HEALTH DEPARTMENT of Northwest Michigan

Physician's Update

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Zoonotic Disease Update 2015

West Nile Virus activity was "epizootic" this past summer and fall. There was an increase in the number of animals identified with the virus compared to the past few seasons. Over 150 animals collected in the state tested positive including 137 birds and 14 mammals. Locally there were birds identified with WNV infection from Antrim, Otsego, Cheboygan, and Presque Isle Counties. There were 17 human cases reported in the state. 16 cases were neuroinvasive including 2 deaths. The majority of the cases were from the southeastern part of the state. In addition 3 viremic blood donors were identified in screening done before blood products are used. The cases ranged in age from 22-85 with average age of 61 and were reported between July 27 and September 21.

Rabies activity was also mild this year compared to seasons past. 32 animals were positive for Rabies this year in Michigan including 31 bats and 1 skunk. The distribution of the animals was in the Lower Peninsula with most being in the southern half. No animals tested in Northern Michigan Counties were positive this year.

For more information on these diseases go to www.michigan.gov/emergingdiseases

County Health Rankings

The University of Wisconsin School of Medicine and Public Health, with support from the Robert Wood Johnson Foundation, annually updates its County Health Rankings for Health Outcomes and Health Factors http://www.countyhealthrankings.org/.

Health Outcomes looked at length of life and quality of life measures. Health Factors looked at Health Behaviors, Clinical Care, Socioeconomic indicators, and Physical Environment. Rankings are by county from 1-82 with 1 being the best.

	Health Outcomes	Health Factors
Alpena	59	28
Cheboygan	25	50
Montmorency	57	80
Presque Isle	75	35
Antrim	64	32
Charlevoix	5	14
Emmet	14	8
Otsego	46	25

Vaccine Preventable Disease Update

Focus on Hepatitis

Hepatitis A virus has long caused epidemic jaundice and liver disease in humans. Although most young children (under 6) are asymptomatic older children and adults generally become symptomatic with nausea, abdominal pain, emesis, and jaundice. Transmission is fecal-oral through person to person contact of ingestion of contaminated food or water. Viral shedding occurs from 1-2 weeks before illness onset up to a week after jaundice is noted. It is still highly endemic in many parts of the world especially the developing nations.

Hepatitis A Vaccine is very effective at providing lifelong immunity to Hepatitis A infection. The vaccine is given as a 2 dose series 6 months apart. All children should routinely be immunized starting at 12 months of age with catch-up to complete the series anytime through age 18. The vaccine is part of the routine recommended schedule and is available through the Vaccine for Children Program.

Adults who are at increased risk or wanting protection should also be offered vaccine. It is available through the Vaccine Replacement Program (VRP) for those who lack insurance coverage. Groups at increased risk for Hepatitis A disease include international travelers (especially itineraries that include travel to rural areas in high risk countries), contacts of recent international adoptees from HAV endemic countries, men who have sex with men, and users of illegal drugs.

Hepatitis A Vaccine can also be used as Post Exposure Prophylaxis for those who may have been exposed during an outbreak, especially those under age 40. Persons with chronic liver disease including Hepatitis C are not at increased risk of infection but are at increased risk of fulminant hepatitis A and should be offered both Hepatitis A and B vaccines.

Both Hepatitis A Vaccines are highly immunogenic. More than 95% of adults will develop protective antibody within 4 weeks of a single dose and nearly 100% will seroconvert after two doses.

Hepatitis B Virus is still a common cause of morbidity worldwide. More than 350 million persons have chronic lifelong infections worldwide. It is an established cause of chronic hepatitis and cirrhosis and a known carcinogen. It is the cause of up to 50% of hepatocellular carcinomas and the WHO estimated that more than 600,000 persons died worldwide in 2002 from Hepatitis B associated disease. Transmission is bloodborne with the most important routes perinatal and sexual contact. Outbreaks have also been reported in long term care facilities related to blood glucose monitoring. The virus remains infectious for at least 7 days on environmental surfaces and is transmissible in the absence of visible blood. The U.S. saw a rapid decline in disease related to the use of vaccine as well as HIV prevention efforts. However, there are around a million persons in the US who are chronically infected with 5000-8000 new cases every year, including 1141 new cases reported in Michigan in 2014. The high risk groups are predominantly those who engage in high risk sexual activity or injection drug use.

Hepatitis B Vaccine is a recombinant product given as a three dose series over 6 months with more than 95% of children and 90% of adults developing protective antibodies. Because of the anamnestic response due to immunologic memory following vaccination, protection is long lasting. All infants should routinely receive the birth dose of vaccine prior to discharge from the hospital. Children born to mothers who are chronically infected or whose status is unknown should also receive Hepatitis B Immunoglobulin. The 3 dose series is recommended routinely for all children as well as for adults at increased risk for disease or those with underlying liver disease including Hepatitis C infection. Adults at risk include sex partners and household contacts of HBV positive persons, persons with multiple sex partners, men who have sex with men, injection drug users, healthcare and public safety workers, persons with diabetes, and those with end stage renal disease. The vaccine is included in the Vaccine Replacement Program.

