Communicable Disease Report
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**Appendix:** Virus Lifecycle, Michigan Rabies Assessment, ICHD Directory of Services

**Links:** Recommended Immunization Schedule 0-18 years, Recommended Adult Immunization Schedule 2015, Healthcare Personnel Vaccination Recommendations, Reportable Disease In Michigan 2016.
Rabies: what you need to know

Rabies is a deadly zoonotic illness caused by a virus that is transmitted to humans through the saliva of an infected animal, usually during a bite. Last year, there was a total of 416 potential rabies exposure reports made to ICHD, and 80 county residents received preventive treatment for rabies. In 2015, no rabid animals were identified in Ingham County.

Early symptoms of rabies infection include fever, headache, and weakness, but these may lead to anxiety, confusion, tingling sensation at the site of the bite, excitation, hallucinations, agitation, salivating more than usual, difficulty swallowing, and fear of water. Death usually occurs within days of the onset of symptoms.

The primary goal of ICHD is to prevent human exposure to rabies through education and awareness; however, if exposure (or potential exposure) occurs, the main goal is to prevent the infectious disease through post-exposure treatment. Because rabies progresses rapidly from symptom onset to death, it is extremely important that all individuals seek medical care as soon as possible after the suspected exposure. However, some potential exposures are difficult to identify. Notably bat bite exposures may go undetected due to their very small teeth that may not leave a mark. As a result, it is important to keep in mind that the following situations involving bats are probable rabies exposures and that they do require post-exposure treatment:

- A sleeping person awakens to find a bat in the room.
- Finding a bat in a room with a small child, intoxicated individual, and/or a cognitive impaired individual.
- A known bite/scratch from a bat, or a lick to an open wound.

If you think that you have had an exposure, safely capture the bat by wearing thick gloves, or using kitchen tongs, and place the bat in a coffee can/container, and then contact your local Health Department.

If you are an Ingham County resident call 517-887-4308, ext 3 for recommendations on the course of action after finding a bat.

Ingham County Animal/Rabies Statistics

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“During 2015 no rabid animals were identified in Ingham County”
Important Information to Know About Rabies and Bats in Your Home

Bats have the potential to carry rabies and evaluation is necessary to determine if there has been an exposure to humans and/or animals.

The definition of a bat exposure is as follows:

- Waking up to a bat in your sleeping area
- Finding a bat with an unattended child, someone who is cognitively impaired, or intoxicated
- If you are bitten, licked, or scratched by a bat

If you find a bat in your home, you will need to catch it. You will need:

- Leather work gloves
- A piece of cardboard
- A small box or coffee can
- Tape

When the bat lands, approach it slowly. While wearing gloves, place a box or coffee can over the bat. Slide a piece of card board under the container to trap the bat inside. Tape the cardboard to the container.

After catching or killing the bat, **DO NOT THROW IT AWAY**. Store the bat in a refrigerator or adequately cold cooler. **DO NOT FREEZE THE BAT.**

The bat is needed to test for the presence of rabies. If you find a bat in your home please contact the Communicable Disease office at 517-887-4308 press 3 to determine if there has been an exposure, if the bat should be tested, and/or if treatment is needed for the prevention of rabies.

For more information check out the links below

**Enteric Disease / Food borne Illnesses**

Most food borne illness peak in summer and drops down during winter. The high prevalence of food borne illness during summer can be attributed to warmer weather and poor food handing during outdoor activities such as picnics, barbecues, and on camping trips. Similar to other infectious diseases, food borne outbreaks can have serious or fatal consequences on a large scale in a short period of time if not properly handled.

The overall incidence rate for many food-borne diseases is much lower in Ingham County, when compared to the state. For example, in 2015, 12 cases of Shigellosis were reported in Ingham County compared to 452 cases in Michigan. According to the CDC, symptoms of shigellosis typically occur 1-2 days after exposure and include diarrhea (sometimes bloody), fever and abdominal pain. Early identification of shigellosis is essential for public health services, such as discovering an outbreak and ultimately breaking the chain of infection. Most cases of shigellosis can be treated with fluids and rest, while severe cases may be treated with antibiotics. However, it is important to note that Shigella is often resistant to antibiotics, therefore it should only be used if absolutely necessary to reduce the duration of symptoms.

Unnecessary antibiotic use in most enteric diseases can lead to the development of resistance, can expose the patient to unwanted side effects and can increase the risk of potentially deadly enteritis due to Clostridium Difficile. However, antibiotics can be administered to the patients with severe forms of the disease or individuals at higher risk for severe diseases, such as immune compromised or infants.

Practicing good hygiene, proper handwashing and other preventive measures can protect an average individual from contracting most food borne illnesses.

### Food Borne Diseases

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<th>Rate per 100,000</th>
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Source: Michigan Disease Surveillance System 2011-2015. (Confirmed Cases), Rates for the cases less than 5 events are not calculated (nc)
How Much Do You know About Communicable Diseases?

1. What is the leading cause of death worldwide?
   a) Viruses
   b) Communicable diseases
   c) Poor hygiene
   d) Contaminated water

2. How are communicable diseases spread?
   a) Contact with an infected person and/or contaminated object
   b) Animal or insect bites
   c) Airborne
   d) All the above

3. Currently, vaccines protect against:
   a) 5 diseases
   b) 16 diseases
   c) 10 diseases
   d) 7 diseases

4. What is the single most effective way to prevent disease?
   a) Get vaccinated
   b) Drink plenty of water
   c) Perform regular hand washing
   d) Wash food properly

5. Persons with latent TB pose no threat to others, while persons with active TB can infect others with TB via particles through the air.
   a) True
   b) False

6. Which of the following is a common vector in the transmission of disease?
   a) Mosquitos
   b) Ticks
   c) Flies
   d) All the above

7. Hepatitis C is spread through blood and body fluids. One of the most common ways to become infected with the HCV virus is through sharing needles and syringes.
   a) True
   b) False

8. Healthy adults can infect others with influenza beginning 1 day before symptoms start and up to _______ after becoming sick
   a) 1-3 days
   b) 3-5 days
   c) 5-7 days
   d) Two weeks

Answers: 1=B, 2=D, 3=B, 4=C, 5=A, 6=D 7=A, 8=C

Immunization Importance: Prevent & Protect!

Immunizations are considered one of the top ten greatest public health achievements of the 20th century. Before vaccinations were developed and licensed for use, infectious diseases were the number one cause of death among the population, killing tens of thousands of people each year. After the introduction of immunizations, communicable disease rates have dropped significantly, and the global eradication of smallpox and the elimination of poliomyelitis (wild-types) have resulted.

