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RESEARCH BRIEF

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Association between specialist compensation and Accountable Care Organization performance

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Abstract

Objective: To determine if Medicare Shared Savings Program Accountable Care Organizations (ACOs) using cost reduction measures in specialist compensation demonstrated better performance.

Data Sources: National, cross-sectional survey data on ACOs (2013-2015) linked to public-use data on ACO performance (2014-2016).

Study Design: We compared characteristics of ACOs that did and did not report use of cost reduction measures in specialist compensation and determined the association between using this approach and ACO savings, outpatient spending, and specialist visit rates.

Principal Findings: Of 160 ACOs surveyed, 26 percent reported using cost reduction measures to help determine specialist compensation. ACOs using cost reduction in specialist compensation were more often physician-led (68.3 vs 49.6 percent) and served higher-risk patients (mean Hierarchical Condition Category score 1.09 vs 1.05). These ACOs had similar savings per beneficiary year (adjusted difference $82.6 [95% CI −77.9, 243.1]), outpatient spending per beneficiary year (−24.0 [95% CI −248.9, 200.8]), and specialist visits per 1000 beneficiary years (369.7 [95% CI −9.3, 748.7]).

Conclusion: Incentivizing specialists on cost reduction was not associated with ACO savings in the short term. Further work is needed to determine the most effective approach to engage specialists in ACO efforts.

KEYWORDS

Accountable Care Organizations, cost reduction, specialists, value-based payment

1 | INTRODUCTION

Accountable Care Organizations (ACOs) are provider groups that coordinate to provide high-quality care within a spending target for a defined patient population. While ACO leaders have focused care coordination and cost reduction efforts on primary care,[1-4] specialty care is a major and rising source of ACO spending growth that remains under-examined.[5-13] In theory, ACOs may address specialty cost growth by attempting to limit leakage to specialists outside of their organization[14] while encouraging efficient care among specialists within the organization, for example, through sharing performance data with specialists or offering them financial incentives to reduce spending. However, we know little about if or how ACOs are engaging specialists, and whether these efforts are associated with

improved performance. In this study, we use linked national survey and performance data to describe ACOs' use of cost reduction measures in specialist compensation and examine a potential association between these efforts and ACO performance.

2 | METHODS

Between September 2013 and April 2015, we administered two waves of the National Survey of ACOs, a national survey of leaders of newly formed ACOs including Medicare Shared Savings Program (MSSP) ACOs.[1,3] The instrument included domains on organizational characteristics, capabilities, and activities. We administered the first wave from September 2013 to March 2014 (for ACOs formed between September 2012 and July 2013) and the second wave from November 2014 to April 2015 (for ACOs formed between July 2013 and January 2015). We sent the survey to a total of 290 confirmed Medicare ACOs across both waves and received responses from 171 ACOs deemed to be MSSP based on reconciliation of publicly available data with survey responses regarding contract status and additional follow-up research. Respondents and nonrespondents did not differ significantly by characteristics including size, number of specialists, and demographic composition of beneficiaries (Table S1). We eliminated ten ACOs with no specialists and one ACO that did not respond to the question that was our key exposure, yielding an analytic sample of 160 ACOs. Each of these ACOs completed one survey. We used ACO names to match survey responses to performance outcome data in the Centers for Medicare & Medicaid SSP public-use file for performance years 2014-2016.

2.1 | Measures

Our primary outcome was each ACO's savings per beneficiary year, calculated by subtracting per beneficiary expenditures from per beneficiary benchmark spending in a given year.[15] Positive values indicated cost savings, and negative values, losses. Our secondary outcomes were two distinct but related measures that may be affected by specialist compensation incentives: outpatient/office visit spending per beneficiary year (which takes into account visit complexity and visit-related services) and specialist visits per 1000 beneficiary years.

Our primary predictor was ACO self-reported use of cost reduction measures to determine specialists' compensation. ACO leaders were asked to identify all measures that contributed to specialist compensation in the ACO such as productivity, quality, and cost reduction; here, we focused on whether an ACO reported that cost reduction measures were used.

