



Emerging Infectious Diseases: Dengue Fever

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Globally, dengue is the most common mosquito-borne viral disease of humans and in recent years has become a major international public health concern. About 2.5 billion people, almost 40 percent of the world’s population, live in areas where there is a risk of dengue transmission. The World Health Organization (WHO) estimates that as many as 100 million people are infected yearly and 22,000 deaths, mostly among children, are attributed to dengue and dengue hemorrhagic fever (DHF). Dengue is endemic in at least 100 countries in Asia, the Pacific, the Americas, Africa and the Caribbean, and is a leading cause of death in the tropics and subtropics.

Outbreaks of dengue occurred in the United States in the 1800s and early 1900s, and Indiana has competent mosquito vectors to spread the disease. However, most dengue cases in U.S. citizens occur in Puerto Rico, the U.S. Virgin Islands, Samoa and Guam, which are endemic for the virus. Nearly all dengue cases reported in the continental U.S. occur in travelers or immigrants. While imported cases rarely result in secondary transmission, it has happened, most recently in Key West, Florida. In 2010, 66 cases of locally acquired dengue were reported from Key West. A few locally acquired cases in Texas have been reported since 1980, and all of them have coincided with large outbreaks in neighboring Mexican cities. Several cases have been reported in Indiana during the past three years, all related to travel in tropical and subtropical areas. By Indiana law, dengue and DHF cases are reportable to public health authorities.

Transmitted by *Aedes aegypti* and *Aedes albopictus* mosquitoes, there are four closely related viruses that cause dengue. Recovery from infection provides lifelong immunity against only that one serotype. Becoming infected with a second serotype can cause more severe illness than the primary infection. *Aedes* mosquitoes are common in the U.S. but currently dengue transmission has been infrequent, which leaves a large percentage of the U.S. population with exposure to a potential vector and no immunity.

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Especially following travel to endemic areas, dengue should be suspected when a high fever (40°C/ 104°F) is accompanied by two of the following symptoms: severe headache, pain behind the eyes, muscle and joint pains, nausea, vomiting, swollen glands or rash. Symptoms of infection usually begin 4 - 7 days after the mosquito bite and typically last 3 - 10 days. Dengue hemorrhagic fever (DHF) is characterized by a fever that lasts from 2 - 7 days, with general signs and symptoms consistent with dengue fever. However, 24 - 48 hours after the fever begins to decline, potentially deadly complications may arise due to plasma leaking, fluid accumulation, respiratory distress, severe bleeding or organ impairment. This may lead to failure of the circulatory system and shock, and possibly death without prompt, appropriate treatment. There is no specific medication for treatment of dengue or DHF, only fluid replacement and supportive care.

Vector control is most important to prevent dengue, DHF and other mosquito-borne illnesses. The best way to reduce mosquitoes is to eliminate the places where mosquitoes lay eggs, like artificial containers that hold water in and around the home. Make sure that your home or vacation residence has well-fitting screens in good repair and use insect repellent containing DEET while outdoors. When possible, wear long sleeves and pants for additional protection. No vaccine is available for dengue, but multiple vaccine candidates are currently in development. If you travel to an endemic area, avoid mosquito bites by sleeping with a mosquito bed net, avoid outdoor activities when mosquitoes are most active (dawn and dusk) and wear repellent containing DEET.

Jane Norton Retires from Daviess County Health Department

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How does one characterize a long career in public health? Jane Norton could measure hers as outlasting three health officers, seven sanitarians and five different office locations. Or it could be summed up in the thousands of patients to whom she has provided protection through immunization or counsel. Or it could be gauged by the emerging diseases for which she provided education to the public, ranging from HIV/AIDS early in her career to the more recent strain of pandemic influenza virus in 2009. Jane has served nearly 35 years as the Public Health Nurse for the Daviess County Health Department. She retired from her position effective March 31, 2012.

Keeping the children of Daviess County healthy is what Jane feels was her greatest accomplishment. This was achieved by expanding immunization services into the community, overcoming myths regarding vaccines and building a trust with parents and the public so they would return. When she first began in 1977, the routine childhood vaccine schedules consisted only of DTP, polio and MMR and were given in the health officer's practice, not the health department.