In addition to the normal vaccination recommendations, there are also special recommendations for healthcare personnel and travelers who may be at a higher risk of infection of certain diseases than the general population. While some may think that large scale outbreaks of infectious diseases are a thing of the past; in reality, there is always the potential for a major outbreaks. Many diseases are considered just a “plane ride away.” Vaccinations are still required to maintain the low number of infectious diseases seen today.

Herd immunity refers to the situation in which a large enough proportion of the population is immune to an infectious disease, therefore making it difficult for the disease to spread. Herd immunity works to protect those who at risk for contracting a disease such as the elderly, infants and/or those who are immunocompromised. In order to maintain herd immunity, communities must keep high rates of vaccine coverage. To protect yourself and your loved ones, it is essential that you receive your vaccinations in accordance to ACIP’s guidelines.
Local Public Health Surveillance

According to the Center’s for Disease Control and Prevention, public health surveillance is referred to as the “systematic, ongoing collection, management, analysis and interpretation of data followed by the dissemination of this data to public health programs to stimulate public health action.” Local health departments are responsible for conducting daily surveillance in an effort to detect the presence of an outbreak before it reaches epidemic proportions. The surveillance done by local health departments is often deemed as “silent,” because the community is often unaware of the work being done on a daily basis unless an outbreak is occurring.

The Communicable Disease staff at the Ingham County Health Department monitors the Michigan Disease Surveillance System on a daily basis to watch for any unusual disease activity.

It is required by law to contact the local health department when a disease that is listed on the list of reportable diseases is identified. The Communicable Disease nurses are then responsible for investigating every case to determine if there are any epidemiological links within the community. The overall goal of local public health surveillance is to reduce, and ideally stop, the transmission of that disease. In the event of an outbreak, the entire staff must work together to protect the community.

Vaccine Preventable Diseases

Surveillance of vaccine preventable diseases not only informs the effectiveness of immunization programs and vaccines, but also allows assessing progress towards preventable disease elimination. It is also helpful in the rapid identification of an outbreak and early administration of prophylactic measures.

There have been no cases of Measles and Rubella between 2011 and 2015 in Ingham County.

<table>
<thead>
<tr>
<th>Vaccine Preventable Diseases</th>
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Source: Michigan Disease Surveillance System 2011-2015. (Confirmed Cases), Rates for the cases less than 5 events are not calculated (nc)
Immunization Waiver Information

Michigan recently modified the administrative rules that change how nonmedical immunization waivers will be processed for school and childcare programs. This rule change is important because Michigan has one of the highest waiver rates in the country. High waiver rates leave communities vulnerable to vaccine preventable diseases such as measles, pertussis, and chickenpox.

In Michigan there are two types of waivers; medical and nonmedical.

A medical waiver is a signed statement from the physician that the child cannot receive a certain vaccine due to a true contraindication or precaution to the vaccine or a vaccine component. A nonmedical waiver is a parent/guardian’s written statement indicating they have a religious or philosophical (other) objection to particular vaccines.

Effective January 1, 2015, parents seeking a nonmedical waiver are required to receive education regarding the benefits of vaccination and the risk of disease from a county health department before the certified nonmedical waiver form will be issued. This nonmedical waiver must be on the current State of Michigan Immunization Waiver form. Waivers are required for all children enrolled in a public or private licensed childcare, preschool, Head Start Program, Kindergarten, 7th grade, and any newly enrolled student into a school district. If a child has a medical reason (a true contraindication or precaution) for not receiving a vaccine, a physician must sign the State of Michigan Medical Contraindication form, which is available at the provider’s office (not the county health department). Parents need to take the signed waiver; they obtained from the local health department or provider’s office, to the school or daycare their child will be attending.

In the State of Michigan there were 9,377 fewer waivers this year compared to last year 7,657 fewer in schools and 1,720 fewer in Childcares.

There was an overall 35.4% decrease in Michigan’s overall immunization waiver rate with a decrease from 4.8% to 3.1%.

The Kindergarten waiver rates decreased by 32.1% from 5.3% to 3.6%.

The 7th grade waiver rates decreased by 35.4% from 4.8 to 3.1%.

The largest decrease was in new entrants with a 47.8% decrease in waiver rates.

Childcares had a 36.4% decrease from 3.3% to 2.1%.

Ingham County:

As of September 30, 2016, Ingham County Quarterly Immunization Report card:

School Completion (Feb 2016) 93.2% - increase of 0.4%.

Percent waived (K-7-O) 3.0% a decrease - 0.9%.

Childcare completion (Oct 2015)- 86.4% increase of 0.9%.

Percent waived 1.2% decrease 3 in -1.0%.

For more information or for a parent to schedule a waiver education session at 887-4350 or visit www.miccontact Ingham County Immunization Department higan.gov/immunize > then click on Local Health Department> then click on Immunization Waiver Information.
Hepatitis

**Chronic Hepatitis B:** During 2015, only 31 cases of Hepatitis B were reported in Ingham County. Although the acute hepatitis B is a short term and mild illness, however 90% of infected infants, 30% of children less than 5 years of age and 2-6% of adults can develop chronic infection. Prenatal transmission is the most common cause of chronic hepatitis B. Reporting pregnant women with positive HBsAg to your local health department can ensure the effective management and follow up of newborn.

**Chronic Hepatitis C:** The rate of Chronic Hepatitis C is greater in Michigan than Ingham County. In 2015, 106 cases of chronic Hepatitis C were reported in Ingham County. Before 1992, chronic hepatitis C was primarily spread through blood transfusion and organ transplant. Today, injection drug users sharing needles and other tools to inject drugs are at higher risk of getting infected with hepatitis C virus. Individuals diagnosed with chronic hepatitis mostly belong to the age group born between 1945 and 1965. Therefore, CDC recommends that all persons in this age group should be screened once and the positive antibody tests should be confirmed by PCR.

