

Immunications

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Immunications

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SUMMER 2008

Infections Are the Enemy, Not Vaccines

By Karen Lewis, M.D., Medical Director, Bureau of Epidemiology and Disease Control Services

"There goes a lovely theory, about to be murdered by a brutal gang of facts."

Many people propagate the theory that there is no need to vaccinate, because immunity from natural disease is better. Others say that deadly diseases are no longer a problem in the United States, so you don't need to vaccinate. Others say that you don't need to get vaccinated if you have good nutrition. However, microbes are not interested in theories, but in spreading to and replicating in susceptible hosts. The real test of these antivaccine theories occurs when the microbes and the susceptible hosts collide.

I have spent my pediatric infectious disease career fighting against both deadly microbes and unjust accusations against vaccines. Sometimes it seems that it is easier to fight the microbes than the unfounded fears about vaccine safety.

The advantage of fighting the microbes is that they are an Enemy that can be diagnosed, treated, and often conquered. These microbes can also be fought by preemptive strikes with vaccines; an immunized population results in the disappearance of the deadly disease.

It is much more difficult to fight against people's fears about vaccines. Widespread acceptance of vaccination in the US has made diseases such as measles, diphtheria, and polio very rare occurrences. People rarely see these diseases and so are not afraid of them. Instead, people see children and adults getting vaccines. Sometimes, people hear claims that vaccines are dangerous. In their minds, the ever-present vaccines become the Enemy, and they believe that infectious diseases are very far away.

In contrast, physicians believe that the Enemy is infectious diseases, and vaccines are an essential part of preventing the ravages of disease. However, when physicians and patient believe in different

enemies, they will disagree as to the best way to fight the Enemy.

My first exposure to antivaccine fervor was during my pediatric infectious disease fellowship at UCLA. At that time, whooping cough vaccine was being blamed for encephalopathy, mental retardation, and Sudden Infant Death Syndrome (SIDS). In Japan, there was a period when parents lost confidence in pertussis vaccines, and stopped immunizing their children. The result of not vaccinating was that scores of infants died yearly from pertussis in Japan before new acellular pertussis vaccines won acceptance. (1).

Measles vaccine was the next rallying cry for people with antivaccine fervor. Some people became convinced that their child's autism was caused by the measles vaccine. Although the initial article about this possible connection was discredited, and multiple studies repudiated the link (2), the stigma still remains in many people's minds.

As multiple studies exonerated the measles vaccine, antivaccine fervor looked for another target. Accusations focused on thimerosal, an ethyl mercury containing vaccine preservative. There had never been any scientific evidence of adverse effects from thimerosal. Still, to be on the safe side, in 1999 the Public Health Service and the American Academy of Pediatrics recommended that thimerosal-containing vaccines be removed from vaccines (3). Thimerosal became the new object of blame.

Careful studies have been done to look for any links between thimerosal and autism. For example, in 2004 the Immunization Safety Review Committee of the Institute of Medicine published an in-depth review of existing studies and found no causal relationship between thimerosal or measles vaccine and autism (4). Autism rates continued to go up even when thimerosal was removed from childhood vaccines (5).

IN THIS ISSUE

- 2 Arizona's Measles Outbreak
- 3 Results from the 2006 Immunization Information System Annual Report
- 4 Arizona's Educational Campaign on Adolescent Immunization
- 5 Updates from the Vaccine Center
- 6 Updates from the Vaccine Center cont.
- 7 Ask Our Experts
- Summary of Reportable Vaccine Preventable Disease
- Save the Date

INSERTS

- A Learn at Lunch Dates/Sites
- B VIS - Varicella
- C VIS - MMR
- D Arizona National Immunization Survey Results
- E New Requirements for the 2008 - 2009 School Year

Continued on page 6

In This Issue

- Infections Are the Enemy, Not Vaccines
- Arizona Measles Outbreak
- ASIIS in National Statistics
- Adolescent Vaccination Campaign
- Updates from the Vaccine Center
- In the News
- Ask Our Experts
- Summary of Reportable Vaccine Preventable Disease
- Save the Date

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- A Learn at Lunch Dates/Sites
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Arizona's Measles Outbreak

By Susan B. Goodykoontz

An unvaccinated visitor from Switzerland developed measles in February while vacationing in Arizona and Mexico. The person sought medical treatment at a Pima County hospital which has resulted in a measles outbreak that includes thirteen cases representing four generations of transmission. All cases were found to be unvaccinated, and the majority of cases were exposed in a single health care setting. One of the recently reported hospitalized cases did not have any association to the previous hospital, suggesting that community spread is occurring. The age of cases ranges from 11 months to 50 years.

