AHIP

America's Health Insurance Plans

AHIP Vaccines and Immunization Roundtable Report

Vaccine Financing

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About the AHIP Vaccines and Immunization Roundtable Series

Health insurance plans face many challenges related to providing access to an ever-expanding array of health services, including newly recommended vaccines. Advances in vaccine development, the increasing number of vaccines recommended by the Centers for Disease Control and Prevention (CDC) Advisory Committee on Immunization Practices (ACIP), the increasing costs of vaccines, and the ever-changing landscape of the health insurance marketplace all add to the complexity of immunization benefit options.

America's Health Insurance Plans' (AHIP) Vaccines and Immunization Roundtable Series is supported by the AHIP Innovation in Immunization Practices Initiative* with the goal of leveraging the knowledge, understanding, and experience of AHIP member health insurance plan experts in the field of immunization. In 2008, the roundtable was convened to facilitate an open dialogue with health insurance plans, physicians, and other vaccine providers, employers, vaccine manufacturers, and public health officials on issues related to public and private financing of vaccines and the stability of the current vaccine delivery system. The roundtable also provided an opportunity to discuss vaccine finance recommendations developed by the National Vaccine Advisory Committee (NVAC) Vaccine Finance Working Group (VFWG).

The main objectives of the 2008 Roundtable were to:

1. Hear pertinent and timely presentations on vaccine financing, including information on:
   - potential additional costs facing vaccine providers and perspectives from the provider community;
   - current revisions in billing codes used for vaccines and vaccine administration; and
   - the financial impact of the increasing number of recommended vaccines.
2. Discuss and facilitate a dialogue among multiple vaccine stakeholders regarding:
   - potential barriers to immunization and solutions to ensure that all Americans receive age-appropriate immunizations; and
   - the new realities facing health insurance plans, providers, employers, and consumers and the likely effects on immunization and vaccine policies, programs, and innovations.

*AHIP's Innovation in Immunization Practices Initiative was created to help health insurance plans improve immunization rates for their enrolled members—children, adolescents, and adults—by sharing information on programs that have worked. The Initiative offers program information and examples of "model programs" to interested stakeholders, including government agencies, employers, health insurance plans, and community partners.

AHIP Vaccines and Immunization Roundtable Report: Vaccine Financing

TABLE OF CONTENTS

EXECUTIVE SUMMARY

In July 2008, America's Health Insurance Plans (AHIP) convened representatives from member health insurance plans, physicians, employers, public health officials, vaccine manufacturers, and academicians to hear the latest research on vaccine financing in the United States and to open a dialogue on the perspectives of these stakeholder groups. This report summarizes the roundtable event.

Providing recommended vaccines is becoming more expensive. In 1995, the price to complete the ACIP-recommended immunization schedule for a child through the age of 18 years was $155. Today that figure is at least $1,105 for boys and $1,407 for girls. Vaccines added to the Advisory Committee on Immunization Practices' (ACIP) schedule since 2000 are the most expensive. When private physicians purchase vaccines, the cost can be as high as $375 for the three-shot human papillomavirus (HPV) vaccination series; $248 for the measles, mumps, rubella, varicella (MMRV) vaccine; up to $306 for the rotavirus vaccine; and $94 for the meningococcal vaccine.[1]

Vaccine purchase prices and the costs providers incur to administer them are rising—

- The cost to vaccinate children up to 18 years increased 713% for boys and 907% for girls from 1995 to 2008.
- The vaccines recommended for routine use since 2000 require greater initial investment to maintain an inventory under existing purchasing arrangements.
- Physicians report that increasing public concern about vaccine safety requires additional time for vaccine counseling that may not be fully factored in to all reimbursements.

Additionally, physicians report that the costs to administer vaccines have also risen over time, with the expanding number of recommended vaccines and vaccine doses that need to be managed. These new costs also include additional labor (ordering, inventory, counseling, immunization registry input), storage (refrigerators, freezers, locks, alarm systems, generators), and insurance against loss.

Compounding these problems are the many conflicting messages about vaccines in the media. Today's parents are often bombarded with inaccurate messages about the relative safety of vaccines compared to vaccine-preventable disease (VPD). Having never witnessed the adverse effects caused by diseases such as polio or measles, many parents are suspicious of vaccines and dismissive of the true health benefits they provide. When this happens, physicians often need to spend additional time educating and reassuring parents about the safety and importance of receiving vaccines.

The confluence of these events has led some public health officials to question whether the vaccine delivery system is in jeopardy. They are concerned that vaccines may no longer be provided through physician practices if, as reported by some physicians and suggested by new studies, some practices lose money on some of the vaccines they administer. If a large number of physicians were to discontinue providing vaccinations, our nation's high immunization rates could be disrupted, opening the door for a return of illness, disease transmission, hospitalization, and death from VPDs.

In response, officials from the U.S. Department of Health and Human Services (HHS) formed an independent advisory working group to evaluate physicians' concerns about their continued willingness to provide vaccines given the financial issues they report, assess the validity of their concerns, and develop potential policy recommendations to, "…ensure that all children and adolescents have access to all routinely recommended vaccinations without financial barriers." This group, the National Vaccine Advisory Committee's (NVAC) Vaccine Finance Working Group (VFWG) formed in 2006, has consulted with the public at large and representatives of major stakeholder groups (employers, insurers, physicians, vaccine manufacturers, consumers, and others), evaluated relevant research, and developed a series of policy options on vaccine financing in the United States (see Appendix B).

Several groundbreaking studies were conducted to assess all costs associated with vaccinations, levels of provider reimbursement, provider perception of the vaccine financing problem, and the likelihood of a decline in the number of physicians who provide vaccines in the United States. Two of these studies were presented at the roundtable, and some of the notable findings[2-4] include:

- Considerable variation exists in the prices physician practices pay to obtain vaccines, with smaller, more rural practices that do not participate in purchasing cooperatives paying more.
- Vaccine pricing is related to the size of the vaccine order; practices participating in purchasing cooperatives or buying groups usually received lower prices. Only 54 percent of practices participate in these groups, with smaller practices tending not to participate.
- One study of physician practices in Georgia found that practices that see more privately insured patients make money on vaccines, but this profit diminishes and turns to a loss as a practice cares for more Medicaid patients. Practices with a patient pool comprised of more than 70 percent of privately insured patients (29 percent or fewer Medicaid patients) saw vaccine revenue exceed expenditures; practices with 61 percent or more Medicaid patients (38 percent or fewer privately insured patients) saw vaccine expenses exceed revenue.
- Another study surveying physicians' attitudes about vaccine finance found that 42 percent of respondents either agreed that reimbursement for vaccines from private payors was adequate, or were neutral on the question; 49 percent either agreed that reimbursement for vaccine administration was adequate, or were neutral on the question.
- Both lead researchers in these two studies noted that data collection was difficult because many practices were not readily aware of the costs associated with administering vaccines.
- Only 5 percent of the pediatricians surveyed in one of these studies indicated that they are seriously considering discontinuing the provision of vaccines to patients.
- The author of one of these studies concluded that there is not an imminent threat to the vaccine delivery system, but systematic changes will be needed if vaccine prices continue to rise.

The AHIP Vaccine and Immunization Roundtable on Vaccine Financing was an opportunity for a diverse group of stakeholders to discuss the issues raised by physicians and these studies. Each group came to the Roundtable with its unique perspective and experiences and the common desire to better understand and to strengthen our nation's vaccine delivery and financing system. All participants reaffirmed their commitment to ensuring that all Americans receive age-appropriate vaccines as recommended by ACIP. In the end, numerous opportunities for future dialogue and collaboration were proposed and considered, including:

- Developing ways to help all vaccine providers become more efficient, as well as financially and operationally solvent;
- Determining how best to encourage the use of combination vaccines;
- Understanding why some primary care physicians are no longer providing vaccines, while OB/GYNs and other non-traditional vaccine providers (e.g. pharmacies and convenience clinics) have begun providing vaccines;
- Examining ways health insurance plans can support non-traditional sites of care that provide immunizations, without moving essential and efficiently-provided health care out of the medical home;
- Assessing the importance of stable vaccine financing as a factor in the timely immunization of some populations; and
- Ascertaining how stakeholders can continue to collaborate to increase immunization rates.

The report that follows captures the dynamic discussion that occurred throughout the AHIP Vaccines and Immunization Roundtable on Vaccine Financing.

Since it was first recognized that people who were exposed to cowpox did not get smallpox, the world has been a much safer place regarding certain communicable diseases. The United Nations estimated in 2007 that immunization prevents between 2 million and 3 million deaths from vaccine-preventable diseases (VPD) worldwide each year.[5-6] The United States in particular has benefited, with the 2007 National Immunization Survey (NIS) conducted by the CDC indicating that residents of the United States now enjoy the highest immunization rates and among the lowest prevalence of vaccine-preventable diseases ever recorded.[7-8]

Vaccines provide tremendous value to society. In 2006, the Partnership for Prevention evaluated 25 widely recommended clinical preventive services and gave childhood vaccination its highest score, based on clinical burden and cost-effectiveness.[9] For some vaccines, estimates of the payoff are huge. For each dollar spent on immunizing children and adolescents with vaccines recommended prior to 2000, more than $1 was saved in medical or societal costs.[10] For each dollar spent on diphtheria/pertussis vaccines, the United States receives $27 in overall societal benefit.[11] While these long-established vaccines have been shown to prevent diseases in millions of people and save thousands of lives in each birth cohort, the newer, and often more costly vaccines in many cases have yet to demonstrate such cost effectiveness. One reason for this may be that the newer vaccines are targeted toward diseases (e.g., HPV and shingles) that are not generally as communicable to the public at-large as the VPDs targeted by earlier vaccines (e.g., measles, whooping cough).