Additional covariates included survey measures of ACO physician leadership[1] and presence of a hospital in the ACO as well as measures from the public use file including time since ACO initiation (number of years since start of their MSSP ACO contract), total number of ACO physicians, specialist focus (percentage of all physicians in the ACO who were specialists), total number of assigned beneficiaries in a given year, and patient demographic characteristics (percentage of beneficiaries who were female, age >75, minority race, disability as reason for Medicare enrollment, and enrolled in Medicaid; mean Hierarchical Condition Categories score). All covariates derived from the public-use file were time-varying—that is, specific to a given calendar year.

What this study adds

- ACOs have largely focused cost reduction efforts on primary care, while specialty care is a major and rising source of ACO spending growth.
- No study to our knowledge has assessed what ACOs are doing nationally to engage specialists in lowering health care spending, nor whether this is associated with improved ACO performance.
- This study shows that a quarter of ACOs reported using cost reduction measures in specialist compensation, and there was no association between these cost reduction incentives and performance.
- Our results suggest that more intensive specialist engagement strategies and/or more time may be needed to see any benefit of such approaches.

2.2 | Analysis

Using Student t tests and chi-square tests as appropriate, we first compared ACOs that used cost reduction-based specialist compensation to ACOs that did not based on characteristics derived from the survey (eg, physician-led) and from the 2016 public use file (eg, specialist focus). We then fit an ACO-level, multivariate logistic regression model to determine which of these characteristics predicted use of cost reduction-based compensation. For our primary analyses, we then examined the three time-varying outcomes noted above (shared savings; outpatient spending; and specialist visits) at the ACO-year level. ACOs initiated by 2014 could contribute outcomes in all three years (2014-2016) for which ACO performance data were available, while ACOs formed in 2015 could contribute outcomes in only two of these years. Since ACOs could contribute multiple outcomes, we used multivariable panel linear regression models that used cost reduction-based specialist compensation as the primary exposure and adjusted standard errors for clustering at the ACO level. The models were adjusted for the survey and public use file covariates mentioned above.

We also used these same panel linear regression models to investigate the interaction between specialist compensation and the number of years since the ACO was initiated. Since none of these interactions were significant, we present a single overall effect of

specialist compensation across all years in the Results section. However, we show the stratified results in the figure so that readers can see the full details. Those stratified results were based on simple linear regression models in which, for example, at "zero years since ACO initiation," each ACO provided one outcome variable: their performance data in the year of initiation.

We considered 2-sided p-values significant at <0.05. Analyses were performed using STATA 13.0 (STATA Corp.). The survey was approved by the Institutional Review Board at Dartmouth College.

3 | RESULTS

3.1 | Survey-reported ACO characteristics and capabilities

Among respondents, 54.4 percent of ACOs were physician-led, 63.1 percent reported having one or more affiliated hospitals in the ACO, and 42.7 percent were integrated delivery systems. Eighty-five percent of ACOs in the sample reported that they were able to monitor financial performance. One third (33.8 percent) shared clinician-level financial performance information with clinicians (eg, spending and utilization for a given physician's patients) while 15.0 percent of ACOs reported that they sought to reduce resource use via outpatient visits.

Turning to our key exposure, a quarter of ACOs (25.6 percent) reported using cost reduction measures to help determine specialist compensation. Respondents also reported that measures of clinical quality (45.6 percent), patient satisfaction (35.6 percent), productivity (eg, Relative Value Units; 25.0 percent), and panel size (16.3 percent) contributed to specialist compensation (See Table S2).

3.2 | ACO characteristics associated with use of cost reduction-based specialist compensation

When we compared ACOs that did or did not use cost reduction-based specialist compensation, we found that ACOs using these measures were significantly more likely to be physician-led (68.3 vs 49.6 percent) and to serve higher-risk patients (mean Hierarchical Condition Category score 1.09 vs 1.05) (Table 1). These ACOs also had more assigned patients and physicians, though these results were not statistically significant (Table 1).