As a result of the outbreak, Arizona Department of Health Services (ADHS) has recommended that Pima County healthcare providers use an accelerated measles vaccine schedule. It recommends that children ages 6 months to 12 months of age receive a single dose of measles-mumps-rubella (MMR) vaccine, and that children ? 12 months of age receive their first dose of MMR as soon as possible after their first birthday. In addition, instead of postponing the 2nd dose until school entry, providers should ensure that children should receive their 2nd dose of MMR as soon as possible with at least 4 weeks between the first and second dose. As of April 24th, **ADHS has only recommended the accelerated schedule for Pima County.**

The affected health care facilities have worked in conjunction with Pima County Health Department, ADHS, and the Centers for Disease Control and Prevention (CDC) to institute outbreak control measures, which have included: screening of all healthcare personnel in affected hospitals for evidence of measles immunity, with subsequent vaccination and/or exclusion for work for all healthcare personnel lacking evidence of measles immunity; investigating close contacts/exposed persons to each case with subsequent vaccination of exposed persons without

evidence of measles immunity; maintaining regular contact with exposed persons to identify development of symptoms throughout the incubation period; conducting active surveillance of Pima County hospitals and associated laboratories, and notifying/educating providers, partners, health care facilities, and other stakeholders throughout the state. It is currently estimated that >7000 persons were exposed to measles as a result of the thirteen cases, and the majority of exposures occurred in the hospital setting.

This outbreak greatly emphasizes the continued risk of measles importation, even into a highly vaccinated community, as well as the special challenges posed by measles cases presenting to health care facilities for treatment. Providers are encouraged to consider measles in the differential diagnosis of any patient with a fever and rash, and to contact their local health department immediately upon suspicion of measles so that specimen testing at the Arizona State Laboratory may be arranged. Any patient suspected of having measles should be immediately placed in airborne isolation. In addition, health care facilities throughout the state are strongly encouraged to review the measles immune status of their health care workers to identify susceptible individuals that need vaccination.

If you have any questions about measles immunization, please contact your local health department or the Arizona Immunization Program Office, at (602) 364 3630). If you have any question about the measles outbreak in Pima County or measles testing/reporting, please contact your local health department or the ADHS Infectious Disease Epidemiology Investigations Program at (602) 364-3676. For further information, please visit the ADHS measles website at azdhs.gov/measles.

Ask Our Experts!

Q. How can I learn more about the ASIIS Web Application?

A. Check the "Tip of the Day" located on the home page of the Web Application. You can also attend an ASIIS Training Class located in Phoenix or at other locations across the state. As always, never hesitate to contact the toll-free technical support line at 1-877-491-5741.

Q: A five-year-old child is enrolling for kindergarten. He received 4 doses of Polio vaccine in the first year of life. Does he need a 5th Polio dose for school entry?

A: No. Four Polio doses meet the requirement for school entry even if all were administered in the first year of life. The minimum age to receive Polio vaccine is 6 weeks and the minimum interval between doses is 4 weeks.

Summary of Reportable Vaccine-Preventable Diseases January - March 2008 ^{1,2}

	Jan - March 2008	Jan - March 2007	Jan - March 5 Year Median
Measles	9	0	0
Mumps	0	2	0
Rubella (Congenital Rubella Syndrome)	0 (0)	0 (0)	0 (0)
Pertussis (confirmed)	2 (2)	0 (0)	80 (26)
<i>Haemophilus influenzae</i> , serotype b invasive disease (<5 years of age)	6 (4)	0 (0)	0 (0)
Meningococcal infection, invasive	3	4	8
<i>Streptococcus pneumoniae</i> , invasive	507	426	253
Hepatitis A	21	49	58
Hepatitis B, acute	27	55	81
Hepatitis B, chronic	323	247	279

¹ Data are provisional and reflect case reports during this period.

