

Epi Report

Pima County Health Department
3950 S Country Club Rd., Suite 100
Tucson, AZ 85714
Telephone: (520) 243-7797
Fax: (520) 791-0366



October 2009, Issue No. 3

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The *Aedes aegypti* mosquito biting human flesh. Picture from the USDA website at <http://www.ars.usda.gov/is/graphics/photos/aug00/k4705-9.htm>.

Traveling Diseases: Chikungunya

By Glenda Diaz, Communicable Disease Investigator

Chikungunya is a viral disease spread commonly by the mosquito species *Aedes*. It is endemic in Africa, Asia, and the Indian subcontinent. A few cases have been reported in Europe and in America. In 2006 and 2007, 52 cases of laboratory-confirmed Chikungunya fever were reported in U.S. travelers returning from areas with ongoing disease activity. Most recently Southeast Asia has been overwhelmed with the cases of Chikungunya.

The incubation period is typically 3–7 days (range 2–12 days). Signs and symptoms include fevers lasting several days up to a week. The fever can be biphasic. Other symptoms include a maculopapular rash after onset of fever involving the trunk and extremities, headache, fatigue, nausea, vomiting, and myalgias. Complications are rare but can occur and include myocarditis, ocular disease (uveitis, retinitis), hepatitis, and neuroinvasive disease, such as meningoencephalitis, Guillain-Barré syndrome, paresis, or palsies.

Severe joint pain often characterizes the disease. Joint symptoms are usually symmetric and occur mostly in hands and feet. Following the acute illness, some patients have prolonged fatigue lasting several weeks. Some patients have reported incapacitating joint pain, which may last for weeks or months. Some studies have reported joint stiffness and/or pain more than a year after the initial infection.

Fatalities related to Chikungunya virus are rare. Older age and co-morbidities are likely risk factors for poor outcomes. Pregnant women will usually not transmit the virus to the fetus. However, the virus can be transmitted while delivering a baby and can result in complications for the baby, including neurologic disease, hemorrhagic symptoms, and myocardial disease. There are also rare reports of first-trimester spontaneous abortions following Chikungunya infection.

The disease can be diagnosed by testing serum or cerebrospinal fluid (CSF) to detect virus-specific IgM and neutralizing antibodies. The specimens can be sent to CDC through the state health department.

Treatment for Chikungunya is symptomatic. Generally taking medicine to relieve symptoms of fever and aching, resting, and drinking fluids should help get by the infection. Infected individuals should be protected from further mosquito exposure during the first few days of the illness so they can not contribute to the transmission cycle.

The United States has thousands of travelers coming in and out of the country on a daily basis. One day one of these travelers could bring along a mosquito or bring back enough viruses in their blood for the proper mosquito species to feed on and transmit Chikungunya. Although rarely fatal the disease's symptoms and long term complications can be severe, and temporarily crippling. Chikungunya virus could silently slip through our borders. Being aware of this disease will allow fast detection and early measures taken to prevent its spread.

For more information on Chikungunya, please visit the Centers for Disease Control and Prevention (CDC) at: <http://www.cdc.gov/ncidod/dvbid/chikungunya/>.

Updated H1N1 Influenza Guidance: New Exclusion Recommendation

By Michelle McDonald, MD



Pima County Health Department is revising its guidance regarding length of isolation (exclusion from work or school) to more closely match that of the CDC. We will recommend that the standard exclusion for ALL patients, including healthcare workers and those that work in or attend childcare, be 24 hours fever free without the use of fever reducing medications. We advise clinicians to consider individualizing their advice to immunocompromised patients and very young children, especially if they have been significantly ill, as these patients are known to shed virus at significant levels for a longer period of time. Consider an exclusion of 7 days after the onset of symptoms for these individuals.



The following article is intended for visitors, patients, medical office support staff such as medical assistants, front office staff, on-site lab personnel and any other staff who may have questions about the 2009 H1N1 Influenza. It contains basic information about H1N1 Influenza as well as Internet links to CDC sites that have accurate, current information about different flu topics. For persons without access to the Internet, the Pima County Health Department flu hot-line number is 243-7800.

