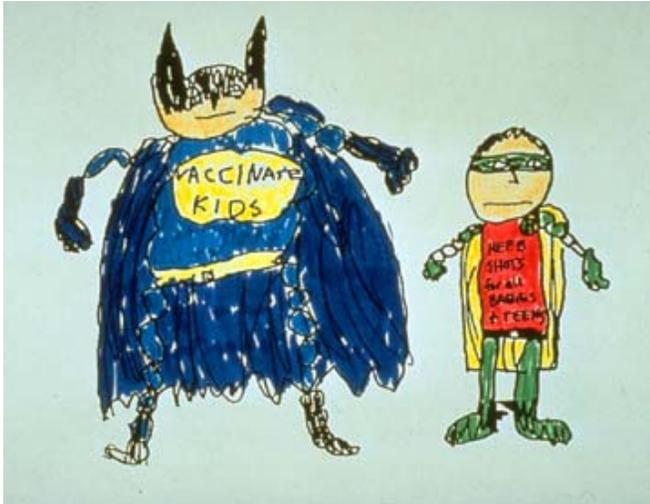


## Immunization



Drawing courtesy of Izzy Wexler-Mann, Immunization Action Coalition

### Introduction

This year we celebrated the 50<sup>th</sup> anniversary of the Salk polio vaccine—a milestone in the history of public health. During the epidemic, the public became acutely aware of the critical role of vaccination to ward off disabling infectious disease. In 2005, fear struck hold again with the unexpected shortage of influenza vaccine and its potentially serious impact on the health of children and other vulnerable populations.

While the influenza vaccine was widely publicized, the public has not heard as much about pediatric vaccine shortages that have been widespread in recent years. These shortages can be partly attributed to the fact that many pediatric vaccines have single manufacturers. If a delay occurs at any point in the manufacturing process, a vaccine may be temporarily unavailable. In response to this problem, the federal government expanded the Pediatric Vaccine Stockpile, a strategic reserve in which manufacturers maintain a six-month supply of vaccine. A newly instituted federal accounting rule,

however, delays the point at which vaccine manufacturers can recognize revenue from these vaccine sales, creating a disincentive to their participation. Congress hopes to develop a solution to this problem by the end of the year.

In this issue of Northwest Bulletin, Dr. William Foege reminds us that the benefits of immunization far outweigh the risks, while acknowledging the concerns of young parents who have not known the potential harm faced by unimmunized children. Other contributors detail and respond to concerns about vaccine risks—offering practical strategies to support the public health community in addressing parents' worries. Readers will find up-to-date information on new vaccines that herald exciting infectious and chronic disease prevention opportunities. And pioneering tools and partnerships for managing and promoting immunization programs are outlined in reports from four Northwest states.

As our contributors note, the “challenge confronting us all is to strike a balance between personal freedoms and societal obligations” as we continue to work towards full immunization for our nation's children.

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**Northwest Bulletin:**  
**Family and Child Health**

## Editorial

### Immunizations—Evaluating the Risks

by William Foege

The problems keep shifting. Some of us remember the days when entire wards of iron lungs were in use and children also faced a toll from diphtheria, pertussis, measles and other “childhood diseases.”

The last half century has brought remarkable progress, so that we take for granted vaccines against polio, measles, mumps, rubella, hepatitis B, and meningitis. Progress has been so fast and the vaccines have been so good that we are now faced with new problems. We have an entire cohort of parents with no memory of the suffering that children used to endure because of the risks imposed by these various viruses and bacteria. No longer faced daily by the disease risk, they are reluctant to subject their children to any risk of the vaccine.

*The last half century has brought remarkable progress, so that we take for granted vaccines against polio, measles, mumps, rubella, hepatitis B, and meningitis.*

It is essential that parents balance risks and benefits for their children. Two factors make it difficult for them to have the full story in making that decision about immunizations. Some vaccines provide protection for the individual but no additional protection for the community. Tetanus vaccine protects only the individual. Since tetanus spores are ubiquitous, a child not immunized gets no benefit from other children having been immunized. At least one vaccine, rubella vaccine, provides very little benefit for the child but is given because of the protection it provides for someone else. Rubella vaccine reduces transmission of the virus,

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#### Acknowledgements

Special thanks to the editorial board editors and guest editor of this issue of *Northwest Bulletin* (NWB). Guest Editor Laurel Wood is the immunization program manager for the Alaska Department of Health and Social Services. Traci Berreth is the maternal and child health special projects coordinator for the Idaho Department of Health and Welfare and member of the NWB Editorial Board. Cynthia Shurtleff—a long-time member of the NWB Editorial Board—is the founding president of the Healthy Mothers, Healthy Babies Coalition of Washington.

preventing pregnant women from getting the disease and causing harm to their unborn child. Every pregnant woman who has avoided this disease can be thankful for the social contract where millions of children received rubella vaccine to protect her baby. Most vaccines do both as they provide individual protection and, in addition, they reduce the risk of transmission to persons not immunized. We protect our children but also help fulfill the social contract inherent in being part of society. Our gratitude for not getting congenital rubella should remind us of the power of that social contract.

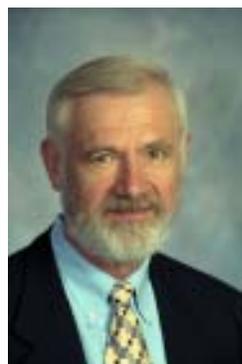
The first factor that makes it difficult for parents to make an informed decision about withholding vaccine from their children is that we never know the point at which enough parents violate the social contract so that the disease returns. Fifteen years ago, after interrupting measles transmission in the United States in the 1980s, enough parents had decided to avoid measles vaccine that the disease caught hold after being imported from out of the country. The United States had an outbreak involving 50,000 children and 61 children under the age of 5 died, accounting for 50 percent of the mortality associated with this measles outbreak. Others were left retarded because of neurological complications. Those children never had a chance to choose because their parents, thinking they had made the right decision, could not forecast when enough other parents making the same decision, would increase the risk of disease. At that point they were unable to go back and 61 children died needlessly and tragically. This unknown risk of the return of a disease is almost never weighed as a parent looks at the small but known risks inherent in vaccines.

The other factor that is hard for a parent to predict is whether their child will ever choose to travel abroad. They may still refuse immunizations and take their chances in an environment that has more disease risks than the U.S., but most of us would be reluctant to allow our children to encounter the risks of these childhood diseases after they become adults.

*This unknown risk of the return of a disease is almost never weighed as a parent looks at the small but known risks inherent in vaccines.*

The problem is likely to get more serious as the number of vaccines increases. While many vaccines are aimed at infectious diseases, Hepatitis B vaccine is the first cancer vaccine—reducing the risk of liver cancer later in life. Soon a vaccine will be in use that reduces the risk of cervical cancer. We can look forward to vaccines against chronic diseases and the child not given vaccines will suffer both the risk of infectious diseases early in life but will also be at increased risk of cancer and chronic diseases later in life. The child whose parents aren't able to access and evaluate the scientific literature will be at a distinct disadvantage as compared to the child growing up in a scientifically literate household.