<table>
<thead>
<tr>
<th>Hepatitis</th>
<th>2011 Cases</th>
<th>Rate per 100,000</th>
<th>2012 Cases</th>
<th>Rate per 100,000</th>
<th>2013 Cases</th>
<th>Rate per 100,000</th>
<th>2014 Cases</th>
<th>Rate per 100,000</th>
<th>2015 Cases</th>
<th>Rate per 100,000</th>
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</thead>
<tbody>
<tr>
<td><strong>Hepatitis B, chronic</strong></td>
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<td>36</td>
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<td>Michigan</td>
<td>780</td>
<td>7.89</td>
<td>750</td>
<td>7.56</td>
<td>454</td>
<td>4.59</td>
<td>438</td>
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<td><strong>Hepatitis C, chronic</strong></td>
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<td>Ingham County</td>
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<td>54</td>
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<td>106</td>
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<td>6306</td>
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<td>59</td>
<td>5364</td>
<td>54</td>
<td>6700</td>
<td>67</td>
<td>6577</td>
<td>66</td>
</tr>
</tbody>
</table>

Source: Michigan Diseases Surveillance System 2011-2015. (Confirmed Cases), Rates for the cases less than 5 events are not calculated (nc)

Influenza & Influenza like Illness (ILI)

**UPDATE!!**

In 2014 the rate of Influenza dropped from the previous year in Ingham County. The rates of both Influenza and Influenza Like Illness are higher in Michigan than Ingham County. Any clinical diagnosis of Influenza is a diagnosis of Influenza Like Illness, not of Influenza. Influenza is a more severe disease and caused by a different virus. Flu seasons are difficult to predict and can constantly vary in its timing and severity from one season to another. During 2013-2014, flu activity began late November 2013 and continued to occur as late as May 2014. Flu activity peaked in the middle of January 2014 and began a downward trend by the end of January 2014. CDC estimated that the seasonal Influenza vaccine can reduce the chance of getting sick by almost 60% across all ages. In cases where a vaccinated person got ill, influenza symptoms would be less severe and less likely to result in serious complications. Based on the symptoms alone, it is often hard to make a distinction between the Seasonal Influenza, Avian Influenza A (H1N9) and MERS CoV, due to similarities in clinical manifestations. However, patient history, severity of symptoms and test results can lead to differential diagnosis.
**Influenza Q & A**

- **Q** What is influenza (flu)?
  
  It is a severe contagious respiratory illness that infects the nose, throat, and lungs. It is easily spread and can lead to severe complications, even death.

- **Q** What are the signs and symptoms of flu?
  
  **Fever**  
  **Headaches**  
  **Cough**  
  **Fatigue (very tired)**  
  **Sore Throat**  
  **Muscle or body aches**  
  **Runny or stuff nose**  
  **Some people have vomiting and Diarrhea**

- **Q** How long am I contagious if I get the flu?
  
  You can pass the flu to someone else before you know you are sick, as well as while you are sick. You can infect someone 1 day before symptoms develop and up to 5 to 7 days after becoming sick. Some people, especially young children and people with weakened immune systems, might be able to infect others for an even longer time.

- **Q** How many people get the flu each year?
  
  Each year in the US, on average, influenza and its related complications result in approximately 225,000 hospitalizations. Depending on virus severity during the influenza season, deaths can range from 3,000 to a high of about 49,000 people. Combined with pneumonia, influenza is the nation’s eighth leading cause of death.

- **Q** Can I get influenza (flu) from the flu shot?
  
  The flu shot does not contain the live virus so it is impossible to get influenza from the vaccine. Side effects may occur in some people, such as mild soreness, redness, or swelling at the injection site, headache or a low-grade fever.

- **Q** If I am not elderly, immunocompromised or an infant, am I at risk for developing complications from the influenza virus?
  
  Influenza impacts people of all ages. People of all ages are at risk for developing complications due to influenza. Children typically experience the highest rates of influenza infection each year. About 90% of deaths caused by influenza and its complications occur among people 65 years of age and older.

- **Q** If I missed the chance to get an influenza vaccination in the fall, do I have to wait until next year?
  
  You can get vaccinated at any point during the influenza season. You should be immunized as soon as vaccine is available in the late summer or early fall, but it is never too late to be vaccinated.

- **Q** What are the strains for seasonal influenza this year?
  
  The strains are: A/California/7/2009 (H1N1) like, A/Hong Kong/4801/2014 (H3N2) like, B/Brisbane/60/2008 like & B Phuket/3073/2013 like virus
Vector Borne Diseases: Lyme Disease

In 2015, a single case of Lyme Disease was recorded in Ingham County. Statewide, however, there has been 130 reported cases of Lyme Disease. The incidence rate for Lyme disease statewide increased from 2014. Right now, the west side of the state, as well as several counties in the Upper Peninsula are considered endemic counties with a known risk for Lyme disease.

Mosquito and tick-borne disease prevention largely depends on individual protection. Taking precautions to prevent mosquito and tick bites when engaging in outdoor activities can significantly reduce the likelihood of getting vector borne infections.

<table>
<thead>
<tr>
<th>Vector Borne Diseases</th>
<th>2011 Cases</th>
<th>2011 Rate per 100,000</th>
<th>2012 Cases</th>
<th>2012 Rate per 100,000</th>
<th>2013 Cases</th>
<th>2013 Rate per 100,000</th>
<th>2014 Cases</th>
<th>2014 Rate per 100,000</th>
<th>2015 Cases</th>
<th>2015 Rate per 100,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lyme Disease</td>
<td>Ingham County</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>nc</td>
<td>3</td>
<td>nc</td>
<td>1</td>
<td>nc</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Michigan</td>
<td>90</td>
<td>0.91</td>
<td>84</td>
<td>0.84</td>
<td>119</td>
<td>1.2</td>
<td>92</td>
<td>0.93</td>
<td>130</td>
</tr>
</tbody>
</table>

Source: Michigan Diseases Surveillance System 2011-2015. (Confirmed Cases). Rates for the cases less than 5 events are not calculated (nc)
Lyme disease (cont.)

Lyme disease is caused by a bacterium called *Borrelia Burgdorferi*. It is spread by tick bite. Many types of ticks bite people in the U.S., but only blacklegged ticks transmit the bacteria that cause Lyme disease.

In most cases, the tick needs to be attached for greater than 24 hours for Lyme disease to be transmitted. There is no evidence that Lyme disease is spread person to person. Antibiotics commonly used to treat Lyme disease include doxycycline and amoxicillin.

Symptoms of Lyme disease include: Bull's eye skin rash (erythema migrans), fever, h/a, and fatigue.

Lyme disease prevention

- When in a wooded or brushy area wear light-colored long-sleeve shirt, light-colored long pants, and closed toe shoes.
- Avoiding tick-infested areas. This is especially important in May, June, and July. If you are in tick infested areas, walk in the center of trails to avoid contact with overgrown grass, brush, and leaf litter at trail edges.
- Use insect repellent that contains 20-30% DEET.
- Clear areas around your home that have grass, brush, and leaves.
- After being outside in an area where there is a known or potential risk of Lyme disease, check skin, hair, scalp, neck, under the arms and behind the ears for ticks.
- Bathe or shower as soon as possible after coming indoors (preferably within 2 hours) to wash off and more easily find ticks that are crawling on you. Ticks can get a ride indoors on your clothes. After being outdoors, wash and dry clothing at a high temperature to kill any ticks that may remain on clothing.

