

# General Pediatricians and Value-Based Payments

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abstract

**BACKGROUND AND OBJECTIVE:** In an effort to transform the health care system, payers and physicians are experimenting with new payment models, mostly in an effort to move from a volume-based system to one based on value. We conducted a national survey to evaluate pediatricians' experience with and views about new value-based models of payment.

**METHODS:** An American Academy of Pediatrics 2016 member survey was used to assess provider and practice characteristics, provider experience with value-based payments (VBPs) (through accountable care organizations [ACOs] or pay for quality performance), and provider views about new payment models. We used descriptive statistics and multivariable logistic regression models to examine relationships between experience and views.

**RESULTS:** The survey response rate was 48.7% ( $n = 786$  of 1614). Of practicing general pediatricians, 52% reported experience with VBP, 32% believed payment for quality metrics have a "positive impact" on pediatricians' ability to provide quality care for patients, and 12% believed ACOs have a positive impact. Adjusting for covariates, respondents experienced with payments for quality metrics (adjusted odds ratio: 2.01; 95% confidence interval 1.26–3.19) and ACOs (odds ratio: 6.68; 95% confidence interval 3.55–13.20) were more likely to report a positive impact.

**CONCLUSIONS:** Although experience and views vary, just more than half of surveyed pediatricians report receiving some form of VBP. Pediatricians reporting this experience are more likely to feel that these payment models have a positive impact on patient care when compared with pediatricians without this experience.



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Overall, 41% of respondents indicated that more than half of their patients are on public insurance, but this indicator was excluded from the multivariable analysis because of multicollinearity.

Drs Tieder, Sisk, and Perrin conceptualized and designed the study and drafted, reviewed, and revised all versions of the manuscript; Dr Sisk designed the data collection instruments, collected data, and conducted the analyses; Drs Hudak and Richerson critically reviewed and revised the manuscript; and all authors approved the final manuscript as submitted and agree to be accountable for all aspects of the work.

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**WHAT'S KNOWN ON THIS SUBJECT:** Use of value-based payment models is increasing. Little is known about pediatricians' experience and views with these new payment models.

**WHAT THIS STUDY ADDS:** Although experience and views vary nationally, almost half of pediatricians have received some form of value-based payment, and this experience is associated with a positive view of these payment models.

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To contain rising health care costs and improve the quality of care, the US health care system has been experimenting with new payment models that increasingly link payment to the value, and not solely the volume, of services provided. These value-based payment (VBP) strategies include a set of payment and delivery methods that seek improved outcomes at lower cost. VBP programs began decades ago with pay-for-performance and bundled payment programs, and they have increasingly been used to adopt measures that promote evidence-based use of resources and avoidance of unnecessary cost.<sup>1,2</sup> Newer strategies, such as accountable care organizations (ACOs), aim to distribute shared savings across health care teams in part on the basis of a team's performance on a panel of strategically selected quality measures. Despite decades of experience, there is still little evidence on how best to design and implement these programs for many practice settings, particularly from the perspective of physicians.<sup>3</sup>

In recent national surveys of physicians, 43% reported that part of their compensation was tied to value,<sup>4</sup> and health care payments made under alternative payment models increased from 38% in 2015 to 57% in 2016.<sup>5</sup> ACOs continue to expand around the country and now exist in all 50 states.<sup>6</sup> By the end of the first quarter of 2017, 923 active public and private ACOs covered >32 million lives, an increase of 2.2 million over the previous year. Comparatively, Medicaid, the single largest insurer for children, accounts for 12% of covered lives, and Medicare contracts represent 29% of covered lives.

VBPs use incentives to influence human behavior by aligning interests between the patient and the provider.<sup>7</sup> Yet, this relationship can be highly variable and complex and dependent on contextual factors. Physicians can be self-employed, or

they can work for a large health care organization, hospital, or academic center. Local and national context, including practice setting, patient populations, and the health care market, also influence physician actions. Therefore, for a VBP strategy to accomplish its goals in its unique health care environment, such as pediatrics, each model will require continuous careful assessment and recalibration in a process of natural experimentation. For example, pediatricians managing the growing population of children with special health care needs must over time learn to address important factors such as medical and social complexity, caregiver needs, and accessing an array of support services. Periodic physician surveys from specialty societies, such as the American Academy of Pediatrics (AAP), can be an important tool for specialties to understand and improve the physician experience with these new models.

