May is Hepatitis Awareness Month!

Brittany Gross, Viral Hepatitis Prevention Coordinator

According to the Centers for Disease Control and Prevention (CDC), "hepatitis" is an inflammation of the liver and also refers to a group of viral infections that affect the liver. In the US, the most common types of viral hepatitis are hepatitis A, hepatitis B, and hepatitis C.

Hepatitis A virus (HAV) is spread when a person ingests fecal matter — even in microscopic amounts — from contact with objects, food, or drinks contaminated by the feces, or stool, of an infected person. Symptoms occur within 15-50 days of exposure, and the infection clears usually within 2 months, although some persons have prolonged or relapsing disease for up to 6 months. HAV is preventable with a safe, effective vaccine.

Hepatitis B virus (HBV) is spread through contact with infected blood and body fluids, primarily through sexual contact, intravenous drug use or sharing needles, and vertical transmission from infected mother to baby. HBV infection can be acute or chronic. Acute HBV infection is a short-term illness that occurs within six months after someone is exposed to HBV. Although most people fully recover and are immune, acute infection can — but does not always — lead to chronic infection. Chronic HBV infection is a long-term infection that occurs when HBV remains in a person's body. About 6-10% of adults will develop chronic infection, while infants and children have higher rates of developing chronic infection. Chronic HBV infection can lead to serious liver problems, including cirrhosis (scarring of the liver) or liver cancer. Hepatitis B is preventable with a safe and effective vaccine.

Hepatitis C virus (HCV) is spread through contact with blood or body fluids of an infected person, primarily through sharing of contaminated needles, syringes and other injection drug equipment, similarly to HBV. Like hepatitis B, hepatitis C can also be acute or chronic. Many persons infected with hepatitis can remain asymptomatic for decades. Unlike hepatitis B, for most people, acute infection leads to chronic infection (75-85 percent of the time). HCV infection can lead to serious liver problems, including cirrhosis (scarring of the liver) or liver cancer, and is the number one reason for liver transplantation in the U.S. Hepatitis C is not vaccine preventable, but can be successfully treated.

While each viral hepatitis infection is a different disease, the different types of viral hepatitis share many signs and symptoms including jaundice, fever, fatigue, loss of appetite, nausea, vomiting, abdominal pain, joint pain, gray-colored bowel movements and dark colored urine. Therefore, laboratory testing is necessary to confirm cases of viral hepatitis.

As of 2013, the CDC reported that nationwide, an estimated 1.4 million people had chronic hepatitis B infections, with 38,000 new infections reported that year.

Volume 23, Issue 2
April - June 2015

The CDC also reports that nationwide, as of 2013, an estimated 3.9 million people have chronic hepatitis C virus infections, with 17,000 new infections that year. That's a total estimate of 5 million people infected with chronic hepatitis in the U.S. alone! In 2013, there were 101 confirmed acute cases of hepatitis B reported to the Indiana State Department of Health. In 2012, there were 89 confirmed acute cases of hepatitis B reported. The number of acute cases of hepatitis B has increased over time. In Indiana, as well as nationally, higher rates of hepatitis B disease continue among adults, particularly among males 30-39 and 40-49 years of age. In 2013, there were 140 confirmed acute cases of hepatitis C reported and approximately 5,459 chronic cases reported. Rates of hepatitis C infection were highest among individuals younger than 30 years of age followed closely by adults age 50-59. This is a shift in the trends from previous years. In 2012, the ISDH investigated 112 acute cases and 5,680 chronic cases of hepatitis C. Again, this data shows an increase in the acute number of cases of hepatitis C in the state.

In response to this rising problem, the CDC has designated May as Hepatitis Awareness Month. The ISDH will join the CDC in observing Hepatitis Awareness Month by providing valuable information regarding viral hepatitis infections each week including web site prevention messages and social media postings. Visit the ISDH Viral Hepatitis Prevention webpage at http://www.in.gov/isdh/25797.htm to take a free hepatitis risk assessment developed by the CDC.