**TICK REMOVAL**

1. Use tweezers to grasp tick as close to the skin as possible.
2. Pull tick straight up and out. Don’t twist or jerk the tick. This can cause the mouth parts to break off and stay in the skin.
3. Clean the bite and your hands with soap and water.

Most Lyme disease exposures in Michigan occur in the Upper Peninsula and along Michigan’s western shoreline.

The first official reported human case of Lyme disease was in 1985. Cases have now been reported in both the upper and lower peninsula although most cases are still acquired out-of-state. It is anticipated, however, that the number of cases reported will continue to increase due to public and medical personnel education, and expanding tick ranges.

**Tick submission to MSU**

If the tick is alive, place it in a small container with a small piece of paper towel moistened with a drop of water

Complete the Tick Identification and Testing Form completely, and indicate whether or not you would like the tick forwarded to Michigan State University for testing. If you choose to have the tick forwarded for testing, enclose a personal check for $55 (payable to MSU-DCPAH). Print the form.

Send the container with the tick along with the submission form in a padded envelope to the below address:

Michigan Department of Agriculture and Rural Development
Pesticide and Plant Pest Management Division
Insect and Rodent Management Program
P.O. Box 30017, Lansing, MI 48909
(517) 284-5658

On the outside of the envelope write “FRAGILE” or “HANDLE WITH CARE” to help prevent damage to the tick when shipped.

Links:

- Tick Identification and Testing in Michigan
- Tick Identification and Testing Form
Vector Borne Diseases: Zika Virus

Zika virus is spread through the bite of an infected *Aedes* mosquito and can be passed from a pregnant woman to her fetus. Zika can also be spread through unprotected sex with an infected person. While there are reports of active transmission in the continental United States, MDHHS reports that transmission of Zika in Michigan is unlikely due to the fact that *Aedes* mosquitoes have yet to be identified in the state. In 2015, there were no cases of Zika reported in Michigan. In 2016, however, 67 cases of travel-associated Zika have been reported. Three of these cases include pregnant women. In Ingham County, 4 cases of Zika were reported, all of which were attributed to travel. One male was identified and three women, all of which who were not pregnant. In Ingham County, the countries associated with confirmed cases of Zika include Mexico and Honduras.

How to Protect Yourself:

- Avoid mosquito bites by wearing appropriate clothing and using protective insect repellant
  - DEET, Picaridin, Oil of lemon eucalyptus (OLE) or para-menthane-diol (PMD)
- Avoid traveling to areas affected with Zika virus check travel notices
- Use a condom to avoid contracting Zika virus from unprotected sex with an individual who may be infected with the virus

For up to date information on Zika travel notices, refer to http://wwwn.cdc.gov/travel/page/zika-travel-information
Vector Borne Diseases: Zika Virus


START

Did the patient or the patient's sex partner travel to an area with documented Zika virus transmission per CDC’s website? [http://www.cdc.gov/zika/geo/index.html]

YES

Current or recent symptoms* with onset date less than 2-weeks after travel?

YES

*Are one or more of the following present?

- Fever
- Conjunctivitis
- Rash
- Arthralgia
- Guillian-Barré Syndrome (with no known etiology)

NO

NO

Is the patient pregnant?

YES

Did the pregnant patient travel to an area with Zika within the past 12 weeks (period when testing is indicated)?

NO

Travel was > 12 wks ago

Monitor pregnancy according to CDC “Interim Guidelines for Health Care Providers Caring for Pregnant Women and Women of Reproductive Age with Possible Zika Virus Exposure” [www.cdc.gov/zika]

NO

NO TRAVEL

DO NOT test for ZIKV

NO

Has the patient had unprotected sex with a partner who had possible Zika exposure?

YES

Proceed with ZIKV testing

Collect serum and urine samples for MDHHS testing

MDHHS, Aug 2016 (Version 4.0). Adapted from Indiana State Department of Health Flowchart. 02/16.
HIV/AIDS and STIs are preventable if the individual is educated on how to appropriately protect themselves from these infections. First, get the facts. Utilize ICHDs STI Fact Sheets located on our website (hd.ingham.org) to arm yourself with a basic understanding of STIs regarding their transmission, signs and symptoms, and treatment methods. Once you are informed, follow the prevention tips below to ensure a life free of HIV/AIDS and STIs!

**PREVENTION TECHNIQUES**

- **Always use condoms:** The proper and consistent use of condoms is extremely effective in decreasing the transmission of all STIs. Use a condom every time you have anal, vaginal, or oral sex.
- **Immunization:** Vaccines are available, safe, and recommended for the prevention of hepatitis B and some of the most common forms of human papilloma virus (HPV).
- **Mutual Monogamy:** Being in a mutually monogamous relationship means that you and your partner are only having sex with one another. Being part of a long-term mutually monogamous relationship is one of the most effective ways to prevent HIV and STI transmission, but both people must be sure they are not infected.
- **Reduced number of sex partners:** Limiting your number of sex partners can significantly decrease your risk of HIV and STIs. However, it is important that you and each partner get tested and that you share these results with one another.
- **Abstinence:** The most effective way to prevent HIV/AIDS and STIs is to abstain from sex (anal, vaginal, and oral).
- **Get tested!** If you are sexually active, knowing your STI status is crucial for preventing the spread of these diseases. Contact your primary care physician to make an appointment for testing, or contact your local health department.

For Ingham County, call:

HIV/STI Program  
(517) 887-4424

**PARTNER SERVICES**

Partner Services is an essential tool utilized by the HIV/STI Prevention Program to impede the spread of HIV and Sexually Transmitted Infections within the community. Partner Services entails educating those infected with HIV/STI about the diseases they have acquired. It also entails assuring the clients that all shared information is confidential, and their personal information that is protected by the health professional assigned to their case. This assurance of confidentiality also assists the health professional in notifying those individuals exposed to infections, expeditiously, while stopping the spread disease.

Partner Services entails an extensive education process by the health professionals assigned to this task. Partner Services duties are conducted by Communicable Disease Investigators (CDI). During this educational process of Partner Services, clients learn the importance of informing those individuals with whom they have had sexual contact with, how important it is to be tested and/or treated for this exposure. High priority Partner Services efforts are focused on the following:

1. Pregnant women
2. Male patients known to have pregnant female partners
3. Individuals engaging in high risk behaviors with multiple partners
4. Persons co-infected with HIV and other STDs
5. Persons with recurrent STDs
6. Persons who present with clinical signs or symptoms of infection
7. Cases in area of high STD incidence within the community
8. Persons with high HIV viral load (increased HIV transmission).