The Health Department provides both pediatric and adult Hepatitis A and B vaccines at all of our offices.

Hepatitis C Surveillance Report

The State reported 2014 surveillance data for Viral Hepatitis. Some key findings include the following:

- There were 8,233 new chronic hepatitis C diagnoses reported in Michigan in 2014 for a rate of 83.30 cases per 100,000 people.
- The rate of hepatitis C, past or present is almost twice as high in Michigan males (107.57 per 100,000) versus females (59.58 per 100,000).
- American Indians and Alaskan Natives (122.6 per 100,000) and African Americans (115.77 per 100,000) have a higher rate of chronic hepatitis C infection than the general Michigan population.
- Where data were available, injection drug use was a factor shared by 64.9% of cases. Incarceration was a risk factor in 67.3% of cases.
- 75% of chronic hepatitis C cases were reported with genotype 1 infection, 14% with genotype 3, and 10% with genotype 2.

Hepatitis C in Young Adults

- From 2004-2014, the number of cases of chronic hepatitis C among persons aged 18 -29 years has increased over 484%.
- Injection drug use in 18-29 year olds was reported in 87.2% of hepatitis C patients.
- During this time frame there have been concurrent increasing trends in heroin abuse. Between 2000 and 2013 there has been a:
    - 71% increase in Michigan heroin substance abuse treatment admissions
    - 280% increase in Michigan heroin overdose deaths

The full report is available at:
http://www.michigan.gov/documents/mdch/2014_Hepatitis_B_and_C_Annual_Report_499557_7.pdf

New Meningococcal B Vaccine

The previous licensed vaccines for meningococcal disease included protection against four serotypes (A,C,Y,W-135) and the conjugate vaccine is recommended routinely at age 11 with a second dose at age 16. The FDA recently licensed 2 vaccines for use against serotype B Meningococcal disease which accounts for around 33% of the reported cases of invasive disease in this country (with serotypes C and Y accounting for over 60%). The Advisory Committee on Immunization Practices recently published recommendations on the use of this vaccine in adolescents and adults.
http://www.cdc.gov/vaccines/acip/

These vaccines may be given to anyone 16 through 23 years old to provide short term protection against most strains of serogroup B meningococcal disease; 16 through 18 years are the preferred ages for vaccination. Ideally this vaccine should be offered to older adolescents prior to admission to college and living in a dormitory.

These vaccines are recommended routinely for people 10 years or older who are at increased risk for serogroup B meningococcal infections, including:

- People at risk because of a serogroup B meningococcal disease outbreak
- Anyone whose spleen is damaged or has been removed
- Anyone with a persistent complement component deficiency
- Anyone taking eculizumab (Soliris)
- Microbiologists who routinely work with N. meningitidis isolates

The Meningococcal B Vaccine is not recommended for travelers to areas with increased risk of meningococcal disease such as Africa or the Middle East as there is very little serotype B activity in these regions.

The recommended schedule depends on which vaccine you get:

- Bexsero is given as 2 doses, at least 1 month apart.
- Trumenba is given as 3 doses, with the second dose 2 months after the first and the third dose 6 months after the first.

The same vaccine must be used for all doses. The vaccine is given in addition to the quadrivalent meningococcal vaccine. As a recommended vaccine it is available through the Vaccine for Children Program for eligible children and is available at the Health Department.

Communicable Disease Totals January - October 2015

Disease	Antrim	Chx	Emmet	Otsego	Total
Campylobacter	4	5	5	16	30
Cryptosporidiosis	0	0	0	6	6
Giardiasis	2	1	0	2	5
Salmonellosis	3	0	3	2	8
Shiga toxin-producing	0	0	0	1	1
Shigellosis	0	0	1	0	1
Yersinia enteritis	0	0	1	0	1
Flu Like Disease*	169	714	2957	3219	7059
Influenza	5	3	3	10	21
Meningitis - Aseptic	1	0	0	0	1
Meningitis - Bacterial Oth-	1	0	0	0	1
Meningococcal Disease	1	0	0	0	1
Streptococcus pneumoni-	1	1	4	0	6
Guillain-Barre Syndrome	0	1	0	0	1
Head Lice	83	129	62	48	322
Strep Throat	74	113	357	208	752
Streptococcal Dis, Inv,	1	1	2	0	4
Animal Bite	0	0	1	0	1
Chlamydia (Genital)	35	30	50	45	160
Gonorrhea	1	0	0	6	7
Syphilis - Early Latent	0	1	0	0	1
Syphilis - Latent of Un-	0	0	1	1	2
Syphilis - Primary	0	0	0	1	1
Mycobacterium - Other	1	0	0	1	2
Chickenpox (Varicella)	1	0	2	0	3
H. influenzae Disease -	0	0	3	0	3
Pertussis	1	1	0	0	2
VZ Infection, Unspecified	0	0	8	2	10
Lyme Disease	0	1	1	0	2
Hepatitis B, Acute	0	0	1	0	1
Hepatitis B, Chronic	0	1	1	3	5
Hepatitis C, Acute	2	0	3	1	6
Hepatitis C, Chronic	18	17	30	20	85
Total	**404**	**1019**	**3496**	**3592**	**8511**

