

## EXPERIENCE WITH QUANTIFERON TESTING TO CONFIRM TUBERCULIN SKIN TEST RESULTS

At the recommendation of the Health Department, 17 clients with positive tuberculin skin tests have obtained Quantiferon testing. The Quantiferon was negative in 9 subjects. This means these 9 clients did not have tuberculosis infection, thus avoiding 9 months of unnecessary INH therapy and physician visits.

Quantiferon is a blood test for tuberculosis infection, including disease, to be used in conjunction with risk assessment and medical and other diagnostic evaluations. Like tuberculin skin tests, Quantiferon does not distinguish between active disease and latent tuberculosis. Quantiferon can be used in place of tuberculin skin tests. It may also be used to confirm tuberculin skin tests.

The advantages of Quantiferon include that it requires only one visit, it is not affected by BCG, it is not affected by most nontuberculous mycobacteria, and it is objective.

Compared with tuberculin skin tests, Quantiferon is more sensitive (89% v 76%) and specific (99.2% v 65.9%). The high specificity means that in patients without evidence of tuberculosis, a negative Quantiferon makes tuberculosis highly unlikely.

The Health Department experience with Quantiferon testing to confirm tuberculin test results is provided below:

### Positive Quantiferon

TBT (mm)	Comment
18	BCG - born in India
20	Immigration screen - China
"allergy"	Student at technical institute
15	Born in Burma
6	Chest x-ray - new fibrotic changes
8	On TNF inhibitor
18	BCG - born in Burma
25	Nursing home and AFC worker

### Negative Quantiferon

TBT (mm)	Comment
19	Born in China
18	Emergency medical technician
10	Hospital worker
15	Zoo worker
7	Born in Cuba
16	Iraq war veteran
14	College student living in dorm
12	Hospital worker - previous TBT 8 mm
13	Youth facility resident - drug use

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The disadvantage of the older Quantiferon is that the test must be processed within 12 hours of venipuncture. Therefore the patient must travel to one of the three sites in Michigan that does testing: Borgess in Kalamazoo, University of Michigan, or Providence in Southfield.

A newer version, the Quantiferon In-Tube Method, was approved by FDA in October 2007. It enables remote location collection. Samples are incubated before shipping to the reference lab. To date, no local location collection sites have been identified.

Quantiferon testing costs between \$35.00 and \$120.00 per The Medical Letter.

## **MEASLES IN MICHIGAN**

More than 100 cases of measles have been reported in U.S. residents this year, including 4 cases in Michigan from the Cadillac area. More than 95% of these cases have occurred in unvaccinated persons. Importantly, one in five cases resulted in exposure in a health care setting. Health care workers should have evidence of immunity to measles \*. Be vigilant for patients with febrile rash illnesses or particularly febrile conjunctivitis, especially in the emergency department. For these persons, observe stringent airborne precautions and remove the patient from waiting areas immediately.

\*Health care personnel born in 1957 or later can be considered immune to measles only if they have documentation of a) a physician-diagnosed measles; or b) laboratory evidence of measles immunity; or c) appropriate vaccination against measles (i.e., administration on or after the first birthday of two doses of live measles and mumps vaccine separated by 28 days or more). Health care facilities should recommend a dose of MMR vaccine to unvaccinated health care professionals born before 1957 who a) do not have a history of physician-diagnosed measles, or b) laboratory evidence of measles.

## **MERCURY THERMOMETER EXCHANGE PROGRAM**

### Why is Mercury so dangerous?

Mercury, being a heavy metal substance, can pose a very real health risk to children, pregnant women, as well as women of childbearing age. There are mainly two different forms of mercury (elemental and methylmercury) that are of human health concern. Elemental mercury, which is most toxic in its vapor form, slowly vaporizes at room temperature and more quickly when heated. In the case of a broken glass-tube mercury fever thermometer, exposure is due to breathing in the invisible vapors that off-gas from the liquid state of mercury. Methylmercury, on the other hand, is absorbed into the body through ingestion. Exposure is most commonly due to the consumption of contaminated fish. The source of mercury in the fish is mainly due to mercury released into the atmosphere from coal-fired power plants and incinerators, which then settles into lakes and streams, and bioaccumulates throughout the aquatic food chain - with predator fish being the top of the aquatic food chain. Elemental or "metallic" mercury can permanently damage the central nervous system, brain and/or kidneys. Short-term exposure to high levels of metallic mercury vapors may cause effects such as nausea, vomiting, diarrhea, fever, increase in blood pressure and heart rate, skin rashes, weakness, gingivitis, and eye irritation. Most health effects are the result of long-term exposure which may include personality changes

(irritability, shyness), tremors, decreased vision and hearing, memory problems, peripheral nerve damage and hypertension.