While immunization rates for children, adolescents, and adults in the United States are at record high levels, the increasing number of new vaccines and the higher prices of some newer vaccines are challenging the successful United States immunization delivery and financing infrastructure. According to an April 2008 analysis based on federally-contracted prices and conducted by NVAC, an advisory committee to the Secretary of HHS on national vaccine policy, the cost to provide vaccines recommended for children and adolescents by ACIP increased from $155 in 1995 to $1,105 for males and $1,407 for females in 2008.[12] New, more expensive vaccines for adults also have been introduced in recent years. For example, the herpes zoster, or shingles, vaccine, Zostavax®, which is recommended for adults over age 60, costs at least $150, and Gardasil®, the vaccine against the human papillomavirus (HPV), costs approximately $360 for the recommended three doses.[13] The growing number of vaccines recommended by ACIP raises concerns about the long-term financing and affordability of vaccines. For example, by age 18 a child born in 2008 may receive as many as 48 doses of vaccines for the 16 VPDs currently covered under existing recommendations, compared to the maximum 19 doses for the nine VPDs covered for a child born in 1998.[14]

Some physicians have raised concerns about traditional vaccine purchasing arrangements in which physicians buy vaccines directly from the manufacturer or a wholesaler (i.e. distributor) and store the doses at their practice so that patients can receive the vaccine during scheduled visits. Recent studies have shown that prices that providers pay for vaccines in the private sector may be higher than the prices paid by the Vaccines for Children (VFC) program, adding to the concerns about the system's ability to immunize the population at the optimal level.[15] Vaccine providers also report that managing and administering vaccines has become more complex as newer vaccines have additional storage and handling requirements, and as vaccine safety concerns among the public have necessitated more counseling.[16] Although there is currently no evidence to indicate that physicians will stop administering vaccines in their offices, some stakeholders vested in the vaccine delivery system worry that the issues mentioned above will lead to such a crisis.[17]

Public health officials are concerned that a decline in the number of physicians willing to administer vaccines will potentially lead to a corresponding reduction in immunization rates, which will in turn lead to a resurgence of certain VPDs. Recent outbreaks of measles, pertussis, and Haemophilus influenzae type b (Hib) in Japan, Sweden, the United Kingdom, and the United States have been linked to communities with only a slightly higher than average proportion of under-vaccinated people. In order to minimize incidences of VPDs, the United States federal government established the Healthy People 2010 initiative, which set goals for the nation to reach at least 90 percent immunization rates for all childhood and adolescent vaccines, 90 percent for most adult vaccines, and 60 percent for adult influenza and pneumococcal vaccines.[18]

To address the challenges our nation faces in ensuring that all American's receive the appropriate vaccines as recommended by the ACIP, America's Health Insurance Plans (AHIP) brought together a broad range of stakeholders in America's vaccine delivery system, including physicians, public health officials, academicians, and employers to engage in a dialogue with representatives from AHIP member health insurance plans to discuss vaccine financing issues. Meeting participants sought common ground to address current and future challenges and identified ways to build on the Nation's impressive immunization accomplishments.

THE TRADITIONAL MODEL FOR VACCINE PROVISION

For most medicines, physicians prescribe drugs that patients typically purchase at a pharmacy. The current vaccine delivery business model, in which physician practices purchase vaccines before administering them in their office to appropriate patients by a specified age group, is somewhat atypical to this model. With most vaccines administered in the private sector, providers typically negotiate the vaccine purchase price with distributors or manufacturers, and then seek reimbursement from health insurers for the vaccine, its administration fee, and the office visit during which the vaccine is given.

Limited purchasing options can mean that a practice's investment in maintaining an adequate vaccine inventory can be substantial in comparison to the size of an office's overall operating budget. In addition to vaccine purchases, the costs related to administering vaccines have also risen over time, a trend many physicians indicate is a result of the need to manage an ever-increasing number of vaccines (products, doses, and inventory), longer office visits to counsel parents on safety concerns, additional costs related to vaccine storage, and data entry into immunization registries. Preliminary research findings presented at the AHIP roundtable suggest that these problems are compounded for some smaller, more rural physician practices.[19] Roundtable participants also heard evidence indicating that public programs are not keeping pace with these increasing costs, and that physicians lose money when vaccinating patients covered under public programs.[20] Other evidence presented showed there is tremendous variation in the prices paid by physician practices for the same vaccine (sometimes as much as a three-fold difference), as well as in the reimbursement physicians negotiate with insurers.

Many variables affect whether a physician practice loses or makes money through administering vaccines, including the characteristics of its patients, the location of the practice, whether a practice participates in bulk purchasing groups, how effectively a practice negotiates contracts with payors, and the business acumen of those running a practice. The degree to which these factors affect each practice or the vaccine financing system as a whole is unknown. It is this unknown that has given rise to concern among some stakeholders in the vaccine delivery and finance system that some physicians may stop offering vaccines, leading to a decline in vaccination rates and a return of disease outbreaks. All of these factors combined suggest that while many elements of the existing vaccine financing and delivery system remain effective and support continuing the current level of high immunization rates, some new strategies may be required to help health care practitioners continue to provide immunizations.

RECENT RESEARCH AND PROVIDER PERSPECTIVES ON THE COST TO VACCINATE

The concerns voiced by the stakeholders about vaccine financing and delivery are complex and can be contradictory. Some concerns are supported only by anecdotal evidence, not rigorous research, raising questions that can only be answered through research:

- What are the most effective policies and practices that will ensure that all American's receive their appropriate vaccinations as recommended by the ACIP? What role does financing play in these efforts?
- What is the cost to physicians and other clinicians to vaccinate children and adolescents?
- Are clinicians placed at financial risk for vaccinating these age groups?
- Is the current business model for providing vaccinations favorable or unfavorable to physicians and other vaccine providers?
- What factors are relevant in determining the costs associated with vaccines and their delivery?

AHIP roundtable attendees heard researchers present some preliminary findings from new studies that have begun to shed light on some of these questions. Representatives of several medical societies also offered the perspectives of their organizations at the event.

Preliminary results of a new study of practice-level vaccine purchase and payor reimbursement, presented to roundtable participants by study leader Gary Freed, MD, MPH, of the University of Michigan, suggest that the price to purchase vaccines in private pediatric medical practices can vary tremendously. Some practices reported paying less than the federal, or VFC, contract price for vaccines, while others pay substantially more. The study, which surveyed 81 primary care physician practices in five non-universal purchase states* revealed that some providers pay as much as three times for Recombivax,® a Hepatitis B vaccine, than other practices. Practices may pay more than the price of the vaccine if purchased for immediate delivery or in small quantities, typically the most costly way to purchase vaccines (see Appendix D).[21]

Health Insurance Plans and Vaccines

AHIP's 2005 immunization assessment, a survey of AHIP member health insurance plans, revealed that 100 percent of the 61 responding plans (representing almost 58 million covered lives), covered all childhood ACIP-recommended vaccines. In 2007, AHIP worked with NVPO to conduct a targeted convenience survey to document the perspectives of a selected group of health insurance plan representatives on vaccine financing.[22] All 15 AHIP member health insurance plans that responded to this survey indicated that all ACIP-recommended vaccines for children and adolescents are covered benefits in either all or most of the products offered. These findings are consistent with the industry-wide surveys conducted by AHIP in 2005 and 2008. The most important factors used to determine or adjust reimbursement rates were manufacturer prices for vaccines (with 80 percent of respondents indicating this is a factor) and physician feedback (53 percent).

In the follow-up interviews, less than half of respondents said vaccine financing was a barrier to childhood vaccination, with the cost to physicians to provide vaccines as the most commonly cited reason. Suggested solutions included obtaining provider input on reimbursement, strongly considering the American Academy of Pediatrics (AAP) recommendations to increase reimbursement, moving away from relative value units (RVU schedule) as a basis for payment, and moving toward other payment models, such as bundled payments, or instituting universal vaccine purchase through states or insurers.

*Universal vaccine purchase states buy all of the vaccines needed to immunize all or parts of that state's population, either through VFC or directly from manufacturers, thus eliminating or reducing vaccinee cost sharing or the need for direct third-party payment of vaccines.

Another study of 34 physician practices in Georgia, led by CDC economist Margaret S. Coleman, PhD, examined the costs associated with administering vaccines, including labor (for ordering, inventory, counseling, registry input), storage of pharmaceuticals (refrigerators, freezers, locks, alarm systems, generators), insurance against loss, and vaccine purchase prices compared to reimbursements. Preliminary results of this study confirmed Freed's finding of wide variations in purchase prices. The study compared Medicaid reimbursements for vaccines to two private payor models—one with reimbursement only for the vaccine and its administration, and one that includes reimbursement for those two items along with reimbursement for the Evaluation and Management (E&M) office visit, which is a more comprehensive model. The study found the lowest price a practice paid for a single dose of the measles, mumps, rubella (MMR) vaccine, for example, ranged dramatically, from a low of $17.22, to a high of $55. The average was approximately $42 per dose.

Substantially higher vaccine prices can affect the cash flow of a practice, determining whether vaccines are a source of profit or loss. In Freed's study, the prices offered by manufacturers for newer vaccines do not range as widely as prices for older ones, but the prices for the newer ones are substantially higher, necessitating a higher outlay by providers. The University of Michigan study also showed, for example, that the lowest per-dose price practices paid for Gardasil® (the HPV vaccine) was $116, while the highest was $129.57. Even the best pricing obtained by the practices was substantially higher than the CDC contract price of $96.75 for federally-eligible or state-eligible children through VFC. Of the private physician practices examined, those getting the lower average prices participated in purchasing cooperatives or buying groups. Solo and two-physician practices paid higher prices, on average, for vaccines.[23]

Physician reimbursements for vaccine purchase can also vary widely, with some practices reimbursed well above the purchase price, while others receive less than that amount. Reimbursements varied by up to five-fold for the HPV vaccine in the CDC study.[24] Examining each practice's most common payor, the University of Michigan study found that reimbursements for the diphtheria, tetanus, and acellular pertussis (DTaP) vaccine, Daptacel®, varied by more than 100 percent. Urban and suburban practices, along with multiple-physician practices, tended to receive higher than average reimbursements for most vaccines.[25]

Preliminary analyses of reimbursement rates for vaccine administration, as reported by providers, ranged from $14 to $17 per single dose.[26] Under Georgia Medicaid, for example, administrative fees average $10 for the first dose of vaccine and $8 for each additional dose. The CDC study also drew attention to the widely varying nature of patient counseling time, finding that Medicaid patients require more counseling time than most private health insurance plan members, even though Medicaid reimbursement was lower than that of private health insurance plans.[27]

Another key finding of the CDC study was that practices with more Medicaid patients suffered net losses. The study also demonstrated that the financial viability of a practice administering vaccines is dependent on having more patients enrolled in private health insurance—this was true whether reimbursement included the E&M office visit along with reimbursement for the vaccine and its administration or not.[28] Some roundtable participants hypothesized that this suggests commercial insurance may be subsidizing inadequate reimbursement from public programs. Physician practices with a patient population composed of 31 percent or more Medicaid patients, on average, failed to recoup estimated vaccine-related costs from federal reimbursement received from administering vaccines. Conversely, practices with more privately insured patients received vaccine-related revenue in excess of vaccine-related costs.[29]

University of Michigan researchers found that reimbursement to physician practices from the three most common private payors overwhelmingly exceeded costs. The amount of profit or, in a few cases loss, varied tremendously by vaccine and by practice.[30]

PHYSICIAN RESPONSE TO VACCINE FINANCE CHALLENGES

A second study by University of Michigan researchers examining private physician attitudes about private payor reimbursement for immunization services found that at the time the study was conducted, there was no evidence suggesting that physicians will stop providing immunization services. Nearly one-third of physician practices stated vaccine-related reimbursement was satisfactory, however, one-third of practices were not satisfied with reimbursement. Twenty-one percent of respondents strongly disagreed that "reimbursement for vaccine purchase is adequate," and 17 percent strongly disagreed that "reimbursement for vaccine administration is adequate" (see Appendix D).[31]

Overall, a slight majority (53 percent) reported that their practices saw declining profits from child and adolescent immunizations (21 percent saw a significant decrease; 21 percent indicated a moderate decrease; and 11 percent experienced a slight decrease) over the three-year period ending in 2007. Nearly half (49 percent) reported they had delayed purchase of new vaccines due specifically to financial concerns; the most commonly delayed vaccines were HPV (67 percent) and MCV4 (34 percent). Only 11 percent of pediatric practices "seriously" considered whether to, "stop providing all vaccines to privately insured patients due to vaccine costs, administration fee or reimbursement issues."[32] The number was near double (21 percent) for family practitioners. Because family physicians see adults, and because they are the only vaccinators in many rural areas, this result has generated concern that adults and people who live in rural areas may be especially susceptible to a drop-off in practices that vaccinate. Such a trend could drive down immunization rates in rural areas. Among family physicians and pediatricians who see immunizations as their "core" business, about four times as many family physicians were seriously considering opting out of providing vaccines.