Partner Services efforts, and the intricate knowledge base of the CDI health professional, protect the overall health of community served. Along with the educational component, it is imperative that the health professional be compassionate and non-judgmental to those going through the process of learning about their acquired infection/disease. When the CDI health professionals work within the community to ensure that Partner Services activities are performed and encouraged, the community at-large benefits from these efforts and disease does not win.
Sexually Transmitted Diseases (STDs)

Chlamydia and Gonorrhea: Chlamydia is the most common STI in Ingham County, Michigan and the United States. The incidence of both Chlamydia and gonorrhea is higher in Ingham County than Michigan. Individuals who have unprotected sex, multiple sex partners, and sexual intercourse with an infected person are at high-risk for infection and often have no symptoms. Both conditions can be cured with the right treatment, but if left undiagnosed or untreated can cause serious and permanent health problems in both women and men. Since the beginning of antimicrobial therapy prescribed to treat gonorrhea, it has developed resistance to antibiotics. The multidrug resistant strains of gonorrhea are increasing, which is an urgent public health threat, specifically because gonorrhea control strategy relies on effective antibiotic therapy. About 10% of those diagnosed with gonorrhea are likely to be infected with HIV. Generally, STIs in an individual increase two to five times the risk of acquiring HIV infection and also transmitting it to his or her partners. Therefore, it is recommended to screen any patient or suspect with STIs for HIV.

Avoiding High-risk sexual behavior, protected sex with the use of latex condoms can prevent infection. Regular screenings for sexually transmitted diseases are advised when unprotected sex is practiced, especially for those under the age of 25.

<table>
<thead>
<tr>
<th>Sexually Transmitted Diseases</th>
<th>2011 Cases</th>
<th>Rate per 100,000</th>
<th>2012 Cases</th>
<th>Rate per 100,000</th>
<th>2013 Cases</th>
<th>Rate per 100,000</th>
<th>2014 Cases</th>
<th>Rate per 100,000</th>
<th>2015 Cases</th>
<th>Rate per 100,000</th>
</tr>
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<tbody>
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<td>1,788</td>
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<td>9,726</td>
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<td>10,672</td>
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<tr>
<td>Syphilis (primary and secondary)</td>
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<td>431</td>
<td>4.35</td>
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<td>4.02</td>
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</tbody>
</table>

Source: Michigan Diseases Surveillance System 2011-2015. (Confirmed Cases). Rates for the cases less than 5 events are not calculated (nc)

HIV/Inhb/Aids:

In Ingham County, most of the people living with HIV/AIDS are white men who have sex with men (MSM), however a number of heterosexual men and women are also HIV-positive. African Americans and Hispanics have higher rates of HIV/AIDS than Whites. A significant proportion of HIV positive individuals can be unaware of their infection because of the long asymptomatic period starting from the time a person gets infected to full blown AIDS. Therefore, undiagnosed individuals can impose a serious threat to their own health and health of their partners. CDC recommends that primary care providers perform HIV screening at least once for all of their patients and annually for the patients who are known to be at risk (especially MSM). Also, women living with HIV should be screened for cervical cancer twice within the first year after initial HIV diagnosis, and if the results are normal, annually thereafter. The clinical setting offers an opportunity for providers to talk with patients about ways to prevent HIV transmission. These opportunities should not be missed by healthcare providers to engage patients in HIV risk reduction discussions and to refer patients for additional preventive services such as STD screening and partner notification.
What are sexually transmitted diseases (STDs)?

STDs are diseases that are passed from one person to another through sexual contact. These include chlamydia, gonorrhea, genital herpes, human papillomavirus (HPV), syphilis, HIV. Many of these STDs do not show symptoms for a long time, but they can still be harmful and passed on during sex.

How are STDs spread?

You can get an STD by having sex (vaginal, anal or oral) with someone who has an STD. Anyone who is sexually active can get an STD. You don’t even have to “go all the way” (have anal or vaginal sex) to get an STD, since some STDs, like herpes and HPV, are spread by skin-to-skin contact.

How common are STDs?

STDs are common, especially among young people. There are about 20 million new cases of STDs each year in the United States, and about half of these are in people between the ages of 15 and 24. Young people are at greater risk of getting an STD for several reasons:

What can I do to protect myself? The surest way to protect yourself against STDs is to not have sex.

That means not having any vaginal, anal, or oral sex (“abstinence”). There are many things to consider before having sex, and it’s okay to say “no” if you don’t want to have sex.

If you do decide to have sex, you and your partner should get tested beforehand and make sure that you and your partner use a condom—every time you have oral, anal, or vaginal sex, from start to finish. Know where to get condoms and how to use them correctly (http://www.cdc.gov/condomeffectiveness/brief.html). It is not safe to stop using condoms unless you’ve both been tested, know your status, and are in a mutually monogamous relationship.

Mutual monogamy means that you and your partner both agree to only have sexual contact with each other. This can help protect against STDs, as long as you’ve both been tested and know you’re STD-free.

Before you have sex, talk with your partner about how you will prevent STDs and pregnancy. If you think you’re ready to have sex, you need to be ready to protect your body and your future. You should also talk to your partner ahead of time about what you will and will not do sexually. Your partner should always respect your right to say no to anything that doesn’t feel right.

Make sure you get the health care you need. Ask a doctor or nurse about STD testing and about vaccines against HPV and hepatitis B.

Girls and young women may have extra needs to protect their reproductive health. Talk to your doctor or nurse about regular cervical cancer screening and chlamydia testing. You may also want to discuss unintended pregnancy and birth control (http://www.cdc.gov/TeenPregnancy/Teens.html).

Avoid using alcohol and drugs. If you use alcohol and drugs, you are more likely to take risks, like not using a condom or having sex with someone you normally wouldn’t have sex with.

If I get an STD, how will I know?

Many STDs don’t cause any symptoms that you would notice, so the only way to know for sure if you have an STD is to get tested. You can get an STD from having sex with someone who has no symptoms. Just like you, that person might not even know he or she has an STD. Open and honest conversation can help your partner make informed decisions to protect his or her health.
Genital herpes is a chronic, life-long viral infection. There are two different types of herpes, which affect the genital area, HSV-1 and HSV-2. HSV-2 account for most of the cases of recurrent genital herpes outbreaks.

50 million people in the United States are infected with HSV-2. (CDC Website) There has also been an increase in the spread of HSV-1 (in young women and MSM population), due to the use of oral stimulation during sex.

Managing one’s genital herpes infection is most effective when antiviral medication (i.e. Acyclovir or Valacyclovir) are used in combination with counseling and education about methods most effective in reducing the transmission of this disease. Medication must be taken daily to suppress the reoccurrence of this infection.

