

# EPI Focus

Kent County Health Department  
2012

## Communicable Disease Summary

### Special points of interest:

- 2012 West Nile Virus
- Abnormal number of GI illness cases
- Trends in Sexually-transmitted Infections
- Vaccine preventable Diseases
- Tuberculosis

This issue of EPI Focus summarizes trends for select communicable diseases reported to the Kent County Health Department. The highlights of the issue include the West Nile Outbreak of 2012 and data for common gastrointestinal illnesses, sexually-transmitted infections, vaccine preventable diseases and Tuberculosis.

The purpose of this issue is to provide feedback to physicians, infection preventionists, laboratories, schools, day care centers and camps who report diseases to the local health department. Prevention and control of communicable disease is a necessary and critical aspect of community health, and is an affirmative duty of local public health departments. It is essential that local providers understand disease trends in our community and continue to report diseases as required under Michigan State Law (section 5111 of Act. No. 368 of the Public Acts of 1978, as amended, being 333.511 of Michigan Compiled laws). A current list of communicable diseases that are required to be reported can be found at the following internet address:

[http://www.michigan.gov/documents/Reportable\\_Disease\\_Chart\\_2005\\_122678\\_7.pdf](http://www.michigan.gov/documents/Reportable_Disease_Chart_2005_122678_7.pdf)

## West Nile Virus

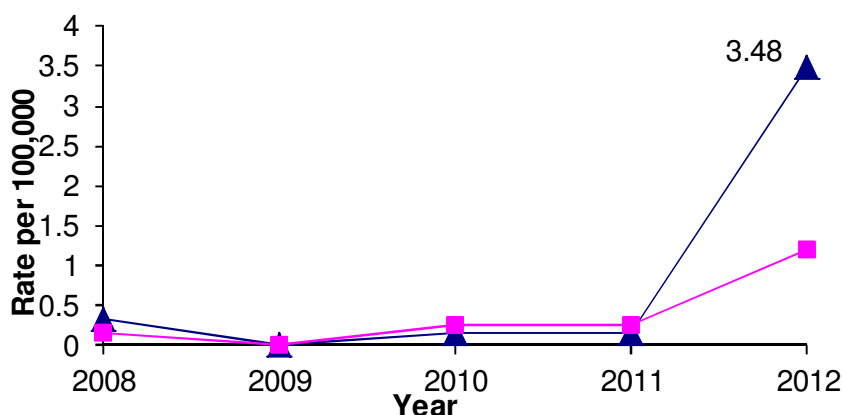
West Nile Virus (WNV), a mosquito-borne virus, can potentially cause serious illness in humans. WNV has established itself as a seasonal epidemic in North America and typically peaks in the late summer months and then continues into the fall. First detected in Michigan after a screening of dead birds in 2001, the first human case was diagnosed in 2002. The main vector for WNV, spread through a mosquito bite, is the stagnant water mosquito species *Culex pipiens*.

About 80 percent of those infected with WNV will show no symptoms at all. Symptoms of WNV include high fever, confusion, muscle weakness and severe headaches. When clinicians suspect a WNV infection, a sample of the patient's cerebral spinal fluid requires submission to the Michigan Department of Community Health (MDCH) Bureau of Laboratories (BOL) for confirmation.

Typically, the majority of WNV cases are reported in older adults. During the 2012 outbreak of WNV, nearly 50 percent of cases were reported in individuals under the age of 50, and the age of infected individuals ranged from 13 to 87 years. The graph to the right displays the distribution of infections by age group during the 2012 outbreak.

Mosquito surveillance and control initiatives can greatly reduce the risk of infection in human populations. Surveillance of mosquito traps identifies high risk areas when mosquitoes test positive for WNV. Once areas of high risk are identified, mosquito control actions can become more focused. In 2013, KCHD is conducting mosquito surveillance at 8 locations. Beyond mosquito surveillance and control, promotion of effective personal prevention measures to protect against infectious mosquito bites is essential for the public. Between surveillance, control and public education pertaining to WNV it is possible to reduce the likelihood of an outbreak.