Only 11 percent of pediatric practices "seriously" considered whether to, "stop providing all vaccines to privately insured patients due to vaccine costs, administration fee or reimbursement issues."

While family practitioners seemed more inclined to stop providing vaccinations, for reasons explained later in this report, the University of Michigan's Freed suggested that the greater inclination on the part of family practitioners may have had more to do with demographics and changing patient panels of family physicians. Family physicians provide care to about one in five children under age four in the United States, a proportion that has declined over the last decade by one-third. "Family physicians," said Freed, "don't see kids in suburban or urban areas; pediatricians do."

PROVIDERS AND IMMUNIZATIONS: PHYSICIAN VOICES

The research findings prompted a lively discussion among stakeholders at the roundtable. It was noted by several participants that vaccinations should not simply be the responsibility of pediatricians. Freed suggested that many physicians who treat adults, including internists, should be providing some vaccines, but many do not have a prevention mindset. "Internists [often] don't give flu vaccines," said Freed, adding that many sub-specialists do not give the flu vaccine either. This may be one reason why there were an estimated 25 million missed opportunities to administer the influenza vaccine in physicians' offices during the 2007-2008 influenza season.[33] Numerous stakeholders at the roundtable agreed that efforts to increase awareness among internists, obstetricians and gynecologists (OB/GYN), as well as other specialists and sub-specialists, perhaps by their respective medical societies, is needed in order to further improve vaccination rates, or at least to prevent a decline. The CDC's research team pointed out that this could be especially challenging for pediatricians. As they conducted their research, they found that many practices were not equipped with the basic resources needed to manage a modern office, such as computers, and the typical practice did not exhibit basic business acumen.

Concerns were also raised by several stakeholders that children and adolescents living in rural areas would be at risk if family physicians stop providing vaccinations, as few or no clinics that would otherwise provide these services exist in these areas. Andrew Eisenberg, MD, who represented the American Academy of Family Physicians (AAFP), asserted that family physicians increasingly see administering vaccines to be overly burdensome, based on reports from AAFP members. He reported that family physicians are among those most likely to refer patients to public clinics for vaccinations and delay purchasing certain vaccines. The AAFP says many of its members are losing money on immunizations, and are not administering newly-recommended vaccines until insurance payment arrangements, with both public and private payors, are renegotiated. Family practices also are not maintaining an inventory of expensive vaccines due to financial concerns. According to a survey of its members, AAFP found 40 percent of family physicians refer some patients elsewhere for vaccines, most often to public health clinics—with Zostavax, the shingles vaccine indicated for people 60 years and older, the most commonly referred for administration at a clinic.[34] Some reasons for this, Eisenberg explained, include not wanting to administer vaccine to patients who are uninsured or whose coverage does not include all immunizations, payments not covering all costs associated with administering vaccines, and the administrative burden involved in requesting reimbursement for vaccines from health insurers.

Eisenberg went on to say that administration of vaccines is a core component of the practice of family medicine, and providing immunizations in the patient-centered medical home is ideal. While children's visits are very much geared toward prevention, most adult visits are not. Family physicians have often found themselves trying to convince adult patients to get immunized, whereas that has not traditionally been the case for children. Additionally, he reported that it can take more time and effort than is usually allotted during a preventive service office visit to counsel adult patients on the importance of receiving ACIP-recommended vaccines.

However, as family physicians report encountering more external barriers to administering vaccinations, other physicians, notably OB/GYNs, increasingly see demand for vaccines to be included as a part of the primary care they provide, and therefore view vaccines as a logical addition to their practices. OB/GYNs can play an important role in immunizing women, particularly against HPV and the increased risk of influenza infections in pregnancy.

Rather than looking at the costs associated with vaccinations, Stanley Gall, MD, representing the American College of Obstetrics and Gynecologists (ACOG), simply asked, "What is the cost of not vaccinating?" More than 60,000 adults in the United States die each year from VPDs, a fact that demonstrates the need for greater emphasis on adult vaccinations. In comparison, fewer than 1,000 children die annually from VPD in the United States. The barriers to maternal and other adult immunizations are attributed to several factors, including a lack of patient knowledge on the importance of receiving ACIP-recommended vaccines, a lack of immunization content material geared to OB/GYNs, a lack of focus on maternal immunization, and a lack of programmatic focus on adult immunization at the CDC. The AHIP 2005 survey does indicate that the percentage of enrollees who have coverage for ACIP-recommended adult vaccines is slightly less compared to coverage for pediatric and adolescent vaccines, although the differences are not significant for most vaccines.[35]

Traditionally, OB/GYNs have not provided vaccinations, noted Gall, but ACOG is trying to change that. Nearly 68 percent of OB/GYNs rate their medical school training on immunizations to be barely adequate, inadequate, or nonexistent; a higher percentage rated their residency training as lacking in this area, according to an ACOG survey of more than 350 members conducted in 2005. The survey also revealed that nearly 80 percent administer vaccines in their offices. Of those practices that do, 91 percent administer HPV vaccine, and 73 percent provide influenza vaccine. The next most commonly administered vaccines by ACOG members are the tetanus, diphtheria, and acellular pertussis vaccine (Tdap) (nearly 30 percent) and MMR (28 percent).[36]

VACCINATION IN THE PRIVATE SECTOR: THE ROLE OF HEALTH INSURANCE PLANS AND EMPLOYERS

Health insurance plans and employers have a significant role in promoting vaccination because they benefit from the millions of lives saved by vaccines every year, the reduction in vaccine-preventable diseases (VPD), a healthier workforce, and the lower costs associated with the incidence of VPD. Accordingly, health insurance plans and employers work together to develop benefit packages to cover vaccines.

The fact that insurers almost universally cover ACIP-recommended vaccines also helps to ensure that vaccine manufacturers have a market for vaccines and consequently will continue to invest in new vaccine development. The case for coverage is strongest for vaccines that provide protection against pathogens that are easily transmissible, protect against infections associated with large illness-related expenses, provide long-lasting immunity, and are highly cost-effective. An open-ended commitment to covering vaccines at any manufacturer-determined price, however, may not be economically viable.

Under the employer-based health insurance system, vaccines are almost universally included in the benefit packages offered by health insurance plans and purchased by employers. Employers decide what coverage is appropriate for their specific workforce based on input from benefit consultants and health insurance plans. Because vaccines have traditionally been inexpensive in relation to total medical costs, employers, up to this point, have not had to consider which vaccines to include in the benefit packages they purchase.

Among the insured, those with private coverage have higher immunization rates than persons with public coverage; with HMO enrollees typically having the highest rates of vaccination and other important prevention services, including cancer screenings.[37] However, having private health insurance that covers vaccines is no guarantee that enrollees will seek out immunization. A study of Johnson & Johnson employees with children born between 1984 and 1991 found that approximately half of the children were not current with recommended vaccinations, although most were covered by plans requiring no or minimal cost sharing for immunizations.[38] The study also documented that uninsured persons were less likely to have been vaccinated.

The trend in the large group market is moving toward first-dollar coverage for preventive services. In recent years, many employers have begun to offer high-deductible plans as a way to reduce health care costs. Although these types of plans usually offer first-dollar coverage of vaccines, out-of-pocket costs, when required, are relatively minimal. According to a 2007 study by Molinari, out-of-pocket costs for immunizations represent 7 percent to 11 percent of the $1,700 of the total costs of immunizations and well-child visits, or $115 for the complete set of childhood vaccines, in 2003 dollars, and $190 for families with individual or small group plans.[39]

Some studies, including the landmark Rand Health Insurance Experiment, which analyzed American health behavior between the years 1973 and 1982, show that cost sharing may reduce or minimize preventive services use. Rand researchers also noted that, "even if care is free, this [preventive medicine] use falls far short of widely accepted standards." Several studies have examined the impact of high-deductible heath plans on immunization rates. These plans incorporate higher deductibles, but generally have significantly lower premiums, and preventive services are typically covered before the deductible is met and without any copayments or coinsurance, i.e. first-dollar coverage. These studies found that the elimination of cost sharing for immunization through high deductible health plans had no effect on immunization rates, suggesting that cost sharing has little to no impact on the decision to get immunized.[40-41]

These studies aside, one of the most compelling arguments that cost sharing has little or no effect on whether people choose to get immunized, is that people with health insurance have higher immunization rates.[42] In addition, the National Committee for Quality Assurance (NCQA) reports that childhood immunization rates among health insurance plan members are at the highest levels ever, and are increasing, thus contributing to the nation's overall effort to meet the Healthy People 2010 goal of 90 percent.[43-44] While health insurance plans and employers are offering first-dollar coverage for vaccines more often, they also recognize that there are numerous other reasons why people do not seek immunizations or other preventive services. Accordingly, health insurance plans have developed many other interventions that promote immunization. AHIP's 2005 survey indicated these activities include reporting of performance rates in Healthcare Effectiveness Data and Information Set (HEDIS®)*, participation in community coalitions, collaboration with public health departments, quality improvement programs, physician and enrollee education, and use of evidence-based guidelines in making coverage decisions.[45]

The National Committee for Quality Assurance (NCQA) reports that childhood immunization rates among health insurance plan members are at the highest levels ever, and are increasing, thus contributing to the nation's overall effort to meet the Healthy People 2010 goal of 90 percent.

*HEDIS is a registered trademark of the National Committee for Quality Assurance (NCQA).

POLICY OPTIONS TO ADDRESS CONCERNS WITH THE CURRENT VACCINE FINANCE SYSTEM

Future vaccines will undoubtedly increase the cost to complete the full ACIP-recommended immunization schedule and any barriers have the potential to lead to lower immunization rates and a return of VPDs.