HOW TO PROTECT YOURSELF, YOUR FAMILY AND CO-WORKERS DURING THE FLU PANDEMIC

By Lynn Carter, LPN, Communicable Disease Investigator

NOTE: This article is current as of the date it is published. For the most current recommendations go to: www.cdc.gov/flu

WHAT ARE INFLUENZA (FLU) PANDEMICS?

A pandemic is an epidemic that can occur when a new flu virus emerges that is able to spread rapidly from person-to-person worldwide. Pandemics indicate a virus is widespread not that it is more severe. Since the first well-described pandemic of influenza-like illness took place in 1580, there have been thirty-one flu pandemics. The Spanish Flu of 1918 is thought to be the most severe of all flu pandemics.

The World Health Organization (WHO) declared a pandemic of **2009 H1N1 Influenza** on June 11, 2009. The following definitions are to clarify terms used when talking about current types of influenza:

2009 H1N1 flu (also known as Novel H1N1, Swine flu, Pandemic flu) is a new influenza virus causing widespread illness in people. It is a combination of human, swine and avian influenza viruses. This virus is spread person-to-person, and is continuing to spread rapidly. It is not spread from pigs to humans and is not spread through eating pork.

Seasonal (or common) flu is an influenza virus that causes respiratory illness and is transmitted person-to-person, mainly in fall and winter. Most people have some immunity and vaccine is available. **The 2009 H1N1 flu is not** the same as the seasonal flu.

Avian (bird) flu (H5N1) is an influenza virus that wild birds can carry and spread to poultry causing illness in chickens, ducks and turkeys. So far, this virus has mostly infected humans who have had close contact with poultry. It can cause severe illness and has a high death rate. However, this virus has not yet been able to spread easily person-to-person.

Swine flu is an influenza virus that causes illness in pigs. Swine flu has been found in pigs around the world. Swine flu does not normally infect humans, but rare human cases have happened, usually in persons with close contact with pigs. Pigs can also be infected with avian, human and swine influenza viruses.

WHY IS THIS FLU DIFFERENT?

Flu viruses are unpredictable and change often. For seasonal flu, changes are usually small (antigenic drift) but enough to require a new vaccine each year to protect people. Many people have some protection against seasonal flu viruses because of previous vaccine or illness.

A sudden, major change in a flu virus (antigenic shift) happens when different or new viral proteins combine to cause a totally new virus. The combinations can be from previous viral strains or a mixture of human and animal strains like the **2009 H1N1**. Most people do not have protection against flu viruses that have had a major shift.

Data shows some important differences between **2009 H1N1** and seasonal flu. So far, **2009 H1N1** flu has been causing mild to moderate flu-like illness and most people are getting better without treatment. However, the age group of those infected and having complications is significantly younger than with seasonal flu. Deaths from **2009 H1N1** so far have occurred in infants to persons 64 years of age, while the majority of seasonal flu deaths are in persons >65 years of age. It is thought that persons >60 years age may have some protection against **2009 H1N1** due to previous exposure to similar viruses or previous vaccines.

Persons at high-risk for complications from 2009 H1N1: (Similar to seasonal flu with a shift to a younger age range)

- Pregnant women
- Persons <5 or >65 years (especially <2 years for children) – NOTE: while few people over 65 have been infected they have been represented in hospitalizations/deaths, especially if they have any of the non-age high risk conditions
- Persons (especially children) with chronic pulmonary, (asthma included), cardiac, renal, hepatic, hematological, neurological, neuromuscular or metabolic disorders including diabetes
- Persons with weak immune systems from disease or medication
- Persons <19 years of long-term aspirin therapy
- Residents of nursing homes and other chronic care facilities
- Obesity may be emerging as a risk factor for complications (possibly due to underlying health problems that are common in this group)

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Transmission of 2009 H1N1 appears to be similar to the seasonal flu. Seasonal flu viruses are thought to spread person-to-person through large-particle respiratory droplets (e.g., when an infected person coughs or sneezes near a susceptible person). Transmission by droplets requires close contact (< 6 feet) because droplets do not hang in the air and do not travel far.