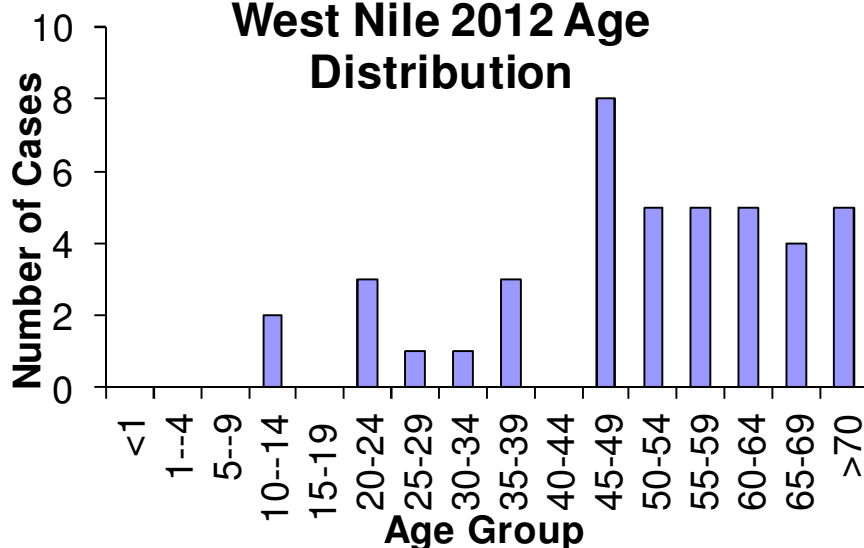
### West Nile Virus



Source: Michigan Disease Surveillance System

Legend: Kent County (blue triangle), State (pink square)

### West Nile 2012 Age Distribution



Source: Michigan Disease Surveillance System

## Gastrointestinal Illnesses

The most prevalent Gastrointestinal illnesses (GI) in Kent County continue to be caused by *Campylobacter*, *Salmonella*, and *Giardia*. The number of cases of Salmonellosis and Giardiasis remained consistent through 2012 compared to the previous five years, however an increased number of *Campylobacter* and cryptosporidiosis cases were reported. A total of 80 cases of campylobacteriosis were reported compared to the five-year median cumulative of 57 cases. Cryptosporidiosis saw an even more dramatic spike in 2012 with 30 cases compared to the five-year median cumulative of 16 cases.

### *Campylobacter*

Very few *Campylobacter* organisms (less than 500) are needed to cause illness in a human. Most commonly found in raw poultry meat, *Campylobacter* can infect an individual when contaminated raw poultry is cut on a cutting board which is later used to prepare other foods not cooked to appropriate temperatures to kill the organism. According to the CDC, *Campylobacter* infection occurs more frequently in the summer months, consistent with the reports filed in Kent County. Almost half of the 2012 cases in Kent County presented in the summer. Symptoms consist of diarrhea, cramping, abdominal pain and fever within 2-5 days after exposure. Diarrhea may be bloody and be accompanied by nausea and vomiting. The symptoms can last about a week and individuals with compromised immune systems are at a greater risk for serious infection in which the bacteria enters the bloodstream.