In recent years, numerous organizations have looked at the rising challenges of financing immunizations, starting with the Institute of Medicine (IOM). The IOM issued a report in 2003 and proposed recommendations, including a universal federal mandate on public and private insurers to cover ACIP-recommended vaccines and federal vaccine subsidies for insurers and clinicians. The IOM also called for federal vouchers for uninsured children and adolescents to ensure adequate financing for recommended vaccines.[46] These options were rejected by several stakeholders who felt that a system in which the federal government was the main purchaser of the nation's vaccines would make vaccines unprofitable for both physicians and vaccine manufacturers.[47] The American Medical Association and the American Academy of Pediatrics held an Immunization Congress in 2007, resulting in the development of a set of recommendations to remove financial barriers for ACIP-recommended vaccines. NVAC has also offered several of its own recommendations, which may be considered by the Secretary of HHS.

Of particular interest to AHIP Roundtable participants were the draft recommendations issued by the VFWG in April 2008. Participants discussed, without reaching consensus, ideas such as the use of tax incentives to boost government and health plan reimbursement for vaccination, federal mandates that health insurance plans provide first-dollar coverage of vaccines, and universal vaccine purchase programs. Additional incremental steps that generated some consensus among stakeholders were also discussed and included efforts to improve the efficiency of physician practices related to vaccination, patient and provider education, employer education on the importance of immunization, updating the coding system used on claims for reimbursement of services, exploring complementary immunization settings, and increasing collaboration among all stakeholders.

NVAC RECOMMENDATIONS RELEVANT TO HEALTH INSURANCE PLANS

In April 2008, the NVAC VFWG issued a set of draft policy options to improve access to vaccines by minimizing or eliminating financial barriers to accessing all vaccines routinely recommended for children and adolescents by the Advisory Committee on Immunization Practices (ACIP). These draft policy options were discussed at the AHIP Roundtable in July 2008 and referenced in the following sections. NVAC voted on these recommendations in September 2008, approving some, but not all of them, and modifying others. Twenty-six recommendations were put forth.*

In the following section, recommendations proposed by the National Vaccine Advisory Committee Vaccine Finance Working Group (NVAC VFWG) are organized according to topic areas relevant to health insurance plans, not the numeric order presented by the VFWG in its white paper. Recommendations are, however, identified by the number used in the white paper and the text of the corresponding recommendation is included.

19. Vaccine manufacturers and third party distributors of vaccine work on an individual basis with providers to reduce the financial burden for initial and ongoing vaccine inventories, particularly for new vaccines.

20. Professional medical organizations provide their members with technical assistance on efficient business practices associated with providing immunizations such as how to contract and bill appropriately.

21. Medical providers, particularly in smaller practices, should participate in pools of vaccine purchasers to obtain volume-ordering discounts.

22. CDC, professional medical organizations, and other relevant stakeholders develop and support additional employer health education efforts.

23. Health insurers and all private payors of health care coverage adopt contract benefit language that is flexible enough to permit coverage and reimbursement for new or recently altered ACIP recommendations as well as vaccine price changes that occur in the middle of a contract period.

24. Supporting incentives for the receipt of immunizations by recommending to health insurers and purchasers of health care to eliminate copayments and deductibles for vaccination for all routinely recommended ACIP vaccines in their plans.

25. Health insurers and purchasers of health care should assure reimbursement for vaccinations in their plans are based on methodologically sound cost studies of efficient practices.

26. NVPO will calculate the marginal increase to insurance premiums to insurance plans of including all routine-ACIP recommended vaccines.

27. NVAC convene one or more expert panels representing all impacted stakeholders to determine if policy options—from tax credits to insurance mandates or universal vaccine purchase—could be developed that would be acceptable to stakeholders to address the burden of financing for private sector childhood vaccinations.

*The final recommendations were released in March 2009; they were reworded and reorganized. The final listing may be found in Appendix B.

First-Dollar Coverage and Benefit Mandates

The American Academy of Family Physicians (AAFP), American Academy of Pediatrics (AAP), and the American Medical Association (AMA) are among the groups calling for first-dollar coverage of vaccines by public and private payors. Despite evidence indicating that removing cost sharing for individuals has little impact on whether they seek preventive care, and that immunization coverage mandates have little impact on immunization rates, some proponents at the roundtable maintained that by eliminating all out-of-pocket costs, individuals would be more likely to obtain vaccines. The main benefit cited for doing so is that it would allow providers to receive full reimbursement while not depending on patient copayments.[48-49] However, providers at the roundtable did acknowledge that such a system would eliminate an immediate source of revenue.

While most health insurance plans require small copayments for primary care office visits, most do not require copayment when vaccination is the only service provided. When out-of-pocket costs are required for vaccine services, the amount is typically nominal.[50-51] The trend, however, in the large group market is toward differential cost sharing, with copayment or coinsurance for some services, but not for preventive services, including immunizations. These types of benefit designs, which include high-deductible plans and "value-based" cost sharing packages, have been offered as a way to reduce overall health care costs. However, as stated earlier in this report, some studies suggest that even when care is "free," as through first-dollar coverage, immunization rates remain unchanged. Universally applied first-dollar coverage, that does not take into account employer or member need, also may limit manufacturer incentives to reduce prices contributing to increased insurance premiums, especially for small and medium-sized businesses. Ultimately this may lead to an increased number of small businesses dropping insurance, greater dependency on public coverage, and putting additional pressure on public programs.

While discussion revolved around voluntary efforts by health insurance plans and other payors to provide first-dollar coverage for vaccinations, the participants turned briefly to coverage mandates. David Howard, PhD, of Emory University, presented data to roundtable participants showing that all states enacted more than 800 new mandated benefit statutes between 1990 and 2002.[52] According to a recent survey, 16 states mandate coverage of HPV vaccine, and 31 mandate coverage for well child visits.[53] Thirty-three states have some type of mandate for childhood vaccinations.[54] These mandates apply to employer-based health insurance coverage while products sold in the individual market vary widely in scope and specificity, with some requiring insurers to cover ACIP-recommended vaccines. Some states prohibit the application of deductibles to vaccine costs, but most mandates do not limit the ability of the health insurance plan to apply some cost sharing to immunizations.

Numerous studies have linked the growing number of uninsured to benefit mandates, and mandates that require coverage of vaccines have not been shown to be effective at improving vaccination coverage rates.

The number of mandates, Howard noted, has prompted concern for the effect on health insurance costs and the potential for such mandates to cause a rise in the number of uninsured or employers to drop or reduce coverage, spurring recent state and federal legislative proposals to allow employers to buy policies exempt from mandated benefit requirements. A law passed in Florida in May 2008, for example, permits insurers to sell individual policies that exclude many of the 52 state-mandated benefits to previously uninsured residents. However, coverage of preventive services is required. At least 26 states have passed mandated benefits review legislation, requiring new mandates to undergo review and analysis, to improve and better inform the decision-making process relating to the cost and effectiveness of mandates.[55]

Numerous studies have linked the growing number of uninsured to benefit mandates, and mandates that require coverage of vaccines have not been shown to be effective at improving vaccination coverage rates.[56] Moreover, according to an AHIP analysis of immunization rate data from the CDC and demographic data from the Census Bureau, immunization rates are more highly correlated with factors such as the average level of education in a state and the ratio of physicians per population as opposed to whether immunization coverage is mandated.[57]

Further, insurance coverage mandates may have other unintended consequences. Forcing purchasers to buy and insurers to provide specified benefits, whether the specified benefit is used by the member or not, may increase the cost of providing insurance across the entire system. Increased insurance premiums will price individuals and groups out of the insurance market, reducing the number of persons with insurance. The magnitude of the effect may differ across markets, with regions representing a high proportion of small employers and individual purchasers, the most sensitive to even the smallest price increases, affected most. Among firms with fewer than 100 employees, a 10 percent increase in premiums is associated with a 2.5 percent decline in the number offering coverage to employees, assuming that benefits remain the same before and after the increase.[58] An analysis by the Lewin Group found that a 1 percent increase in premiums causes 300,000 people to lose coverage. [59] A review of the literature on the economics of mandated benefits concluded that coverage mandates reduce wages, demonstrating that employees, not employers, bear the burden of employer-sponsored health insurance, and researchers noted that, "there is convincing evidence that conventional mandates have indeed priced some purchasers out of the health insurance market."[60]

Tax Credits

The VFWG raised the possibility that using tax credits would help ease the burden of financing for private sector childhood vaccinations, as part of its Recommendation #27. A benefit-specific tax credit would be unprecedented, observed Emory University's Howard. He added that if the credit were conditional on the level of vaccine cost sharing, implementation could be difficult, because tax authorities would presumably have to examine the cost-sharing provisions of each employment-based health insurance plan. Howard also suggested that a tax credit might not be the most cost-effective mechanism for increasing immunization rates because it would be impossible to exclude the many health insurance plans that already offer first-dollar coverage of vaccines.[61] Given the global economic crisis of 2008 and 2009 and the government response, recommendations pertaining to tax credits or new government outlays may need to be reconsidered in a larger context.

Model Contracts and Contract Flexibility

The joint AMA and AAP Immunization Congress in February 2007 recommended that the health insurance industry provide model vaccine coverage contracts for purchasers of health care. Short of a model contract, some have suggested contract flexibility. VFWG Recommendation #23 focuses on model contracts: "NVAC recommends health insurers and all private payors of health care coverage adopt contract benefit language that is flexible enough to permit coverage and reimbursement for new or recently altered ACIP recommendations as well as vaccine price changes that occur in the middle of a contract period."

Model contracts can raise antitrust issues especially when they address reimbursement or other sensitive issues, noted health insurance plan representatives. Moreover, standardizing contracting models in that manner is inconsistent with general contracting rights of private parties to negotiate in accordance with local market conditions and the needs of consumers in that particular region. Health insurance plans and providers, like any other parties negotiating contracts, should have the flexibility to negotiate the terms and conditions of their contracts. Regardless of whether model contracts are developed at some point, physicians at the roundtable urged the development of standardized terminology in contracts related to pricing vaccines, such as the automatic adjustment of vaccine purchase reimbursements to reflect changes in prices.

Reimbursement Processes

In Recommendation #25, NVAC suggested that health insurers and purchasers of health insurance should reimburse vaccinations based on methodologically sound cost studies of efficient practices. By doing so, it is thought that reimbursement levels will cover provider costs with a margin of profit.

As previously discussed, physicians typically purchase vaccine doses in bulk, sometimes months before they are administered. With the increasing costs to purchase and administer vaccines and the limited options available in the existing vaccine purchasing system, physician practices are exposed to an increasing amount of financial risk. In order to administer ACIP-recommended vaccines to their patients, physicians must maintain an adequate vaccine supply; this often requires a proportionately sizable vaccine inventory compared to their overall operating budget. However, it is not clear whether the risk level is out of line with the other types of inventory risks normally faced by businesses that sell goods or services. In response to pressure to offer vaccine providers more flexible payment options, many vaccine manufacturers allow providers to pay for the vaccine months after receipt of the doses, or will buy back unused doses; the affect of these programs on provider profitability is not yet known. While there seems to be increasing recognition that physician practices need to follow best business practices, many providers claim the private health insurers should cover all of the costs associated with delivering vaccines, including items that are usually relegated to overhead, such as costs associated with financial protection against loss.