Finally, we can anticipate that the science leading to new vaccines will also lead to a reduction in the adverse effects of current and new vaccines. The goal is risk-free vaccines. But even before that objective is achieved, those involved in promoting the use of vaccines can be assured that vaccines have saved millions of children from early death, unnecessary suffering and life-long disabilities. The benefits far outweigh the risks and immunization programs will continue to be the foundation for domestic and global public health improvements.



A graduate of the University of Washington and Harvard, William Foege, MD, MPH, embarked on his career in public health as a medical missionary and epidemiologist in Nigeria—battling smallpox with what is now regarded as a state-of-the-art strategy of surveillance and containment. Under his directorship, the Centers for Disease Control and Prevention (CDC) expanded its scope of international health activities, broadened its

focus to such areas as chronic disease and injury prevention, and created a task force on Kaposi's Sarcoma and Opportunistic Infections in the wake of the AIDS epidemic. Dr. Foege has directed the Carter Center and is Presidential Distinguished Professor at the Rollins School of Public Health at Emory University. As Senior Fellow of the Bill and Melinda Gates Foundation in Seattle, Dr. Foege continues to influence global health through support of immunization and disease prevention initiatives worldwide.

## Parental Concerns About Childhood Vaccination: Risk Perception and Reality

“Immunization is every citizen’s responsibility”  
(Franklin D. Roosevelt)

by Lauren Greenfield and Krista Rietberg

“Safe, effective and potent.” Spoken on April 12, 1955, these words remind us of a critical milestone in public health—the development of the polio vaccine pioneered by Jonas Salk. (See Salk Polio Vaccine Celebrates 50th Anniversary.) Polio elimination was possible because the public understood and accepted both the need for protection of individuals and the corresponding societal benefits of individual vaccination. (NIC 2005)

According to the World Health Organization, no medical intervention—other than clean water—has saved more lives than immunization. In addition to polio, immunization led to worldwide eradication of smallpox and the elimination of indigenous rubella in the U.S. Immunization has reduced the incidence of vaccine preventable disease by 98 percent or more for all childhood vaccines recommended for routine use since 1990, except pertussis. (Table 1) (NIC 2005)

*According to the World Health Organization, no medical intervention—other than clean water—has saved more lives than immunizations.*

Yet public perception about immunization has changed in ways that threaten to reverse some benefits realized over the past 50 years. While many parents recognize the importance of vaccines, some view immunization as a matter of personal choice without considering its value to the community. Growing numbers of parents are selectively vaccinating or choosing not to vaccinate their children. Five Northwest states have the highest rates of unvaccinated children in the country. (Table 2) (Smith 2004)

### New views on immunization

Because of the effectiveness of polio and other vaccines, most young parents and health care professionals lack firsthand knowledge of many diseases

prevented by routine childhood vaccines. Concurrently, as the number of childhood immunizations has increased, reports of adverse events—both vaccine-related and coincidental—have also increased. Concerns about possible vaccine side effects sometimes outweigh the fear of the diseases themselves. With the reduction in cases and associated morbidity and mortality, public health officials have refocused the spotlight on vaccine safety and efficacy.

Today, children receive 11 vaccines routinely and up to 20 shots by age 2. With the perceived absence of disease, it is not surprising that almost one-quarter of parents surveyed in the U.S. question the number of shots recommended for their children. (Gellin 2000) The complexity of the vaccine schedule, media coverage of alleged safety issues, and a vocal antivaccination movement may all contribute to parents’ hesitancy to vaccinate. Even parents who ultimately choose to vaccinate may do so despite worries about safety.

*The complexity of the vaccine schedule, media coverage of alleged safety issues, and a vocal antivaccination movement may all contribute to parents’ hesitancy to vaccinate.*

Faced with limited time to discuss such concerns during well-child medical visits, parents seek information from other sources, such as the Internet. “Antivaccinationists have

**Table 1. Impact of Vaccine in the 20<sup>th</sup> Century**

Disease	20 <sup>th</sup> Century Annual Morbidity	2003 Total	Percent Decrease
Smallpox	48,164	0	100.0
Diphtheria	175,885	1	>99.9
Pertussis	147,271	11,647	92.1
Tetanus	1,314	20	98.5
Polio (paralytic)	16,316	0	100.0
Measles	503,282	56	>99.9
Mumps	152,209	231	99.9
Rubella	47,745	7	>99.9
Congenital rubella	823	1	99.8
Haemophilus influenzae (<5 years)	20,000*	259**	98.8

\*estimated

\*\*serotype B or unknown serotype

Sources:

1. CDC. Impact of vaccines universally recommended for children, United States, 1900-1998. *MMWR* 1999;48(12):24-28.

2. CDC. Notice to Readers: Final 2003 Reports of Notifiable Diseases. *MMWR* 2004;53(30):687.

essentially commandeered the search term ‘vaccination’ on the Internet.” (Schlenker 2005) A study in 2000 demonstrated that anti-vaccination Web sites make claims unsupported by peer-reviewed scientific literature (Wolfe 2002). The key concern expressed on these sites relates to the perceived risk of disease, harm, or death from vaccines. Rarely is there a balanced discussion of the potential complications and risks associated with the disease itself or the need to maintain high levels of immunization in the population to prevent disease resurgence.

Three main *unsubstantiated* vaccine safety claims continue to circulate in the popular media:

**Claim #1: Thimerosal, a mercury-based preservative used in vaccines, is harmful and can cause autism.**

This concern was based on the possibility that some infants who received several vaccines in the first 6 months of life might exceed the acceptable limits of mercury according to safety standards. Although exposure of infants to high levels of environmental mercury (methylmercury) *can* be harmful, the levels of mercury contained in thimerosal were within established safety guidelines<sup>1</sup>. Additionally, thimerosal contains *ethylmercury*, which is quickly eliminated from the body in contrast to environmental (methylmercury) mercury, which accumulates in body tissues over time. No scientific, epidemiological studies support the claim that thimerosal causes harm or autism. As a purely precautionary measure, thimerosal as a preservative was removed from childhood vaccines in 1999. (CHOP 2005)

**Claim #2: MMR vaccine causes/is associated with autism.**

The hypothesis that MMR vaccine was associated with autism was first noted by Wakefield et al in a study based on 12 children in England. The authors suggested that the onset of autism symptoms was temporally associated with the receipt of the MMR vaccine. (Wakefield 1998) MMR vaccine is recommended between 12–18 months of age, which happens to be just before the peak age of the onset of autism. Large-scale epidemiological studies and a 2004 Institute of Medicine (IOM) report concluded that no evidence supports this claim. (IOM 2004) And in 2004, ten of the thirteen authors of the Wakefield study formally retracted their suggestion of this link. Nevertheless, Dr. Wakefield actively promotes the MMR/autism hypothesis and is joined in the U.S. by others who have taken up a similar crusade linking autism to thimerosal.

**Claim #3 Multiple vaccines given simultaneously can overload a child’s immune system.**

A national parent survey conducted in 2000 reported that one-fourth of U.S. parents were concerned that the receipt of

<sup>1</sup>See [www.cdc.gov/nip/vacsafe/concerns/thimerosal/faqs-thimerosal.ht](http://www.cdc.gov/nip/vacsafe/concerns/thimerosal/faqs-thimerosal.ht) for discussion of safety guidelines.