3.3 | ACO outcomes associated with use of cost reduction-based specialist compensation

ACOs using this approach had similar savings per beneficiary year (adjusted difference $82.6, 95% CI [–77.9, 243.1]), outpatient spending per beneficiary year (–24.0, 95% CI [–248.9, 200.8]), and specialist visits per 1000 beneficiary years (369.7, 95% CI [–9.3, 748.7]) overall and when stratified by time since ACO initiation (Figure 1, Table S3). The interaction between cost reduction-based specialist compensation and time since ACO initiation were nonsignificant for each outcome, indicating our model showed no evidence that having spent more time under the ACO contract was associated with improved performance for ACOs using these measures.

4 | DISCUSSION

In our study, more than a quarter of ACOs reported using cost reduction measures to determine specialist compensation and these ACOs were more likely to be physician-led and to care for sicker populations. While these ACOs achieved greater savings and lower outpatient spending per beneficiary than ACOs not using cost reduction-based compensation, these results were not statistically significant. Our results suggest that paying specialists based on cost reduction may not have been an effective way to improve ACO performance or lower outpatient spending or specialist visit rates in the short term, though it is possible this would change given more time or better execution.

Our findings add to a growing literature suggesting that there are few predictors of ACO performance beyond integration of a hospital in the ACO.[6,16] Financial incentives for physicians, in particular, have had equivocal impact on ACO success.[16-18] However, the physician composition of ACOs may play a role. Primary care-focused ACOs have achieved up to 5 percent reductions in specialist visits compared to specialist-focused ACOs[14] and have their PCPs deliver a higher proportion of chronic condition visits,[19] though it is not clear if greater primary care focus is associated with better performance overall.[14,15] Others studies suggest that ACOs in which specialists were providing 40-45 percent of office visits (rather than fewer or more) were more likely to have lower spending and utilization,[20] while cardiologist participation in an ACO may be associated with lower spending for patients with cardiovascular disease.[13]

In theory, ACO leaders seeking to improve performance need to engage specialists—a major source of spending growth—in this effort.[8,21] ACOs with specialists might use a two-pronged strategy: First, limit leakage (ie, attributed patients seeking specialist care outside of the ACO), for example, by incentivizing primary care clinicians to refer within network, though this has been shown to have limited effect on leakage.[14] Limiting leakage could improve ACO performance by allowing better communication between primary and specialty care and by maximizing the impact of any efforts by the ACO to engage its specialists. Second, ACOs might try to curb specialty spending within the ACO. For instance, ACOs might deploy primary care-specialist pacts[22] to standardize care coordination and limit specialist's roles (eg, a specialist might agree not to refer to another specialist without primary care input). ACOs may ask specialists to offer e-consultations or to educate primary care clinicians on core specialty topics to avoid unnecessary in-person referrals.[23,24] ACOs might track specialist utilization data such as

TABLE 1 ACO characteristics associated with use of cost reduction-based specialist compensation, 2016

ACO characteristic	Cost reduction-based specialist compensation ($n = 41$)	No cost reduction-based specialist compensation ($n = 119$)	Unadjusted odds of ACO using cost reduction-based specialist compensation, 95% CI	Adjusted OR, 95% CI
Physician-led, %	68.3	49.6	2.19 (1.03, 4.63)	2.80 (1.00, 7.85)
Participating hospital(s), %[a]	65.0	62.4	1.12 (0.53, 2.37)	2.39 (0.73, 7.88)
Number of physicians, mean[b]	522.5	509.3	1.01 (0.95, 1.06)[c]	0.96 (0.85. 1.09)[c]
Specialist focus, mean %[b]	51.9	50.0	1.00 (0.98, 1.03)	1.01 (0.98, 1.03)
Total person-years assigned, mean[b]	21,313	18,568	1.01 (98.8, 1.03)[d]	1.02 (0.98, 1.07)[d]
Female, mean %[b]	57.5	57.4	1.02 (0.83, 1.25)	0.87 (0.65, 1.17)
Age, mean % >75yo[b]	40.3	37.9	1.07 (1.00, 1.15)	1.00 (0.87, 1.16)
Minority, mean %[b]	17.0	17.0	1.00 (0.98, 1.02)	1.01 (0.96, 1.06)
Disability, mean %[b]	13.1	15.3	0.96 (0.91, 1.02)	0.95 (0.85, 1.05)
Medicaid dual enrollment, mean %[b]	10.0	9.3	1.01 (0.97, 1.04)	1.00 (0.92, 1.08)
HCC score, mean[b]	1.09	1.05	1.51 (1.01, 2.26)[e]	1.69 (0.97, 2.95)[e]