² These counts reflect the year reported or tested and not the date infected

Save the Date

3rd Adolescent & Adult Vaccine Symposium September 25, 2008

Black Canyon Conference Center
9440 N. 25th Avenue, Phoenix, AZ 85021
See www.azdhs.gov/phs/immun/index.htm for more updates!

2008 Invaluable Medical Assistant Seminar October 25, 2008

Presented by the Arizona Community Association of Health Centers

Phoenix College-John Paul Theatre
1202 West Thomas Road
Phoenix, Arizona 85013

Online registration is available through www.aachc.org



Vaccine Center before you can return the vaccines to McKesson. The approval must be marked on your Return/Adjustment form before you can return the vaccine to McKesson.

Please follow these steps when returning **non-viable vaccines**:

- 1) Fax your Return/Adjustment (R&A) form to the Vaccine Center Office at 602-364-3276.
- 2) Your R&A will be reviewed for correct adjustment codes and accurate vaccine information.
- 3) You will receive your R&A back within a week from the Vaccine Center with a stamped approval and the instructions on how to mail your vaccines back to McKesson.
- 4) You will need to always keep one container from McKesson to return vaccine.
- 5) McKesson will not accept viable vaccine.

Returning Viable Vaccine:

- 1) Fax your Return/Adjustment (R&A) form into the Vaccine Center Office at 602-364-3276
- 2) Your R&A will be reviewed and your VFC representative will contact you by phone or fax with the following information:
 - a) How to return viable vaccines to the Vaccine Center
 - b) Informing you that a courier or the rep will pick up the vaccine, or
 - c) Asking you to keep the vaccine and try to use it before the expiration date

Note: A 3 month notice prior to the vaccine expiration date is required to return viable vaccine.

Sending Paper Reports to the Arizona State Immunization Information System (ASIS)

Paper report forms must be mailed to ASIS. Do not fax the forms to the Vaccine Center. The receipt and processing of provider vaccine orders are being delayed by the faxing of the ASIS report forms.

VFC Vaccine Order Form

All section of the VFC vaccine order form must be completely filled out. The form will be returned to the provider if the order form is not complete, which will delay the provider in receiving vaccine.

VFC Paperwork

It is a VFC program requirement that all VFC paperwork to include order forms, Return and Adjustment forms, packing slips, and other forms must be retained for three years. If an employee leaves, the provider must ensure that the VFC information is retained and that it can be located for future use.

Faxing or Mailing Immunization Logs

The Vaccine Center no longer requires VFC providers to fax or mail their immunization logs to the Vaccine Center. Immunization logs are provided to assist providers to track immunizations provided to VFC-eligible children. This information must be reported to the Vaccine Center when providers order vaccine. Providers must keep the immunization logs for three years but do not send the logs to the Vaccine Center.

In spite of multiple studies to the contrary, many people are still convinced that vaccines are dangerous, and should be avoided at all costs. The Enemy is the vaccines, or the fear of the vaccines, rather than infectious diseases (which vaccines have helped to control or eradicate).

Infectious diseases will not be kept away by theories that say that infections have disappeared. Arizona just had nine cases of measles, caused by an unimmunized international traveler from Switzerland. Deadly diseases from all parts of the world are just an airplane ride away from all of us. We should continue to educate patients that infections have not disappeared, but are ready to swoop down upon us if we stop vaccinating. Let's hope that it won't take new waves of vaccine preventable diseases to reaffirm the following truth: Infectious diseases are our Enemy, and vaccines are our Friends.