**Table 2. Top 10 states with the highest estimated rates of unvaccinated children, 19-35 months of age**

State	Rate/100,000	Rank*
Utah	1,125	1 <sup>st</sup>
Montana	968	2 <sup>nd</sup>
<b>Oregon</b>	881	3 <sup>rd</sup>
Colorado	839	4 <sup>th</sup>
Oklahoma	745	5 <sup>th</sup>
Maine	699	6 <sup>th</sup>
<b>Washington</b>	670	7 <sup>th</sup>
<b>Alaska</b>	663	8 <sup>th</sup>
<b>Idaho</b>	636	9 <sup>th</sup>
Vermont	605	10 <sup>th</sup>

\*ordered by rate of unvaccinated children

Source: Smith P.J., Chu S.Y., Barker L.E. Children who have received no vaccine: Who are they and where do they live? *Pediatrics* 2004; 114:187-195. 1995-2001. (Note: Table based on National Immunization Survey, 1995-2001).

multiple vaccines might weaken a child’s immune system. (Gellin 2000)

A review of studies by the IOM in 2002 revealed no association between the receipt of multiple childhood immunizations and immune system problems (IOM 2002). Scientists estimate that the immune system of a newborn can recognize and respond to hundreds of thousands, if not millions, of different organisms. In fact, scientists have calculated that a child could receive up to 10,000 vaccines in one day and still not “use up” his or her immune response. (Offit 2002)

**Consequences of using opinion instead of facts for making public health decisions**

Even with a preponderance of scientific evidence disproving these claims, some parents and even some members of the medical community remain skeptical. The consequence of such misperceptions can be great:

- On an *individual* level, such concerns may increase the likelihood that immunizations will be delayed until the child is older—yet, the most serious complications of vaccine-preventable diseases are seen in infants.
- On a *community* level, a drop in immunization coverage increases the risk of disease outbreak among vulnerable populations (e.g. those too young for vaccination or not fully vaccinated, and immunocompromised persons and others who can’t be vaccinated). For example, Britain, in response to

the Wakefield study, has suffered a decline in MMR vaccine coverage: Up to one-third of 2-year-olds are unvaccinated. As a result, London experienced ongoing measles transmission during most of 2003. (Schlenker 2004)

- On a *state* level, immunization laws provide a safety net ensuring that nearly all school-aged children are vaccinated. These laws have been critical to maintaining high immunization coverage rates. This safety net is now threatened. Some view legislation that mandates specific vaccines for school as a violation of civil rights. This belief, along with safety concerns, may also contribute to increasing school vaccination exemption rates. At present, all states rightly allow medical exemptions to vaccination. In addition, 48 states permit religious exemptions (all but Mississippi and West Virginia) and 19 permit philosophical or personal exemptions. (Salmon 2005)
- Additionally, the unsubstantiated association between thimerosal and autism has led to legislation banning it from the manufacture of vaccines. Such legislation will be enacted in California in July 2006. Over 19 other states have similar legislation pending, several within the Northwest. (Backer 2005)

### Where do we go from here?

Perceptions of the value of vaccines are changing in ways that are counterproductive for the health of the society. The overwhelming public support for immunization of the mid-1900s is being eroded by a growing sense of complacency towards vaccine-preventable diseases, compounded by inaccurate perceptions of vaccine risks and benefits. Dr. Edgar Marcuse, Associate Medical Director of Children's Hospital and Regional Medical Center in Seattle, suggests that immunization advocates use the following strategies:

- Publicize the vaccine safety system.
- Make key concepts accessible (association vs. causation).
- Assess public perception of the desirability of a benefit and acceptability of a risk.
- Articulate the personal and public health perspectives of health risks and benefits for the individual and the community.
- Facilitate policy debates (individual freedom vs. community protection; media responsibility).



Child with *Haemophilus influenzae* type b (Hib)  
Courtesy of Children's Immunization Project, St. Paul, Minn

- Involve the public in public health policy.
- Educate and equip all health providers to elicit and respond to parents' concerns, and have media-savvy spokespersons address concerns about vaccine safety. (Marcuse 2004)

### Conclusion

The decision to not vaccinate is not without risk; it is simply a decision to accept a different and more serious risk: health consequences of vaccine-preventable diseases. (CHOP 2005) The challenge confronting us all is to strike a balance between personal freedoms and societal obligations. Innovative approaches by public health and medical professionals are needed to re-establish the public's belief in the value and necessity of vaccines.

***The decision to not vaccinate is not without risk; it is simply a decision to accept a different and more serious risk: health consequences of vaccine-preventable diseases.***

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## The Immunization Action Coalition of Washington



The Immunization Action Coalition of Washington (IACW), chaired by the Healthy Mothers, Healthy Babies Coalition of Washington, consists of over 200 organizational members from the public and private sectors. The IACW seeks to increase public awareness of the importance of immunization and to achieve and maintain full immunization of all infants, children, adolescents, and adults throughout the state.

Since its formation in 1994, the coalition has worked to promote immunization through quarterly meetings, legislative advocacy, promotion of materials, education, and presentations, creation of PSAs and posters, curriculum development, and community talks with key leaders.

Five committees—Executive, Health Care Provider Awareness, Public Awareness and Education, Adult Immunization, and the Hepatitis B Task Force—are responsible for carrying out our mission.

Join us at our next quarterly meeting, chaired by Cynthia Shurtleff, HMHB board officer), on July 20. For details, contact Ginny Heller at 206-830-5168 or [ginnyh@hmhbwa.org](mailto:ginnyh@hmhbwa.org).

The Immunization Action Coalition of Washington (IACW) is at <http://www.hmhbwa.org/forprof/IACW/home.htm>.

Healthy Mothers, Healthy Babies Coalition of Washington is at <http://www.hmhbwa.org>.

## Immunization Registries: The Information Age Meets Childhood Immunization

by Janna Bardi

Our world just keeps getting more complex. Managing and balancing home and work life continues to challenge us all. In response, activities need to be simplified—or we can't work them all in! In government, and specifically public health, this complexity underscores our responsibility to make service delivery easier for individuals, families, health care providers, and public health workers. This age of information systems is making it possible.

Immunization registries are key to improving the effectiveness and efficiency of immunization-related activities. Registries are confidential, computerized systems for maintaining information about an individual's vaccinations. They're a mechanism that eases our administrative burdens so there is more time to focus on the quality aspects of our partnerships with parents, health care providers, and public health workers. In each state, efforts continue to fully establish immunization registries, engage health care providers to participate, populate registries with historical immunization information of clients, and explore the many ways registries can support and improve immunization assessment and required reporting of vaccine use and immunization rates.

*Immunization registries are key to improving the effectiveness and efficiency of immunization-related activities.*

### Benefits at every level

Why are these registries so important? The nation is experiencing some of the highest immunization rates ever, yet we still have outbreaks of vaccine-preventable disease. One goal of the national Healthy People 2010 prevention initiative is to have immunization registries fully operational, with data collected for 95 percent of children birth to 6 years of age by 2010. We need to continue increasing rates to reach and sustain this national goal to prevent disease, disability, and death through universal vaccination. Sustaining high rates is the challenge, and immunization registries are exactly the right tool to help us.