Note: Specialist focus is the percentage of all physicians who are specialists.
Abbreviation: HCC, Hierarchical condition category.
[a] Responses missing for 19 ACOs.
[b] Responses missing for 3 ACOs.
[c]Odds ratio represents the increased odds of reported cost reduction-based specialist compensation for each additional 100 physicians.
[d]Odds ratio represents the increased odds of reported cost reduction-based specialist compensation for each additional thousand person-years.
[e]HCC score was derived by combining weighted mean HCC scores for beneficiary subpopulations in each ACO.
[f] Odds ratio represents the increased odds of reported cost reduction-based specialist compensation for each additional 0.1 HCC score point.

visit frequency or use of high-cost imaging or specialty drugs, then intervene on physician outliers with remediation efforts or financial penalties. Finally, ACOs might use bundled payments to pay specialists for surgical or other episodes of care. Such efforts might theoretically reduce the number of, or the cost associated with, specialist visits and overall.

However, these specialist engagement approaches face significant economic and operational challenges, which our findings may reflect. First, most health systems with ACO contracts have a minority of their patients under these contracts.[25] Even if a reduction in within-ACO specialist spending results in shared savings, those savings may be offset by loss of fee-for-service revenue.[14,26] Faced with this misalignment of incentives, system leaders may report using cost reduction in specialist compensation despite making anemic efforts at best.[16,25] Financial incentives in particular may be an ineffective lever to influence cost reduction and quality outcomes, particularly if these incentives form a small fraction of specialists' salaries.[16,27,28] Finally, ACOs may not yet have had adequate infrastructure or data to implement these incentives effectively.[3,16]

This study has several limitations. Most importantly, it is cross-sectional in nature, limiting inference. We had limited power to detect differences in the stated outcomes due to small sample sizes in the early years of ACO implementation. We do not know exactly how respondents used cost reduction measures for specialist compensation nor whether they continued these efforts following the survey. There is also a possibility that poor-performing ACOs may have been more motivated to adopt approaches such as paying specialists based on cost reduction. However, given the paucity of information about specialist engagement in ACO efforts, we believe this work represents an important contribution to the literature.

Further work might use qualitative analysis to understand the range of specialist engagement strategies in ACOs and their potential effects on ACO outcomes. These results could then inform development of more robust and nuanced survey-based measurement of specialist engagement strategies and facilitate needed, systematic government collection of these measures. Future studies could also employ stronger study designs such as differences

