



Financing of Vaccine Delivery in Primary Care Practices

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ABSTRACT

OBJECTIVE: Vaccines represent a significant portion of primary care practice expenses. Our objectives were to determine among pediatric (Ped) and family medicine (FM) practices: 1) relative payment for vaccine purchase and administration and estimated profit margin according to payer type, 2) strategies used to reduce vaccine purchase costs and increase payment, and 3) whether practices have stopped providing vaccines because of finances.

METHODS: A national survey conducted from April through September 2011 among Ped and FM practitioners in private, single-specialty practices.

RESULTS: The response rate was 51% (221 of 430). Depending on payer type, 61% to 79% of practices reported that payment for vaccine purchase was at least 100% of purchase price and 34% to 74% reported that payment for vaccine administration was at least \$11. Reported strategies to reduce vaccine purchase cost were online purchasing (81% Ped, 36% FM), prompt pay (78% Ped, 49% FM), and bulk order (65% Ped, 49% FM) dis-

counts. Fewer than half of practices used strategies to increase payment; in a multivariable analysis, practices with ≥ 5 providers were more likely to use strategies compared with practices with fewer providers (adjusted odds ratio, 2.65; 95% confidence interval, 1.51–4.62). When asked if they had stopped purchasing vaccines because of financial concerns, 12% of Ped practices and 23% of FM practices responded 'yes,' and 24% of Ped and 26% of FM practices responded 'no, but have seriously considered.'

CONCLUSIONS: Practices report variable payment for vaccination services from different payer types. Practices might benefit from increased use of strategies to reduce vaccine purchase costs and increase payment for vaccine delivery.

KEYWORDS: adolescents; children; immunizations; primary care; vaccines

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WHAT'S NEW

Practices report variable payment for vaccination from different payer types and payments often fail to cover the costs of vaccine delivery. Whereas some practices reported using strategies to reduce vaccine purchase cost, few used strategies to increase payment for vaccination.

challenge for pediatric (Ped) and family medicine (FM) practices because of the high cost of purchasing, storing, tracking, and administering vaccines in a complicated, multipayer system.^{2–5} These challenges have caused some practices to seriously consider whether to stop providing vaccines.^{1,2}

Practices must obtain and store at least 12 vaccine products to provide all Advisory Committee on Immunization Practices recommended vaccines for youth.⁶ Whereas approximately half of the vaccine supply for children in the United States is purchased by the federal government through the Vaccines for Children (VFC) program and distributed to VFC providers, slightly less than half is

VACCINATING YOUTH TO protect them from vaccine-preventable diseases is a cornerstone of primary care and a great achievement in public health.¹ Despite its critical importance, delivering vaccines to all youth can be a

purchased by Ped and FM practices serving privately insured patients. The private sector purchase price for these vaccines ranges from approximately \$21 for 1 dose of the diphtheria, tetanus, and acellular pertussis vaccine to \$178 for 1 dose of the 9-valent human papillomavirus vaccine.⁷ In addition to the upfront purchase cost of vaccines, practices incur additional product-related expenses: personnel costs, storage costs, insurance costs, and recovery costs due to inventory waste.^{8,9} Next, practices must deliver the vaccines to their patients, incurring expenses including physician and staff time, medical equipment, and professional liability insurance.^{8,9} Practices recover these expenses by receiving payment for vaccine purchase and administration; however, the amounts practices pay to purchase vaccines and they are paid for vaccine product and administration vary widely.^{10–12}

A cause of variation in vaccine costs and payments for privately insured patients is that practices typically must negotiate with manufacturers or distributors for purchase prices and with health plans for payment for vaccine administration.⁸ VFC vaccines are provided at no cost to VFC providers, but these providers do not receive any additional payment for the expenses associated with vaccine storage and tracking. Medicaid payments for VFC vaccine administration are set by states with matching from the federal government.^{8,13} Recognizing the challenges and complexity of vaccine financing, the National Vaccine Advisory Committee (NVAC) published recommendations in 2009 ‘to create optimal approaches to vaccine financing in both the public and private sectors’.¹⁴ These recommendations included strategies for vaccine manufacturers, federal and state government programs, health insurance plans, professional medical organizations, and medical providers. The Affordable Care Act (ACA) of 2010 included some provisions to maintain and improve children’s access to vaccines including requiring nongrandfathered private health plans to cover all Advisory Committee on Immunization Practices recommended vaccines without a copay in the next plan year that occurs 1 year after their recommendation and increasing Medicaid payment for vaccine administration for 2 years.^{15,16} Although the ACA included these provisions, most factors that affect vaccine purchase price and reimbursement for vaccine delivery for privately insured patients are left up to vaccine manufacturers and health plans.

Although previous studies have reported detailed vaccine expense and payment data from Ped and FM providers in a limited number of states,¹² data about medical providers’ use of strategies to improve financing of vaccine delivery, such as those recommended by the NVAC, are limited. We conducted this study in 2011 using a national sample of providers from Ped and FM practices to describe their experiences with vaccine financing with the intent to follow changes over time. Our objectives were to determine and compare among Ped and FM practices: 1) levels of payment for vaccine purchase and administration and estimated profit margin for vaccine delivery according to payer type, 2) strategies used to reduce vaccine purchasing costs and increase payment for vaccine purchase and administra-

tion, and 3) whether practices have stopped providing vaccines to patients because of financial concerns.

METHODS

The Vaccine Policy Collaborative Initiative, a program designed collaboratively with the Centers for Disease Control and Prevention (CDC) to assess primary care physicians’ attitudes about vaccine-related issues, administered a survey to a national sample of Ped and FM physicians. The human subjects review board at the University of Colorado approved this study as exempt research.

STUDY POPULATION

Physicians were recruited from the American Academy of Pediatrics (AAP) and American Academy of Family Physicians (AAFP). These physicians agreed to respond to several surveys annually. Physicians were excluded if they were in training, did not practice in the United States, or practiced <50% of the time in a primary care setting. A quota strategy was used to ensure that our physician sample was representative of the AAP and AAFP memberships on the basis of a sampling matrix including region of the country, practice setting, and practice location. Cells in the matrix were filled by randomly selecting from all of the recruits to yield a total of approximately 400 physicians in the Ped sample and 400 in the FM sample. This quota sampling strategy has been described in more detail in a previous publication.¹⁷

This analysis includes physicians who classified themselves as working in single-specialty, private practices because our preliminary data suggested that physicians working in multispecialty practices, sites within a health maintenance organization (HMO) or managed care organization (MCO), and sites in an academic or public health setting were not knowledgeable about vaccine financing issues. Physicians living in universal purchase states with a system to collectively purchase vaccines for all children regardless of insurance type, were excluded because many of the questions on the survey were not relevant to them. At the time of this survey, 13 states collectively purchased some or all vaccines: Alaska, Hawaii, Massachusetts, Maine, North Carolina, New Hampshire, New Mexico, Rhode Island, South Dakota, Vermont, Washington, Wisconsin, and Wyoming. Among all of the physicians in our original samples, 56% (232 of 413) of Ped and 46% (198/427) of FM practitioners worked in single-specialty, private practices and did not practice in these 13 states. In comparison, approximately 44% of all Ped AAP members practice in a single-specialty, private practice, and approximately 47% of FM AAFP members practice in a privately-owned medical practice.^{18,19}

QUESTIONNAIRE DESIGN

The questionnaire was developed with input from the CDC. It was pretested in advisory committees of Ped and FM practices from across the United States and was pilot tested among 39 Ped and FM practitioners, most of

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