Registries assure quick access to immunization histories. They support provider-to-provider sharing of immunization information to assure their patients receive the right vaccinations at the right time. They make it easy for health care providers to remind patients when immunizations are due and recall patients who are past due. Reminder and recall systems

have been shown to improve immunization rates. With the schedule of child vaccinations increasing in complexity, registries provide essential support to busy health care providers. They contain immunization algorithms that quickly evaluate patient age and immunization history and indicate the appropriate immunizations for the next visit. At the 2005 National Immunization Conference, Dr. Peter Szilagyi described recent research confirming that clinic visits for immunizations provide opportunities for other primary care. So the better we are at getting families in for immunizations, the more likely they will receive other needed prevention services.

Registries can be used to address disparities in immunization coverage. Clinic, geographic, and even age assessment helps health care providers and public health agencies make sure no one falls through the cracks. Registries support the clinic assessment process by making it possible to download a provider's practice information into software that analyzes efficiencies and provides data for streamlining clinic practices. Geographic data about immunization coverage enable local and state public health agencies to effectively target resources to assure high immunization rates.



Health care worker vaccinating child.  
Courtesy of the Centers for Disease Control and Prevention.

Parents benefit from the immunization reminders that registries provide, safeguarding against lost records, and giving them quick access to their child's immunization record for child care or school entry. In Washington State, the Department of Health generates the reminders for parents of children birth to age 6 so that every parent receives this important information, regardless of health insurance status. Washington State's CHILD Profile Immunization Registry and Health Promotion System is unique in this capacity, including age-specific information about growth, development, nutrition, safety, and other parenting issues as part of the reminder package (see Washington Report) .

### Applications on the horizon

As immunization registries further prove their value in each state, potential applications to improve and integrate service delivery are being recognized (see Idaho Report). Many states are exploring integrated child health information systems so that, for example, parents seeking nutrition services through the Women, Infants, and Children (WIC) program are also screened for immunizations and referred to a health care provider, if needed. States are exploring ways to link their immunization registries to improve speed and security for providers who need immunization information for families that have moved. Federal, state, and local governments are exploring the possible use of immunization registries to support emergency preparedness and planning. In a flu pandemic or other vaccine preventable disease-related emergency, registries can be used to quickly identify who needs to be vaccinated and provide essential record keeping for a mass vaccination clinic.

Immunization registries are helping us work smarter and faster to meet the changing needs of our communities and quickly integrate new vaccines and best practices information into our work. Shifting our workflows from manual record pulls and data collection methods is challenging. However, the improved service delivery and information for decision making will be well worth the effort. Immunization registries are an essential tool in our commitment to protect the public's health.

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*Janna Bardi, MPH, has been with the Washington State Department of Health for over ten years, first as manager of Washington's health promotion and immunization registry program, CHILD Profile, and currently as the immunization program manager. Her background includes service in the Peace Corps where she worked on immunization issues.*

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## Salk Polio Vaccine Celebrates 50th Anniversary

by Cherish Hart

The menace of death or paralysis from polio, a viral infection that affected mostly children, caused widespread fear and panic in the U.S. for decades. Sporadic and unpredictable outbreaks marked the lives of Americans during the first half of the 20th century. In 1952, the most severe polio epidemic year on record, nearly 58,000 people were stricken with the disease. The images of youngsters in unwieldy "iron lungs" responsible for every breath haunted parents.



In 1954, the March of Dimes sponsored the largest clinical trial in U.S. history, testing the vaccine developed by Jonas Salk, MD, on more than 1.8 million schoolchildren. Thousands of health care workers and other volunteers across the country contributed to the effort.

On April 12, 1955, millions of anxious Americans breathed a collective sigh of relief when the successful results of the field trials were announced. A huge outpouring of joy greeted the news that polio could now be prevented—and Dr. Salk became a national hero overnight.

This anniversary continues to have significance, as many other medical advances were made possible by the wide net that was cast in funding the quest for a polio vaccine. Development of vaccines came to be seen by the public as a priority, and great strides were made in protecting unborn babies, children, and adults from many other deadly and disabling infectious diseases. For more information, visit <http://www.marchofdimes.com/polio>.

*Cherish Hart is the Program Services Director for the Washington State Chapter of March of Dimes and a member of the Northwest Bulletin Editorial Board.*  
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## New Vaccines: What's in the Forecast?

by Rosalyn Singleton

An explosion in vaccine development has occurred in the last 20 years. Since 1985, 10 new vaccines have been licensed for routine use in the U.S., increasing the number of vaccines in the recommended childhood schedule from 3 to 13. A number of vaccine-preventable diseases [measles, mumps, rubella, diphtheria, tetanus, *Haemophilus influenzae* type b (Hib)] have been nearly eliminated through routine vaccination. New vaccines continue to be developed. In 2005 a new meningococcal quadrivalent conjugate vaccine received licensure, and two adult tetanus-diphtheria-acellular pertussis vaccines (Tdap) are on the horizon. Here is an overview of these and other new vaccines.

### Meningococcal conjugate vaccine

Meningococcal disease is rare (< 1–5 per 100,000/year). It is significant, however, because of its high mortality rate of up to 25 percent. Plain polysaccharide vaccines have been available since the 1960s, but polysaccharide vaccines do not produce a good immune response in children under age 2 and don't provide long-term protection. Conjugating polysaccharide vaccines to a carrier protein can increase their effectiveness. For example, conjugate vaccines for Hib and *Streptococcus pneumoniae* bacteria have revolutionized protection against these diseases in children.

Menactra™ is the first quadrivalent conjugate vaccine licensed for prevention of meningococcal disease and offers protection against four serogroups of *Neisseria meningitidis* (A, C, Y, and W-135). Studies on children 2 to 18 years of age showed similar immune response and side effects compared with the long-available polysaccharide vaccine (Menomune®). Menactra was licensed by the Food and Drug Administration (FDA) in early 2005. The Advisory Committee on Immunization Practices (ACIP) voted to recommend routine vaccination with Menactra for preadolescents (ages 11–12), high school entrants (age 15), and college freshmen living in dorms. Other groups for whom routine vaccination was recommended include military recruits, travelers to or residents of countries with epidemic disease, and microbiologists at risk.

*Conjugate vaccines for Hib and Streptococcus pneumoniae bacteria have revolutionized protection against these diseases in children.*

The United Kingdom and Canada have used meningococcal conjugate C vaccine to halt outbreaks of serogroup C disease. While serogroup C predominates in these countries, serogroups C (28 percent), Y (34 percent), and B (33



Photo courtesy of the Centers for Disease Control and Prevention

percent) were most prevalent in the U.S. from 1995–1998. The highest rate of meningococcal disease (5/100,000) occurs in infants; however, a peak also occurs in 15–19 year olds, and approximately 70–80 percent of the disease in the latter age group would be preventable with a quadrivalent vaccine. Menactra is at least as safe and effective as Menomune and offers the advantage of long-term protection. While Menactra is currently licensed for 11–55 years, Sanofi Pasteur has just applied for licensure down to 2 years of age.