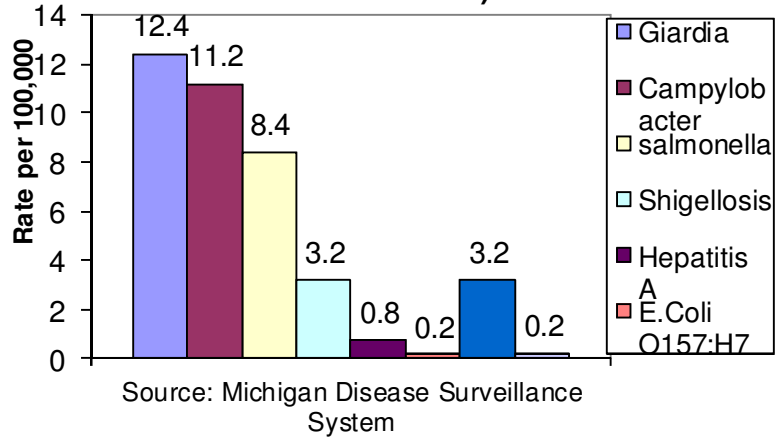
### *Cryptosporidiosis*

*Cryptosporidium*, also known as “crypto,” is a microscopic parasite found all over the United States and the world. *Cryptosporidium* can live outside the body for long periods of time and elimination with disinfectants, such as chlorine, is difficult. Cryptosporidiosis, one of the most common waterborne diseases, presents with stomach cramps or pain, dehydration, nausea, vomiting, fever and weight loss. The symptoms last about one to two weeks on average.

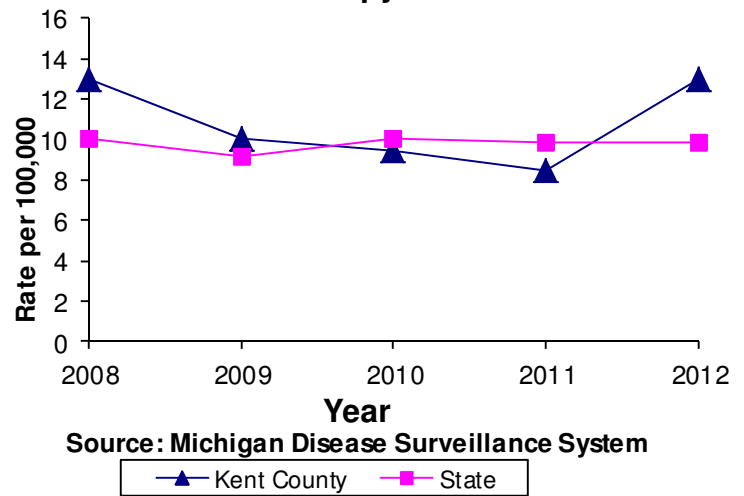
Kent County reported 30 cases in 2012 compared to the previous five-year median cumulative of 16 cases. Of those reported in 2012, 73 percent occurred in July through September, but the greatest number of cases (12) were reported in August and included a cluster of five cases associated with common exposure to a recreational water source.

To reduce the number of cases during the summer months, reviewing proper pool hygiene with both adults and children is essential. Since certain individuals display no symptoms of infection, they have the ability to transmit infection through a water source if proper hygiene techniques are not followed. The CDC recommends the following steps be followed to reduce infections: do not swim when you have diarrhea, do not swallow pool water, shower with soap before swimming, wash your hands after using the toilet or changing diapers, take your kids on bathroom breaks frequently to reduce accidents, and do not change diapers poolside. All of these steps will help reduce the number of cryptosporidiosis cases each year.

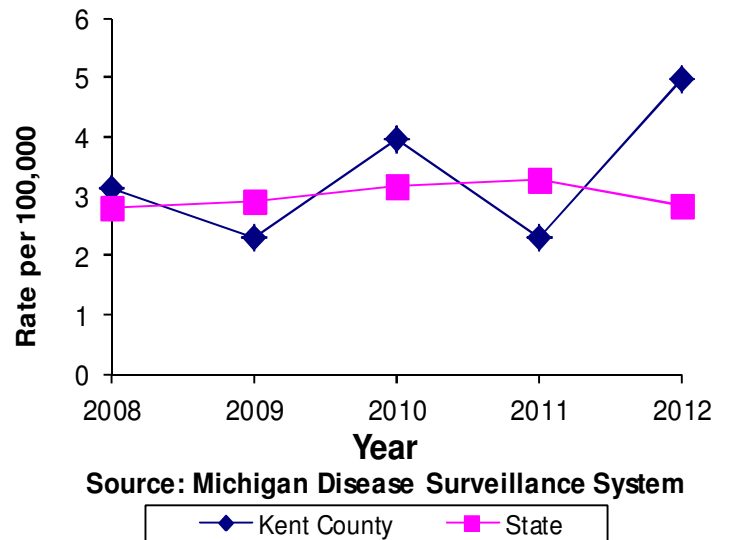
## Gastrointestinal Illnesses of Greatest Frequency, Kent County, Five Year Average (2008-2012)



