Association Between Effectiveness of Care Quality Ratings and Insurer Characteristics in the Health Insurance Marketplaces

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INTRODUCTION

The Affordable Care Act (ACA) has enabled millions of individuals to purchase private health plans through the individual marketplace. Enrollees should seek high value care, defined as medical services that are clinically recommended, delivered efficiently, and use resources optimally.[1] Recently, the Centers for Medicare and Medicaid Services (CMS) initiated collection and dissemination of plan quality ratings, including those reflecting effectiveness of care, to facilitate consumer decision-making for the 2020 plan year.[2] However, little is known about the association of insurer characteristics and effectiveness of care quality ratings. This research examined four effectiveness of care quality ratings out of the 38 selected by CMS in the individual health insurance market and their association with insurer organizational attributes.

METHODS

We used three primary data sources. We linked 2019 CMS Quality Rating System to the Robert Wood Johnson Foundation's 2019 Plan Participation Tracker data, and the National Association of Insurance Commissioners 2016 data. These data provide information on plans' non-profit status, Blue Cross Blue Shield Association membership, Preferred Provider Organization (PPO) plan offerings, and classification as predominantly serving the Medicaid managed care segment. Of 195 total insurer-plan type combinations, 185 reported effectiveness of care quality information.

We used multivariate linear regression to analyze the association between plans' effectiveness of care measures and organizational attributes. Analyses were performed in Stata 15 with standard errors clustered on insurer.

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RESULTS

Appropriately testing children for pharyngitis and treatment of children with upper respiratory infections had mean scores of 83.39% (SD 19.18) and 88.96% (SD 10.92), respectively (Table 1). Appropriate use of imaging studies for lower back pain had a mean score of 76.73% (SD 8.07). Appropriate avoidance of antibiotics for adults with acute bronchitis had a mean score of 32.85% (SD 15.35).

The adjusted model found non-profit insurers had an 8.66 percentage point higher score for avoiding antibiotic treatment for adults with acute bronchitis (95% CI, 4.51 to 12.82%; $P < 0.001$) while insurers offering PPOs were associated with a 7.66 percentage point lower score (95% CI, − 12.61 to − 2.71%; $P < 0.001$) (Table 2). Non-profit insurers were also associated with a 3.77 percentage point higher score (95% CI, 1.40 to 6.14%; $P < 0.001$) on guideline-concordant use of imaging studies for low back pain, while insurers offering PPOs were associated with a 3.68 percentage point lower rating (95% CI, − 7.11 to − 0.25; $P < .05$) for the appropriate treatment of pediatric upper respiratory infections. Medicaid managed care insurers had a 3.74 percentage point lower score (95% CI, − 6.85 to − 0.64%; $P < 0.02$) and Blue Cross Blue Shield Association insurers were associated with a 2.94 percentage point lower score (95% CI, − 5.62 to − 0.26%; $P < 0.03$) on this measure. No significant differences in organizational attributes were detected for appropriate testing for children with pharyngitis or for appropriate treatment of children with upper respiratory infections.

DISCUSSION

Insurance sold on the ACA Marketplaces varies in effectiveness of care quality ratings. Both pediatric measures had high

Table 1 Distribution of Plan Efficiency and Affordability Quality Ratings Among Health Insurance Marketplace Insurers

Insurer characteristic	Insurer type, mean (SD)				
	All	Non-profit	Medicaid managed care	Blue Cross affiliate	Preferred provider organization
Number of insurers, *n* (%)[a]	185 (100%)	108 (58.3%)	34 (18.4%)	48 (25.9%)	44 (23.8%)
Organizational characteristic, mean (SD)					
Appropriate testing for children with pharyngitis	83.39 (19.18)	85.26 (18.46)	80.1 (18.8)	82.31 (19.39)	82.32 (16.23)
Appropriate treatment for children with upper respiratory infection	88.96 (10.92)	89.46 (12.14)	87.72 (10.19)	88.39 (7.06)	86.62 (8.67)
Avoidance of antibiotic treatment in adults with acute bronchitis	32.86 (15.35)	36.11 (18.01)	29.61 (9.28)	31.11 (13.85)	28.79 (13.20)
Use of imaging studies for low back pain	76.73 (8.07)	78.54 (8.18)	73.42 (6.78)	75.5 (7.34)	77.67 (8.69)