### Tdap

Although the diphtheria-tetanus-pertussis (DTaP) vaccine has nearly eliminated diphtheria and tetanus in the U.S., pertussis infections have been steadily increasing, from a low of 6,000 cases in 1976 to >19,000 cases in 2004—a nearly 40 percent increase over 2003 and the highest number in four decades. Approximately 40 percent of the cases occur in adolescents and adults. Ninety percent of pertussis deaths, however, occur in infants < 3 months of age who are often exposed to pertussis from older siblings. The pertussis immunity induced by early childhood vaccinations wears off after about 6 years, leaving adolescents and adults susceptible to infection. Recently, several outbreaks have occurred in adolescents.

*Although the diphtheria-tetanus-pertussis (DTaP) vaccine has nearly eliminated diphtheria and tetanus in the U.S., pertussis infections have been steadily increasing, from a low of 6,000 cases in 1976 to >19,000 cases in 2004—a nearly 40 percent increase over 2003 and the highest number in four decades.*

In 2004 two companies applied to the FDA for licensure of candidate Tdap vaccines. GlaxoSmithKline (Boostrix®) and Sanofi Pasteur (ADACEL™) have similar vaccines, each with the same amount of tetanus and diphtheria toxoid as Td and with one quarter the amount of the pertussis antigens found in their respective DTaP vaccines. Both vaccines appear to have superior immune response to that seen in children with DTaP and similar adverse events to currently available “adult” tetanus-diphtheria (Td) vaccine. The FDA just licensed Boostrix™ for 11–18 year olds, and licensure for Adacel™ vaccine in adolescents and adults aged 11–64

years should occur soon. After these Tdap vaccines are licensed, they likely will be phased in, with the first recommendation to use Tdap to replace Td in adolescents, and perhaps eventually to replace Td in adolescents and adults.

### Rotavirus vaccine

Rotavirus is the most common cause of dehydrating diarrhea in the world and affects children in both developing and developed countries. Rotavirus annually causes 500,000 deaths worldwide. In the U.S. about 70 deaths and 70,000 hospitalizations are attributed to rotavirus each year. In 1998 a quadrivalent live attenuated rotavirus vaccine (Rotashield®) was licensed for use in infants. Although nearly 100 percent effective against severe rotavirus diarrhea, the manufacturer found an association with increased intussusception (a type of bowel obstruction) and licensure was suspended shortly after implementation. Since then, several new candidate rotavirus vaccines have been studied. Two live attenuated oral vaccines, RotaTeq® and Rotarix®, are close to licensure in the U.S. Large studies show no increase in intussusception with these vaccines, and the main side effect was an increase in fever after vaccine.

### MMRV

Since 1995 varicella vaccine (Varivax®, Merck) has been licensed as a single antigen vaccine. In 2004 Merck applied for licensure of combined MMR-Varicella vaccine (MMRV). This live attenuated vaccine will require stringent freezer storage like Varivax, but would decrease the number of injections required at 1 year of age.

### Other vaccines

The list for future potential vaccines and vaccine combinations is long. Some important potential vaccines we may see in the near future include: respiratory syncytial virus, cytomegalovirus, human papilloma virus, herpes zoster vaccine and a DTaP-IPV-Hib combination. The potential for disease prevention is high. Achieving this, however, requires significant resources and the dedication of thousands of frontline vaccinators. Meanwhile, we must maintain the successes of the past as we reach for the potential of the future.

*Since 1985 Rosalyn Singleton, MD, MPH, has worked as a pediatrician with the Indian Health Service and tribes in Chinle, Arizona and Anchorage. As an immunization consultant with the Alaska Native Tribal Health Consortium and research associate with the Centers for Disease Control and Prevention (CDC) Arctic Investigations Program, Dr. Singleton pursues her special interest in respiratory syncytial virus (RSV), Hib, pneumococcal and respiratory disease.*

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907-729-3418; ris2@cdc.gov

## Preconception Planning— Immunizations

by Cherish Hart

All women of childbearing age can take steps, even before conception, to improve their chances of having a healthy baby. These include taking folic acid daily, adopting a healthy lifestyle, and getting a preconception health checkup.

Preconception checkups include screening for antibodies that show whether or not a woman is immune to rubella (German measles) and chickenpox, both of which can cause birth defects if the mother is infected for the first time during pregnancy. Women not immune can be vaccinated before pregnancy, but are advised to postpone conception for three months.

Additionally, the Centers for Disease Control and Prevention (CDC) recommends that all pregnant women be screened for hepatitis B. Untreated infants of infected mothers have about a 50 percent risk of contracting the virus. Prompt immunization and treatment after birth usually can prevent infection in the baby. However, high-risk women, such as health care workers, should consider vaccination prior to pregnancy.

Since many crucial stages in a baby's development occur before a woman may realize she is pregnant, preconception care can minimize harm to the baby from certain infections, illnesses, nutritional deficiencies, and environmental hazards.

For more information on immunizations and preconception care visit <http://www.marchofdimes.com>.

**The NW Bulletin is published  
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<http://depts.washington.edu/nwbfch>

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becomes available.**

## Immunization Schedule for Children and Adolescents: United States 2005

The 2005 childhood and adolescent immunization schedule is approved by the Advisory Committee on Immunization Practices, the American Academy of Pediatrics, and the American Academy of Family Physicians. "The schedule shows the recommended ages for routine administration of currently licensed childhood vaccinations as of December 1, 2004 for children through age 18 years. Any dose not given at the recommended age should be given at any subsequent visit when indicated and feasible."<sup>1</sup>

**Additional recommendations and combination vaccines**  
Additional vaccines may be licensed and recommended during the year. Licensed combination vaccines may be used whenever any components of the combination are indicated and the vaccine's other components are not contraindicated. Providers should consult the manufacturers' package inserts for detailed recommendations"

**New developments**  
New vaccines to protect adolescents against meningococcal disease and pertussis have recently been approved.  
<sup>1</sup>Quoted text from CDC, Recommended Childhood & Adolescent Immunization Schedule; United States 2005.

**Immunization schedule-formats and ordering information**  
The schedule is available in a pocket-sized laminated format (6" x 4.5") which includes footnotes, a catch-up schedule, minimum age and dosage intervals, and resources.

**Footnotes:** Important information is found in the footnotes that accompany the immunization schedule. Please do not use the schedule depicted here. See ordering information below.

**Washington residents:** Laminated cards have been produced by the Immunization Action Coalition of Washington (a program of the Health Mothers, Healthy Babies Coalition of Washington), Public Health-Seattle & King County, Snohomish County Health District, and the Washington State Department of Health, with funding from vaccine manufacturers. HMHB: 1-800-322-2588

**Residents-other states:** Schedules in two and four-page (8 1/2" x 11") color and black and white versions are available online in pdf format from the CDC. <http://www.cdc.gov/nip/recs/child-schedule>.