#### How should I dispose of a broken Mercury thermometer?

Don't dump it or throw it away! Mercury, when improperly disposed of can either end up in the lakes and streams, and thereafter bioaccumulate in the fish and aquatic wildlife, or eventually end up in the groundwater we drink. For the proper disposal and/or clean-up of a broken glass tube Mercury thermometer, please contact the Barry Eaton District Health Department at 517-541-2615 or visit the Michigan Department of Community Health's home web page, [www.michigan.gov/mdch](http://www.michigan.gov/mdch) then type in the search box, mdch-mercury.

#### What is the alternative to using a Mercury thermometer?

A variety of mercury-free alternatives are readily available to the consumer, which include alcohol (dyed red or blue) thermometers, as well as button battery or solar powered digital thermometers.

#### Where can I exchange my old Mercury thermometer?

Mercury thermometers can be exchanged for new digital thermometers free of charge in the Environmental Health Division of the Barry Eaton District Health Department at 330 West Woodlawn Avenue in Hastings or 1033 Health Care Drive in Charlotte.

### **NEW INFLUENZA RECOMMENDATIONS FOR THE 2008-2009 SEASON**

The 2008 recommendations include new and updated information. Principal updates and changes include:

- a new recommendation that annual vaccination be administered to all children aged 5 - 18 years, beginning in the 2008-09 season, if feasible, but no later than the 2009-10 influenza season
- a recommendation that annual vaccination of all children aged 6 months through 4 years (59 months) continue to be a primary focus of vaccination efforts because these children are at higher risk for influenza complications compared with older children
- a new recommendation that either trivalent inactivated influenza vaccine or live, attenuated influenza (LAIV) be used when vaccinating healthy persons aged 2 through 49 years (the previous recommendation was to administer LAIV to persons aged 5 - 49 years)
- a recommendation that vaccines containing the 2008-09 trivalent vaccine strains A/Brisbane/59/2007 (H1N1)-like, A/Brisbane/10/2007 (H3N2)-like, and B/Florida/4/2006-like antigens be used

These recommendations also include a summary of safety data for U.S. licensed influenza vaccines. This report and other information are available at CDC's influenza website (<http://www.cdc.gov/flu>), including any updates or supplements to these recommendations that might be required during the 2008-09 influenza season. Vaccination and health-care

providers should be alert to announcements of recommendation updates and should check the CDC influenza website periodically for additional information.

Source: MMWR July 17, 2008 / 57 (Early Release); 1-60.

## **PREVENTION OF PERTUSSIS, TETANUS, AND DIPHTHERIA AMONG PREGNANT AND POSTPARTUM WOMEN AND THEIR INFANTS**

The risk for pertussis death or severe pertussis is highest among infants in the first 6 months of life and remains elevated until infants have received 1-2 doses of pediatric DTaP. In the U.S. between 2000 and 2006, there were 9,078 hospitalizations and 145 deaths in infants ages <12 months with reported pertussis. The most important source of infant pertussis is caregivers, siblings and parents, especially mothers.

In May, 2008, the CDC recommended that pregnant women who were not previously vaccinated with Tdap (the adult pertussis vaccine) receive Tdap in the immediate postpartum period before discharge from hospital or birthing center. In December 2006 the CDC recommended that adults who have or who anticipate having close contact with an infant < 12 months (e.g., parents, grandparents, child-care providers, or health-care providers) should receive a single dose of Tdap. Any woman who might become pregnant should receive a single dose of Tdap.

For those without insurance or those whose insurance does not cover vaccines, Tdap is available by appointment at the Health Department. There is no charge for the vaccine. There is an administration fee that can be waived based on ability to pay. No one is turned away due to inability to pay. Contact 269-945-9516, extension 129 in Barry County or 517-541-2660 in Eaton County to schedule an appointment.

## CAPTURE THAT BAT IN THE HOME

Bat season is upon us. Bats can transmit rabies. Historically August is the peak month in Barry and Eaton Counties for human exposure to bats.

For all situations in which a person is potentially exposed to rabies from a wild animal, an attempt must be made to collect the animal for rabies testing. If the animal is not tested, post-exposure treatment is necessary because rabies is always fatal once symptoms develop. Post-exposure treatment, before onset of symptoms, is 100% effective in preventing rabies. If the animal tests negative, then the exposed person does not need to receive post-exposure treatment for rabies.

Bats are a particular problem because they are frequently found inside homes, resulting in potential exposure to humans and unvaccinated pets. A bat in a home should be collected safely (see below) and not released until the health department has been consulted about the need for testing. The bat must be captured in such a way as to preserve the brain for rabies testing.