Patient counseling is essential in helping the patient manage their diagnosis of herpes. Assisting patients in understanding their infection and preventing sexual and perinatal transmission is essential to managing their disease. It is important for the counseling session to include the following:

- information about the history of the disease; how recurrent episodes and asymptomatic viral shedding affect the client
- the effectiveness of suppressive therapy
- the use of effective therapy to address recurrent outbreaks
- the importance of notifying sex partners, or informing potential sex partners
- the potential for sexual transmission of herpes to sex partners
- the importance of abstaining from sexual activity with uninfected partners when lesions are present
- risk for neonatal HSV infection
- increased risk for HIV acquisition among HSV-2 seropositive persons

A herpes diagnosis can be controlled with the right medication and education of disease management. It is essential that a patient understands their role in stopping the spread of this infection to others. This begins with obtaining the knowledge necessary to improve one’s well-being and protect others.
Tuberculosis (TB)

Tuberculosis (TB) is a serious bacterial disease caused by Mycobacterium tuberculosis, which usually infects the lungs, but can also infect the kidneys, the spine, and the brain. TB is spread through the air when an infected individual coughs, sneezes, speaks, or sings, sending out droplets of infectious bacteria. An uninfected person may breathe in these bacteria and become infected.

Not everyone who is infected with TB presents symptoms or becomes sick. In fact, most people who are infected with TB have strong enough immune systems that protect them from illness. This type of TB is called Latent TB Infection.

However, if the TB bacteria become active and multiply, the patient will develop signs and symptoms of TB, and are then said to have TB Disease. Common manifestations of TB Disease include:

- Severe cough lasting 3 or more weeks
- Coughing up blood or sputum
- Chest pain
- Weight loss
- Fatigue
- Fever
- Night sweats

TB Infection and TB Disease are located in the chart below.

Early detection and prevention are key for this disease. Those who are at the highest risk of infection, such as health care workers and those with HIV, should be skin tested for TB.

Details on TB skin testing are located below.

At ICHD, the TB Program aims to prevent TB infection, treat existing cases of TB, and perform skin testing and reading at little or no cost to county residents.

For further questions or concerns about TB, contact your primary care physician or your local health department.

Positive Tuberculosis Skin Test (TST): What does it mean?

Once a TST is conducted, several scenarios are possible. If the result is negative, Latent TB Infection and TB Disease are unlikely. In this situation, no treatment is necessary. (Although it should be noted that TB Disease is possible with a negative test result in the case of overwhelming diagnosis due to other factors.) In contrast, a positive test result indicates infection with TB bacteria; however, it does not determine whether the person has Latent TB Infection or TB Disease. As such, further laboratory tests must be completed to differentiate between the two conditions. Commonly used methods are examination of medical history, symptom manifestation, and chest x-rays. The following chart provides a brief overview of Latent TB Infection and TB Disease and their differences in regards to symptoms, infectivity, isolation and treatment requirements, and whether or not the case will be handled by the local health department.

<table>
<thead>
<tr>
<th>TST Result</th>
<th>Latent TB Infection</th>
<th>TB Disease</th>
<th>Important Info</th>
</tr>
</thead>
<tbody>
<tr>
<td>TST Result</td>
<td>Positive</td>
<td>Negative OR Positive</td>
<td>Can be negative if patient has another illness overwhelming the immune system.</td>
</tr>
<tr>
<td>Signs/Symptoms</td>
<td>None</td>
<td>Present</td>
<td>Symptoms include severe cough, weight loss, fatigue, productive cough with blood or sputum, fever, night sweats.</td>
</tr>
<tr>
<td>Chest X-Ray</td>
<td>Normal</td>
<td>Abnormal</td>
<td>Typical abnormalities in lung apices—can be atypical with HIV.</td>
</tr>
<tr>
<td>Infectious?</td>
<td>No</td>
<td>Yes</td>
<td>Infectious when positive sputum smears.</td>
</tr>
<tr>
<td>Isolation?</td>
<td>No</td>
<td>Yes</td>
<td>Isolation until patient meets clearance criteria, but must continue treatment regimen.</td>
</tr>
<tr>
<td>Treatment?</td>
<td>Recommended—Not Mandatory</td>
<td>Yes—Mandatory</td>
<td>Call primary care physician or local health department for treatment options.</td>
</tr>
<tr>
<td>Health Dept Case Management?</td>
<td>Available through health department or provider.</td>
<td>Yes—For All Cases</td>
<td>N/A</td>
</tr>
</tbody>
</table>

For further questions or concerns about TB and/or TSTs, contact your local health department.

For Ingham County residents, call: Communicable Disease Control (517) 887-4308
The Many Faces of TB in Ingham County

In the United States, the number of TB cases has been declining since 1993; however, TB is still a life-threatening disease in this country. Anyone can get TB. The following stories have been developed from actual TB cases here in Ingham County. Personal details have been changed to protect patient privacy.

Mr. Brown

Mr. Brown is 92 years old. This fall he developed a productive cough that would not go away. He was losing weight and had no appetite. His chest x-ray was suspicious for lung cancer. Imagine his surprise when he was diagnosed with pulmonary tuberculosis. He has vague memories of someone in his family having tuberculosis in the 1930s when he was a child. He did not know of any other exposure to tuberculosis. He also gave a history of being in the South Pacific during World War II. Other than that Mr. Brown had never travelled outside of United States. It is thought that Mr. Brown’s tuberculosis resulted from a latent tuberculosis infection or LTBI that he had for many years. Since antibiotics for tuberculosis were not discovered until 1943, Mr. Brown most likely had many contacts with tuberculosis without realizing it. When he developed LTBI it is also not known.

Sheila

Sheila just could not shake a summer cold. She was so tired and fatigued. She could not stop coughing and then she started coughing up blood. Little did she know that three of her family members had tuberculosis when she was a small child. Her maternal grandmother and two of her aunts had tuberculosis. During the Spring Sheila had started a tumor necrosis factor (TNF) blocker for her rheumatoid arthritis. Prior to starting the TNF blocker, she had been evaluated for tuberculosis, but she had been taking high dose steroids at the time, so it is believed that the steroids interfered with accuracy of the tuberculosis screening. By the time Sheila’s tuberculosis was actually diagnosed she required two weeks of hospitalization because of the severity of her illness. Sheila had LTBI and after she started the TNF blocker, her LTBI progressed rapidly into tuberculosis.

The Centers for Disease Control estimate that up to 13 million people in the United States have LTBI. While not everyone with LTBI will develop TB disease, about 5 – 10% of infected people will develop TB disease if not treated. This equates to approximately 650,000 to 1,300,000 people who will develop TB disease at some point in their life, unless they receive adequate treatment for LTBI. Identifying and treating those at highest risk for TB disease will help move toward elimination of the disease. Primary care providers play a key role in achieving the goal of TB elimination because of their access to high-risk populations. Advanced age, diabetes and use of TNF blockers are some of the risk factors for LTBI progressing to tuberculosis. Earlier intervention in treating LTBI would have prevented both Mr. Brown’s and Sheila’s tuberculosis.
What’s on the cover?