Pocket-size versions for children and adults are available online for reproduction. <http://www.cdc.gov/nip/recs/lamincard-instruct.htm>

**Recommended Childhood & Adolescent Immunization Schedule United States, 2005**

Age Vaccine	Birth	1 mo	2 mos	4 mos	6 mos	12 mos	15 mos	18 mos	24 mos	4-6 years	11-12 years	13-18 years
Hepatitis B <sup>1</sup>	Hep B #1	only if mother is HBsAg(-)	Hep B #2		Hep B #3					Hep B series		
Diphtheria, Tetanus, Pertussis <sup>2</sup>			DTaP	DTaP	DTaP		DTaP			DTaP	Td	Td
Haemophilus influenzae type b <sup>3</sup>			Hib	Hib	Hib		Hib					
Inactivated Poliovirus			IPV	IPV	IPV				IPV			
Measles, Mumps, Rubella <sup>4</sup>						MMR #1			MMR #2		MMR #2	
Varicella <sup>5</sup>						Varicella			Varicella			
Pneumococcal <sup>6</sup>			PCV	PCV	PCV	PCV			PCV		PPV	
Influenza <sup>7</sup>					Influenza (yearly)				Influenza (yearly)			
----- Vaccines below this line are for selected populations -----												
Hepatitis A <sup>8</sup>									Hepatitis A series			

Footnotes: Important information is found in the footnotes that accompany the immunization schedule. Please do not use the schedule depicted here.

## State Reports

### Alaska Report



#### 2005 Year of the Booster

by Doreen Stangel



##### Alaska's Yearlong and Every Decade, Adult Immunization Campaign

In the Chinese zodiac 2005 is the *Year of the Rooster*. In Alaska, by Executive Proclamation of the governor, 2005 has been designated as the *Year of the Booster* to spotlight the importance of adult immunization. The governor's proclamation urges all Alaska parents to make sure their children are fully immunized and encourages all Alaska adults to be up-to-date with their own vaccinations.

The State of Alaska has conducted adult immunization campaigns every decade since 1975, when an outbreak of diphtheria resulted in eleven cases and one death. In response to this outbreak, the Alaska Department of Health and Social Services conducted a massive tetanus/diphtheria (Td) immunization campaign. Because a booster dose of Td vaccine is recommended every ten years, reminder campaigns have occurred in Alaska every decade since 1975. The 2005 campaign, the Year of the Booster, is designed to focus attention on adult immunizations, encourage Alaskans to check the status of their immunizations, and support efforts by health care providers to immunize adults.

The yearlong project involves many individuals and groups from across the state. Garden clubs, labor unions, professional associations, and other organizations are promoting the message that adult immunizations are important. Special immunization opportunities will occur at community events such as boat and home shows, special interest gatherings, professional conferences, and health fairs.

The campaign mascot is the *Booster Rooster*. A one-size-fits-all *Booster Rooster* costume is available on loan from the Alaska Immunization Program for use at



immunization events. To date the *Booster Rooster* has been sighted all around the state at community events where volunteer "Booster Rooster Boosters" administer immunizations. People who receive a booster are given an "I'm a Booster Booster" sticker to show that they believe in staying protected from vaccine-preventable diseases in adulthood.

##### "I Did It By TWO!"—Alaska's Childhood Immunization Awareness Program

In 1925 an outbreak of diphtheria in Nome, Alaska killed five people. To protect the rest of the community, courageous mushers brought life-saving serum from Nenana to Nome, a distance of 674 miles, by dog team relay via the Iditarod Trail.

The modern Iditarod Trail Sled Dog Race in Alaska commemorates this life-saving event. True to its historical origins, the theme of the present-day contest is *Race to Vaccinate*.



In conjunction with the state's most well known and highly visible annual event—the Iditarod Trail Sled Dog Race—the State of Alaska has adopted "I Did It By TWO!" as our primary childhood immunization awareness campaign. The campaign is a collaborative effort involving the Alaska Immunization Program, the Vaccinate Alaska Coalition, and the Iditarod Trail Sled Dog Race Committee. The campaign seeks to heighten public awareness of the critical need for timely immunization of children from birth through 2 years of age.

"I Did It By TWO!" capitalizes on the *Race to Vaccinate* idea by incorporating the dog-mushing theme into all promotional and educational materials. Just as the actual Iditarod mushers pass through checkpoints along the trail, children pass immunization "checkpoints" at age-appropriate immunization intervals to stay on schedule. At immunization visits children receive a sticker to place on their personal *Race to Vaccinate* poster. When a child accumu-

lates sufficient stickers (immunizations), they cross the finish line and are declared a “Winner in the Race to Vaccinate.”

The campaign also distributes educational and promotional items to participating health care providers who, in turn, use these materials as incentives for parents of patients in the target age group. Publicity events are coordinated with the Iditarod Trail Sled Dog Race every year to increase general public awareness of the campaign and its mission. On the day of the ceremonial start of the Race Alaska’s dog racing celebrities—both two and four-legged varieties—actually wear messages about the importance of immunizations. Each musher wears an official race bib that displays the *Race to Vaccinate* slogan. Most mushers also outfit their dogs with “I Did It By TWO!” jackets for all race fans present and those watching on national TV to see.

The *Year of the Booster* and “I Did It By TWO!” provide two fun ways to promote the awareness of immunization for Alaskans of all ages.

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*Doreen Stangel, MAT, is the education and training coordinator for the Alaska Immunization Program for the State of Alaska.*

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## Idaho Report



### State-to-State Registry Communication Using HL7 Technology

by Christina Babin

With the movement of families between states as well as those living on state borders, immunization programs have long-recognized the need for state-to-state registry communication to retrieve and combine vaccination records stored within registries outside of their jurisdictions. Idaho and Washington are on the cusp of being the first states to improve immunization service delivery through the use of Health Level Seven (HL7) Standard Protocol technology with their respective registry systems—Idaho’s Immunization Information System (IRIS) and Washington’s CHILD Profile.

HL7 is the accepted method of choice for communication compatibility between immunization registries and external systems including billing and electronic medical records. It allows easy and confidential sharing of immunization data. Many states have implemented this functionality within their immunization information systems while others are still working toward this needed capability. HL7 also meets the federal Public Health Information Network (PHIN) guidelines for data sharing.

Currently, data-sharing capability through HL7 is available either through reciprocal transmissions of *all* patient data and *query-only* transmission for specific patients and their immunization histories. Idaho and Washington have opted for a query-only approach with information shared on a “need-to-know” basis. Through this registry communication model, Idaho and Washington have accounted for all HIPAA confidentiality and security issues. Electronic state-specific data-sharing agreements have been incorporated, and security audits are enabled through the use of security modules within each state registry to track both logins and queries or changes to individual patient records.

**How IRIS will work**

1. The provider must be registered with an IRIS username and password.
2. The provider searches IRIS for patient(s) who need immunization services.
3. After selecting the existing patient in IRIS (or adding them as a new patient) the user uses a drop down menu of participating states (i.e. Washington)

and selects the registry (CHILD Profile) to query for vaccination records and updates.

4. The user must review and accept the terms of the Washington information sharing/user agreement that will appear on the screen before access will be granted to Washington's registry.
5. A list of possible patient matches is retrieved from CHILD Profile with limited demographic information.
6. The user selects the appropriate patient, if found, to review the immunization history.
7. After reviewing the record, the immunization history can be imported to IRIS and incorporated into the patient record (only vaccination history can be imported from CHILD Profile; no demographic information).

The registry administrators in each state can review the registry query logs at any time to determine which users have queried their system and which histories were retrieved.