For more information on viral hepatitis and Hepatitis Awareness Month, visit the CDC's website http://www.cdc.gov/hepatitis/ or contact Brittany Gross at bgross@isdh.in.gov or 317-233-7627.

Blastomycosis

Susan Pickerill, District 4 Field Epidemiologist

Blastomycosis is an invasive disease caused by inhaling spores of the fungus *Blastomyces dermatitidis* or by contact with contaminated soil. It is a fungal infection that affects humans and other animals. Blastomycosis causes flu like clinical symptoms similar to histoplasmosis. It is endemic to the Midwestern, central and southeastern United States. *Blastomyces dermatitidis* is found in moist soils, wooded areas, and near waterways.

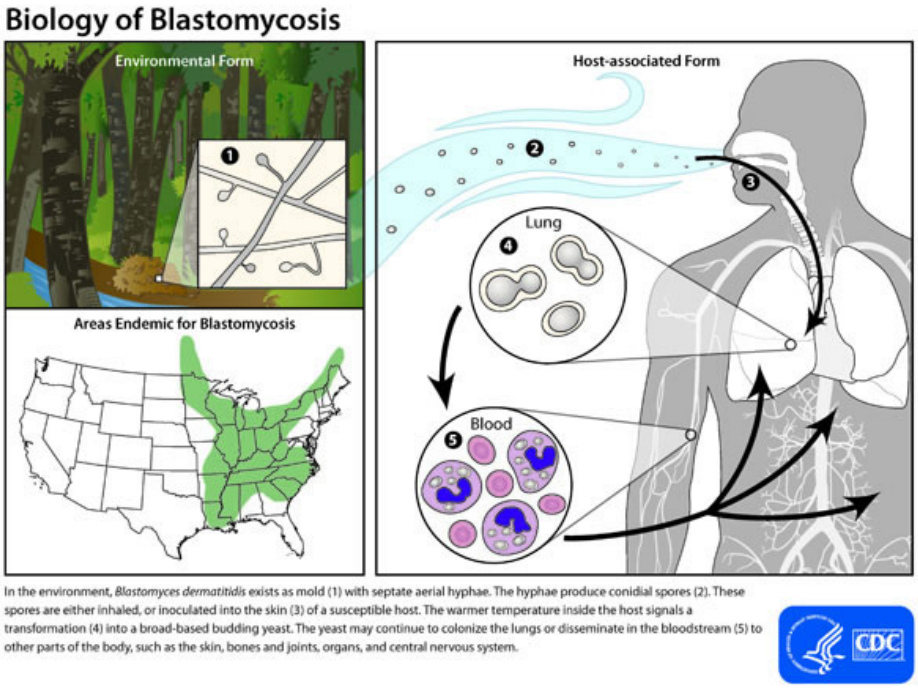
Blastomyces fungus releases spores into the environment that can be inhaled. The fungus is commonly found in areas with rich decaying matter, low light, and wet environments like riverbanks, lakes, and swamps. Blastomyces dermatitidis is naturally occurring throughout North America. It is more prevalent in Mississippi, Missouri, Ohio, and Tennessee River basins, including Indiana.

According to the CDC, only about half of the people that are infected with blastomycosis will develop symptoms. It can occur in healthy individuals, but those with underlying conditions are at higher risk.

People that live in endemic areas and participate in outdoor activities are at greater risk for acquiring blastomycosis. Person-to-person transmission has not been documented. The symptoms usually occur 3 to 15 weeks after exposure to the fungus. The symptoms include fever, chills, cough, muscle aches, joint pain, skin sores, weight loss, and chest pain. Severe cases can occur when the fungus disseminates to the skin, bone, and central nervous system.