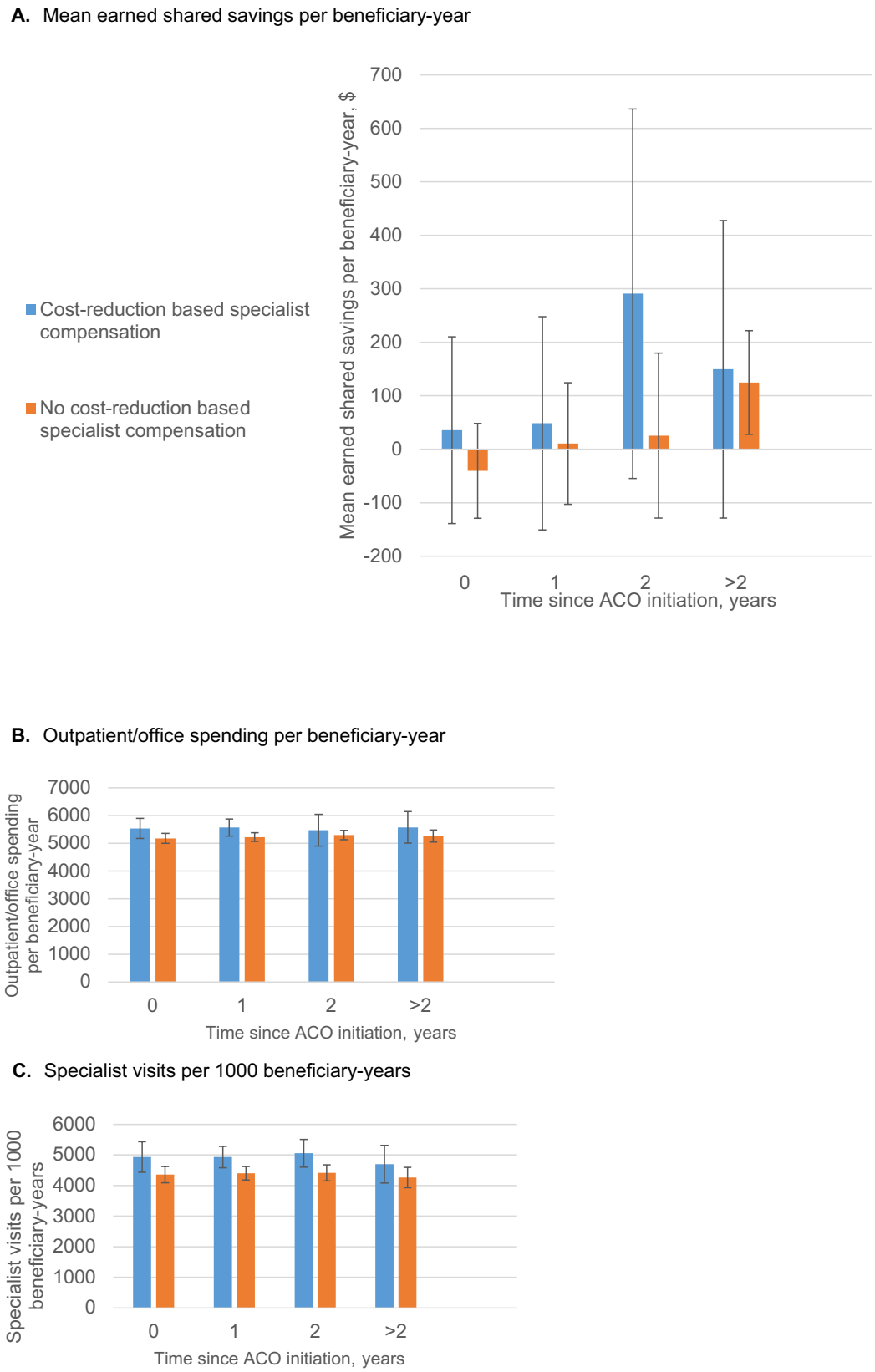

FIGURE 1 ACO outcomes associated with cost reduction-based specialist compensation, by performance year. [Color figure can be viewed at wileyonlinelibrary.com]

Note: A, Mean earned shared savings per beneficiary year. B, Outpatient/office spending per beneficiary year. C, Specialist visits per 1000 beneficiary years. Panel linear regression model with robust standard errors. Covariates included self-reported leadership type, self-reported hospital participation, ACO size, specialty focus, and ACO population size and demographics. All nonself-reported variables were time varying. All p-values for trend over time were nonsignificant (A $P = .23$; B $P = .83$; C $P = .96$)

in differences analysis, contingent on a definable start time for a specialist engagement intervention and a non-ACO comparison group.

In sum, ACOs reporting use of cost reduction measures in specialist compensation achieved slightly better contract performance and lower outpatient spending that were not statistically different from their counterparts. These results suggest that any potential benefits of specialist engagement strategies had not been realized a few years into the Medicare Shared Savings Program. Efforts to examine their impact over a longer time frame are warranted since the theoretical benefit of such strategies remain.

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section.

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