Studies have shown that flu viruses are able to live on environmental surfaces and can infect a person for 2 to 8 hours after being spread to a surface. It is possible for people to become infected by touching a contaminated surface or item (toy, doorknobs, phones, computer keyboards etc) and then touching their mouth, nose or eyes.

The incubation period (the time it takes to be infected with **2009 H1N1** until illness begins) is unknown, but in general is thought to be from 1-7 days, more likely 1-4 days. How long people can shed (spread) the virus is probably similar to seasonal influenza. Persons with **2009 H1N1 are most contagious from 1 day before to 3-5 days after the beginning of symptoms**. Some virus may continue to be shed for several days after this but to a lesser degree. Persons recovering from the flu should continue to cover coughs and wash hands frequently until all symptoms are resolved.

Symptoms of 2009 H1N1 have been fever of at least 100 degrees, chills, headache, upper respiratory symptoms (cough, sore throat, runny or stuffy nose), body aches, headache, chills and fatigue. Some people have had vomiting and diarrhea. Severe illness and death have occurred because of illness due to this virus.

The CDC (Centers For Disease Control) Continues To Monitor 2009 H1N1 For Changes That Would Cause It To Become A More Severe Problem. The Following Prevention Steps Should Help Protect People No Matter How Severe The Pandemic Becomes:

BE PREPARED FOR THE WORST: The U.S. Department of Homeland Security advises that all persons be ready for any type of emergency disaster. In case the severity of the flu causes a widespread slow-down of essential services be prepared to make it on your own for at least 3 days.

Have on hand a 3-day supply of the following:

- Non-perishable food that is easy to store and prepare such as dried fruit, protein bars and canned foods. Have enough drinking water and rehydrating fluids (juices, broth, electrolyte drinks) on hand for each person.
- Unique family needs such as daily prescriptions, infant formula and diapers, medical supplies for chronic conditions such as diabetes, and family documents.
- Face masks. Surgical or procedural facemasks can be found at drug stores. (See below for use).
- Manual can opener, battery powered radio and flashlights with extra batteries, wrench to turn off utilities, and warm clothing during winter months are some items that may be needed.

This is just a partial list of items that can help people get through a difficult time. See www.ready.gov for more complete information on how to be prepared for an emergency.

GET VACCINATED: The CDC recommends both flu vaccines this year (seasonal and **2009 H1N1**). See <http://www.cdc.gov/flu/protect/vaccine/index.htm> for a full listing. Vaccine for seasonal flu is now available and because seasonal flu is still present persons at-risk should receive this vaccine. Persons >65 years of age are more vulnerable to seasonal flu and the vaccine is recommended for this age group along with other high-risk groups.

Vaccine for **2009 H1N1** has been arriving in limited quantities to state health departments for distribution to county health departments and medical providers who applied for the vaccine. Over 60 Pima County medical providers other than the health department have received some vaccine. People should check with their medical provider to see if they have or will be getting vaccine. For persons without access to vaccine, Pima County Health Department will be holding clinics as vaccine becomes available. See http://pimahealth.org/disease/swineflu/h1n1_influenza_arizona.asp for an up-to-date schedule of health department clinics or call 243-7800 for information.

Vaccine has been limited due to manufacturer's inability to grow the viral cultures fast enough to make the vaccine. The vaccine is being made in exactly the same way that prior flu vaccines have been made to ensure that the vaccine is safe to use. Newer methods of making vaccines faster are not yet licensed by the FDA.

Vaccine is available in two forms. The **H1N1 Flu Mist Nasal Spray** is a live vaccine and is only licensed for healthy, non-pregnant people 2 through 49 years of age in the following groups: household contacts and caregivers (aged 2-49 years) of infants under 6 months of age, healthcare workers who are not working with severely immune-compromised persons and children and young adults 2 through 24 years. The **H1N1 Injectable "the flu shot"** is an inactivated vaccine that can be given to children 6 months through 24 years, pregnant women and high-risk persons by age. The health

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department has been giving vaccine to the highest risk persons first as defined by the CDC. For more information see http://www.cdc.gov/h1n1flu/vaccination/public/vaccination_qa_pub.htm.