Since Jane's career began, the role of the public health nurse has evolved from "putting out fires" to being more of an agent for prevention of disease. While she feels the role is currently more defined and better understood within the community, it now includes greater and more diverse responsibilities. One thing is certain: Jane Norton has been the face of public health nursing in Daviess County for a couple of generations. Her coworkers will be what Jane says she will miss most in departing from her public health nursing duties. Her immediate plans are to travel with her husband, Jim.

Tick Vectors of Indiana

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There are approximately 820 species of ticks worldwide and about 90 species are found in the U.S. Ticks are external parasites that feed on the blood of their hosts, including wild animals, livestock, pets and humans. Ticks are vectors that can transmit disease to their hosts. Two families of ticks exist in the US: the family *Ixodidae* or “hard ticks” represent about 89 percent of the tick species in the U.S. and the family *Argasidae*, or “soft ticks,” represent 11 percent. Approximately 15 species of ticks are found in Indiana. Four tick species in Indiana are a concern to public health. The American dog tick (*Dermacentor variabilis*) is the most common tick found on humans in Indiana, and these ticks are found in every Indiana county. They feed on mice, livestock, wild animals, pets and humans. Their preferred hosts are dogs and medium sized mammals. The American dog tick transmits bacteria that cause Rocky Mountain spotted fever, tularemia and anaplasmosis. Dogs may also get hepatozoonosis by ingesting the tick.

The deer tick or black legged tick (*Ixodes scapularis*) is mostly prevalent in the northwest section of Indiana. Deer ticks feed on a wide range of animals, and they can be found on birds, reptiles, many species of mammals and humans. The deer tick can transmit Lyme disease, anaplasmosis and babesiosis.

The brown dog tick (*Rhipicephalus sanguineus*) is found throughout Indiana. It will feed on many different mammals, but dogs are the main host. The brown dog tick can complete its entire life cycle indoors. This can cause infestations in the home and kennels. It rarely causes disease in humans, however, the brown dog tick has been recently found to carry *Rickettsia rickettsii* which causes Rocky Mountain spotted fever. It is a vector of disease in dogs that cause canine ehrlichiosis, babesiosis and hepatozoonosis.

The lone star tick (*Amblyomma americanum*) is found throughout Indiana but is more common in the southern portion of the state. It is commonly encountered in moist woodlands. These ticks feed on small and large mammals, livestock, pets, ground dwelling birds and humans. The lone star tick is a vector for Rocky Mountain spotted fever, ehrlichiosis, tularemia and Southern tick associated rash illness.

To prevent tick bites, avoid habitats where ticks may be found such as woodlands, bushy areas with high grass, lawns that meet fields and woods, areas with leaf litter, and places that may harbor mice and other small mammals. If these areas cannot be avoided, wear light colored clothing with shirts tucked in and pants tucked into socks. Apply repellent containing DEET and treat clothing with permethrin. Complete a body check and immediately remove any ticks that may be found. Check clothing and gear for ticks and remove immediately. Keep the lawn litter free and mowed. Check pets daily for ticks and remove any right away. Discuss tick prevention with your veterinarian.

Instructions for safe tick removal: http://www.cdc.gov/ticks/removing_a_tick.html

Resources:

<http://www.cdc.gov/ticks/index.html>

<http://www.dogsandticks.com/>

<http://extension.entm.purdue.edu/publichealth/insects/tick.html>

Poison Ivy (Leaves of Three, Let it Be)

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There are many plants both native and exotic that are poisonous to humans when ingested or by skin contact. Poison mushrooms or berries can cause serious illness or even death, but the more common reactions in humans comes from contact with sap oil from plants such as poison ivy, poison oak and poison sumac.



Typical Summer Growth

The most prevalent cause of allergic contact dermatitis in the United States comes from poison ivy, with over 350,000 people a year affected. Initially, 15 to 30 percent of people have no allergic response from the oil but with repeated exposure, allergic reactions will develop. Reactions to poison ivy account for 10 percent of the US Department of Agriculture and Forestry Services lost time injuries.



