among MSSP ACOs with varying levels of rural presence. We focus only on MSSP ACOs because the MSSP is the most widespread ACO model serving rural areas, rendering any differences we find more meaningful. ACO's participating in CMS demonstrations (such as the Advance Payment model) were excluded from the analysis.

Data and Methods

We used the 2014 and 2015 Medicare ACO performance data obtained from the CMS website.[8] The data sets include an overall quality score and 33 individual quality measures, which cluster into 4 domains: Patient/Caregiver Experience (PCE), Care Coordination/Patient Safety (CCP), Preventive Health (PH), and At-Risk Population (AtR). ACOs' percentage scores in those four domains are averaged to create the overall

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quality score. For Performance Year 2014, the sample included 288 MSSP ACOs that had successfully reported their quality measures and were not participating in the Advance Payment model. We excluded 116 ACOs with a start date in 2014 because CMS did not calculate the overall quality scores for ACOs in their first year of program participation.[9] We calculated the quality domain scores for our analytical sample (n = 172) based on the CMS scoring methods.[10] Finally, we compared the difference in the overall quality score among the 156 ACOs with data from both 2014 and 2015.[11]

We classified ACO geographic categories based on county location of ACO providers[12] and county Urban Influence Codes.[13] In 2014, 48.3 percent of 172 ACOs in the analytical sample operated exclusively in urban counties (100 percent of the counties where they had providers were metropolitan counties n = 83), 30.8 percent operated in "mostly urban" counties (67 percent or more of the counties where they had providers were metropolitan counties, n = 53), 14.5 percent operated in "mixed" counties (33-67 percent of the counties where they had providers were metropolitan counties, n = 25), and 6.4 percent operated in "rural" counties (less than 33 percent of the counties where they had providers were metropolitan counties, n = 11).[14]

We compared means and standard errors of the domain and overall quality scores, and used box-and-whisker plots to show the performance differences across ACOs in different geographic categories. The box-and-whisker plots display the distribution of numeric data by showing the mean, median, interquartile range, range, and outliers. They provide additional information not captured by typical descriptive statistics such as means and standard errors.

Results

Table 1 shows the means and standard errors of the overall quality score and each domain score for ACOs in the four geographic categories. The average overall quality score for rural ACOs was higher than for urban ACOs. ACOs in mixed and mostly urban categories had similar or slightly higher average overall quality scores than urban ACOs. Further, compared to ACOs located exclusively in urban counties, ACOs in other geographic categories had higher average scores in three quality domains (CCP, PH, and AtR). In fact, rural ACOs reported the highest average scores in these three domains. Urban ACOs reported the highest average PCE score.