As more **2009 H1N1** vaccine becomes available, vaccine will be provided to other persons depending on the vaccine available and CDC recommendations regarding priority. Since availability may change quickly, persons needing vaccine should check frequently with their medical provider or health department to see if vaccine is available for them. Once demand for all target groups has been met, vaccine will be offered to all persons.

ANTIVIRAL MEDICATIONS: Because the **2009 H1N1** flu remains mild for the vast majority of people who get it, most people will not need antiviral medication. **If you or a family member has an underlying health condition or are at high-risk due to age (younger children and infants), call your doctor as soon as you or they start having influenza-like symptoms.** Taking antiviral medications can help prevent or minimize symptoms. The medication needs to be taken within the first 24-48 hours of onset of symptoms to be most effective. It is not necessary to go to an emergency room unless someone is severely ill with the warning signs indicated below.

Current recommendations are to start antiviral medication for persons in high-risk groups due to age or underlying health conditions or to any person presenting with severe influenza-like symptoms. Medical providers should use their best clinical judgment when treating patients. For full recommendations, see www.cdc.gov/h1n1flu/recommendations.htm.

TAKE PREVENTIVE ACTIONS: Cover your nose and mouth when you cough. Cough into your elbow or use a tissue. Throw the tissue in the trash after you use it. Wash your hands often with soap and water, especially after you cough. If soap and water are not available use an alcohol-based gel sanitizer by rubbing your hands until the gel is dry. Avoid touching your eyes, nose, or mouth - germs spread this way. Try to avoid close contact with sick people. Stay at least 6 feet away from people who are coughing.

SOCIAL DISTANCING: Measures that increase the physical spread between people and reduce the amount of close contact can help reduce spread of the flu. Avoiding large crowds, not shaking hands or hugging people, isolating yourself if you or a family member are ill (especially staying home from work or school) are examples of social distancing. Do not hold "swine flu" parties. While most persons who have had the flu have had mild illness, it has been severe and fatal for others. There is no way to predict the outcome of intentionally getting sick with this flu or intentionally infecting someone else.

IF YOU OR A FAMILY MEMBER IS SICK: DO NOT SEND YOUR INFANT OR CHILD TO DAYCARE OR SCHOOL. *If you are sick stay home for at least 24 hours after your fever is gone (without the use of fever-reducing medicines) except to get medical care.* Person's sick with **2009 H1N1** are most contagious from 1 day before to 3-5 days after symptoms begin, but will continue to shed virus for several more days, so cover your coughs and wash your hands frequently even if your fever is gone. **Call your doctor if you are in a high-risk group due to age or underlying health conditions.** If you need to seek medical care wear a facemask if you are able, and cover your cough and sneezes with your elbow or a tissue. Sick persons should avoid contact with people who are at high-risk within your household, especially young children, the elderly or anyone who is at high-risk for complications if they get the flu. People do not need to go to the emergency room unless they develop the following warning signs:

Emergency warning signs that need urgent medical attention include:

In children: (NEVER give children aspirin or aspirin-containing products to treat fever)

Fast breathing or trouble breathing	Bluish or gray skin color
Not drinking enough fluids	Severe or persistent vomiting
Not walking or not interacting	Extreme irritability
Flu-like symptoms that improve but then return with fever and worse cough or fever with a rash	

In adults:

Difficulty breathing or shortness of breathe	Pain or pressure in the chest or abdomen
Sudden dizziness, confusion	Severe or persistent vomiting
Flu-like symptoms that improve but then return with fever and worse cough	

FACEMASK/RESPIRATOR USE: Facemasks are recommended for use by **coughing** persons if able when they must be in close contact with other household members or need to seek medical care. Data to prove the usefulness of people wearing facemasks in the general community is lacking. In the healthcare setting, respiratory hygiene measures include visual alerts instructing patients with flu-like symptoms to tell the medical staff as soon as they arrive; provide facemasks for coughing patients; provide hand cleansers, tissues and no-touch receptacles; and the use of droplet precautions for all staff. Pima County Health Department (as well as numerous other bodies with expertise) recommends the use of N95 respirators only in a setting where aerosol generating procedure (such as endotracheal intubation and extubation or open suctioning of airways) is occurring . However, CDC is still recommending N95 or better in all clinical situations involving contact with patients with ILI symptoms in case it is 2009 H1N1. There is already a shortage of N95 masks, and many clinical settings also lack access to fit-testing. In these settings, practices and institutions should document any efforts they have made to obtain/use N95 or better for their staff or develop a formal infection control policy that specifies all coughing patients will be masked, or perhaps use signage to turn away those with flu symptoms for practices (i.e. mental health) that do not evaluate flu symptoms, etc, or both. For full recommendations in the healthcare setting see: http://www.cdc.gov/h1n1flu/guidelines_infection_control.htm.