Much of the confusion surrounding reimbursement for vaccines is the lack of an agreed-upon method of accounting for the costs and benefits associated with administering vaccines in the context of the existing reimbursement system that uses CPT codes to describe services provided. Although pediatric vaccines are usually delivered during routine well child visits, which have their own CPT codes, representatives from physician societies reported that, as they understand it, CPT vaccine administration codes are distinct from other counseling conducted during a routine office visit. Health insurance plan representatives pointed out that physicians have flexibility when coding and billing for office visits during which vaccines are administered.

One key element of this issue is that vaccine provision can be an integral part of a primary care physician's business, especially for pediatricians. For practices that see privately insured patients, vaccines can be a substantial source of revenue. For all practices, vaccines can attract patients who will also seek additional services when they receive their vaccines; this indirect benefit to the physician practice cannot be captured through the CPT-based billing system. At the same time, many physicians who see Medicaid patients have expressed concern that they appear to be losing money per dose on the vaccines they administer to those

Vaccines can attract patients who will also seek additional services when they receive their vaccines.

patients. Many practices must weigh the difficult-to-calculate indirect benefit that vaccines bring against the possibility of losing money per dose on a segment of their patient pool. They also realize that they may lose patients if they stop vaccinating because patients could go to other practices to receive their vaccines; were this to happen, physicians fear that their financial losses would compound because they would not be able to provide services that they would have otherwise provided. Regardless of the indirect benefits of providing vaccines, providers caution that if reimbursement rates do not cover the cost to administer vaccines, practices will lose money on vaccines and physicians may be less willing to provide them in their office.

It was noted that a collective effort by physicians to increase reimbursement rates is likely to violate antitrust laws, which prohibit competitors from collectively setting prices. Similarly, health insurance plans may not, under antitrust law, collectively establish reimbursement levels, even if the end goal is to increase immunization rates.

Seeking Changes to the Resource-Based Relative Value Scale (RBRVS)

VFWG Recommendation #18 states: "NVAC recommends the AMA Resource-Based Relative Value Scale (RBRVS) Update Committee (RUC) should review its Current Procedural Terminology (CPT) coding to ensure that it accurately reflects the non-vaccine costs of vaccination. This review would include an analysis of the potential costs and savings from the use of combination vaccines."

As part of Medicare's RBRVS physician payment system, which many commercial health insurance plans use as a basis for setting physician reimbursement, the AMA-convened RUC makes recommendations to the Centers for Medicare & Medicaid Services (CMS) on how to adjust reimbursement as it relates to physician services. It was pointed out at the roundtable that certain costs borne by medical practices administering vaccines are not accounted for in Medicare's vaccine administration code reimbursement formula. Such costs, for example, include freezers and temperature monitoring alarms that providers have in place for vaccines.

For 2009 and beyond, vaccine administration CPT codes will include practice expense costs related to additional counseling, storage, and data entry into immunization information systems (IIS, or immunization registries) in vaccine administration CPT codes 90465-90474.

Vaccine administration may be reimbursed by fee-for-service payments based on the AMA's CPT billing codes, may be included in a standard office visit rate as it is for capitated insurance plans, or both. CPT codes for vaccine administration cover a wide range of costs associated with vaccine delivery, including counseling, scheduling, preparing the patient chart, billing, greeting the patient, taking vital signs, obtaining a vaccine history, presenting Vaccine Information Sheets (VIS), preparing and administering the vaccine, and observing for adverse events.[62] Medicare's RBRVS also takes into account labor, overhead, and malpractice costs. Stakeholders were informed by AMA CPT Panel and incoming RUC member Joel Bradley, MD, that many of non-vaccine costs of vaccination detailed earlier in this report are not accounted for in the practice expense component of the immunization administration relative values. CMS, in its proposed rule, deemed these activities to be related to business and quality improvement, not to the medical procedure of administering the vaccine, as is the case for other clinical services reimbursed by CMS. After public comment by the AAP, NVPO employees and other members of NVAC, in its final rule in October 2008, CMS reversed this decision and for 2009 and beyond, vaccine administration CPT codes will include practice expense costs related to additional counseling, storage, and data entry into immunization information systems (IIS, or immunization registries) in vaccine administration CPT codes 90465-90474.

Encouraging Manufacturer Competition

In Recommendation #26, the Vaccine Finance Work Group recommends NVPO calculate the marginal increase to insurance premiums [if] insurance plans [were required to cover] all routine ACIP-recommended vaccines.

The number of vaccine manufacturers has declined rapidly since the 1970s, reducing competition in the vaccine market. Moreover, some newer vaccines are produced by a sole source manufacturer.[63] Insurers that offer first-dollar coverage of vaccines, in an attempt to maximize the value provided to purchasers of health insurance, may feel obligated to cover vaccines at any price set by manufacturers. Some participants at the roundtable suggested that one way to address concerns about vaccine prices may be to incorporate cost-effectiveness criteria into decisions about vaccine coverage mandates. Insurers would not be required to cover vaccines if costs exceeded societal benefits. ACIP could play a similar role at the federal level, as recommended by the Institute of Medicine's Committee on the Evaluation of Vaccine Purchase Financing in the United States, by making recommendations contingent upon price and cost-effectiveness.

Universal Purchase

Recommendation #27 states that the NVAC convene one or more expert panels representing all impacted stakeholders to determine if policy options could be developed that would be acceptable to address the burden of financing for private sector childhood vaccinations. Topics for discussion could include creating a universal federal vaccine purchase or universal federal reimbursement for vaccines and vaccine administration.

AAFP's Eisenberg expressed support for an expanded VFC-like system. Such an arrangement, from physicians' standpoint, would no longer have physicians purchasing the product up front, theoretically reducing overhead costs. AAFP maintains universal purchase of vaccines would support the moral imperative of providing health care while taking the expense of buying and billing out of the equation. However, other stakeholders cautioned that such a system might diminish vaccine manufacturer incentives to invest in vaccine research, development, and production.

Improving Business Practices and Creating Efficiencies in Vaccine Management

NVAC suggested in Recommendation #20 that professional medical organizations provide their members with technical assistance on efficient business practices associated with providing immunizations such as how to negotiate prices with manufacturers and contracts with health insurance plans, inventory management, and submitting accurate claims for reimbursement. Medical societies should identify best business practices to assure efficient and appropriate use of ACIP-recommended vaccines and appropriate use of CPT codes, including Evaluation and Management (E&M) codes, when submitting claims for vaccines and vaccine administration. These professional medical organizations may receive federal assistance from CMS or other relevant agencies.

The widely varying prices paid by providers and the wide-ranging level of reimbursements they receive for vaccine administration suggested to some participants that sub-optimal business practices are common in many provider practices. Business practice improvement could lead to increased efficiency in vaccine administration. Several participants agreed that medical societies, which are beginning to provide such assistance in varying degrees, should identify and promote best business practices. Recent steps to gather information about provider vaccine purchasing and reimbursement, all stakeholders agreed, is a positive step to better understanding the financial barriers confronting some practices.

The AMA and AAP assert that health insurers can improve certain processes for submitting claims for reimbursement, a step that would allow providers to more efficiently manage vaccination services. In addition to their desire for model vaccine coverage contracts with flexible language to anticipate new and revised ACIP recommendations and vaccine price changes that occur during contract periods, some provider organizations, such as the AMA and AAP, want health insurers to develop simplified methods for providers to verify patient eligibility and coverage of vaccines.

Eisenberg from the AAFP says several practice-level improvements will help, including assigning key staff to manage immunizations, researching acquisition options and strategies (i.e. inventory control), understanding managed care contracts, and coding appropriately when submitting claims for reimbursement. For example, helping physician practices become efficient and successful from an operational standpoint could be as basic as developing a checklist or template for providers to refer to as they coordinate providing immunization with other services.

CDC economist Margaret Coleman suggested that, compared to other small businesses, many of the physician practices she studied in Georgia seemed to be behind other service business practices in terms of technology and systems. She said that whether a practice makes or loses money on vaccination services can depend upon that office having a capable office manager—someone who knows the basics of buying vaccines at the best price and has the technology skills necessary to track inventory and bill electronically.

As suggestions for identifying and sharing best business practices with physicians surfaced, such as offering technical and financial assistance for physician practices that are purchasing computers, making fundamental business classes available, improving contract negotiation skills, and the need to build a health information infrastructure, an AAP official reported that the organization is working to address many of these issues. AAP is developing an immunization best business practices electronic education module, which will present best practices related to immunization for their members. The organization also has posted a list of group purchasing organizations that report having worked with pediatricians.

Helping physician practices become efficient and successful from an operational standpoint could be as basic as developing a checklist or template for providers to refer to as they coordinate providing immunization with other services.

Coding and Billing Assistance

One area discussed as having potential to provide value to physician practices by promoting efficient and cost-effective delivery of immunization services is improved coding and billing processes. It was apparent during the discussions that many physician practices may not be fully informed about the resources available to them. Physicians and other clinicians providing vaccines during the course of a well-child visit can bill for a preventive service visit, as well as for vaccine administration, when submitting claims for reimbursement. Evaluation and management (E&M) preventive medicine codes include time to obtain vaccine history and order needed vaccines, but they do not include counseling for vaccines, which is included in vaccine administration codes.[64] Clinicians can also bill for E&M office visit codes provided they have performed a separate, medically necessary service in addition to vaccination.[65-66]

According to the AHIP 2005 Immunization Assessment, approximately 57 percent of health insurance plans do not reimburse for an office visit when routine vaccination is the only service provided.[67] Physicians can seek reimbursement by coding claims for both vaccines and vaccine administration when billing for vaccination-only visits, and submit additional E&M codes, when appropriate. The current CPT coding system is complex because vaccines represent both a product and a service. Many health insurance plans have offered tools

and education to help providers report CPT codes accurately on claims, including online tutorials, in person meetings, and seminars.

Distribution-Related Assistance, Purchasing Pools, and Retail Clinics

VFWG Recommendation #19 recommends that vaccine manufacturers and third-party distributors of vaccine work on an individual basis with providers to reduce the financial burden for initial and ongoing vaccine inventories, particularly for new vaccines. This may include extending payment periods (e.g., from 60 to 90 or 120 days or more), until vaccine has been administered and reimbursed.

In Recommendation #21 NVAC recommends medical providers, particularly in smaller practices, should participate in pools of vaccine purchasers to obtain volume ordering discounts. This may be done by individual providers joining or forming purchasing collaboratives, or through a regional vaccine purchasing contract held by professional medical organizations on behalf of providers.