VBP strategies offer the potential to facilitate better quality and to lower the cost of health care for children. Physician engagement and experience is important to consider if transition to these new payment models is to achieve desired aims. Therefore, we surveyed pediatricians to evaluate their experience with these new models of health care payment and to examine whether their real-life experience contributes to the perceived merit of ACOs and VBPs.

## METHODS

### Data

With this analysis, we used data from the Periodic Survey of Fellows, a nationally representative survey of randomly selected, nonretired US members of the AAP. Periodic Survey of Fellows 94 (2016) was administered to 1614 respondents (survey instrument is available upon request). We sent 7 mailed surveys

and 2 e-mails (with a link to complete the survey electronically) to nonrespondents between March and August of 2016. The survey collected demographic information on respondents, characteristics of their patients and practice, and detailed responses regarding experience with and views about various health care payment models. We restricted the analytic sample to postresidency physicians in ambulatory US settings who provide general pediatric care for at least 50% of their time, and this yielded a final analytic sample of 489 respondents. The AAP Institutional Review Board approved the survey.

## Measures

### Dependent Variables

The dependent variables in the analysis were used to capture pediatricians' views about ACOs and VBPs. The survey was used to ask respondents to describe the impact (negative, positive, none, or not sure) of the following on pediatricians' ability to provide quality care to their patients: (1) increased use of programs that include bonus and/or incentive payments based on quality metrics and (2) increased participation in ACOs.

### Independent Variables

The primary independent variables were used to measure physicians' experience with various health care payment models. Respondents indicated whether any of the following factors were used to modify their own compensation: productivity (ie, volume-based compensation), results of patient satisfaction surveys, specific quality measures, results of practice profiling, and the overall financial performance of the practice. Respondents also indicated if their practice participates in an ACO arrangement.

### Analysis Plan

We first described the demographic and practice characteristics of the

analytic sample and then examined the dependent and primary independent variables. Next, using 2-sample *t* tests, we examined bivariate relationships between experience with ACOs and VBPs and the view that the payment model had a “positive impact.” Finally, we used logistic regression models to separately estimate the view of a positive impact of ACOs and bonus and/or incentive payments based on quality metrics to examine the independent effect of ACOs and VBPs on pediatrician attitudes, controlling for demographic and practice characteristics. Data were analyzed by using R.<sup>8</sup>

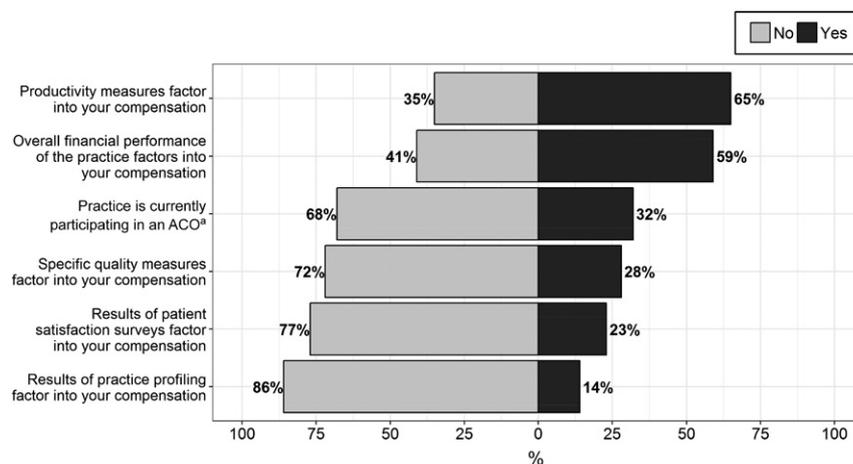
## RESULTS

### Sample Demographics

The final survey response rate was 48.7%. Respondents and nonrespondents did not differ with respect to age, sex, or geographic region. A descriptive overview of the analytic sample of general pediatricians is provided in Table 1. The average age of respondents was 48.6 years; most were women (67%) and worked full-time (71%). In terms of employment status, 57% were employees, 39% were owners, and 5% were contractors or in other work arrangements. Most of the respondents worked in a group practice and/or health maintenance organization (HMO) (70%), whereas the remainder worked in solo or 2-physician practices (15%) or medical school, hospitals, clinics, Federally Qualified Health Centers (FQHCs), and/or other settings (15%). More than half of respondents practiced in suburban areas, 14% in rural areas, and the remainder practiced in urban areas. Overall, 41% of respondents indicated that more than half of their patients are on public insurance.