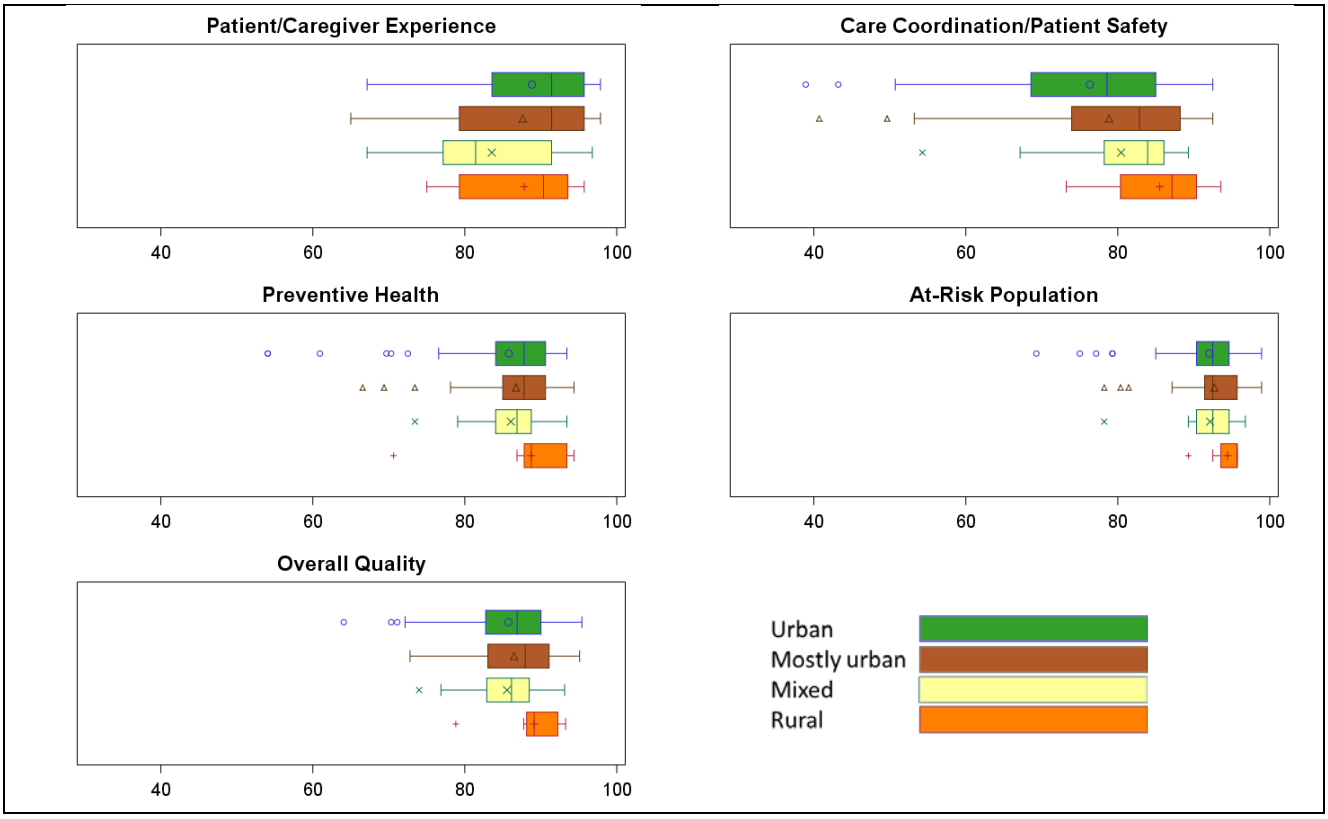
Table 1. 2014 Domain and Overall Quality Scores, by Geographic Category (n = 172)

	Rural (n = 11)		Mixed (n = 25)		Mostly Urban (n = 53)		Urban (n =83)	
	Mean	S.E.	Mean	S.E	Mean	S.E.	Mean	S.E.
PCE: Patient/Caregiver Experience	87.8	(2.2)	83.6	(1.9)	87.6	(1.4)	88.8	(0.9)
CCP: Care Coordination/ Patient Safety	85.5	(1.9)	80.4	(1.7)	78.9	(1.6)	76.3	(1.2)
PH: Preventive Health	88.7	(2.0)	86.1	(0.9)	86.7	(0.8)	85.8	(0.8)
AtR: At-Risk Population	94.4	(0.6)	92.1	(0.8)	92.7	(0.6)	92.0	(0.6)
Overall Quality	89.1	(1.2)	85.6	(1.0)	86.5	(0.8)	85.8	(0.6)

The box-and-whisker plots in Figure 1 show substantial overlap in the distribution of the overall quality scores across the three non-rural categories. Part of the difference in the means between rural ACOs and ACOs in other geographic categories can be explained by the higher number of lower scoring ACOs in the other categories, the urban category in particular. For domain scores, Figure 1 shows that the PCE and CCP scores have higher degrees of dispersion across all four geographic categories as indicated by the larger interquartile ranges. The PH and AtR scores have lower degrees of dispersion, especially in ACOs located primarily in non-metropolitan counties. There are more outliers in urban ACOs than in other categories. Comparing the median and interquartile range across geographic categories, Figure 1 shows results similar to those reported in Table 1 except that the performance of ACOs in mixed and mostly urban categories on PH, AtR, and the overall quality scores is indistinguishable from that of urban ACOs.