New Spring Growth

Poison ivy contains the poisonous oil urushiol (you-Roo-shee-all or you-Roo-shee-ol). The first symptom of exposure is severe itching within 15 minutes of contact. The rash usually develops in 8 to 48 hours but can occur from 5 hours to 15 days following exposure. The rash may develop within a week if the individual had been exposed to urushiol for the first time. Rash develops much quicker as exposures become more

frequent. This rash is typically red, raised, itchy, contains fluid-filled bumps and blisters and can appear in a linear or circular pattern. In severe cases, oozing sores will develop. The blood vessels develop gaps that leak fluid through the skin, causing blisters and oozing. The rash can develop over any part of the body and the lungs if the oil has been inhaled. The rash generally will not affect the palms of the hand because the oil cannot penetrate the calloused skin. Urushiol is extremely potent: when exposed to 50 micrograms of urushiol, or about one grain of table salt, 80 to 90 percent of people will develop a rash. In theory, urushiol oil is so potent that $\frac{1}{4}$ ounce could cause a rash in every person on earth.

Contrary to popular belief, the rash is not contagious. You cannot catch or spread the rash to someone else after it appears. The rash does not contain urushiol because it has already been absorbed or washed off the skin. When the plant is disturbed by touching or burning, it releases the oil, thereby attaching itself to the contact surface or if burned, inhaled. The oil can be spread from any surface such as clothing, shoes, tools or animal hair. Urushiol evaporates quickly, but the residue will remain and can last on a surface for up to five years. New rashes appearing after three days may be due to re-exposure to the oil from clothing, tools or pets.



Large Vine

Treatment

There is no cure for the allergic reaction to poison ivy. Wash skin with soap or alcohol and rinse with plenty of water within 15 minutes. Water alone will not wash the oil off of the skin. For a mild rash, you can help relieve the symptoms by doing one or more of the following:

- Apply hydrocortisone cream or calamine lotion to the affected areas.
- Take antihistamine pills but this may result in drowsiness.
- Place cool cloths on your skin.
- Apply wet compresses to reduce itching and blistering.
- Shower in cool water.
- Add oatmeal or baking soda while taking a lukewarm bath.
- Do not scratch area because skin infection may occur.
- For more serious reactions such swelling for the face, mouth, neck, eyelids, lungs or widespread large blisters, see your physician. The physician may prescribe topical corticosteroids or oral/injected corticosteroids.

Prevention

To prevent exposure, avoid contact with the plant, but if that is not possible, minimize the exposure by:

- Wear long sleeves, long pants, boots and gloves.
- Wash exposed clothing separately in hot water with detergent. Wash garden tools, sports equipment or any other objects that have had contact with the plant with hot sudsy water or rubbing alcohol (isopropanol or isopropyl alcohol) and water. Wear disposable gloves during this process. Urushiol can penetrate latex gloves but not rubber gloves.
- Barrier skin creams containing bentoquatam may offer some protection but they should be washed off and reapplied twice a day. The FDA has approved Bentoquatam 5% without a prescription and can be found under the trade name *Ivy Block*.
- Avoid burning plants or brush piles containing poison ivy. When exposure to burning poisonous plants is unavoidable, wear a NIOSH-certified half-face piece particulate respirator rated R-95, P-95 or better.

The common saying “Leaves of three, let it be” or “Leaves of three, beware of me” is meant to help you easily recognize poison ivy. Poison ivy and poison sumac is found throughout Indiana, whereas poison oak does not grow within the state. The leaves of poison ivy consist of three pointed leaflets; the middle leaflet has a much longer stalk than the other two leaves. The leaf edges can be smooth or toothed and



Fall Color

greatly vary in size but generally are one half inch to two inches in length. The leaf surface may have an oily appearance. It grows either in low-growing shrub or a hairy, ropelike vine that can climb to the top of the tallest tree.