**TABLE 1** Demographic and Practice Characteristics of the Analytic Sample of General Pediatricians

	Value
Age, y, mean (SD)	48.6 (10.8)
Sex, %	
Female	66.9
Male	33.1
Work status, %	
Full-time	70.9
Part-time	29.1
Employee or owner status, %	
Employee	56.6
Owner	38.5
Contractor or other	4.9
Practice setting, %	
Solo or 2-physician practice	15.3
Group practice and/or HMO	69.8
Medical school, hospital, clinic, FQHC, and/or other	14.9
Practice area, %	
Suburban	51.4
Urban, inner city	13.6
Urban, not inner city	20.7
Rural	14.4
<i>N</i>	489



**FIGURE 1**

Pediatrician experience with health care financing and payment models. <sup>a</sup> The “No” response category for this item includes respondents who indicated “no” and “unsure.”

### Experience With and Views About ACOs and VBP

The majority of respondents reported some linkage of compensation to productivity (65%) or financial performance (59%), and some received additional VBP based on quality measures (28%) and/or patient satisfaction surveys (23%). Many respondents’ practices were participating (32%) or were planning to participate (6%) in an ACO, with 24% not participating and 38% of respondents unsure. Overall, 52%

of respondents reported experience with some type of VBP (Fig 1).

More than half of respondents (57%) reported a low level of concern about adapting to new payment models (“not at all,” “slightly,” or “neutral”). Response about the use of quality metrics to modify compensation was mixed, with 32% reporting that this practice had a positive impact on their ability to provide quality care, but a nearly equal proportion (28%) perceived a “negative impact.” Many respondents were neutral about

ACOs, with 12% indicating that ACOs have a positive impact, whereas 21% reported that ACOs have a negative impact (Fig 2).

### Relationship Between Experience With and Views About ACOs and VBP

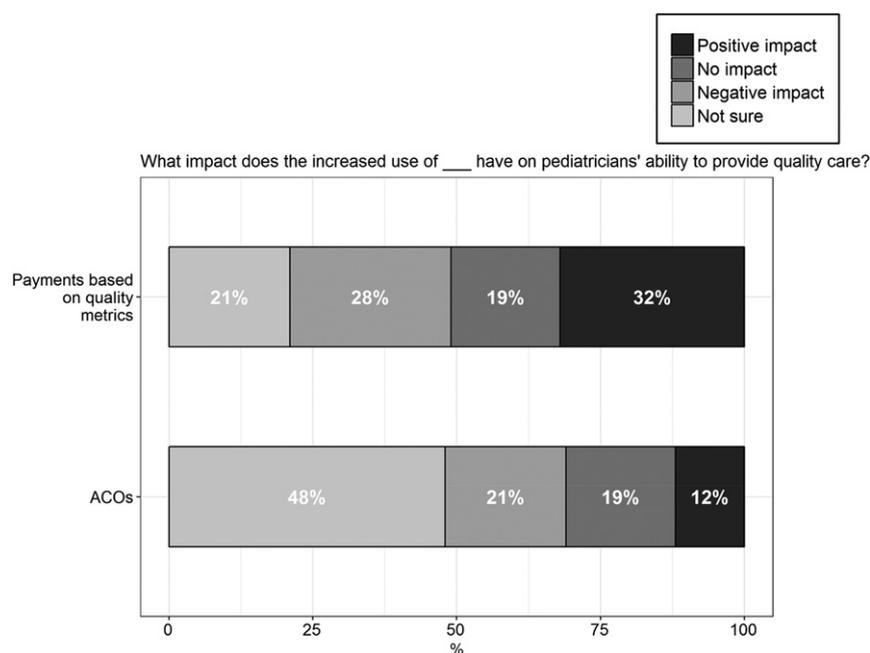
We found a positive relationship between actual experience with ACOs and VBP and the view that they had a positive impact (Table 2). For example, 26% of respondents in practices participating in an ACO reported that ACOs have a positive impact, compared with only 5% of respondents who indicated that they did not participate or were unsure if they participated in an ACO ( $P < .01$ ). Similarly, 42% of respondents with experience using quality metrics for compensation report that payments based on quality metrics had a positive impact, compared with 27% of respondents who reported that quality metrics did not impact their compensation ( $P < .01$ ).

