

AMERICAN ACADEMY OF PEDIATRICS

POLICY STATEMENT

Organizational Principles to Guide and Define the Child Health Care System and/or Improve the Health of All Children

Committee on Community Health Services and Committee on Practice and Ambulatory Medicine

Increasing Immunization Coverage

ABSTRACT. Despite many recent advances in vaccine delivery, the goal for universal immunization set in 1977 has not been reached. In 2001, only 77.2% of US toddlers 19 to 35 months of age had received their basic immunization series of 4 doses of diphtheria and tetanus toxoids and acellular pertussis (DTaP) vaccine, 3 doses of inactivated poliovirus vaccine, 1 dose of measles-mumps-rubella (MMR) vaccine, and 3 doses of *Haemophilus influenzae* type b (Hib) vaccine. Children who are members of a racial or ethnic minority, who are poor, or who live in inner-city or rural areas have lower immunization rates than do children in the general population. Additional challenges to vaccine delivery include the introduction of new childhood vaccines, ensuring a dependable supply of vaccines, bolstering public confidence in vaccine safety, and sufficient compensation for vaccine administration.

Recent research has demonstrated specific and practical changes physicians can make to improve their practices' effectiveness in immunizing children, including the following: 1) sending parent reminders for upcoming visits and recall notices; 2) using prompts during all office visits to remind parents and staff about immunizations needed at that visit; 3) repeatedly measuring practice-wide immunization rates over time as part of a quality improvement effort; and 4) having in place standing orders for registered nurses, physician assistants, and medical assistants to identify opportunities to administer vaccines. Pediatricians should work individually and collectively at local and national levels to ensure that all children receive all childhood immunizations on time. Pediatricians also can proactively communicate with parents to ensure they understand the overall safety and efficacy of vaccines.

ABBREVIATIONS. AAP, American Academy of Pediatrics; VFC, Vaccines for Children Program; VIS, vaccine information statements; DTaP, diphtheria and tetanus toxoids and acellular pertussis; MMR, measles-mumps-rubella; Hib, *Haemophilus influenzae* type b; ACIP, Advisory Committee on Immunization Practices; AAFP, American Academy of Family Physicians.

BACKGROUND INFORMATION

Disease prevention by immunization is a public health priority for both pediatricians and society as a whole. Comprehensive and timely immunization of young children has been a major goal of pediatric health care, as evidenced by the first American Academy of Pediatrics (AAP) pol-

icy statement on immunization in 1977, which called for universal childhood immunization.¹ The 1995 AAP policy statement "Implementation of the Immunization Policy" supported specific guidelines to improve the vaccine delivery system and increase immunization rates.² Many of the 1995 recommendations have been achieved, including the improvement of immunization financing through the Vaccines for Children (VFC) Program,³ production of parent-friendly vaccine information statements (VIS), promotion of the Standards for Child and Adolescent Immunization Practices,⁴ and development of safer and combined vaccines. Childhood immunization rates are one of the 10 leading health indicators used to assess the health of the nation as part of *Healthy People 2010*. The leading health indicators reflect the major health concerns in the United States.⁵

CHALLENGES

Despite recent advances in the vaccine delivery system, the goal for universal immunization set in 1977 has not been reached. In 2001, only 77.2% of US toddlers 19 to 35 months of age had received their basic immunization series of 4 doses of diphtheria and tetanus toxoids and acellular pertussis (DTaP) vaccine, 3 doses of inactivated poliovirus vaccine, 1 dose of measles-mumps-rubella (MMR) vaccine, and 3 doses of *Haemophilus influenzae* type b (Hib) vaccine (not including hepatitis B, hepatitis A, varicella, pneumococcal conjugate, or influenza vaccines).⁶ Therefore, almost one quarter of America's children lack at least 1 of the basic childhood immunizations. Furthermore, children who are members of a racial or ethnic minority, who are poor, or who live in inner-city or rural areas have lower immunization rates than do children in the general population.⁷

There have been and will continue to be challenges to the vaccine delivery system in terms of the science, economics, and social impact of immunization, and these challenges may increase as new vaccines are developed. New vaccines are on track to be introduced, and although they have the potential to improve the health of America's children, they may increase the burden on an already strained vaccine delivery system.⁸ Shortages of specific vaccines during 2001–2002 have brought to light the fragile nature of the US childhood vaccine supply and have resulted in significant disruption to childhood immunizations.