While human rabies cases are rare in the U.S., the majority are caused by strains of rabies from bats. Bat bites are a problem because their bite can easily go unnoticed. In many cases, there has been no known contact or bite from a bat. A bat exposure is defined by the Centers for Disease Control and Prevention as direct contact with a bat, or potential exposure.

- Potential exposure: "Finding a bat in the same room as a person whom might be unaware that a bite or direct contact had occurred (e.g., a deeply sleeping person awakes to find a bat in the room or an adult witnesses a bat in the room with a previously unattended child, mentally disabled person, or intoxicated person. These situations would be considered exposures if rabies is not ruled out by diagnostic testing of the bat".

### Collection of a Bat for Rabies Testing

Bats are assumed to have rabies, unless proven otherwise by capturing and testing the animal. Collection of a bat should occur in such a way as to avoid contact with the bat. If a bat is present in the home and you cannot rule out the possibility of exposure, do not free the bat. Capture the bat pending consultation with the Health Department.

The tools you need to capture a bat are:

- Leather work gloves
- Small box or coffee can
- Piece of cardboard
- Tape

Once the bat lands, wearing gloves, approach slowly and place a box or can over it. Slide a piece of cardboard under the container, trapping the bat inside. Securely tape the cardboard to the container. If you wish to keep the bat alive, punch holes (no larger than ¼ inch in diameter) in the container for the bat to breathe. Contact your local public health or animal control agency to discuss whether the bat needs to be tested for rabies and to receive instructions on what steps to take next.

Exclude bats from your home. Contact a wildlife control professional. Or if you chose to "bat proof" your home yourself, examine the home for holes that may allow bats into your living quarters. Any opening larger than ¼ inch should be caulked. Observe where bats exit at night and exclude them by loosely hanging clear plastic sheeting or bird netting over these areas. Bats can crawl out but cannot reenter. After the bats have been excluded, the openings can be permanently sealed. Additional information is available from from Bat Conservation International, PO Box 162603, Austin, TX 78716, [www.batcon.org](http://www.batcon.org).

Humans and bats do not mix. Pets and bats do not mix; be sure your pet is up to date on rabies vaccination. A bat that has not been tested is assumed to have rabies, and documented or potential exposure to an untested bat means that post-exposure treatment for rabies is needed.

If you have questions about potential exposure to a bat, contact the Health Department at 269-945-9516 extension 652, 517-541-2641, or 517-541-2613.

### Summary of Reportable Diseases for Barry and Eaton Counties

	Second Qtr 2008	First Qtr 2008	TOTAL 2008	TOTAL 2007	TOTAL 2006
Campylobacter	5	2	7	17	22
Chickenpox	5	7	12	136	109
Chlamydia	102	93	195	369	356
Coccidioidomycosis	0	0	0	1	1
Cryptococcus	0	0	0	0	2
Cryptosporidiosis	3	3	6	11	5
E coli unspecified or not 0157:H7	0	1	1	2	1
E coli 0157:H7	4	0	4	3	2
Encephalitis	0	0	0	0	1
Flu-like disease	50	3191	3241	Unavailable	3911
Giardiasis	4	5	9	17	19
Gonorrhea	17	19	36	83	101
Hepatitis A	0	0	0	0	1
Hepatitis B acute	0	0	0	5	3
Hepatitis B chronic	3	3	6	15	13
Hepatitis C acute	0	0	0	0	0
Hepatitis C chronic	27	14	41	88	92
Hepatitis E	1	0	1	0	0
Histoplasmosis	1	0	1	2	3
HIV/AIDS	7	7	14	20	11
Kawasaki	1	2	3	2	0
Legionellosis	0	0	0	2	2
Listeriosis	0	0	0	1	0
Lyme disease	1	0	1	0	1
Meningitis, aseptic	7	2	9	14	14
Meningitis, bacterial	5	5	10	4	4
Pertussis	0	0	0	2	3
Salmonellosis	7	3	10	28	25
Shigellosis	0	1	1	0	0
Strep invasive group A	0	0	0	2	2
Strep pneumoniae	0	1	1	13	10
Syphilis	2	2	4	11	9
Tuberculosis	0	2	2	1	0
West Nile virus	0	0	0	0	1
Yersinia enteritis	0	0	0	1	0
Animal exposures	150	84	234	540	463
Rabies PET recommended	11	8	19	90	31

The communicable disease numbers represent the number of confirmed cases (except for chickenpox and pertussis, which includes confirmed and probable cases).

Effective with the first quarter of 2008, strep pneumoniae in persons older than 5 years of age will be counted as bacterial meningitis.

The HIV/AIDS numbers represent new cases in our jurisdiction, not necessarily newly diagnosed patients.

To report communicable diseases in Barry and Eaton Counties, please call Janet Graham at 517-541-2641, or fax reports to 517-541-2666.