Data are from Centers for Medicare and Medicaid Services Quality Rating System 2019 database. Insurer types are identified with the 2016 National Association of Insurance Commissioners report and the Robert Wood Johnson Foundation's Marketplace insurer type data. All analyses used Stata-SE, version 15 (StataCorp)

[a]*Non-profit and preferred provider organization are not mutually exclusive; Medicaid managed care and Blue Cross affiliate are mutually exclusive to one another*

mean scores which may limit the possibility of future improvements. Appropriate use of antibiotics in adults with acute bronchitis had a low mean score of 32.86% despite the existence of clear clinical guidelines.[3]

We found significant associations between performance and insurer attributes. Non-profit insurers are associated with higher quality on two measures despite guidelines for imaging for low back pain.[4] Previous research has suggested that non-profit insurers may invest more resources into quality improvement than for-profit insurers.[5] In contrast, PPO plans performed worse on two measures. Insurers may have less control over contracted providers in a PPO network compared with other arrangements. Low mean performance and high variability suggest space for improvement. Future quality metric sets will need to balance the tension between setting minimum targeted standards and aiding quality improvement identification efforts.

A limitation of our cross-sectional analysis is that we cannot fully control for unobserved factors that may affect relevant outcomes.

Enrollees face a complex challenge in selecting insurance plans. Additional plan quality information may inform systemic quality improvement efforts. While the structure of the subsidies in the ACA's individual market does not directly reward insurers' quality investments, measurement and public reporting of information could facilitate policy changes to direct consumers to higher quality health plans.[6]

Table 2 Associations of Health Insurance Marketplace Insurer Characteristics and Plan Efficiency and Affordability Quality

Insurer characteristic	Unadjusted		Adjusted	
	Association (95% CI)	*P* value	Association (95% CI)	*P* value
Appropriate testing for children with pharyngitis				
Non-profit	4.49 (−1.13 to 10.11)	.12	4.37 (−1.63 to 10.38)	.15
Medicaid managed care	−4.03 (−11.21 to 3.15)	.27	−3.97 (−11.55 to 3.6)	.30
Blue Cross affiliate	−1.46 (−7.82 to 4.9)	.65	−2.31 (−9.2 to 4.58)	.51
Preferred provider organization	−1.4 (−7.95 to 5.15)	.67	−2.76 (−8.59 to 3.08)	.35
Appropriate treatment for children with upper respiratory infection				
Non-profit	1.19 (−2.03 to 4.41)	.47	1.51 (−1.86 to 4.87)	.38
Medicaid managed care	−1.52 (−5.62 to 2.57)	.46	−2.09 (−6.48 to 2.31)	.35
Blue Cross affiliate	−0.78 (−4.4 to 2.85)	.67	−0.74 (−3.83 to 2.35)	.64
Preferred provider organization	−3.08 (−6.78 to 0.63)	.10	−3.68 (−7.11 to −0.25)	.04
Avoidance of antibiotic treatment in adults with acute bronchitis				
Non-profit	7.81 (3.42 to 12.19)	.001	8.66 (4.51 to 12.82)	< .001
Medicaid managed care	−3.99 (−9.73 to 1.75)	.17	−3.74 (−8.66 to 1.19)	.14
Blue Cross affiliate	−2.37 (−7.45 to 2.71)	.36	−2.6 (−7.11 to 1.9)	.26
Preferred provider organization	−5.35 (−10.53 to −0.16)	.04	−7.66 (−12.61 to −2.71)	.003
Use of imaging studies for low back pain				
Non-profit	4.35 (2.05 to 6.64)	< .001	3.77 (1.4 to 6.14)	.002
Medicaid managed care	−4.06 (−7.03 to −1.08)	.01	−3.74 (−6.85 to −0.64)	.02
Blue Cross affiliate	−1.66 (−4.32 to 1.01)	.22	−2.94 (−5.62 to −0.26)	.03
Preferred provider organization	1.24 (−1.51 to 3.99)	.37	0.21 (−2.58 to 2.99)	.88

Data are from Centers for Medicare and Medicaid Services Quality Rating System 2019 database. Insurer types are identified with the 2016 National Association of Insurance Commissioners report and the Robert Wood Johnson Foundation data. Non-profit and preferred provider organization are not mutually exclusive; Medicaid managed care and Blue Cross affiliate are mutually exclusive to one another. Linear multivariate regression models adjusted for all four insurer characteristics. Standard errors were clustered by insurer. All analyses used Stata-SE, version 15 (StataCorp)

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