Table 2 shows results of the pairwise comparison of improvement in overall quality scores between 2014 and 2015. Overall, ACOs in all four geographic categories improved their performance from 2014 to 2015. Only 19 (12.2 percent) of the ACOs had a lower performance score in 2015 than in 2014. Within the geographic categories, rural ACOs had the highest average overall quality scores in both 2014 and 2015. Figure 2 displays similar improvement results.

Figure 1. 2014 Domain and Overall Quality Scores, by Geographic Category (n = 172)



*The box-and-whisker plots display the mean score as the symbol and the median score as the vertical line inside the box. The box itself represents the interquartile range; that is, the range between the 25th and 75th percentiles. The whiskers represent those cases that are outside the interquartile range—up to 1.5 times the interquartile range. Any cases beyond 1.5 times the interquartile range are represented by symbols beyond the whiskers as outlier cases.

Figure 2. 2014-2015 Improvement in ACO Overall Quality Performance, by Geographic Category (n = 156)

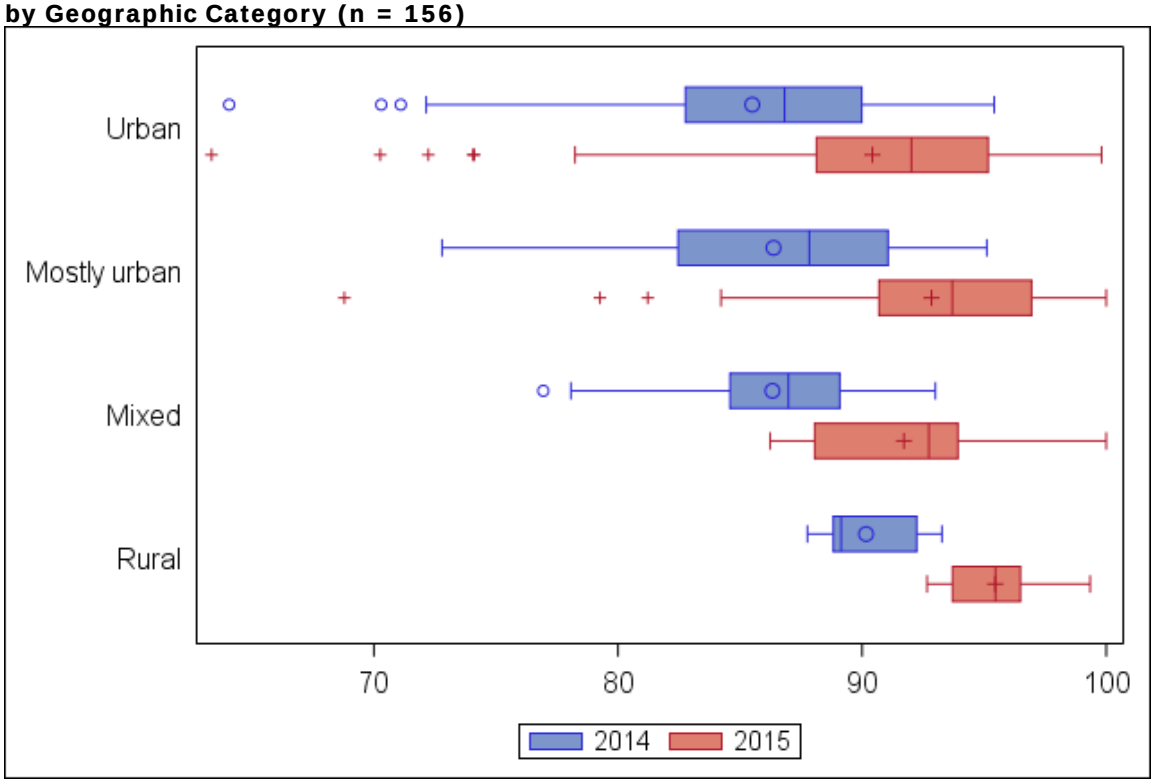


Table 2. 2014-2015 Improvement in ACO Overall Quality Performance, by Geographic Category (n = 156)

	Rural (n = 10)		Mixed (n = 20)		Mostly Urban (n = 52)		Urban (n = 74)	
	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.
2014 Overall Quality	90.2	(0.6)	86.3	(0.9)	86.4	(0.8)	85.5	(0.7)
2015 Overall Quality	95.5	(0.7)	91.7	(0.9)	92.8	(0.8)	90.4	(0.8)
Percent ACOs with improved scores	90.0%		90.0%		92.3%		83.8%	

