



### **Mark Your Calendars:**

Pediatrics by the Sea  
Summer CME Meeting  
June 10-13, 2015

The Ritz Carlton, Amelia Island, FL

#### [ACIP Meeting](#)

Advisory Committee on Immunization  
Practices (ACIP), CDC  
June 24-25, 2015

Location: Tom Harkin Global Communica-  
tions Center, CDC, Atlanta, GA

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### **End in Sight for the Spread of Measles That Started at Disneyland**

*Sacramento Bee (04/13/15) Craft, Cynthia H.*

Public health officials in California are anxiously waiting for April 17, when they may be able to declare the end of the measles outbreak that originated at Disneyland. If no additional measles cases are reported, that date marks the end of two back-to-back incubation periods totaling 42 days without a case surfacing, thereby ending the outbreak. According to the California Department of Public Health, at least 19 of the 131 cases reported in the state involved individuals who were deliberately unvaccinated. The outbreak involving the B3-strain of measles is believed to have been introduced to the amusement park by travelers who had visited the Philippines, where that strain has been common since the 2013 typhoon. "This is how disease gets reintroduced in California and why up-to-date vaccinations are so important," says Dr. James Watt, chief of the state's division of communicable disease control.

### **Microneedle Patch for Measles Vaccination Could Be a Game Changer**

*CDC News Release (04/27/15)*

The Centers for Disease Control and Prevention (CDC) and the Georgia Institute of Technology are developing a microneedle patch for measles vaccination. The patch, which measures about 1 square centimeter and is administered with just the press of the thumb, would enable administration by minimally trained workers. In addition, it would facilitate storage, distribution, and disposal compared with traditional vaccines. "With no needles, syringes, sterile water or sharps disposals needed, the microneedle patch offers great hope of a new tool to reach the world's children faster, even in the most remote areas," said James Goodson, PhD, epidemiologist from CDC's Global Immunization Division. "This advancement would be a major boost in our efforts to eliminate this disease, with more vaccines administered and more lives saved at less cost." A recent study by the CDC and the Georgia Institute of Technology, published in the journal *Vaccine*, found that the microneedle patch generated a strong immune response in rhesus macaques, with no adverse effects. Human clinical trials could begin in 2017.

## **FDA finds no association between venous thromboembolism and Gardasil vaccination in large "Sentinel" study**

IAC Express Issue 1180: April 28, 2015

On April 23, the U.S. Food & Drug Administration (FDA) posted [FDA Sentinel study finds no association between venous thromboembolism and Gardasil vaccination](#) on its website. The text is reprinted below.

### **Background**

On December 7, 2010, the Food and Drug Administration (FDA) presented a comprehensive post-licensure safety evaluation of Gardasil (Merck Inc. & Co.) to FDA's Pediatric Advisory Committee (PAC). In this review, FDA presented safety data from the Vaccine Adverse Event Reporting System (VAERS) and the Centers for Disease Control and Prevention's Vaccine Safety Datalink (VSD) suggesting that more venous thromboembolism (VTE) cases were being observed than expected after vaccination with Gardasil. Venous thromboembolism is a condition where blood clots form in the deep veins of the body, especially the lungs and extremities. Because both the VAERS and VSD data were inconclusive, FDA conducted a follow-up study in the Sentinel system. This FDA update provides a summary of the final analysis, which did not find any evidence of an association between venous thromboembolism and Gardasil vaccination.

### **Summary of Results**

The Sentinel study evaluated the risk of venous thromboembolism in more than 650,000 females aged 9 through 26 years of age, totaling more than 1.4 million doses of Gardasil evaluated. The study identified only 30 medical record confirmed cases of venous thromboembolism in the 8–9 week observation period after each dose administered in the 3-dose series. The VTE cases were identified from 5 Sentinel data partners during the time period of 2006–2013. The study evaluated the risk of VTE 1–28 days after Gardasil vaccination compared to a period approximately one to two months after vaccination. The study did not identify any evidence of an increased risk of VTE in the 1–28 days after any of the 3 doses of Gardasil vaccination. The study also scanned the entire 8–9 week observation period and did not find any unusual VTE clusters appearing after Gardasil vaccination, further strengthening the conclusion that there is no increased risk of VTE.