Diagnosis is made by taking a specimen from infected tissue, sputum, or fluid from infected joint and performing fungal culture. Bronchoscopy may be needed to collect a specimen for testing. Blood or urine can be tested for antibodies to *Blastomyces*. Treatment with an antifungal agent is required. Treatment is usually for 6 months. The severity and duration of the illness varies between individuals.

Canines are the most commonly affected animals. Dogs that are at greatest risk for developing clinical signs of blastomycosis are young males of larger breeds and hunting or sporting breeds. Dogs will sniff and dig in soil resulting in greater risk of exposure to the spores. The most common sites of clinical infection in dogs include the lungs, lymph nodes, eyes, skin, and bone. Testing in dogs includes cytology of infected tissue, serology, urinary antigen testing, and PCR. Symptoms in dogs include: fever, flu-like symptoms, pneumonia, loss of appetite, weight loss, eye infection, sudden blindness, skin sores or lesions, lethargy, joint pain, reluctance to walk, loss of coordination, and lymph node swelling. Infection can be treated with antifungal agents. The disease can be extremely aggressive in dogs with a low survival rate. Dogs are 10 times more likely to develop blastomycosis than humans.



Blastomycosis is reportable in the following states: Louisiana, Michigan, Minnesota, Mississippi, and Wisconsin. There is no national surveillance. *Blastomycosis* is not reportable in Indiana. Health care providers should report clusters or cases of unusual respiratory illness immediately to local health departments and consider *blastomycosis* in the diagnosis of individuals with respiratory symptoms if they have had outdoor exposure, especially in or near construction and/or excavation sites, recreational activities along waterways, and hunting or hiking in woodlands.

References:

1. http://www.akcchf.org/news-events/library/articles/blastomycosis-bruisers.html
2. http://www.cdc.gov/fungal/diseases/blastomycosis/
3. http://www.idsociety.org/uploadedFiles/IDSA/Guidelines-Patient_Care/PDF_Library/Blastomycosis.pdf
4. Werner, Alison, DVM, and Frank Norton, DVM. "Blastomycosis." VetLearn.com. N.p., n.d. Web. 17 Apr. 2015.

Training Evaluation via Pre-test and Post-test Methods

Jim Ignaut, MA, MPH, MCHES

Evaluation of a training session via pre-test and post-test results can provide a measure of training effectiveness by determining the increase in knowledge of subject matter. Analysis can also provide information to presenters to improve their training effectiveness. This article illustrates an example of interpretation and implications of pre-test and post-test results.

Analysis was based on evaluation results from a public health training conference. The table below includes data regarding the pre-test and post-test scores and illustrates item-specific and overall differences based on those scores.

Pre-test/post-test results per question (1-15) and collectively, via raw data & percentage measures						
Pre-test Question #	Correct Raw Score and Percentage	Incorrect Raw Score and Percentage	Post-test Question #	Correct Raw Score and Percentage	Incorrect Raw Score and Percentage	Percentage Difference from pre-test to post-test
#1	41 (64%)	23 (36%)	#1	43 (68%)	20 (32%)	+4%
#2	55 (86%)	9 (14%)	#2	60 (95%)	3 (5%)	+9%
#3	37 (58%)	27 (42%)	#3	39 (62%)	24 (38%)	+4 %
#4	21 (33%)	43 (67%)	#4	60 (95%)	3 (5%)	+62%
#5	0	64 (100%)	#5	9 (14%)	54 (86%)	+14%
#6	51 (80%)	13 (20%)	#6	60 (95%)	3 (5%)	+15%
#7	62 (97%)	2 (3%)	#7	61 (97%)	2 (3%)	0%
#8	40 (62%)	24 (38%)	#8	36 (57%)	27 (43%)	-5%
#9	14 (22%)	50 (78%)	#9	52 (83%)	11 (17%)	+61%
#10	36 (56%)	28 (44%)	#10	57 (90%)	6 (10%)	+34%
#11	53 (83%)	11 (17%)	#11	60 (95%)	3 (5%)	+12%
#12	32 (50%)	32 (50%)	#12	60 (95%)	3 (5%)	+45%
#13	19 (30%)	45 (70%	#13	45 (71%)	18 (29%)	+41%
#14	61 (95%)	3 (5%)	#14	60 (95%)	3 (5%)	0%
#15	7 (11%)	57 (89%)	#15	36 (57%)	27 (43%)	+46%
Total Aggregate Data	Raw Score 529	Raw Score 431		Raw Score 738	Raw Score 207	Difference between Raw Scores Pre-test correct + 98 over pre-test incorrect Post-test correct + 531 over post-test incorrect
Totals: Aggregate Data	Percentage 55%	Percentage 45%		Percentage 78%	Percentage 22%	Percentage Between pretest and post-test scores: 23% improvement