Another significant challenge to immunization delivery is the increasing concern within a segment of the general public about the safety and potential adverse effects of childhood immunizations. New organizations and Internet sites portraying themselves as official resources for credible information on vaccines continue to appear. Unfortunately, many provide flawed or biased information that serves to fuel public concern regarding the safety of childhood immunizations, leading to increased immunization refusal rates by families.⁹

NEW INFORMATION

Although these challenges seem daunting, opportunities exist to improve vaccine delivery and address these challenges in the future. With the implementation of the VFC Program and other changes in vaccine financing, there has been a dramatic shift in vaccine delivery away from public health clinics to primary care settings, which now administer 73% of all childhood vaccines, up from just 50% 10 years ago. Therefore, effective and timely administration of childhood vaccines rests with practicing pediatricians and other primary care clinicians. Recent research has demonstrated that physicians can take specific and practical steps to improve their practices' effectiveness in immunizing children.^{10,11} Similarly, applied research has identified approaches that can be used by health plans, public health departments, and state and federal government agencies to support improvements in the vaccine delivery system at the health care delivery and population levels.¹²

The Task Force on Community Preventive Services, convened by the US Department of Health and Human Services with support from the Centers for Disease Control and Prevention, analyzed the peer-reviewed published evidence on interventions designed to improve the timely immunization of children and adults.¹³ The task force found the following interventions to be proven effective for office practices to improve vaccine delivery (and the delivery of other preventive health care services):

- **Parent reminders for upcoming visits and recall notices** have increased immunization rates in many settings, such as private physician offices and public clinics; for children enrolled in health maintenance organizations; and for children from diverse backgrounds and economic groups, including urban and rural, and white, black, and Hispanic populations.
- **Nurse and/or physician reminders** in written or electronic form for vaccines needed during the visit have been shown to decrease missed opportunities to immunize during those visits.
- **Parent education and expanded access to services, such as after-hours or weekend clinics**, are effective when combined with other interventions to decrease missed opportunities for immunization during office visits.
- **Quality improvement efforts, including repeated measurement of immunization levels of an office practice's 1- and 2-year-old children**, allow clini-

cians to objectively assess their effectiveness in vaccine administration and evaluate the effectiveness of changes implemented to improve practice-wide immunization rates.

- **Standing orders for registered nurses, physician assistants, and medical assistants** that allow staff to independently screen patients, identify opportunities for immunization, and administer vaccines under physician supervision (where permissible by local regulations) are effective at raising immunization rates.¹⁴
- **Multicomponent interventions that include provider education were strongly recommended**, although their effectiveness needed further evaluation. Pediatricians can improve immunization quality and rates by combining clinical and staff education with other practice-wide system changes.

RECOMMENDATIONS

1. Pediatricians and child health professionals should join with the national AAP and AAP chapters in the following activities:
 - ◆ Vigorously advocating for all children to receive comprehensive health care, including childhood immunizations in a medical home.¹⁶ Children most likely to experience barriers to comprehensive care in a medical home are children who are members of racial and ethnic minorities, poor or uninsured children, children living in inner-city or rural areas, and children with chronic medical conditions.
 - ◆ Collaborating with local public and private child health services to identify children without access to a medical home and assist in referring them to a medical home. The medical home should maintain the children's medical records, including immunization records.
 - ◆ Removing economic barriers to immunizations for parents and pediatricians to participate in the VFC Program or state vaccine programs.
 - ◆ Reducing socioeconomic and racial disparities in immunization rates by working with all national medical groups and specialty societies that care for poor and underserved populations.
 - ◆ Advocating with state vaccine purchasing or VFC Programs and private third-party payers of vaccine for adequate vaccine reimbursement rates that cover all costs associated with the administration of vaccines, including the vaccines product, physician work, practice administrative expense, professional liability, and all related supplies, including safety needles.
 - ◆ Advocating with vaccine manufacturers and state and federal governments to maintain an adequate supply of all childhood vaccines at all times.
 - ◆ Ensuring that the safest and most effective vaccines and combinations are available to children.

- ◆ Advocating with state and federal governments to ensure that timely access to all immunizations recommended by the Advisory Committee on Immunization Practices (ACIP), the AAP, and the American Academy of Family Physicians (AAFP) for all children remains a high public policy priority.
 - ◆ Supporting ongoing education and quality improvement programs for pediatricians and other child health care professionals about important vaccine-related issues, including the dissemination of peer-reviewed evidence for more effective immunization delivery.
2. Pediatricians should undertake assessment and improvement activities necessary to maximize their practices' effectiveness in immunizing children.
 3. Pediatricians should use the most current vaccine information statements to educate parents about vaccine risks and benefits of immunizations (available on the AAP Web site at www.aap.org).
 4. As directed by the National Childhood Vaccine Injury Act,¹⁵ pediatricians should report all adverse events related to vaccines by using the Vaccine Adverse Event Reporting System (see <http://www.vaers.org/> for forms and instructions).
 5. Pediatricians should support and implement the Standards for Child and Adolescent Immunization Practices as endorsed by the AAP and the National Vaccine Advisory Committee (see <http://www.cdc.gov>).

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ADDITIONAL READINGS AND GENERAL REFERENCES

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