### **FDA Conclusions**

The Sentinel study is the largest study of VTE after Gardasil in the United States to date and builds upon other published studies, including those from Denmark and Sweden that also found no evidence of an increased risk for venous thromboembolism after Gardasil vaccination. FDA is not requesting any changes to Gardasil labeling as a result of this new safety information.

### **Autism Occurrence by MMR Vaccine Status Among US Children With Older Siblings With and Without Autism**

*Journal of the American Medical Association (04/21/15) Vol. 313, No. 15, P. 1534 Jain, Anjali; Marshall, Jaclyn; Buikema, Ami; et al.*

A large study of privately insured children with older siblings has found no association between receipt of the MMR vaccine and increased risk of autism spectrum disorder (ASD), whether or not the older siblings had ASD. The retrospective cohort study looked at insurance claims for about 96,000 children born between 2001-2007 and who had an older sibling. The researchers determined that 1.04 percent of the children were diagnosed with ASD and 2.01 percent had an older sibling with ASD. Of the children whose older siblings had ASD, about 7 percent had ASD, compared with 0.9 percent of children with unaffected siblings. Receipt of the MMR vaccine was not associated with a higher risk of ASD at any age, the researchers concluded, nor was there evidence that receipt of one or two doses of MMR vaccine was linked to a higher risk of ASD among children whose older siblings had ASD.

### **Epidemiology of Pediatric Herpes Zoster After Varicella Infection**

*Pediatrics (03/01/15) Vol. 135, No. 3, Wen, Su-Ying; Liu, Wen-Liang*

In a study to demonstrate the epidemiologic characteristics of pediatric herpes zoster (HZ), researchers looked at 27,517 children under age 12 who developed varicella infections between 2000-2006. A routine varicella vaccination program was started in 2004, so the study authors identified vaccinated children without medically attended varicella between 2004-2006, and followed them for a diagnosis of HZ until December 2008. Of the children included in the study, 428 developed HZ, with an HZ incidence of 262.1 cases per 100,000 person-years, while 106 of 25,132 vaccinated children without medically attended varicella went on to develop HZ, for an HZ incidence of 93.3 per 100,000 person-years. Children under age two years who were diagnosed with varicella had a higher incidence and shorter duration than those diagnosed after age two. Children who were diagnosed with varicella between ages two and eight years had a significantly increased HZ incidence after than before the vaccination program. The researchers note that children with varicella infections had a significantly higher risk of HZ compared to vaccinated children without a history of varicella.

### **CDC urges travelers to Germany to get measles vaccine**

*Published on April 30, 2015 by Vaccine News Daily Reports*

Due to a measles outbreak, the Centers for Disease Control and Prevention (CDC) recommends that travelers to Germany be sure they have been vaccinated against the disease.

At the end of March, the Berlin Senate Department of Health and Social Affairs reported more than 950 cases of measles, primarily in Berlin and surrounding areas.

The CDC suggests infants and young children be vaccinated before visiting Germany. Infants 6 to 11 months old should receive a single dose of the measles vaccine, and children 12 months or older should receive two doses. Adults who have not had measles or have not been vaccinated should also get two doses, separated by at least 28 days.

## Routine Rotavirus Vaccination Reduced US Disease Activity

Laurie Barclay, MD Medscape Medical News

April 10, 2015

After implementation of routine rotavirus vaccination in the United States in 2006, there has been a sustained decrease in laboratory detection, according to a report from the Centers for Disease Control and Prevention, [published](#) in the April 9 issue of the *Morbidity and Mortality Weekly Report*.

"Before the introduction of rotavirus vaccine in the United States in 2006, rotavirus infection caused significant morbidity among U.S. children, with an estimated 55,000–70,000 hospitalizations and 410,000 clinic visits annually," write Negar Aliabadi, MD, from the Epidemic Intelligence Service and Division of Viral Diseases, National Center for Immunization and Respiratory Diseases, Centers for Disease Control and Prevention, and colleagues.–

In 2006, rotavirus vaccine was first included in the childhood vaccination schedule. Subsequently, there was a substantial, sustained decline in rotavirus circulation both nationally and regionally, as well as a shift in the epidemiology of this virus.

During reporting years 2007 to 2014, data from the National Respiratory and Enteric Virus Surveillance System indicate a 57.8% to 89.9% national decline in disease activity for each postvaccine year compared with prevaccine years, with alternating years of lower and greater positivity rates. Analysis of data for each region revealed similar patterns.