The AMA and AAP voiced support for assistance from vaccine manufacturers and third-party vaccine distributors to reduce the financial burden of establishing and maintaining vaccine inventories, particularly for the newer, more expensive vaccines. Such assistance may include extending payment periods from 60 days to more than 90 or 120 days, consideration of buy-back provisions for unused vaccine inventories, provisions to purchase on credit with minimal interest and to purchase doses in smaller quantities without penalty, reducing exposure to risk associated with purchasing vaccines in bulk.

Fewer than 50 percent of pediatricians use a purchasing group, according to AAP. According to Emory University epidemiologist Walter Orenstein, MD, this is one area where pediatricians can significantly reduce their costs. Smaller practices, which often do not participate in such pools, tend to pay more for vaccines than their peers do at larger practices. Participants examined several ways that health care practitioners could improve purchasing-related decisions.

Regarding the growing use of complementary vaccination venues (e.g., convenience clinics or pharmacies, sometimes called alternate vaccination sites) as a new way to help boost the cost efficiency of immunization, Freed pointed to plans by Wal-Mart to increase its presence in this area. Wal-Mart counts some 3,700 U.S. stores, with a heavy presence in rural America, and is pushing to open 1,800 retail clinics in these stores, he noted. "There may be exciting possibilities to fill this need," Freed suggested. Yet, participants observed that it is premature to determine the effect this budding industry will have. While there was concern that such clinics would compete with physician practices, causing them to close and undermining other businesses, as often is the complaint by local retailers when a Wal-Mart opens, most stakeholders were not concerned, especially as Wal-Mart does not appear to be developing full-service health clinics.

Even though complementary immunization sites hold enormous potential in terms of addressing challenges of acquiring, storing, and administering vaccines, some participants raised concerns that these sites might move people away from their personal physician or medical home, either because some practices will stop providing vaccinations or because retail clinics are more convenient. Another possible complementary venue is the workplace. Some companies are promoting worksite vaccination programs, which may take advantage of economies of scale in vaccine delivery. Removing the burden of vaccine purchasing from physician offices to health insurance plans may also present an opportunity to reduce vaccine prices if health insurance plans are able to obtain volume discounts.

NEXT STEPS

Health insurance plans have a number of tools at their disposal that have been shown to have a positive effect on immunization rates. For example, health insurance plans can use provider reporting, pay-for-performance incentives, and health education and promotion to encourage physicians to provide preventive care, including immunizations.* There are a number of organizations working with health insurance plans to adopt these types of programs. NCQA rates plans on quality using its HEDIS measures, including the provision of recommended childhood vaccines, flu shots for adults ages 50 to 64, and pneumococcal vaccination for older adults. Employers, looking for opportunities to improve health care quality and reduce costs, are working with health insurance plans to improve the use of preventive services.[68-69]

Private-Market Solutions

The public-private partnership that funds vaccinations in the United States has been a successful model, achieving record-high immunization rates. As vaccine financing issues emerge, particularly because of the sharp rise in the number of higher-cost vaccines coming on the market, it will be important to continue to build on the successful approach that has led to those high immunization rates. Health insurance plans advocate that private-sector solutions are needed for private-market problems, while public-sector solutions are appropriate for public program issues.

That is not to say there are not important areas where health insurance plans, government, employers, and providers can work together, including a collaborative effort between the public and private sectors on the benefits of preventive medicine. Collaboration to develop and deliver accurate public messages about vaccination may yield significant benefits. Many non-financial barriers to immunization remain in place,

Health insurance plans can use provider reporting, pay-for-performance incentives, and health education and promotion to encourage physicians to provide preventive care, including immunizations .

including organizational barriers, lack of electronic medical records or immunization registries, and patient misperceptions about the safety and importance of vaccines. Patient education and provider feedback are also examples of interventions that many private health insurance plans already use to increase vaccination rates among their members and involve collaboration among multiple stakeholders.

Patient Education

Patient-focused strategies include a variety of outreach initiatives, including printed and electronic reminders such as by e-mail or Web sites. Some of these efforts have been demonstrated to be effective at increasing immunization rates.[70] The vast majority of health insurance plans surveyed by AHIP have programs in place to educate enrollees about vaccination.[71]

Providers are an essential component in providing education to patients on the importance of immunizations. Ensuring that accurate information is given to patients requires that physicians also have access to it. To illustrate this, Gall noted that the public is largely unaware of the dangers posed by the human papillomavirus (HPV) – only two of 10 women know why they have a Pap smear, for example. Participants at the roundtable agreed that examples like this demonstrate there are numerous opportunities for health insurance plans to collaborate with providers to ensure that patients receive the best care.

*You can view AHIP toolkits online at:
http://www.ahip.org/healthandmedicine/InnovationinImmunizationPractices

Employer Education

In Recommendation #22 NVAC recommends that CDC, professional medical organizations, and other relevant stakeholders develop and support additional employer health education efforts. These efforts should communicate the value of good preventive care including appropriate vaccinations.

Roundtable participants discussed that such efforts would help these payors understand the importance of vaccines and help educate workers about the cost-effectiveness of vaccines. Coordinated promotion of the value of vaccines to employers by medical societies, health insurance plans, the government, and others makes sense. Taking the notion one step further, it may also make sense to promote the benefits of immunizations in schools, even developing a system to immunize children, particularly adolescents, in schools.

Immunization Information Systems

Health insurance plan efforts to promote vaccination using patient education, provider feedback, and pay for performance (P4P) programs may be more effective if implemented at the community level. Feedback and P4P systems require plans to measure provider-specific immunization rates, but most plans only have claims data for a fraction of the patients seen by any particular practice. Immunization registries may serve as a focal point for efforts to document and improve immunization rates and to help plans more accurately assess provider-level vaccination rates.

Organizations, including AAP, support the use of Immunization Information Systems (IIS), which are seen as helpful tools to assist physician offices and improve their efficiency through aiding vaccine inventory management, assisting with patient reminders and recalls, and reducing the need for chart review when health insurance plans collect data for HEDIS. However, providers point out that it is time consuming to populate IIS, especially when entering several years of patient data. Many providers believe that health insurance plans, which save money from fewer chart reviews, should be responsible for paying for IIS data entry and extraction. However, many states also require health insurance plans to collect and report HEDIS data, which includes the immunization rates of their members. In a scenario such as this, health insurance plans would pay the state for information that they are required to report to the state.

Electronic Medical Records

In conjunction with vaccine registries, electronic medical records (EMR) systems help to ensure that patients receive recommended vaccines. EMRs can alert physicians and other caregivers when a patient is due for a recommended age-specific vaccine, thereby reducing the number of missed opportunities. Such systems can also help patients and physicians monitor and adhere to increasingly complex childhood vaccination regimens.

CONCLUDING THOUGHTS

Thanks to stakeholder efforts, better information is available to help private health insurance plans, policymakers, physicians, and other stakeholders make reasonable decisions on vaccine financing issues. Rather than viewing each other with some distrust, health insurance plans and providers have come to understand that they, along with other stakeholders, are working toward a common goal: immunizing children, adolescents, and adults against vaccine-preventable disease.

One strong example of stakeholders working together on that worthy common goal is the establishment of the Immunization Alliance. In the spring of 2008, the AAP formed the Immunization Alliance, a campaign dedicated to ensuring America's children receive recommended immunizations on time and provide parents and caregivers with the knowledge and information they need to make fully informed decisions about vaccinations. Two dozen medical, public health, parent, and other organizations have signed onto the alliance, including AHIP and other organizations represented at the roundtable, including the AAP, AAFP, ACOG, and AMA. The Alliance aims to improve upon the Nation's impressive record of accomplishment of achieving high rates of immunization, preventing many diseases from harming and killing people in the United States, to combat increasing amounts of disinformation about vaccine dangers, and to address the concerns of worried parents.

Other barriers require systemic solutions. Changing the mindset of providers and patients to focus on prevention—rather than overemphasizing procedures—will require putting more economic value on preventive services, for example. Whether that can be done in the context of health care reform is a major open question.

As the roundtable ended, participants raised additional questions and left open the possibility for future dialogue and collaboration on several topics, including:

- Finding ways to help practitioners become more efficient; allowing practices to be more financially and operationally successful.
- Assessing possible steps that the AMA Resource-Based Relative Value Scale Update Committee (RUC) can take to enhance incentives around combination vaccines.
- Initiating research to document whether primary care physicians are reducing vaccine delivery, and other studies to examine the number of OB/GYNs and other non-pediatricians and family practice physicians initiating vaccination in their clinics.
- Examining ways health insurance plans can support retail clinics and other entities that step in when patients' traditional medical homes opt out of vaccine delivery.
- Determining what role vaccine financing plays, as compared to other issues, such as why some patients and members are not getting vaccinated on a timely basis.
- Ascertaining how stakeholders can work collaboratively to increase immunization rates.

Appendix A: List of Attendees

Jon Almquist, MD
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American Academy of Pediatrics

Carol Berg
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UCare

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Deputy Commissioner, Office of Public Health
New York State Department of Health
Chair National Vaccine Advisory Committee / NVAC Vaccine Finance Working Group

Carmella Bocchino
Executive Vice President
Clinical Affairs and Strategic Planning
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Joel Bradley, MD
Associate Medical Director
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Angie Bricco
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Sandi Deckinger
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Andrew Eisenberg, MD
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American College of Obstetricians and Gynecologists
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Bruce Gellin, MD
Director
National Vaccine Program Office

Liz Greenbaum
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National Business Group on Health

Doug Hadley, MD
Medical Officer, Coverage Policy Unit
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Phil Hosbach
Vice President
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David Howard, PhD
Associate Professor
Emory University

John Hunsaker
Senior Manager for Vaccines, Immunization, and Specialty Pharmaceuticals
America's Health Insurance Plans

Tom James, MD
Physician Advisor, Strategic Advisory Group
Humana

Matt Krapf
National Account Director
Merck

Barbara Lardy
Senior Vice President
Clinical Affairs & Strategic Partnerships
America's Health Insurance Plans

Tamara Lewis, MD
Medical Director
Community Health and Prevention
Intermountain Healthcare

Megan Lindley
Epidemiologist
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Appendix B: NVAC Recommendations

National Vaccine Advisory Committee (NVAC) Vaccine Finance Working Group (VFWG) Recommendations (for Children and Adolescents) Adopted by NVAC - September 2008 (with approved editorial changes March 2, 2009)

Recommendation #1. The Vaccines for Children program (VFC) should be extended to include access to VFC eligible underinsured children and adolescents receiving immunizations in public health department clinics and thus not be limited to access only at Federally Qualified Health Centers and Rural Health Clinics.

(NB: In 2004, NVAC also recommended that such an expansion be considered and did support VFC coverage for underinsured children and adolescents in all public health departments.)

Recommendation #2. VFC should be expanded to cover vaccine administration reimbursement for all VFC-eligible children and adolescents. (Currently the vaccine administration fee is not covered by VFC.) This should include children on Medicaid as this would provide for a single system and uniform vaccine administration fee. The vaccine administration reimbursement should be sufficient to cover the costs of vaccine administration (as referenced elsewhere in these recommendations).