Histological result from a woman with a positive result for *Chlamydia trachomatis*. Chlamydia is the most commonly reported sexually transmitted disease in the United States. Chlamydia can have serious effects on a woman’s reproductive system, especially if left untreated.

Photo: Baud et al. (2011) Role of Chlamydia trachomatis in Miscarriage... Emerging Infectious Diseases. CDC

According to the CDC, the *Shigella sonnei* bacteria, a multi-drug resistant form of shigellosis is being spread in the United States. Outbreaks of Shigella have been observed in several states, including Michigan. Shigella is considered extremely contagious, yet it typically goes away without treatment.


Zika Virus is spread through the bite of an infected *Aedes* species mosquito. Currently, active transmission of Zika is occurring in the Southern United States. These mosquitoes are also known to spread other viruses like dengue and chikungunya.

Photo made available via the Centers for Disease Control and Prevention at http://www.cdc.gov/zika/about/
Appendix

Links:

Recommended Immunization Schedule 0-18 years
http://www.cdc.gov/vaccines/schedules/downloadcombined-schedules/child/0-18yrs-child-.pdf

Recommended Adult Immunization Schedule

Healthcare Personnel Vaccination Recommendations

Reportable Disease In Michigan 2016
http://www.michigan.gov/documents/mdch/
Reportable_Diseases_Michigan_by_Pathogen_478489_7.pdf
http://www.michigan.gov/documents/mdch/
Reportable_Diseases_Michigan_by_Condition_478488_7.pdf
**Virus Lifecycle**

**Stage 1**
Once the virus particle reaches a vulnerable host cell, it attaches using surface proteins.

**Stage 2**
Then the virus' genetic material (DNA or RNA) goes inside the host cell.

**Stage 3**
The virus DNA or RNA 'takes over' the host cell machinery, making lots of copies of itself.

**Stage 4**
After the virus has replicated, the new virus particles break off from the host cell and can go on infecting more cells.


**Bacteria Lifecycle: Proteobacteria, *Bdellovibrio*, utilizing nutrients in a host cell**

Source: http://academic.pgcc.edu/~kroberts/Lecture/Chapter%2011/proteobacteria.html
MICHIGAN RABIES ASSESSMENT: WHEN AN ANIMAL HAS BEEN EXPOSED

DOG/CAT  Animal Species Exposed  FERRET/LIVESTOCK

Exposed dog/cat has documentation of current OR previous rabies vaccination

YES

1. Revaccinate immediately, and
2. Have owner observe for 45 days

Euthanize and test dog/cat/ferret/livestock for rabies if it becomes ill, with signs suggestive of rabies, or dies during observation period.

NO

Is the biting animal available for testing?

NO

Immediately euthanize exposed dog/cat/ferret/livestock *

* If owner refuses euthanasia, see options below

OPTION 1

Within 96 hours of exposure: Rabies vaccine booster, and strict quarantine for 4 months for dogs and cats, 6 months for ferrets and livestock.

Euthanize and test dog/cat/ferret/livestock for rabies if it becomes ill, with signs suggestive of rabies, or dies during quarantine period.

OPTION 2

(Cats and dogs only) Consult the Michigan Department of Agriculture & Rural Development regarding the possibility of using serologic monitoring for rabies antibodies.

YES

Send to MDHHS Laboratory for rabies testing

Results Positive

Results Negative

Vaccinate dog/cat/ferret/livestock against rabies

[1] For questions about exposure:
1. Call your local health department and animal control offices.
2. If they are unavailable, during business hours, call the Michigan Department of Agriculture and Rural Development (MDARD) at (800) 292-3939 OR the Michigan Department of Health and Human Services (MDHHS) at (517) 335-8165.
3. After 5:00 PM and weekends, call MDARD at (517) 373-0440 OR MDHHS at (517) 335-9030.

[2] Current vaccination means administered by a veterinarian within 1 or 3 years from previous vaccination, depending on vaccine used. An animal is considered “previously” vaccinated against rabies if the owner has documentation showing that a licensed veterinarian has ever administered a vaccine product approved for use in that species.

[3] Ferret/Livestock: An animal is considered “currently” vaccinated against rabies if a licensed veterinarian has administered a vaccine product approved for use in that species within 1 or 3 years, depending on the vaccine used. Consideration should be given to vaccinating livestock that are particularly valuable. Animals that have frequent contact with humans (e.g., in petting zoos, fairs and other public exhibitions) and horses traveling interstate should be currently vaccinated.
MICHIGAN RABIES ASSESSMENT: WHEN ANIMALS HAVE BITTEN PEOPLE

WILD ANIMAL (MAMMAL)

OWNED DOG/CAT/FERRET (Vaccinated or Unvaccinated)

STRAIGHT DOG/CAT/FERRET *(Vaccination status unknown)

OTHER DOMESTIC MAMMAL *

Euthanize and test if appropriate species.

Is animal showing signs of rabies?

NO

YES

Is animal showing signs of rabies?

NO

YES

Does owner want animal?

YES

NO

OPTION 1

Confinement for required holding time, if applicable, then euthanize and test.

Euthanize and test

OPTION 2

Confinement for 10 days from the day of the bite. If it remains healthy, it is considered rabies-free at the end of confinement.

Test if animal becomes ill, with signs suggestive of rabies, or dies during confinement

* At the end of 10 day confinement, a healthy animal with unknown or no rabies vaccination history should be given initial rabies vaccine dose.

[4] Regardless of rabies vaccination status. Though rabies in animals vaccinated against rabies is rare, vaccinated animals can still develop rabies.

[5] Livestock and exhibit animals that bite people are assessed individually (a separate zoo animal rabies flowchart is available @ www.michigan.gov/rabies). In all instances of other domestic animal species, contact the Michigan Department of Health and Human Services (MDHHS) at (517) 335-8165 OR notify the Michigan Department of Agriculture and Rural Development (MDARD) at (800) 292-3939.

[6] State law requires that all stray dogs be reported to animal control within 48 hours of a person taking possession of the animal. Ensure animal has been reported.

[7] Contact local animal control office where the animal is located for required hold times.

[8] The animals listed above are rarely infected with rabies and have not been known to transmit rabies to humans. These species will not be tested except by special arrangement with MDHHS at (517) 335-8165. After 5:00 PM and on weekends, dial (517) 335-9030.