These statistically significant relationships remain after controlling for demographic and practice characteristics of respondents (Table 2). Respondents who have used quality metrics for compensation (adjusted odds ratio [OR]: 2.01; 95% confidence interval [CI] 1.26–3.19) and those who have participated in an ACO (OR: 6.68; 95% CI 3.55–13.20) are more likely to report a positive impact on their ability to provide quality care to patients (Supplemental Fig 3, Supplemental Tables 3 and 4).

## DISCUSSION

### Key Summative Findings

With this study of 489 practicing general pediatricians, we provide current insight regarding outpatient pediatricians' perception and experience of the transition toward VBP. We found that pediatricians who report receiving a VBP were significantly more likely to view



**FIGURE 2** Pediatrician attitudes toward health care financing and payment models.

**TABLE 2** Relationship Between Pediatrician Experience With VBP and ACO and Perception of Positive Impact

Impact	Bivariate Results <sup>a</sup>		Multivariable Results <sup>b</sup>
	Reporting Positive Impact by Experience With Payment Model, % (n)		Experience With Payment Model (Reference = No Experience or Unsure)
	Experience: Yes	Experience: No or Unsure	Adjusted OR (95% CI)
Payments based on quality metrics (n = 486) <sup>c</sup>	42.2 (135)**	27.4 (351)	2.01 (1.26–3.19)**
ACOs (n = 475) <sup>c</sup>	26.0 (154)***	5.3 (321)	6.68 (3.55–13.20)***

<sup>a</sup> Results are from Pearson's  $\chi^2$  test.

<sup>b</sup> Results are from multivariable logistic regression model; dependent variable is reporting positive impact from payment model; independent variables are experience with payment model, sex, age, work status, employee status, practice setting, and practice area.

<sup>c</sup> Sample sizes for multivariable results are  $n = 455$  for ACOs and  $n = 459$  for payments based on quality metrics because of missing data.

\*\*\*  $P < .001$ ;

\*\*  $P < .01$ .

them favorably when compared with pediatricians who do not report receiving a VBP, and this finding persisted after adjusting for provider- and practice-level characteristics. However, we also found that VBP is still the most common payment method and that many pediatricians do not believe that VBPs will have a positive impact on their ability to provide quality care.

Our finding that many pediatricians do not view VBPs favorably may be driven, in part, by the lack of strong evidence supporting the premise that ACOs or VBP leads to better patient care and value in pediatrics. There are a few successful examples, however, in pediatrics worth highlighting. Oregon's 2015 Coordinated Care Organization reported a decrease in rates of asthma admissions and

low birth weight and an increase in developmental screening and adolescent well-care visits.<sup>9–11</sup> Colorado's Accountable Care Collaborative experienced a 20% increase in well-child visits, 10% rise in postpartum visits, and a net savings of \$37 million in 2015.<sup>12</sup> The Massachusetts Alternative Quality Contract reported improvement in the quality of preventive care in both children with and without special health care needs without a rise in per capita spending for either group.<sup>13,14</sup>

Although these reports are promising, negative perceptions may persist because of the considerable skills and resources needed by pediatricians to apply VBPs to their own practice settings. A 2017 survey of family physicians conducted by the American Academy of Family Physicians can be used to provide some insight into the barriers.<sup>15</sup> Although half of family physicians indicate that their practices participate in VBPs, the most common obstacles to participation identified 2 years ago remain and include lack of physician time (90%), costs of investment in health information technology (86%), difficulties in acquisition and display of data (74%), lack of evidence to predict outcomes (62%), lack of standard performance measures (78%), and concern that VBP will increase work without a benefit to the patient (58%). Accurate and meaningful measurement of quality is essential to improving quality and realizing cost economies; thus, development of relevant, validated, and readily obtainable quality measures of high value are needed if VBP is to succeed in its purposes. Moreover, the most appropriate focus of physician participation in ACOs and VBP should be to interpret and respond to the quality measures for their practice rather than to obtain them or address their accuracy. Adapting electronic health records

or collecting and reporting quality measures is resource intensive and costs physician practices up to \$15.4 billion annually.<sup>16</sup> These technical hurdles and costs, which differ by practice, must be addressed within the structure of the ACO or VBP for busy physicians to appreciate value in participation.<sup>17</sup>