1. Kimura M, Kuno-Sakai H. Developments in pertussis immunisation in Japan. *Lancet* 1990; 336: 30-32.
2. Katz SL. Has the Measles-Mumps-Rubella Vaccine Been Fully Exonerated? *Pediatrics* 2006; 118: 1744-1745.
3. Centers for Disease Control and Prevention. Thimerosal in Vaccines: A Joint Statement of the American Academy of Pediatrics and the Public Health Service. *MMWR* 1999; 48: 563-565.
4. Institute of Medicine. Immunization Safety Review: Vaccines and Autism. 2004. Board on Health Promotion and Disease Prevention. Washington, DC: The National Academies Press.
5. Madsen K, Lauritsen MB, Pedersen CB, et al. Thimerosal and the Occurrence of Autism: Negative Ecological Evidence from Danish Population-Based Data. *Pediatrics* 2003; 112: 604-606.

Results from the 2006 Immunization Information System Annual Report

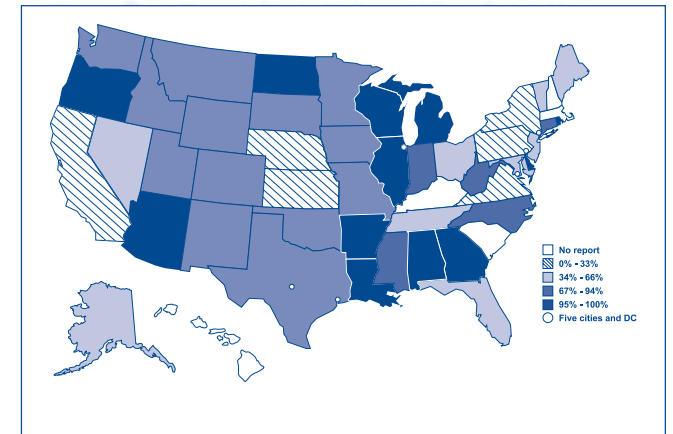
By Lisa Rasmussen; ASIS Project Leader

A recent Morbidity and Mortality Weekly Review (MMWR) featured an article about immunization registries in the U.S. There are 56 grantees with registries across the country (all 50 states, 5 cities and the District of Columbia). Each year, these states and cities are asked to participate in a self-administered, Internet-based questionnaire, asking about participation, provider sites, data use, etc. The article "Immunization Information Systems Progress – United States, 2006" provides the results of the questionnaire. <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5711a4.htm>

Nationwide, in 2006, there were approximately 15 million (65%) children under 6 years of age who participated in a registry. Below is a figure that shows the responses from 51 of the 56 entities who responded. Arizona is listed amongst the fifteen states reporting > 95% of the children participating. Data quality measures include the completeness of core data elements identified by the National Vaccine Advisory Committee. There are 14 elements which are used as a standardized set of demographic and vaccine event data elements that are necessary for data exchanges between registries, identification and removal of duplicate records, and exchanges with other health information systems.

Below is a table that identifies the core data elements and Arizona's progress towards meeting the 90% goal of all elements.

FIGURE. Percentage of children aged <6 years participating in a grantee† immunization information system — United States, five cities, and the District of Columbia, 5 2006



SOURCE: 2006 Immunization Information System Annual Report.
 * Participation is defined as having two or more vaccinations recorded in an immunization information system.
 † Grantees include 50 states, five cities, and the District of Columbia, under the Public Health Service Act (42 USC Sect. 247b, Project grants for preventive health services).
 ‡ Chicago, Illinois (34%–66%); District of Columbia (95%–100%); Houston, Texas (67%–94%); New York, New York (95%–100%); Philadelphia, Pennsylvania (95%–100%); and San Antonio, Texas (67%–94%).

Percentage of records in immunization information systems with core data elements* that contain data — United States, 2006 † and Arizona, 2007

Core data elements	% of records with element populated — United States	Arizona
Patient first name	100%	100%
Patient middle name	67%	42%
Patient last name	100%	100%
Patient birth date	100%	100%
Patient sex	96%	93%
Patient birth state	54%	4%
Patient birth country	18%	9%
Mother's first name	71%	87%
Mother's maiden name	55%	23%
Mother's last name	66%	71%
Vaccine type	99%	100%
Vaccine manufacturer	37%	35%
Vaccine date	99%	100%
Vaccine lot number	37%	36%

We are currently collaborating with our Vital Records division to add the birth state and birth country elements through our existing process to populate ASIS with birth certificate data. We will continue to stress the importance of providing all these elements during our training sessions and will strive to remain one of the premiere registries in the country. For those readers of Immunizations that provide data to ASIS, we are asking for your assistance in updating patient demographics information and also improving reporting of manufacturer and lot numbers of vaccines that you give. Thank you.