Chipmunk  Mole  Rat
Gerbil  Mouse  Shrew
Gophor  Muskrat  Squirrel
Guinea Pig  Prairie Dog  Vole
Hamster  Rabbit

Emerging and Zoonotic Infectious Diseases Section
Updated April 2016
MICHIGAN RABIES ASSESSMENT: WHEN A PERSON HAS BEEN EXPOSED

Michigan law requires that animal bites be immediately reported to the local health department.

Did the person have contact with the saliva or brain tissue of a mammal via fresh open wound or mucous membrane, or was the person exposed to a bat? [1]

- NO → DO NOT ADMINISTER PEP
- YES →
  - Was the exposure to a wild animal, such as a bat, fox, raccoon, or skunk? [2]
    - NO →
      - Is the animal a rodent, such as a squirrel, hamster, mouse, rabbit, or rat? [3]
        - NO → Consult the local or state health department
        - YES → DO NOT ADMINISTER PEP
    - YES →
      - Is the animal a dog, cat, or ferret? [4]
        - NO →
          - Was the animal captured - or can it be located - for 10-day observation?
            - NO →
              - Did the animal exhibit abnormal behavior or die within 10-day observation period?
                - NO →
                  - Did the animal exhibit abnormal behavior or bite unprovoked? [5]
                    - NO → DO NOT ADMINISTER PEP
                    - YES → ADMINISTER PEP
                - YES* →
                  - Is the direct fluorescent antibody test positive?
                    - NO → DO NOT ADMINISTER PEP
                    - YES* → ADMINISTER PEP
            - YES → DO NOT ADMINISTER PEP
        - YES →
          - Is the animal brain available for rabies testing at the state laboratory? [3]
            - NO →
              - Did the animal exhibit abnormal behavior or die within 10-day observation period?
                - NO →
                  - Did the animal exhibit abnormal behavior or bite unprovoked? [5]
                    - NO → DO NOT ADMINISTER PEP
                    - YES → ADMINISTER PEP
                - YES → DO NOT ADMINISTER PEP
            - YES →
              - Was the animal captured - or can it be located - for 10-day observation?
                - NO →
                  - Did the animal exhibit abnormal behavior or die within 10-day observation period?
                    - NO →
                      - Did the animal exhibit abnormal behavior or bite unprovoked? [5]
                        - NO → DO NOT ADMINISTER PEP
                        - YES → ADMINISTER PEP
                    - YES → DO NOT ADMINISTER PEP
                - YES →
                  - Is the direct fluorescent antibody test positive?
                    - NO → DO NOT ADMINISTER PEP
                    - YES* → ADMINISTER PEP
          - YES → DO NOT ADMINISTER PEP
    - YES →
      - Is the animal a dog, cat, or ferret? [4]
        - NO → Consult the local or state health department
        - YES → DO NOT ADMINISTER PEP

* Rabies PEP is a medical urgency, NOT an emergency. The decision to initiate rabies PEP can normally wait to determine whether an animal is available for testing or observation, and for test results to become available. Testing is available at the MDHHS laboratory 24/7 including weekends and holidays; turnaround time for testing and results is normally 24-48 hours.

SEE IMPORTANT INFORMATION ON REVERSE SIDE
# ICHD Directory of Services

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<td>(517) 887-4308</td>
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<td>Bathing Beach Results</td>
<td>Environmental Health</td>
<td>(517) 887-4312</td>
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<td>Immunizations</td>
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<td>Breast &amp; Cervical Cancer Screening</td>
<td>Breast &amp; Cervical Cancer Control Program</td>
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<td>Office for Young Children</td>
<td>(517) 887-4319</td>
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<td>greatstartconnect.org, Early Learning and</td>
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<td>Children’s Health Services</td>
<td>Child Health</td>
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<td>Sexton Health Center</td>
<td>(517) 755-1076</td>
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<td>Well Child Center</td>
<td>(517) 267-3400</td>
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<tr>
<td></td>
<td>Willow Health Center</td>
<td>(517) 702-3500</td>
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<tr>
<td>Children’s Special Health Care Services</td>
<td>Children’s Special Health Care Services</td>
<td>(517) 887-4309</td>
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<tr>
<td>Special health care needs for children and</td>
<td></td>
<td></td>
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<tr>
<td>some adults over age 21</td>
<td></td>
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<tr>
<td>Children’s Special Health Care Services</td>
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<tr>
<td>Communicable Disease Control</td>
<td>Disease Control</td>
<td>(517) 887-4308</td>
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<tr>
<td>Tuberculosis (TB) Follow-Up</td>
<td></td>
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<tr>
<td>Counseling- 10 to 21 years of age</td>
<td>Willow Health Center</td>
<td>(517) 702-3500</td>
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<tr>
<td>Dental Services—Ingham County Residents</td>
<td>Adult Dental</td>
<td>(517) 887-887-4423</td>
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<tr>
<td>ONLY</td>
<td>Healthy Smiles (under 18 years old)</td>
<td>(517) 272-4150</td>
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<tr>
<td>Disease Outbreaks</td>
<td>Disease Control</td>
<td>(517) 887-4308</td>
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<tr>
<td>Emergency Preparedness</td>
<td>Public Health Emergency Preparedness</td>
<td>(517) 887-4631</td>
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<tr>
<td>Family Outreach Services</td>
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<td>(517) 887-4322</td>
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<tr>
<td>Family Planning Services</td>
<td>Willow Health Center</td>
<td>(517) 702-3500</td>
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<td>Women’s Health</td>
<td>(517) 887-4320</td>
</tr>
<tr>
<td>Flu Shots</td>
<td>Immunizations</td>
<td>(517) 887-4316</td>
</tr>
<tr>
<td>Food Bank (Emergency Food—NO walk-ins—</td>
<td>Food Bank</td>
<td>(517) 887-4357</td>
</tr>
<tr>
<td>Phone interviews only)</td>
<td></td>
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<tr>
<td>Foodborne Illness</td>
<td>Environmental Health</td>
<td>(517) 887-4312</td>
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## ICHD Directory of Services

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<td>(517) 887-4312</td>
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<tr>
<td>General Health Care</td>
<td>Adults Health</td>
<td>(517) 887-4302</td>
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<td>Birch</td>
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<td>Child Health</td>
<td>(517) 887-4305</td>
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<td>Eastern</td>
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<td>(517) 755-1076</td>
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<td>St. Lawrence</td>
<td>(517) 364-7440</td>
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<td>Sparrow</td>
<td>(517) 364-3074</td>
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<td>Ingham Health Plan</td>
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<td>(866) 291-8691</td>
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<td>Enrollment Information</td>
<td>(517) 887-4641</td>
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<td>Indoor Air Quality Testing</td>
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