There are also additional challenges faced by pediatricians.<sup>1</sup> First, pediatric health care generates only a small proportion of total health care costs. Potential savings for children are small compared with what can be saved on adult health care costs, so payers have less incentive to focus on innovation in pediatrics. Second, making investments in improving the quality of preventive pediatric health care, although intended to promote the health and well-being over the life span of a young person, may not reveal a return on investment for years or decades to come. Third, only a few pediatric-specific quality measures exist that are relevant to outpatient pediatricians. This leaves few options for practices to reliably quantify, track, and improve using their existing data management resources. Fourth, the prime target for VBP strategies in pediatrics is the growing population of children with special health care needs. These children require substantial health resources and account for a markedly disproportionate share of pediatric health care costs. However, the health conditions and needs of this patient population are heterogeneous (eg, autism, cerebral palsy, technology dependence, etc), and the number of children with any given condition is small compared with the adult population. This introduces additional complexities to benchmark quality and to achieve savings in children. Finally, social determinants of health such as poverty and poor access to health care have the potential to influence the cost of pediatric care profoundly. The financial and structural

resources needed to address social determinants rarely keep pace with the need.

## Limitations

First, it is possible that nonresponse bias influenced the findings. Such bias likely had limited impact, given our response rate of 48.7% and the results of our nonresponse analysis. Nonetheless, pediatricians with more positive VBP experience could have responded at a higher rate to the survey. Second, 38% of respondents indicated that they are unsure if their practice participates in an ACO. As such, our model may have overestimated the positive association by limiting or misclassifying the number of respondents with VBP experience. However, given the impact of ACO participation on practice operations and finances, it is likely that the majority of physicians who reported “uncertainty” were in fact not providing care to ACO patients. Third, we do not use this study to provide evidence for cause and effect related to experience with ACOs or VBPs and positive views. Adjusting for many confounding factors mitigates this risk, but it is possible that residual confounding remains from unmeasured factors. Fourth, many also report feeling neutral, which may be an indication of lack of awareness or understanding, as opposed to a reasoned assessment. Fifth, although our analytic sample size ( $n = 489$ ) is large enough for us to provide robust estimates of our target population overall, our ability to do specific subgroup analyses is limited. Finally, the experience of AAP members may differ from non-AAP members. This is unlikely to impact our results given that 60% of board-certified pediatricians in the United States between the ages of 27 and 70 were AAP members in 2016, indicating that AAP members represent the majority of board-certified pediatricians. However, it is

possible that members may be more aware of VBPs and other aspects of health care policy compared with nonmembers.

### Implications

Findings from this survey and analysis reveal that more physician engagement and feedback is needed if VBPs are to transform pediatric health care from a system driven by volume to one focused on value. Additional surveys or focus groups should be used to seek specific feedback from physicians who have used these models and be designed (1) to describe the circumstances and contextual factors that are driving both positive and negative experiences with ACOs and VBPs and (2) to help physicians identify and mitigate barriers to the adoption of these innovations in different practice types. Surveys should also be used to seek to understand gaps in physicians' awareness and knowledge of ACOs and VBPs to assess the need for educational interventions. To keep

abreast with the fast pace of change, a survey and system used to foster the real-time sharing of experiences should be established. For example, the Center for Medicare and Medicaid Services supports a variety of learning networks for providers to share experiences to promote learning and improvement. The AAP, pediatricians, industry providers, and governing bodies could use survey results and networking to create a learning framework (eg, virtual community) that promotes and facilitates dialogue and sharing of ideas across practices, the development of patient registries, relevant and obtainable quality metrics for benchmarking, cataloging of pediatric ACOs and VBPs by setting, and group innovation. Finally, future research should be used to evaluate how best to account for important social determinants of health in refining care delivery and payment systems and critically assess the impact of these innovations on the long-term health outcomes of children.

### CONCLUSIONS

Pediatricians have varied experience with and views about ACOs and VBPs, but those with experience tend to hold more positive views. Further work to understand the factors that contribute to a positive (or negative) view could be used to improve and more widely disseminate innovative delivery systems and payment models in pediatrics.

### ABBREVIATIONS

AAP:	American Academy of Pediatrics
ACO:	accountable care organization
CI:	confidence interval
FQHC:	Federally Qualified Health Center
HMO:	health maintenance organization
OR:	odds ratio
VBP:	value-based payment

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