Discussion

Our analysis shows that rural ACOs performed better than urban ACOs on three domain scores (CCP, PH, and AtR) and the overall quality score in Performance Year 2014. ACOs in mixed and mostly urban categories performed as well as urban ACOs on these three domain scores and the overall quality score. Urban ACOs performed better than ACOs in other geographic categories on the PCE score. ACOs in all geographic categories improved their quality performance between 2014 and 2015.

ACOs serving rural areas are believed to face certain challenges in meeting the program's goal of increasing value of care. For example, smaller numbers of assigned beneficiaries may affect rural ACOs' ability to effectively absorb cost variation, and inadequate information infrastructure and data analytics capacity may limit the effectiveness of their care management and population health strategies. Our results show that, despite the challenges, ACOs with a significant rural presence have performed as well as, if not better than, urban ACOs in delivering quality care. The results reflect the early experience of rural ACOs and should be interpreted with caution because of the small sample size and potential self-selection bias (i.e., high-performing rural providers opted into the ACO model first). Nevertheless, our finding suggests that the MSSP ACO model has utility in rural America, and ACOs serving different geographic areas can be held accountable to the same quality standards. The conditions and strategies that enabled the early success in rural ACOs should be investigated to facilitate future spread of the model in rural areas.

References and Notes

[1] Centers for Medicare & Medicaid Services. (2016). *CMS welcomes new Medicare Shared Savings Program (Shared Savings Program) participants* [Fact sheet]. https://www.cms.gov/Newsroom/MediaReleaseDatabase/Fact-sheets/2016-Fact-sheets-items/2016-01-11-2.html

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[5] McWilliams, J. M., et al. (2016). Early performance of Accountable Care Organizations in Medicare. *New England Journal of Medicine* 374(24): 2357-2366.

[6] Muhlestein, D., Saunders, R., McClellan, M. (2016, September 9). Medicare Accountable Care Organization results for 2015: The journey to better quality and lower costs continues [Blog post]. http://healthaffairs.org/blog/2016/09/09/medicare-accountable-care-organization-results-for-2015-the-journey-to-better-quality-and-lower-costs-continues/

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[8] Data sources: Performance Year 2014 https://data.cms.gov/ACO/Medicare-Shared-Savings-Program-Accountable-Care-O/ucce-hhpu and Year 2015 https://data.cms.gov/ACO/Medicare-Shared-Savings-Program-Accountable-Care-O/x8va-z7cu/data

[9] Medicare Shared Savings Program Quality Measure Benchmarks for the 2014 Reporting Year. https://www.cms.gov/medicare/medicare-fee-for-service-payment/sharedsavingsprogram/downloads/mssp-qm-benchmarks.pdf

[10] For the 116 ACOs with a start date in 2014, CMS measured their quality performance based on "complete and accurate reporting" and did not use the data on the quality measures to produce an overall quality score. We excluded these ACOs from the analysis. We conducted a sensitivity analysis by calculating and comparing the overall quality scores and the domain scores for these "first-year" ACOs using the data on the 33 quality measures reported and CMS's scoring methods. The results suggested that the exclusion of these "first-year" ACOs did not affect our conclusion.

[11] We did not compare differences in domain scores in 2015 because the CMS scoring methods included a quality improvement reward for which data were not available for calculating the domain scores.

[12] All ACO participant providers were considered (including both primary and specialty care practices). Data on practice size or percent of a county's beneficiaries attributable to a particular practice are not available. The existence of a single participant provider was regarded as an indication of the ACO's presence in the county.

[13] Counties with Urban Influence Codes 1 and 2 were classified as metropolitan counties, and counties with Urban Influence Codes 3-12 were classified as non-metropolitan counties.

[14] We used a different classification of geographic categories than the one reported in the previous policy brief (RUPRI Rural Policy Brief No. 2016-5) because of small sample sizes in the previously used nonmetro and mostly nonmetro categories.