To report a Communicable Disease/STD to the Health Department:

Antrim County:
Rhonda Decker, RN
231-533-1005

Charlevoix County:
Marley Niewendorp, RN
231-547-7631

Emmet County:
Melissa Mundy, RN (*Chlamydia only)
231-347-5636

Emmet/Otsego Counties:
Sandy Tarbutton, RN
989-732-6869

OR
Send a secure fax 24 hours / day:
231-547-6238

Proactive Identification of HIV Infection in People Who Inject Drugs through Increased HIV and Viral Hepatitis Testing

Statistics:

- The CDC estimates that in the United States, about **80%** of people with HIV who inject drugs also have HCV.
- In a study conducted by MDHHS, **94%** of young adults with HCV infection reported injecting drugs in their lifetime; **92%** reported injecting heroin in their lifetime.
- Based on data analyzed by the CDC and Food and Drug Administration, people addicted to prescription opioid painkillers are **40 times** more likely to be addicted to heroin, compared to other drugs (e.g. cocaine: 15 times).
- In Michigan, the number of opioid-related hospitalizations increased by **137%** from 2000 to 2013.

People who inject drugs are at high risk of HIV and Hepatitis C infection

The HIV outbreak in the spring of 2015 illustrated the severity of participating in high-risk injection drug use behaviors. The CDC Health Alert Network (HAN) reports that 96% of persons newly diagnosed with HIV infection interviewed during the outbreak injected drugs. Of all persons identified, 84% were also infected with the hepatitis C virus (HCV).

HIV and HCV transmission are not limited to certain geographic locations. For that reason, the CDC and Michigan Department of Health and Human Services (MDHHS) recommend proactive identification of HIV infection through increased testing of HIV and HCV in medical services used by at-risk populations, such as emergency departments and in-patient facilities.

CDC recommendation for providers: Ensure testing for HIV and HCV infection

Providers should implement routine opt-out HIV testing and viral hepatitis testing, especially for at-risk persons:

- With medical problems related to unsafe injection practices, such as drug overdose or intoxication, endocarditis, or skin and soft tissue infections (e.g., abscess, cellulitis)
- With substance abuse or mental health issues
- With potential or diagnosed HCV or hepatitis B virus (HBV)
- Seeking evaluation or treatment for a sexually transmitted disease (STD)
- Who are sexual partners of injection drug users

It is imperative to report all reactive HIV, HCV, and HBV tests to the local or state health department, in compliance with the Reportable Disease Rules of the Michigan Public Health Code.

Testing for HIV and Viral Hepatitis

HEPATITIS B	HEPATITIS C	HIV
Serologic Tests for Acute Infection: • HBsAg in acute and chronic infection • Anti-HBc • IgM anti-HBc is positive in acute infection only **Serologic Tests for Chronic Infection:** • HBsAg (and additional markers as needed) • Anti-HBc	**Serologic Tests for Acute Infection:** • No serologic marker for acute infection **Serologic Tests for Chronic Infection:** • Screening assay (EIA or CIA) for anti-HCV • Verification by an additional assay (e.g. nucleic acid testing (NAT) for HCV RNA)	• Antibody Test • Combination Antigen-Antibody Test (e.g. Determine Combo test) • RNA test

Harm Reduction Strategies to share with high-risk patients who inject drugs

- Stop injecting drugs by enrolling and completing a drug treatment program
- Always use new, sterile syringes, water, and other drug preparation equipment (i.e. needles, syringes, rinse water, cookers, and cotton)
- Limit the amount of people sharing drug equipment
- Practice safe sex by using preservatives, such as male or female condoms
- Begin and continue a consistent pharmaceutical prophylaxis regiment, such as pre-exposure prophylaxis (PrEP), if engaged in high-risk behavior to reduce the risk of HIV transmission
- Receive hepatitis A virus (HAV) and/or HBV vaccination to reduce the risk of HAV and HBV transmission

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Communicable disease reporting guidance in Michigan:
www.michigan.gov/cdinfo
CDC HAN: Outbreak of recent HIV and HCV infections among persons who inject drugs:
http://emergency.cdc.gov/han/han00377.asp
PrEP Guidance:
http://www.michigan.gov/mdhhs/0,5885,7-339-71550_2955_2982_74225-362309--,00.html
HIV, STD, TB, Viral Hepatitis Testing and Prevention in PWID:
http://www.cdc.gov/mmwr/preview/mmwrhtml/rr6105a1.htm?s_cid=rr6105a1_w