AT WORK: Employers should develop plans to cover essential positions by cross-training employees. ***Send sick workers home and keep them at home until at least 24 hours after their fever is gone (without the use of fever-reducing medications)***. All employers should plan now to allow and encourage sick workers to stay home without fear of losing their jobs. CDC recommends this strategy for all businesses regardless of size. Employers should also plan on absenteeism from workers who need to stay home to take care of ill family members. Flexible leave policies should be put in place now and discussed with employees. Teach employees to cover their coughs and wash their hands frequently. Have available soap, alcohol hand sanitizers and tissues to encourage use. Clean shared surfaces such as phones, doorknobs and computer boards with an appropriate disinfectant on a regular basis. Do not require a doctor’s note for employees to return to work. See www.cdc.gov/h1n1flu/business/guidance for more information.

By following the advice given by ADHS (Arizona Department of Health Services) at www.azdhs.gov/flu and Pima County Health Department at www.pimahealth.org and the CDC at www.cdc.gov/flu people may be able to prevent or minimize the worst effects of widespread illness.

Summary of Selected Reportable Diseases for Pima County (Year to Date)

Enteric Diseases:	January-September 2009	January-September 2008
Amebiasis	5	2
Campylobacter	109	121
Shigella	50	90
Salmonella	173	170
Hepatitis A	6	12
Giardia	47	45
Vaccine Preventable Diseases:		
Pertussis	17	3
Measles	0	18
Mumps	8	0
Rubella	0	0
Tetanus	0	0
H. Influenzae, serotype b (<5 years of age)	0	0
Invasive Diseases:		
Streptococcus pneumoniae	102	144
Streptococcus Group A	29	21
Streptococcus Group B (in infants <90 days old)	7	9
MRSA	145	214
Diseases Involving Central Nervous System:		
Meningococcal Infection	1	2
Aseptic Meningitis	21	24
HIV & Sexually Transmitted Diseases:		
HIV	92	77
Chlamydia	2831	2811
Gonorrhea	241	370
Syphilis	22	102
Granulomatous Infections:		
Tuberculosis	22	19
Coccidioidomycosis	876	508
Vector-Borne & Zoonotic Diseases:		
West Nile Virus	0	11
Animal Rabies	78	50

Michelle McDonald, MD
Chief Medical Officer

Disease Control Staff

Edmee Botwright, RN
Vaccine Preventable Diseases
Program Manager

Lynn Carter, LPN
Communicable Disease Investigator

Glenda Diaz, BS
Communicable Disease Investigator

Yolanda Fisher
Administrative Support Specialist

Gil Gonzales, PA
Communicable Disease Investigator

Babs Johnson, BA
Epidemiologist

Francelli Lugo, MPH
Epidemiology Program Manager

Grace McGlothlin
Administrative Support Specialist

Rod Norrish, MPH
Epidemiologist

Donna Perkins, MPH
Epidemiologist

Anne Spacone, MPH
Epidemiologist

Anissa Taylor, BS
Communicable Disease Investigator

Adriana Vizuet
Office Support Level III

Please contact Francelli Lugo at telephone number (520) 243-7797 or by fax at (520) 791-0366 to update your current contact information.

Statistical data for the years 2008-2009 reflects communicable disease reports of confirmed, probable, and suspect cases received via the Medical Electronic Disease Surveillance Intelligence System (MEDSIS) from 01/01/2008 to 09/30/2008 and 01/01/2009 to 09/30/2009, respectively. Tb data provided by Tuberculosis Control Program. STD data extracted from the NATP database. Data are provisional. Report generated on 10/27/2009.