### Campylobacter



### Cryptosporidiosis



## Sexually-Transmitted Infections

The Kent County Health Department offers counseling, testing and treatment for chlamydia, gonorrhea, and syphilis. Counseling and testing for HIV are also available. In addition to testing, the department provides assistance in contacting partners of individuals that have been diagnosed with these infections. Health care providers must report all confirmed cases of chlamydia, gonorrhea, syphilis and HIV to the health department and can obtain information on how to report by calling (616) 632-7171.

### Chlamydia

The most common sexually-transmitted infection in Kent county continues to be chlamydia with an average of 3,337 cases reported each year. While a large number of cases are reported each year, many infections progress undetected and the community burden is likely greater.

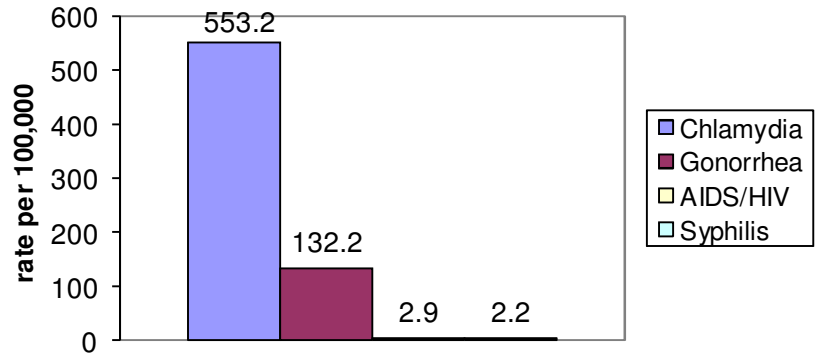
In 2012, 69% of all reported cases in Kent County were female and 88.7 percent of female patients were between the ages of 15-29.

Many women with chlamydia experience little to no symptoms. The milder symptoms are assumed due to lesser infections, such as UTIs or yeast infections. Yearly screenings are the most effective way to identify asymptomatic infections. The detection of asymptomatic individuals is essential in helping to reduce the spread. HCPs should advocate for yearly screenings of all sexually active adults, especially females.

### Gonorrhea

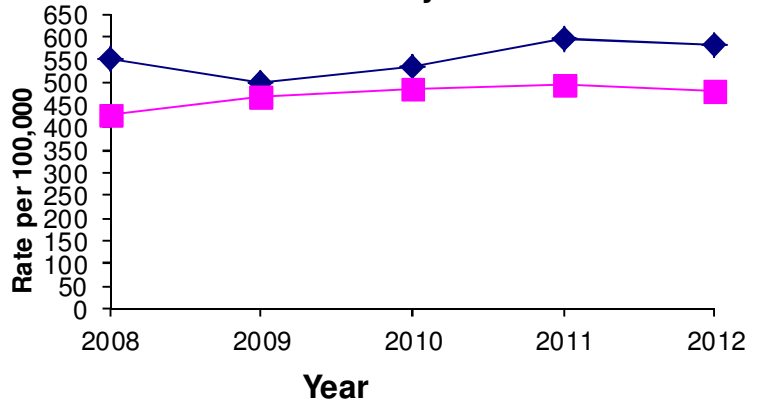
Over the past five years, the rate of gonorrhea has steadily decreased. In 2008, Kent County reported 1030 total cases. This number has since decreased to 628 total cases in 2012. The age distribution of cases continues to be consistent with that of chlamydia with a majority of cases occurring in young adults 15-29 years of age.