NB: Recommendation #2 and Recommendations #3-#5 are designed to accomplish similar goals with respect to improving vaccine administration reimbursement in VFC. NVAC voted to approve both sets of recommendations understanding that the latter would not be needed if legislation were passed to cover administration fees for all VFC-eligible children through VFC, as in Recommendation #2 above.

Recommendation #3. The Centers for Disease Control and Prevention (CDC) and the Centers for Medicare and Medicaid Services (CMS) should annually update, publish, and disseminate actual Medicaid vaccine administration reimbursement rates by state.

Recommendation #4. CMS should update the maximum allowable Medicaid administration reimbursement amounts for each state and include all appropriate non-vaccine related costs as determined by current studies. These efforts should be coordinated with the American Medical Association's (AMA) review of Relative Value Unit (RVU) coding (Recommendation #6).

Recommendation #5. Increase the federal match (i.e. a larger federal proportion) for vaccine administration reimbursement in Medicaid to levels for other services of public health importance (e.g. family planning services).

Recommendation #6. AMA's RVS Update Committee (RUC) should review its RVU coding to ensure that it accurately reflects the non-vaccine costs of vaccination including the potential costs and savings from the use of combination vaccines.

Recommendation #7. Vaccine manufacturers and third-party vaccine distributors should work with providers on an individual basis to reduce the financial burden for initial and ongoing vaccine inventories, particularly for new vaccines. This may include extending payment periods (e.g. from 60 days to 90 or over 120 days), or until vaccine has been administered and reimbursed. It may also include options not related to payment terms for vaccine inventory.

Recommendation #8. Professional medical organizations should provide their members with technical assistance on efficient business practices associated with providing immunizations, such as how to contract and bill appropriately. Medical organizations should identify best business practices to assure efficient and appropriate use of ACIP recommended vaccines and appropriate use of CPT codes, including Evaluation and Management (E&M) codes, when submitting claims for vaccines and vaccine administration. These organizations may receive federal assistance from CMS or other relevant agencies.

Recommendation #9. Medical providers, particularly in smaller practices, should participate in pools of vaccine purchasers to obtain volume ordering discounts. This may be done by individual providers joining or forming purchasing collaboratives, or through a regional vaccine purchasing contract held by professional medical organizations on behalf of providers.

Recommendation #10. CDC, professional medical organizations, and other relevant stakeholders should develop and support additional employer health education efforts. These efforts should communicate the value of good preventive care including recommended vaccinations.

Recommendation #11. Health insurers and all private healthcare purchasers should adopt contract benefit language that is flexible enough to permit coverage and reimbursement for new or recently altered ACIP recommendations as well as vaccine price changes that occur in the middle of a contract period.

Recommendation #12. All public and private health insurance plans should voluntarily provide first-dollar coverage (i.e., no deductibles or co-pays) for all ACIP-recommended vaccines and their administration for children and adolescents.

Recommendation #13. Insurers and healthcare purchasers should develop reimbursement policies for vaccinations that are based on methodologically sound cost studies of efficient practices. These cost studies should factor in all costs associated with vaccine administration (including, for example, purchase of the vaccine, handling, storage, labor, patient or parental education, and record keeping).

Recommendation #14. Congress should request an annual report on the CDC's professional judgment of the size and scope of the Section 317 program appropriation needed for vaccine purchase, vaccination infrastructure, and vaccine administration. Congress should ensure that Section 317 funding is provided at levels specified in CDC's annual report to Congress.

Recommendation #15. CDC and CMS should continue to collect and publish data on the costs and reimbursements associated with public and private vaccine administration according to NVAC standards for vaccinating children and adolescents.94 These costs include costs associated with the delivery of vaccines, such as purchase of the vaccine, handling, storage, labor, patient or parental education, and record keeping. These published data should be updated every five years and also include information about reimbursement by provider type, geographic region, and insurance status. State governments should use this information in determining vaccine administration reimbursements rates in Medicaid.

Recommendation #16. NVPO should calculate the marginal increase in insurance premiums if insurance plans were to provide coverage for all routinely ACIP-recommended vaccines.

Recommendation #17. NVAC should convene one or more expert panels representing all impacted stakeholders to consider whether tax credits could be a tool to reduce or eliminate underinsurance. The panel would determine if policy options that would be acceptable to stakeholders could be developed to address the burden of financing for private sector child and adolescent vaccinations by using tax credits as incentives for insurers, employers, and/or employees (consumers), and whether these credits would provide added value to vaccination of children and adolescents.

Recommendation #18. CDC should substantially decrease the time from creation to official publication of ACIP recommendations in order to expedite coverage decisions by payers to cover new vaccines and new indications for vaccines currently available.

Recommendation #19. Congress should expand Section 317 funding to support the additional national, state and local public health infrastructure (e.g., widespread and effective education and promotion for healthcare providers, adolescents, and their parents; coordination of complementary and alternative venues for adolescent vaccinations; record keeping and immunization information systems; vaccine safety surveillance; disease surveillance) needed for adolescent vaccination programs as well as childhood vaccination programs for new recommendations such as universal influenza vaccination.

Recommendation #20. Continue federal funding for cost-benefit studies of vaccinations targeted for children and adolescents.

Recommendation #21. State, local and federal governments along with professional organizations should conduct outreach to physicians and non-physician providers who currently serve VFC-eligible children and adolescents to encourage these providers to participate in VFC if they currently do not. Outreach directed at providers serving adolescents who may not have provided vaccinations in the past (e.g. obstetrician-gynecologists) is a particular priority.

Recommendation #22. States and localities should develop mechanisms for billing insured children and adolescents served in the public sector. CDC should provide support to states and localities by disseminating best practices and providing technical assistance to develop these billing mechanisms. (This may require additional resources not currently in CDC's immunization program budget.) Further, NVAC urges states and localities to reinvest reimbursements from public and private payers back into immunization programs.

Recommendation #23. Ensure adequate funding to cover all costs (including those incurred by schools) arising from assuring compliance with child and adolescent immunization requirements for school attendance.

Recommendation #24. Promote shared public and private sector approaches to help fund school-based and other complementary-venue child and adolescent immunization efforts.

Appendix C: Frequently Used Acronyms

AAFP – American Academy of Family Physicians

AAP – American Academy of Pediatrics

ACIP – Advisory Committee on Immunization Practicwes

AMA – American Medical Association

ACOG – American Congress of Obstetricians and Gynecologists

CDC – Centers for Disease Control and Prevention

CPT – Current Procedural Terminology

E&M – Evaluation and Management

FDA – U.S. Food and Drug Administration

FQHC – Federally Qualified Health Centers

HEDIS® – Healthcare Effectiveness Data and Information Set

HHS – U.S. Department of Health and Human Services

HIB – Haemophilus influenzae type b

HPV – Human Papillomavirus

IIS – Immunization Information Systems

IOM – Institute of Medicine

MMRV – Measles Mumps Rubella and Varicella Vaccine

NVAC – National Vaccine Advisory Committee

P4P – Pay for Performance

RBRVS – Resource-Based Relative Value Scale

RHC – Rural Health Clinic

RUC – Relative Value Scale Update Committee

SCHIP – State Children's Health Insurance Program

TDaP – Tetanus, Diphtheria, and acellular Pertussis Vaccine

VFC – Vaccines for Children Program

VFWG – NVAC Vaccine Finance Working Group

VIS – Vaccine Information Statement

VPD – Vaccine-Preventable Disease

Appendix D: Tables

Private-Practice Price-Per-Dose Data

Vaccine	Brand	# of Practices	Private-Practice Price-Per-Dose, $			Public-Sector Price, $[a]	Average Sales Price (ASP), $[b]	Average Wholesale Price (AWP), $[c]
			Minimum	Maximum	Mean			
RECOMMENDED CHILDHOOD VACCINES								
DTaP	Daptacel	52	12.63	21.40	16.13	13.25	31.080	22.04
	Tripedia	9	13.40	22.40	18.31	12.65	31.080	21.40
	Infanrix	19	8.77	21.60	17.11	13.25	31.080	20.96-21.44
IPV	IPOL	72	14.29	26.34	18.99	11.06	26.122	22.8-26.34
MMR	MMRII	67	37.50	51.86	42.23	17.60	43.217	44.84
Hib	ActHIB	41	13.87	21.76	16.47	8.12	21.782	21.78
	PedvaxHIB	30	20.26	26.42	22.06	10.83	21.426	22.77
Hepatitis B	Recombivax	42	8.25	23.20	12.23	9.50	24.360	23.20
	Engerix	17	4.26	13.06	10.32	9.10	24.360	21.37
Varicella	Varivax	73	66.14	87.00	72.34	59.15	75.320	74.56
Hepatitis A	Havrix	31	14.23	47.12	26.69	12.25	26.248	28.74
	Vaqta	48	21.00	30.22	24.79	12.25	26.248	30.37
PCV7	Prevnar	73	67.00	80.25	73.62	62.14	78.803	78.44
Rotavirus	RotaTeq	60	62.50	76.55	66.39	55.05	NA	66.94
RELATED COMBINATION VACCINES								
DTaP-Hepatitis B-IPV	Pediarix	35	43.60	77.09	57.85	47.25	NA	70.72
Hepatitis B-Hib	Comvax	25	21.02	32.08	27.72	27.75	NA	43.56
MMR-V	ProQuad	47	103.15	134.99	118.29	77.75	NA	124.37
RECOMMENDED ADOLESCENT VACCINES								
HPV	Gardasil	70	116.00	129.57	120.06	96.75	NA	120.50
MCV4	Menactra	70	80.36	93.43	86.61	73.09	86.100	89.43
Tdap	Adacel	61	29.20	36.34	33.23	30.75	35.171	37.43
	Boostrix	23	34.41	38.61	35.80	30.75	35.171	36.25

[a] January 14, 2008, Data show the public-sector price from the CDC vaccine price list

[b] 2007, ASPs were obtained from CMS

[c] January 14, 2008, AWPs were obtained from the CDC vaccine price list

NA indicate not available; Dtap, diphtheria-tetanus-acellular pertussis; IPV, inactivated polio vaccine; MMR, measles-mumps-rubella; Hib, Haemophilus influenzae type b; PCV7, heptavalent pneumococcal conjugate vaccine; MMR-V, measles mumps rubella varicella; HPV, human papillomavirus, MCV4, meningococcal conjugate vaccine; Tdap, tetanus-diphtheria-acellular pertussis.