* Recommended by the National Vaccine Advisory Committee. Additional information available at <http://www.cdc.gov/vaccines/programs/iis/stds/coredata.htm>

† For children aged < 6 years. Source: MMWR March 21, 2008/57 (11); 289-291 and Arizona reported data.

Arizona's Educational Campaign on Adolescent Immunization

By Chris Lyons, MS, RN Immunization Services Manager

It's Their Turn! is an educational campaign that the Arizona Department of Health Services (ADHS) is developing to promote adolescent immunization and that aims to support the implementation of the school requirement for children entering 6th grade in the fall of 2008 that are 11 years of age and older to receive meningococcal (MCV4) and pertussis (Tdap) vaccines.

With this mandate, Arizona is viewed as a lead state in promoting adolescent immunization. With the campaign *It's Their Turn!*, health education becomes an important component in the success of this effort.

It's their turn! will be implemented statewide and will provide public health professionals, health care providers, and schools with strategies and tools needed to promote adolescent vaccination. The campaign is unique in that it will offer both printed and electronic media materials such as:

- Posters
- E-cards
- Podcasts
- Facebook, MySpace
- Informational flyers
- Health Care Provider reference card
- Form letters, press materials

These materials will be available in May at <http://www.azdhs.gov/phs/immun/>.

Partnerships with the Arizona Partnership for Immunization (TAPI), local and regional public health professionals, local coalitions, education professionals, health care provider groups, and parent organizations will assist in the dissemination of the educational materials. A collaboratively developed media outreach will also promote awareness and implementation of the educational program. The campaign was recently presented at the April 9th

Immunization Services Meeting. Participants were able to view the materials and learn about the development of the educational campaign. To receive updates on the materials and to download when available, please visit <http://www.azdhs.gov/phs/immun/>.

In the past three years, new vaccines have been recommended to help protect adolescents against meningococcal disease and pertussis. Despite the substantial gains made in vaccinating infants, delivering immunizations and other preventive health services to adolescents has proven challenging. A number of challenges limit routine access to vaccination for teens. These include low parental awareness of adolescent risk for diseases, the availability of vaccines, immunization disparities among certain ethnic groups, low frequency of adolescent "well" visits, and health care providers that are unaccustomed to immunizing adolescents.

ADHS has partnered with the National Meningitis Association (NMA) to collaborate on an adolescent immunization educational initiative to help support the implementation of CDC and ACIP adolescent vaccine recommendations. The key to improving adolescent vaccination rates is to heighten awareness of the importance of adolescent immunization among health care providers, parents, and adolescents. While the incidence of meningococcal disease is not as high as pertussis, the devastating nature of the disease, and high morbidity and mortality, positions the meningococcal vaccine to serve as an "immunization motivator" to the recommended adolescent vaccines. The goal of the initiative is to elevate the importance of adolescent meningococcal immunization through educational and communications programs targeting health care providers, parents, and adolescents and, in turn, encourage implementation of other ACIP-recommended vaccines.

Updates from the Arizona Immunization Program Vaccine Center

By Cherry Boardman RN, MSN Vaccine Center Manager

Vaccine Supply Status can be found at www.cdc.gov/vaccines/vac-gen/shortages

Haemophilus b Conjugate(HIB) Vaccine

Merck Haemophilus b Conjugate Vaccine (PedvaxHIB®) is still not available to order. Merck is unsure when the vaccine will become available. Arizona receives a monthly allocation of PedvaxHIB® to provide to Native Americans and high risk children only. All other children should receive sanofi ActHIB®. The booster dose of HIB should be deferred for all children except Native Americans and children with health conditions that put them at high risk of acquiring HIB disease.