References:

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<http://allergies.about.com/od/contactdermatitis/f/poisonoakcure.htm>

WebMD,
<http://www.webmd.com/allergies/guide/poison-ivy-oak-sumac>

NIOSH Fast Acts, Protecting Yourself from Poisonous Plants,
www.cdc.gov/niosh/docs/2010-118/

About.com dermatology,
<http://dermatology.about.com/cs/eczemadermatitis/a/poisonivy.htm>

Indiana Cancer Facts and Figures 2012 Now Available

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In Indiana, over 30,000 residents are diagnosed with cancer annually, and two of every five people will eventually develop a form of cancer during their lifetime. On April 27, the Indiana Cancer Consortium (ICC) hosted their 2012 Annual Meeting entitled, “Hot Topics in Cancer Prevention and Control.” During the event, the [Indiana Cancer Facts and Figures 2012](#)—the state’s only comprehensive report on the burden of cancer—was unveiled. A collaborative effort of the ICC, the American Cancer Society Great Lakes Division and the Indiana State Department of Health, this is the third edition of the burden report with previous publications released in 2003 and 2006. Additionally, the ICC has developed an [infograph](#) that depicts the burden of specific cancer types on Indiana residents. Code is provided on the ICC website if you would like to embed the [infograph](#) on your own site.

The [Indiana Cancer Facts and Figures 2012](#) includes the most up-to-date cancer information available and identifies current cancer trends and their potential impact on Indiana residents. This report significantly helps the ICC measure Indiana’s progress toward meeting the goals and objectives outlined in the [Indiana Cancer Control Plan 2010–2014](#). The plan was created as a roadmap for comprehensive cancer control in six focus areas including primary prevention, early detection, treatment, quality of life, data access and advocacy.

The [Indiana Cancer Facts and Figures 2012](#) publication is an exemplary application of collaboration in public health. We hope that the sharing of knowledge, resources and expertise among the many participating organizations that produced this tool will inspire organizations across the state to tackle the cancer burden together.

Please help by sharing the report and infograph with colleagues and Indiana residents. Also, please encourage professionals and advocates to utilize the data and strategies within the publication to educate and lead for policy and behavioral changes that promote healthier lifestyles among Hoosiers.



Training Room

INDIANA STATE DEPARTMENT OF HEALTH IMMUNIZATION PROGRAM PRESENTS:

Immunizations from A to Z

Immunization Health Educators offer this FREE, one-day educational course that includes:

- Principles of Vaccination
- Childhood and Adolescent Vaccine-Preventable Diseases
- Adult Immunizations
 - Pandemic Influenza
- General Recommendations on Immunization
 - Timing and Spacing
 - Indiana Immunization Requirements
 - Administration Recommendations
 - Contraindications and Precautions to Vaccination
- Safe and Effective Vaccine Administration
- Vaccine Storage and Handling
- Vaccine Misconceptions
- Reliable Resources

This course is designed for all immunization providers and staff. Training manual, materials and certificate of attendance are provided to all attendees. Please see the Training Calendar for presentations throughout Indiana. Registration is required. To attend, schedule/host a course in your area or for more information, please visit <http://www.in.gov/isdh/17193.htm>.

Save the Date

2012 Public Health Nurse Conference Partners in Public Health: Preventing, Promoting, Protecting

May 16-17, 2012
Hilton Indianapolis North Hotel
8181 North Shadeland Avenue
Indianapolis, IN 46250

Presented by:



Indiana State
Department of Health

INDIANA
IMMUNIZATION COALITION

 St. Vincent

InSOPHE
Indiana Society for Public Health Education

During the one and a half day conference, attendees will be able to choose from eight 90-minute workshops and twelve 60-minute breakout sessions. On-line registration information is forthcoming. Parking during the conference is free. More information will be available in future issues of the Health Officer News, VacZine and on the LHD Resource SharePoint website.

For more information, contact:

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St. Vincent Hospital and Health Care Center, Inc., Indianapolis IN (ISNA No. CNEP 10-10, 12/1/2013) is an approved provider of continuing nursing education by the Indiana State Nurses Association, an accredited approver by the American Nurses Credentialing Center's Commission on Accreditation. CNE contact hours will be provided.

Indiana Society for Public Health Education has submitted an application for Category I Continuing Education Contact Hours (CECH) to award Certified Health Education Specialists (CHES) and Master Certified Health Education Specialists (MCHES). SOPHE, including its chapters, is a designated multiple event provider of CECHs by the National Commission for Health Education Credentialing, Inc. Please note, a \$3 per contact hour fee will be collected by Indiana SOPHE for non-InSOPHE members. The number of offered credits will be determined at a later date.