Sixty-four conference attendees completed the pre-test, and 63 completed the post-test. All responders attended the same sessions. Analysis of results indicated an overall improvement of 23% between pre-test and post-test knowledge. Improvement was noted in 12 of 15 items, with one question showing a negative difference and no change between pre-test and post-test for two questions. Test content consisted of questions developed by each of the five presenters.

The question demonstrating a negative result, # 8, had three more incorrect answers on the post-test than the pre-test; a 5% difference. Results for the two questions with no change in scores from pre-test to post-test

indicated that these questions were initially scored highly for correct answers; 97% for question #14 and 95% for question # 7, with only two and three attendees respectively answering incorrectly.

Benefits of evaluation based on the pre-test and post-test include establishment of initial knowledge baseline, knowledge gained following presentations, feedback for individual presenters regarding presentation effectiveness, assessment of conference goal achievement, and a measure of objective attainment for individual presentations. Variables affecting change in scores from pre-test to post-test may include factors such as degree of subject matter complexity, difficulty of questions, prior familiarity with subject, and varying levels of attendees' knowledge of subject matter.

Results of this particular evaluation indicated a notable improvement in knowledge from the pre-test to the post-test, with positive changes in twelve questions, no change in two questions, and a five percent negative change in one question; results indicative of improvement in knowledge gained and confirmation of success in objectives achievement for individual presentations.

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.

ISDH Data Reports

The following data reports and the *Indiana Epidemiology Newsletter* are available on the ISDH webpage: http://www.IN.gov/isdh/

HIV/STD/Viral Hepatitis Semi-Annual Report (June 2007 - December 2013)	Indiana Mortality Report (1999–2013)
Indiana Cancer Reports: Incidence; Mortality; Facts & Figures	Indiana Linked Infant Birth/Death Report (1999, 2002, 1990-2003)
Indiana Health Behavior Risk Factors Report (1999–2013)	Indiana Natality Report (1998–2013)
Indiana Health Behavior Risk Factors (BRFSS) Newsletter (2003–2014)	Indiana Induced Termination of Pregnancy Report (1998–2013)
Indiana Hospital Consumer Guide (1996)	Indiana Marriage Report (1995, 1997-2004)
Public Hospital Discharge Data (1999–2013)	Indiana Infectious Disease Report (1997-2012)
Assessment of Statewide Health Needs (2007)	Indiana Maternal & Child Health Outcomes & Performance Measures (1989-1998 through 2002–2011)

HIV Disease Summary

Information as of March 31, 2015 based on 2014 population of 6,596,855

HIV - without AIDS:

136	New HIV cases from January 1, 2015 thru March 31, 2015	3-month incidence	2.06 cases/100,000
5,420	Total HIV-positive, alive and without AIDS on March 31, 2015	Point prevalence	82.16 cases/100,000

AIDS cases:

65	New AIDS cases from January 1, 2015 thru March 31, 2015	3-month incidence	1.00 cases/100,000
6,146	Total AIDS cases, alive on March 31, 2015	Point prevalence	93.16 cases/100,000
12,561	Total AIDS cases, cumulative (alive and dead) on March 31, 2015		