Providers and patients can benefit significantly from these data-sharing capabilities with improved data quality, decreased missed immunization opportunities, decreased over-vaccination, and less effort to track and enter historical vaccinations. This will get us closer to universal patient care as well as time and cost savings for immunization providers.

Idaho and Washington are currently in the testing process, and with the exception of a few minor technical connectivity issues, are very close to successful communication between the two state registries. The next step—a rollout to actual users and providers in the field—is slated for winter 2005.

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*Christina Babin, BS, is the Health Program Specialist-Registry Coordinator for the immunization program of the Idaho Department of Health and Welfare in Boise.*

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## The Power of Partnerships: Raising Immunization Rates in Oregon

*by Mary Durbro, Karen Elliott, and Mary Beth Kurilo*

Oregon's investment in public and private ventures has paid off. Our successes, now and in the future, are tied directly to innovative partnerships that bring a variety of stakeholders to the table to help guide our decisions. A few key examples demonstrate this commitment and the subsequent rewards.

### **Oregon's Immunization Registry—ALERT**

Collaboration is a cornerstone of Oregon's successful statewide immunization registry. After nearly ten years of operation as a public-private partnership, over 4,000 authorized health care and school professionals use ALERT to ensure that children are properly immunized. All public sites and 86 percent of private sites submit data. Use of ALERT across Oregon continues to grow, with an average of 30,000 immunization histories per month produced from a secure Web site. This has a direct impact on Oregon's ability to keep kids in school, improve immunization practices, avoid costly duplicate shots, and help prevent disease.

Armed with this wealth of data, we provide timely consolidated immunization information to our partners and explore complex research questions about immunizations across the state.

- Schools, certified childcare providers, and clinic staff can access "Shots Past Due" and "Shots Due Now" (as recommended by the Advisory Committee on Immunization Practices) for all children in the registry. Early results from an online survey show that 91 percent of respondents find the forecasts helpful.
- AFIX—a quality improvement strategy to raise provider immunization rates—is built around our registry. Rather than clinic chart pulls, registry data is used to assess the immunization rates for participating clinics. This frees staff time to review the data and conduct in-person feedback sessions to discuss findings and improvement strategies.

- A pilot project with ALERT and the Centers for Disease Control and Prevention (CDC) uses registry data and geographic information system (GIS) software to map areas of low immunizations. This project will enable the CDC and the registry to test mapping as a tool for targeting resources to pockets of need.
- The Sentinel Site project is another CDC collaboration in which Oregon and five other states use immunization registry data to assess trends in vaccination coverage and provide data for public health decision-making.

Throughout 2005, ALERT will continue to explore innovative ways to use the rich registry database to improve immunization rates through informed clinical practice and targeted public health outreach throughout Oregon.

### **WOW!—Building on Regional Partnerships: Focusing on the Fourth DTaP**

The Washington-Oregon Workgroup (WOW)—established in 2002—is a collaboration between the Immunization Action Coalition of Washington (IACW) and the Oregon Partnership to Immunize Children (OPIC). WOW is a communications network for sharing science-based immunization resources with parents and caregivers in both states through cost-effective strategies to promote the 4<sup>th</sup> dose of DTaP and increase immunization rates through timely administration of the vaccine.

Immunization rates for the 4<sup>th</sup> DTaP in Washington and Oregon lag behind those for other childhood vaccines. At the same time, the number of pertussis cases is increasing. The incidence of pertussis in 2003 is the highest in decades in both states: 16.8 cases per 100,000 in Oregon and 13.8 per 100,000 in Washington, compared to 4.1 per 100,000 nationally.

WOW partners include the Deschutes County Health Department (Oregon), Desautel Hege Communications, the Oregon Department of Human Services (DHS) the Washington Department of Health, OPIC, and IACW. WOW has launched a two-state 4<sup>th</sup> DTaP Initiative, using educational materials developed by the Washington Department of Health for parents and providers.

### **Oregon Pharmacists: A Natural Partner for Immunizing Adults**

Despite low cost, safe, and effective vaccines, adults remain underimmunized. Pharmacists have long played an advocacy role for adult immunizations, and since 2000 have administered adult vaccines in Oregon. An estimated 100,000 Oregonians (about 25 percent in rural areas) have received vaccines from these providers. Research supports that pharmacists are effective in immunizing adults who would not have otherwise received a vaccination.

In addition to providing individual-level services, Oregon pharmacists participate in state and national immunization advocacy and policy activities. Examples include: active involvement in the Oregon Adult Immunization Coalition leadership; committee membership at the National Flu Summit; consultation on statewide immunization projects by pharmacy school faculty; membership in the Health Policy Advisory Team for the Office of Public Health Preparedness; and volunteering to immunize the homeless and other at-risk populations.

Through their relationships with individual clients and the health care community, pharmacists have unrealized potential to affect underimmunized populations. Oregon has extended its reach into important communities through partnerships with pharmacists statewide.

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*The authors of this report are with the Oregon Department of Human Services. Mary Durbro, MPH, CHES, is the Adult Immunization Coordinator. Karen Elliott, JD, BA, is Project Coordinator for the Oregon Partnership to Immunize Children. And Mary Beth Kurilo, MPH, MSW, is Program Specialist with the ALERT registry.*

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# Washington Report



## Immunization Update

by Michele Perrin

**I**mmunization work continues to be fast paced and rapidly changing! We're engaged in exciting activities that have the potential to improve program operations for the next two decades. These include targeted efforts to increase immunization rates; the Vaccine Management Business Improvement Project; policy work with stakeholders; partnerships with the Vaccine Advisory Committee and State Board of Health to ensure our immunization laws are understandable and assure protection from disease; and use of the immunization registry to streamline our operations. Read on for details on some of these programs.

### Focus on the Fourth—Washington's New Immunization Initiative

Washington and Oregon are teaming up to fight pertussis (whooping cough) and protect children. In April 2005 both states launched a 4<sup>th</sup> DTaP initiative to increase childhood immunization rates through timely administration of the 4<sup>th</sup> DTaP vaccine—the most frequently missed in the five-vaccine series. Initiative activities, including outreach to health care providers and parents, will continue through 2005 in partnership with local health departments.

Immunization rates for the 4<sup>th</sup> DTaP in Washington lag behind those of other pediatric vaccines, adversely affecting overall immunization rates. The 4<sup>th</sup> DTaP is due between 15–18 months; nearly 20 percent of Washington children, however, have not received their 4<sup>th</sup> DTaP by age 3. National Immunization Survey data show that Washington has consistently achieved lower 4<sup>th</sup> DTaP immunization rates than the national average.

### The initiative in action

Washington launched the initiative with a press conference in May, and activities will continue through 2005. We're coordinating some actions with Oregon to address regional DTaP rates and pertussis disease and are conducting outreach to parents, health care providers, child care centers, and the public. Broadcast and print public service announcements to promote the 4<sup>th</sup> DTaP have been produced.

### How to get involved

- Distribute 4<sup>th</sup> DTaP education materials. Free materials are available in Spanish and English and include such items as parent fact sheets, providers tips, and a poster.
- Encourage immunization providers to track 4<sup>th</sup> DTaP immunization rates in their practices. Local health departments can help.
- Immunization providers can also use CHILD Profile, our state's health promotion and immunization registry system, to improve 4<sup>th</sup> DTaP immunization rates.
- Contact local media and ask them to use DTaP public service announcements. Guidance on how to work with the media is available.