Additional benefits after routine vaccination against rotavirus included delay or absence of rotavirus seasons, with shorter duration (0 - 18 weeks) and lower peak positivity for rotavirus (10.9% - 27.3%).

"The later onset and shorter duration of rotavirus seasons in the postvaccine era, including some years without a defined rotavirus season, could be a result of fewer unvaccinated, susceptible infants, resulting in reduced intensity and duration of rotavirus transmission," the report authors write. "This reduced transmission of rotavirus likely also explains the declines in rates of rotavirus disease that have been seen in unvaccinated older children and even in some adult age groups in postvaccine years compared with the prevaccine era, resulting from the phenomenon known as herd immunity."

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The authors note several study limitations, including reliance on aggregate reports of stool samples without any demographic or clinical data, possible regional biases, possible variations in testing practices from site to site and year to year, and possible changes in rotavirus testing practices coinciding with implementation of the rotavirus vaccination program.

The report authors estimate that during 2007 to 2011, routine rotavirus vaccination averted more than 176,000 hospitalizations, 242,000 emergency department visits, and 1.1 million outpatient visits resulting from diarrhea, with cost savings of \$924 million. They anticipate additional reductions in rotavirus disease burden from 2012 to 2014.

"The findings in this report are consistent with the high field effectiveness of vaccination observed in post-licensure epidemiologic studies," the report authors conclude. "Taken together, these findings reaffirm the large public health impact of routine rotavirus vaccination in reducing the circulation of rotavirus among U.S. children."

The authors have disclosed no relevant financial relationships.

Morb Mortal Wkly Rep. 2015;64:337-342. [Full text](#)

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## Question of the Week

IAC Express Issue 1175: March 31, 2015

**I have a female patient who has a history of immune thrombocytopenia and had a splenectomy as treatment. This patient responded to the treatment. She is not currently on medication for this condition. How long after a splenectomy should a person wait before they get an MMR vaccination?**

A history of thrombocytopenia is a precaution for MMR vaccine. If there is a risk of disease, the benefit of vaccination would outweigh the risk of vaccination, particularly since the thrombocytopenia has been treated. For more information on vaccination of persons with asplenia, see the ["Question of the Week" for January 6, 2015](#).

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**Question of the Week**

**Issue 1178: April 14, 2015**

**In regard to the current measles outbreak, some people are saying that children who have not had the vaccine should pose no threat to vaccinated people. It is my understanding that during an outbreak, vaccinated people can still contract it. Am I correct?**

You are correct that vaccinated people can still be infected with infections against which they are vaccinated. No vaccine is 100% effective. Vaccine effectiveness varies from greater than 95% (for diseases such as measles, rubella, hepatitis B) to much lower (influenza this year 23%, and 60% in years with a good match of wild and vaccine viruses, and the acellular pertussis vaccines after 5 years or so offer only about 70% protection). Therefore, we encourage as many people as possible to be vaccinated, to avoid outbreaks, while working towards the development of better vaccines (such as for influenza and pertussis). More information is available for each vaccine and disease at [www.cdc.gov/vaccines/vpd-vac/default.htm](http://www.cdc.gov/vaccines/vpd-vac/default.htm) and [www.immunize.org/vaccines](http://www.immunize.org/vaccines).

**Question of the Week**

**IAC Express Issue 1179: April 21, 2015**

**I have heard concerns from individuals who are undergoing chemotherapy about being exposed to a child who recently received MMR vaccine. Is there a risk for the vaccinated child to transmit vaccine virus to the chemotherapy patient?**

MMR vaccine can be given to the healthy household contacts of immunosuppressed persons, such as those undergoing chemotherapy. Measles, mumps, and rubella vaccine viruses are not transmitted from the vaccinated person, so MMR vaccination of a household contact does not pose a risk to an immunocompromised person.

**Question of the Week**

**IAC Express Issue 1180: April 28, 2015**

**If MMR vaccine is given at 9 months of age, it will not count as the first dose. Is this because immunity at this age may not develop?**

Studies indicate that about 86% of children vaccinated at 9 months of age respond to the vaccine while the estimate is about 97% for children vaccinated at 12 months or older. Maternal antibodies against measles virus may persist up to 11 months. For these reasons children vaccinated between 6 and 11 months of age should receive two more doses of MMR after their first birthday.