Hepatitis A Vaccine

Merck hepatitis A vaccine (Vaqta ®) is not available to order. Merck is unsure when the vaccine will become available. There is ample of another hepatitis A vaccine to meet demand.

MMRV (ProQuad) Vaccine

Merck MMRV vaccine is still not available to order. An anticipated availability date has not been stated by Merck. Remember to order enough MMR and Varicella vaccine to vaccinate your patients in the absence of MMRV. ACIP now states that they do not prefer vaccinating with MMRV over vaccinating with single antigen MMR and Varicella.

Influenza Vaccine

The VFC program has placed Arizona's flu vaccine order with CDC. We will be notified by CDC if our flu vaccine order has been approved as requested. The quantity and presentation of vaccine requested may be changed. The following vaccines have been requested.

- Sanofi 0.25 mL preservative free flu vaccine in syringes: 85,000 doses
- Sanofi 0.5 mL preservative free flu vaccine in syringes: 34,000 doses
- Sanofi 0.5 mL preservative free flu vaccine in vials: 34,000 doses
- Sanofi 0.5 mL flu vaccine in multidose vials: 75,000 doses
- Novartis 0.5 mL flu vaccine in vials: 12,000 doses
- MedImmune live attenuated flu vaccine (LAIV): 12,000 doses

Flu request forms will be mailed to providers in July. Providers will be requested to submit their flu vaccine

requests for the 2008 flu season. However, the requests may have to be changed based on vaccine availability.

Inactivated Polio Vaccine (IPV)

IPV is currently only available to order in vials. Providers will be notified when IPV can be again ordered in syringes.

New McKesson Vaccine Distribution Center

Arizona VFC providers will now be receiving their vaccine shipments from the McKesson Distribution Center in Sacramento. The shipments will appear unchanged to providers except that the packing container will have a return address to Sacramento.

The Memphis site will continue to process non-viable vaccine returns. Arizona will receive further instructions if the return process will change.

McKesson Packing Slip

The vaccine packing slip that is included in the container has been revised to show how many containers you should receive with a shipment. This will assist the provider to know if they have received their full shipment or if they can expect to receive more vaccine within a few days. Please notify the Vaccine Center at 602-364-3641 if you do not receive all of the shipment within a week.

Vaccine Wastage Invoices

Providers agree to reimburse the VFC program for vaccine wastage in excess of 5% over what was distributed to the provider annually. Vaccine wastage invoices were mailed recently to 111 VFC providers for vaccine wasted over 5%. Over \$380,000 dollars of vaccine was wasted over the allowed 5% annual amount.

The wastage was primarily due to providers allowing their refrigerator temperatures to drop to 32 °F (0 °C) or lower. Vaccine must be removed if refrigerator temperatures fall in the freezing range because vaccine quickly loses potency at low temperatures.

Please assist the Arizona Immunization Program to ensure that vaccine remains viable and safe to provide to Arizona children. Keeping a close watch on refrigerator temperatures and taking action to ensure that the temperatures remain in recommended storage ranges will ensure that providers will not need to reimburse the VFC program for expensive vaccine.

Wasted/Expired Vaccine Return Process

All expired or wasted VFC vaccines must now be returned to McKesson rather than to the Vaccine Center. Your return must receive approval from the

IN THE NEWS...

MMWR April 18, 2008 Vol 57 / No. 15
Rotavirus Vaccination Coverage and Adherence to the Advisory Committee on Immunization Practices (ACIP)-Recommended Vaccination Schedule – United States, February 2006-May 2007; <http://www.cdc.gov/vaccines/news/news-pubs.htm>

CDC Press Release April 14, 2008
CDC Urges Travelers to Israel to Protect Themselves from Measles; <http://www.cdc.gov/od/oc/media/pressrel/2008/r080414a.htm>

May 2, 2008 Vol 57 / No. 17
Syncope After Vaccination – United States, January 2005-July 2007 <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5717a2.htm>

Measles – United States, January 1–April 25, 2008 http://www.cdc.gov/mmwr/preview/mmwrhtml/mm57e501a1.htm?s_cid=mm57e501a1_e