ISDH Data Reports Available

The following data reports and the *Indiana Epidemiology Newsletter* are available on the ISDH Web Page:

<http://www.IN.gov/isdh/>

HIV/STD/Viral Hepatitis Semi-Annual Report (June 2007- June 2011)	Indiana Mortality Report (1999-2008)
Indiana Cancer Report: Incidence; Mortality; Facts & Figures	Indiana Infant Mortality Report (1999, 2002, 1990-2003)
Indiana Health Behavior Risk Factors Report (1999-2010)	Indiana Natality Report (1998-2008)
Indiana Health Behavior Risk Factors (BRFSS) Newsletter (2003-2011)	Indiana Induced Termination of Pregnancy Report (1998-2009)
Indiana Hospital Consumer Guide (1996)	Indiana Marriage Report (1995, 1997-2004)
Public Hospital Discharge Data (1999-2010)	Indiana Infectious Disease Report (1997-2009)
Assessment of Statewide Health Needs – 2007	Indiana Maternal & Child Health Outcomes & Performance Measures (1989-1998, 1990-1999, 1991-2000, 1992-2001, 1993-2002, 1994-2003, 1995-2004, 1996-2005, 1997-2006, 1998-2007)

HIV Disease Summary

Information as of December 31, 2000 based on 2000 population of 6,080,485

HIV - without AIDS to date:

334	New HIV cases from March 1, 2011 thru February 29, 2012	12-month incidence	5.49 cases/100,000
4,688	Total HIV-positive, alive and without AIDS on February 29, 2012	Point prevalence	77.10 cases/100,000

AIDS cases to date:

376	New AIDS cases from March 1, 2011 thru February 29, 2012	12-month incidence	6.18 cases/100,000
5,638	Total AIDS cases, alive on February 29, 2012	Point prevalence	92.72 cases/100,000
11,632	Total AIDS cases, cumulative (alive and dead) on February 29, 2012		

REPORTED CASES of selected notifiable diseases

Disease	Cases Reported in January - February MMWR Weeks 1-8	
	2011	2012
Campylobacteriosis	73	63
Chlamydia	4,410	3,700
Cryptococcus	4	10
Cryptosporidiosis	25	14
<i>E. coli</i> , shiga toxin-producing	4	7
Giardiasis	45	35
Gonorrhea	1,112	930
<i>Haemophilus influenzae</i> , invasive	11	17
Hemolytic Uremic Syndrome (HUS)	0	0
Hepatitis A	6	6
Hepatitis B	9	11
Hepatitis C Acute	15	8
Histoplasmosis	18	23
Influenza Deaths (all ages)	16	1
Legionellosis	5	3
Listeriosis	0	2
Lyme Disease	0	1
Measles	0	15
Meningococcal, invasive	2	1
Mumps	0	1
Pertussis	64	32
Rocky Mountain Spotted Fever	0	0
Salmonellosis	41	33
Shigellosis	11	5

REPORTED CASES of selected notifiable diseases

Disease	Cases Reported in January - February MMWR Weeks 1-8	
	2011	2011
Severe <i>Staphylococcus aureus</i> in Previously Healthy Person	2	3
Group A Streptococcus, (invasive)	47	44
Group B Streptococcus, (invasive, all ages)	60	48
<i>Streptococcus pneumoniae</i> (invasive, all ages)	155	130
<i>Streptococcus pneumoniae</i> (invasive, drug resistant)	43	32
<i>Streptococcus pneumoniae</i> (invasive, <5 years of age)	6	4
Syphilis (Primary and Secondary)	23	25
Tuberculosis	9	9
Vibriosis	0	3
Varicella	28	30
Yersiniosis	0	2
Animal Rabies	0	0

For information on reporting of communicable diseases in Indiana, call the *Surveillance and Investigation Division* at 317.233.7125.



The *Indiana Epidemiology Newsletter* is published bi-monthly by the Indiana State Department of Health to provide epidemiologic information to Indiana health care professionals, public health officials and communities.

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