Variation in Provider Vaccine Purchase Prices and Payer Reimbursement
Gary L. Freed, Anne E. Cowan, Sashi Gregory and Sarah J. Clark

Reimbursement Attitudes for All Respondents (N = 597)

In General, for My Practice…	Proportion Who…, %				
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Reimbursement for vaccine purchase and administration is timely	3	25	33	29	10
Reimbursement for vaccine purchase is adequate	3	20	19	37	21
Reimbursement for vaccine administratin is adequate	2	23	24	34	17
We would not give a vaccine if reimbursement was less than the purchase price	40	25	16	13	5

Primary Care Physician Perspectives on Reimbursement for Childhood Immunizations,
Gary L. Freed, Anne E. Cowan and Sarah J. Clark

REFERENCES

[1] Birkhead G. National Vaccine Advisory Committee, Vaccine Financing Working Group White Paper. Presented at: AHIP 2008 Vaccines and Immunization Roundtable; July 15, 2008; Arlington, VA.

[2] Freed GL, Cowan AE, Clark SJ. Primary care physician perspectives on reimbursement for childhood immunizations. Pediatrics 2008; 122: 1319-1324.

[3] Freed GL, Cowan AE, Gregory S, Clark SJ. Variation in provider vaccine purchase prices and payer reimbursement. Pediatrics 2008; 122: 1325-1331.

[4] Coleman MS, Lindley MC, Ekong J, Rodewald L. What is the financial net gain or loss from vaccination in pediatric medical practices? A Georgia study. Submitted to Pediatrics Vaccine Finance Supplement, 2009.

[5] World Health Organization, Immunization work, 2006-2007 Highlights. 2009. http://whqlibdoc.who.int/publications/2008/9789241596749_eng.pdf. Accessed February 18, 2009.

[6] Achievements in public health, 1900-1999 impact of vaccines universally recommended for children – United States, 1990-1998. Centers for Disease Control and Prevention Morbidity and Mortality Weekly Report (MMWR), (1999, April 2), 48(12); 242-264.

[7] National, state, and local area vaccination coverage among children aged 19-35 months-United States, 2006. Centers for Disease Control and Prevention Morbidity and Mortality Weekly Report (MMWR), (2007, August 21), 56(34); 880-885.

[8] Centers for Disease Control and Prevention. Vaccine and Immunizations. http://www.cdc.gov/vaccines/default.htm. Accessed December 11, 2008.

[9] Maciosek MV, Coffield AB, Edwards NM, Flottemesch TJ, Goodman MJ, Solberg LI. Priorities among effective clinical preventive services: results of a systematic review and analysis. American Journal of Preventive Medicine 2006; 31:52-61.

[10] Zhou F, Santoli J, Messonnier ML, et al. Economic evaluation of the 7-vaccine routine childhood immunization schedule in the United States, 2001. Archives of Pediatrics and Adolescent Medicine 2005; 159:1136-1144.

[11] Institute of Medicine, financing vaccines in the 21st century: assuring access and availability. Washington, DC: National Academies Press; 2004.

[12] Birkhead, G, 2008.

[13] Loftus P. Fighting shingles: whether to take the only vaccine. Wall Street Journal, November 14, 2008. http://online.wsj.com/article/SB122599949042805769.html?mod=googlenews_wsj. Accessed December 11, 2008.

[14] Lindley C, Orenstein WA, Shen A, Rodewald L, Birkhead GS. Assuring vaccination of children and adolescents without financial barriers: recommendations from the National Vaccine Advisory Committee (NVAC) U.S. Department of Health and Human Services. Report developed by the NVAC Vaccine Financing Working Group, March 2, 2009. http://www.hhs.gov/nvpo/nvac/NVACVFWGReport.pdf. Accessed July 1, 2009.

[15] Loftus P. Fighting shingles: whether to take the only vaccine. Wall Street Journal, November 14, 2008. http://online.wsj.com/article/SB122599949042805769.html?mod=googlenews_wsj. Accessed December 11, 2008.

[16] Lindley C, Orenstein WA, Shen A, Rodewald L, Birkhead GS, 2009.

[17] Freed GL, Cowan AE, Gregory S, Clark SJ, 2008.

[18] U.S. Dept. of Health and Human Services. Healthy People 2010, leading health indicators, http://www.healthypeople.gov/Document/html/uih/uih_bw/uih_4.htm#immuniz. Accessed December 11, 2008.

[19] Freed GL, Cowan AE, Gregory S, Clark SJ, 2008.

[20] Coleman MS, Submitted to Pediatrics Vaccine Finance Supplement, 2009.

[21] Freed GL, Cowan AE, Gregory S, Clark SJ, 2008.

[22] McPhillips-Tangum C, 2006.

[23] Freed GL, Cowan AE, Gregory S, Clark SJ, 2008.

[24] Coleman MS, Submitted to Pediatrics Immunization Supplement 2009.

[25] Freed GL, Cowan AE, Gregory S, Clark SJ, 2008.

[26] Freed GL, Cowan AE, Gregory S, Clark SJ, 2008.

[27] Coleman MS, Submitted to Pediatrics Immunization Supplement 2009.

[28] Freed GL, Cowan AE, Gregory S, Clark SJ, 2008.

[29] Freed GL, Cowan AE, Gregory S, Clark SJ, 2008.

[30] Freed GL, Cowan AE, Gregory S, Clark SJ, 2008.

[31] Freed GL, Cowan AE, Gregory S, Clark SJ, 2008.

[32] Freed GL, Cowan AE, Clark SJ, 2008.

[33] Averbeck B. Sanofi Pasteur influenza vaccine 2008 update. Presented at: National Influenza Vaccine Summit; May 12, 2008; Atlanta, GA. http://www.preventinfluenza.org/summits/2008/After_Dinner/Averbeck_2008.pdf

[34] Eisenberg A. AAFP: Vaccination without financial barriers. Presented at: AHIP 2008 Immunization Roundtable on Vaccine Finance; July 15, 2008; Arlington, VA.

[35] McPhillips-Tangum C, Rehm B, Hilton O. Immunization practices and policies: a survey of health insurance plans. AHIP Coverage 2006; 47: 32-37.

[36] Gall S. Immunization practices and knowledge of obstetricians and gynecologists. Presented at: AHIP 2008 Immunization Roundtable on Vaccine Finance; July 15, 2008; Arlington, VA.

[37] Tu HT, Kemper P, Wong HJ. Do HMOs make a difference? Use of health services. Inquiry. Winter 1999-2000; 36(4):400-410.

[38] Fielding JE, Cumberland WG, Pettitt L. Immunization status of children of employees in a large corporation. Journal of the American Medical Association. February 16, 1994; 271(7):525-530.

[39] Molinari NA, Kolasa M, Messonnier ML, Schieber RA. Out-of-pocket costs of childhood immunizations: a comparison by type of insurance plan. Pediatrics. November 2007; 120(5):1148-1156.

[40] Busch SH, Barry CL, Vegso SJ, Sindelar JL, Cullen MR. Effects of a cost-sharing exemption on use of preventive services at one large employer. Health Affairs. November-December 2006; 25(6):1529-1536.

[41] Rowe JW, Brown-Stevenson T, Downey RL, Newhouse JP. The effect of consumer-directed health plans on the use of preventive and chronic illness services. Health Affairs. January-February 2008; 27(1):113-120.

[42] Smith PJ, Stevenson J, Chu SY. Associations between childhood vaccination coverage, insurance type, and breaks in health insurance coverage. Pediatrics 2006; 117: 1972-1978.

[43] National Committee for Quality Assurance (NCQA). The state of health care quality 2008. Accessed online, February 19, 2009, at: http://www.ncqa.org/tabid/858/Default.aspx.

[44] National, state, and local area vaccination coverage among children aged 19–35 months — United States, 2007. Centers for Disease Control and Prevention Morbidity and Mortality Weekly Report (MMWR), (2008, September 5), 57(35); 961-966.

[45] McPhillips-Tangum C, 2006.

[46] Institute of Medicine. Financing vaccines in the 21st century assuring access and availability. Washington, DC: The National Academies Press; 2003.

[47] Letters to the Editor - The U.S. Vaccine Supply. New England Journal of Medicine Volume 352:1046-1047 March 10, 2005 Number 10.

[48] Rosenbaum S, Stewart A, Cox M, Mitchell S. The epidemiology of U.S. immunization law: mandated coverage of immunizations under state health insurance laws. Center for Health Services Research and Policy, George Washington University. July 2003.

[49] Hunsaker J, Veselovskiy G. Analysis: A comparison of immunization rates in states with health insurance mandates to states without mandates. America's Health Insurance Plans Clinical Affairs Department. March 18, 2008.

[50] Molinari NA, 2007.

[51] Molinari NA, 2007.

[52] Laugesen MJ, Paul RR, Luft HS, Aubry W, Ganiats TG. A comparative analysis of mandated benefit laws, 1949-2002. Journal of Health Services Research & Policy. June 2006; 41(3 Pt 2):1081-103.

[53] Bunce VC, Wieske JP. Health insurance mandates in the states 2008. Washington DC: Council for Affordable Health Insurance; 2008.

[54] Rosenbaum S, 2003.

[55] Bellows NM, Halpin HA, McMenamin SB. State-mandated benefit review laws. Health Services Research 2006; 41(3 Pt 2):1104-1123.

[56] National Immunization Survey, 2006. www.cdc.gov/nip/data. Accessed December 11, 2008

[57] Hunsaker J, 2008.

[58] Gruber J, Lettau M. How elastic is the firm's demand for health insurance? Journal of Public Economics 2004; 88(7):1273-1294.

[59] Sheils J,Hogan P, Manolov N. Exploring the determinants of employer health insurance coverage, report to the AFL-CIO. The Lewin Group. January 20, 1998.

[60] Jensen GA, Morrisey MA. Employer-sponsored health insurance and mandated benefit laws. Milbank Quarterly. 1999; 77(4):425-459.

[61] Howard D. Financing vaccines in the private sector. Presented at: AHIP 2008 Immunization Roundtable on Vaccine Finance; July 15, 2008; Arlington, VA.

[62] American Academy of Pediatrics. Comprehensive overview: immunization administration. http://www.aap.org/visit/OverviewImmunizationAdministration2008.pdf Accessed December 11, 2008.

[63] Institute of Medicine, 2004.

[64] American Academy of Pediatrics. Comprehensive overview: immunization administration, 2008.

[65] Hainer BL. Vaccine administration: making the process more efficient in your practice. Family Practice Management. 2007; 14:48-53.

[66] American Academy of Pediatrics Committee on Coding and Nomenclature. Position paper: when is it appropriate to report 99211 during immunization administration? http://www.cispimmunize.org/pro/pdf/AAPPositionPaper99211.pdf. Accessed December 11, 2008.

[67] McPhillips-Tangum C, 2006.

[68] United States Workplace Wellness Alliance. http://www.uswwa.org/portal/uswwa/default, Accessed December 11, 2008.

[69] National Business Group on Health. Employer coverage for immunizations. http://www.businessgrouphealth.org/ppt/nvac020706.ppt#291,6,Slide%206. Accessed December 11, 2008.

[70] Jacobson VJ, Szilagyi P. Patient reminder and patient recall systems to improve immunization rates. Cochrane Database of Systematic Reviews; 2005; (3): CD003941.

[71] McPhillips-Tangum C. 2006.


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