Reported cases of selected notifiable diseases		
Disease	**Cases Reported in January - March MMWR Weeks 1-13**	
	2014*	**2015***
Arbovirus:		
California serogroup (La Crosse) encephalitis virus	0	0
Chikungunya virus	0	0
Dengue virus	0	0
Eastern equine encephalitis virus	0	0
St. Louis encephalitis virus	0	0
West Nile Virus neuroinvasive disease	0	0
Animal Bites	1,334	1,196
Brucellosis	0	0
Campylobacteriosis	80	61
Chlamydia	6,995	6,112
Cryptococcus neoformans	3	8
Cryptosporidiosis	20	15
Dengue	0	0
E. coli, shiga toxin-producing	9	7
Giardiasis	29	23
Gonorrhea	1,756	1,555
Haemophilus influenzae, invasive	25	20
Hansen's Diseases (Leprosy)	0	0
Hemolytic Uremic Syndrome (HUS)	2	0
Hepatitis A	4	3
Hepatitis B (acute)	35	31
Hepatitis C (acute)	35	10
Hepatitis D	1	0
Hepatitis E	1	0
Histoplasmosis	23	25
Influenza Deaths (all ages)	63	102
Legionellosis	18	22
Listeriosis	0	0
Lyme Disease	3	6
Malaria	5	4
Measles (rubeola)	0	0
Meningitis, other	2	0
Meningococcal, invasive	2	1
Mumps	13	0
Pertussis (Whooping Cough)	99	45

Reported cases of selected notifiable diseases (cont.)		
Diseases	**Cases Reported in January – March MMWR Weeks 1-13**	
	2014*	**2015***
Rabies, Animal	0	0
Rocky Mountain Spotted Fever	0	0
Rubella	0	0
Salmonellosis	103	95
Shigellosis	34	89
Severe *Staphylococcus aureus* Infection in Previously Healthy Person	2	6
Group A Streptococcus, invasive	76	53
Group B, Streptococcus, Invasive (All ages)	85	87
Group B, Streptococcus, invasive Newborn	7	3
Streptococcus pneumoniae (invasive, all ages)	188	117
Streptococcus pneumoniae (invasive, drug resistant)	7	58
Streptococcus pneumoniae (invasive, <5 years of age)	7	0
Syphilis (Primary and Secondary)	42	37
Toxic Shock Syndrome, streptococcal (STSS)	3	5
Tuberculosis	18	23
Tularemia	0	0
Typhoid Fever	3	1
Typhus/Rickettsial disease	0	0
Varicella (Chickenpox, confirmed and probable)	53	45
Varicella (Hospitalization or Death)	5	2
Vibriosis (non-cholera Vibro species infections)	0	0
Yersiniosis	2	0
*Provisional		
For information on reporting of communicable diseases in Indiana, call the *ERC Surveillance and Investigation Division* at 317.233.7125.		

Healthy and Safe Swimming Week – May 18-24.

For more information visit the CDC website:

http://www.cdc.gov/healthywater/observances/hss-week/index.html

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

FIND US ON THE WEB

http://www.in.gov/isdh/25154.htm

Indiana State Department of Health
Epidemiology Resource Center

Social Media

The Indiana State Health Department is on social media! Check out our social media pages for the latest health information, updates, event information and photos. Like us on Facebook at www.facebook.com/ISDH1. Follow us on Twitter @StateHealthIN. Watch videos on YouTube.

News from CDC:

Outbreak

Ebola Update

CDC response to Ebola in United States and West Africa and what you need to know about Ebola.

Outbreak

***Listeria* Outbreak**

Learn more about outbreak of listeriosis linked to Blue Bell Creameries ice cream products.

Feature

Stop Ticks

Learn ways to reduce your chance of getting tickborne diseases before and after you go outdoors.

News

Advertising to Kids

53% of food and drinks advertised on kids TV don't meet government nutrition standards.

http://www.cdc.gov/