### Vaccine Management Business Improvement Project (VMBIP)

The Centers for Disease Control and Prevention (CDC) is undertaking a project to increase efficiencies in vaccine inventory management and distribution. The CDC will consolidate national vaccine distribution to two or three regional distributors by March 2007. Washington recently learned that we have been selected as a pilot site with a possible start date of fall 2005.

### Components of the project include:

- Provider ordering and approval: Establish provider-direct ordering from a third party distributor (with appropriate state and local oversight) using tailored ordering/replenishment guidelines to simplify processes, standardize reporting and accountability, and reduce administrative burden.
- Distribution and inventory management: Merge inventories into a few third-party distributors, and fulfill orders directly to providers.
- Consolidation of information technology systems: Provide key ordering, inventory and distribution system functionality that captures appropriate data, enables a centralized program, and increases the visibility of vaccine nationwide.

As a pilot site Washington has the opportunity to shape the national system and ensure that it best meets our unique needs. An oversight committee of health officers, nursing directors, immunization coordinators, vaccine coordinators, and Washington Department of Health staff will be responsible for project planning and development of vaccine ordering procedures. The committee will also establish channels for stakeholder input and review prior to launch of the pilot.

*Michele Perrin, MPH, CHES, coordinates state immunization education activities in her role as a health educator with the Washington State Department of Health Immunization Program. She previously completed a two-year fellowship in program evaluation of HIV and STD programs with the Centers for Disease Control and Prevention (CDC).*

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(4<sup>th</sup> DTaP media material & questions)

Order 4<sup>th</sup> DTaP Educational Materials

<http://www.doh.wa.gov/cfh/immunize>

Immunization Program

360-236-3595

<http://www.doh.wa.gov/cfh/immunize>

CHILD Profile

1-800-325-5599

<http://www.childprofile.org>

## Resources

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**Advisory Committee on Immunization Practices**

<http://www.cdc.gov/nip/acip>

**Alaska Immunization Program** (links to “Year of the Booster” & “I Did it by TWO!” campaigns available)

<http://www.epi.hss.state.ak.us/id/immune.stm>

**American Academy of Family Physicians**

<http://www.aafp.org>

**American Academy of Pediatrics**

<http://www.aap.org>

**Centers for Disease Control and Prevention (CDC)**

**National Immunization Program**

1-800-232-4636; <http://www.cdc.gov/nip>

**Health Affairs**, “The Vaccine Enterprise,” 24(3) May/June 2005.

**Idaho Immunization Program**

<http://www.healthandwelfare.idaho.gov>

**Immunization Action Coalition** (links to individual states available)

<http://www.immunize.org>

**Institute of Medicine (IOM)**, Immunization Safety Review: Vaccines and Autism, May 2004.

**March of Dimes**

<http://www.marchofdimes.com>

**National Network for Immunization Information**

<http://www.immunizationinfo.org>

**Oregon Immunization Program**

<http://www.oregon.gov/DHS/ph/imm>

**Smithsonian National Museum** of American History.

Whatever happened to polio?

<http://americanhistory.si.edu/polio/americanepi/index.htm>

**Washington State Department of Health Immunization Program** (includes link to CHILD Profile, Health Promotion and Immunization Registry System)

<http://www.doh.wa.gov/cfh/immunize>

## Events

### June 23

Immunization Action Coalition (IACW) of Washington (King County) Partnership to Immunize Children (OPIC)–Parent Leadership Inquiry (Hepatitis B). For details contact Ginny Heller, 206-830-5168 or [ginnyh@hmhbwa.org](mailto:ginnyh@hmhbwa.org)  
<http://www.hmhbwa.org>

### June 23

Vaccinate Alaska Coalition Teleconference Meeting, 11:00 a.m. Alaska Daylight Time. Call-in number: 1-800-315-6338, code VAC# (822#)

### July 8–15

NAACHO – ASTHO Joint Conference, Boston. “Reversing the Tide: Promoting Policies and Programs to Advance the Nation’s Health.”  
[http://www.astho.org/?template=annual\\_meeting.html](http://www.astho.org/?template=annual_meeting.html)

### July 20

Immunization Action Coalition (IACW) of Washington Quarterly Meeting, Seattle. For details contact Ginny Heller, 206-830-5168 or [ginnyh@hmhbwa.org](mailto:ginnyh@hmhbwa.org)  
<http://www.hmhbwa.org>

### July 28

Centers for Disease Control and Prevention (CDC) Immunization Update Satellite course (2.5 CEU).  
[http://www.cdc.gov/nip/ed/satellite\\_broadcasts.htm#2](http://www.cdc.gov/nip/ed/satellite_broadcasts.htm#2)

### July 29

Oregon Flu Summit co-sponsored by Oregon DHS and Oregon Adult Immunization Coalition, OHSU Auditorium in the Old Library, 3181 SW Sam Jackson Park Road, Portland. 8:00 a.m.–12:00 p.m. Pacific Daylight Time. For more information, contact Anne Van Curen, 971-673-0314 or [anne.m.vancuren@state.or.us](mailto:anne.m.vancuren@state.or.us).

### August

National Immunization Awareness Month-National Partnership for Immunization.  
<http://www.partnersforimmunization.org/niam.html>

### August 5–6

11th Biennial NCAST-AVENUEW Institute with the Center on Infant Mental Health, Seattle. “The Need for a System-Wide Focus on Infant Mental Health.”  
<http://www.ncast.org/events.asp>

### September 27–29

Wyoming Public Health Association (WPHA) Annual Education Conference, Cody, Wyoming.  
<http://www.outreach.uwyo.edu/conferences/publichealth>

### October 10–12

Twelfth Annual Washington State Joint Conference on Health, Yakima. “Partnering for a Healthier Tomorrow”  
<http://www.wspha.org/JCH1.html>

### October 18

Oregon Partnership to Immunize Children (OPIC) 6<sup>th</sup> Regional Roundtable, Portland. (See July 19 meeting above for contact information.)

### October 19

Immunization Action Coalition (IACW) of Washington Quarterly Meeting, Seattle. For details contact Ginny Heller, 206-830-5168 or [ginnyh@hmhbwa.org](mailto:ginnyh@hmhbwa.org)  
<http://www.hmhbwa.org>

### November 3–5

Society for Public Health Education 56<sup>th</sup> Annual Meeting, New Orleans.  
<http://www.sophe.org>

### November 28–30

Alaska Health Summit, Anchorage.  
<http://www.alaskapublichealth.org/healthsummit.htm>

### November 5–9

American Public Health Association Annual Meeting, New Orleans, “Evidence-Based Policy and Practice.”  
<http://www.apha.org/meetings>

### December 5–9

CDC-National Center for Infectious Disease (NCID) National Viral Hepatitis Prevention Conference, Washington, D.C.  
<http://www.signup4.et/Public/ap.aspx?EID=2004104E>

**Do you have an event that wasn't included in this issue? Send us the information and we'll post it on our Web page:**

**<http://depts.washington.edu/nwbfch/events.htm>**

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