STI 5 year average for Kent County



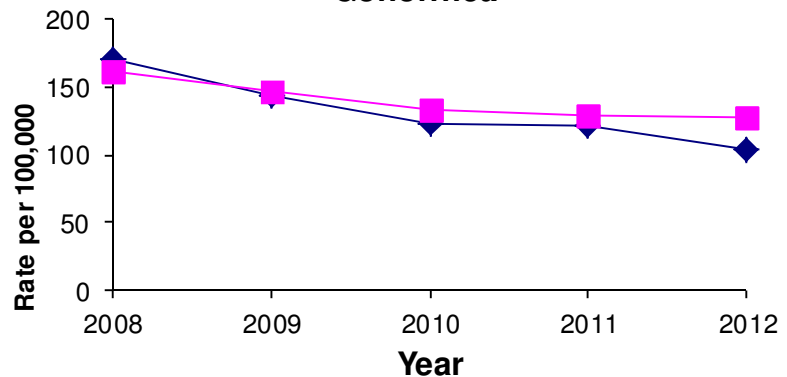
Source: Michigan Disease Surveillance System

### Chlamydia



Source: Michigan Disease Surveillance

### Gonorrhea



Source: Michigan Disease Surveillance System

## Vaccine-Preventable Diseases

Disease rates for vaccine-preventable diseases continue to decrease across Kent county, the state of Michigan, and the United States. Although a majority of infants and young children are completely vaccinated, there are still many under-immunized children and adults. The lack of vaccination in a population may stem from misinformation, religious beliefs or fear. Health care providers must continue to educate patients about the importance of immunizations and help patients understand how vaccines function within the body. The lack of proper immunizations in a population can increase the risk of a potential outbreak of a preventable disease.

## Vaccine-Preventable Diseases

### Pertussis

The rate of pertussis in Kent County continues to appear significantly lower than the average for the State of Michigan. The low rate of reported pertussis cases is believed to be caused by a lack of proper diagnosis and reporting of cases, not a lack of pertussis infections in Kent County. Physicians should consider pertussis in the differential diagnosis of a patient with cough illness lasting more than 2 weeks. Any potential pertussis cases should receive cultures for confirmation.

Early symptoms of pertussis include runny nose, low grade fever, and a mild cough. Infants may also present with apnea, or a pause in breathing. These early symptoms can last one to two weeks before progressing to the paroxysmal stage, which presents with the classic “whoop” cough and normally lasts from one to six weeks.

Pertussis is most frequently seen in children and young adults. In 2012, 50 percent of the reported pertussis cases in Kent county were in children under the age of 14. Within that age group there are three specific high-risk groups; infants who have not yet received the full course of the vaccine, teens whose immunity may be waning, and those who have never been vaccinated. Physicians should consider pertussis for individuals in these three groups who present with cough illness and advocate for booster doses of Tdap vaccine for those aged 7-18.

### Chicken Pox:

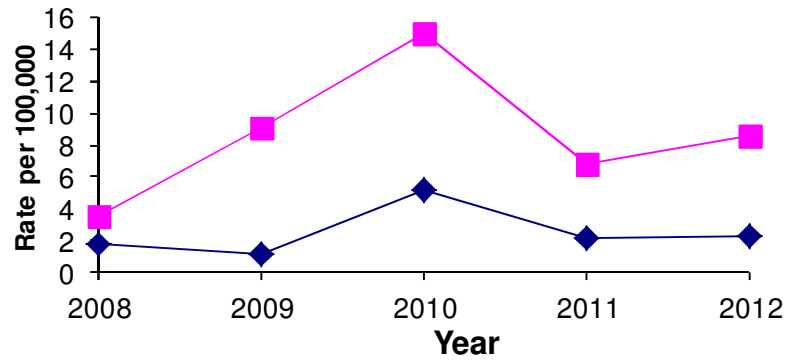
In the last five years the prevalence of chicken pox has decreased significantly. The number of cases has dropped from 214 in 2008 to only 19 cases in 2012. This drop in cases could be due to the requirement of the varicella vaccine for school entry.

## Tuberculosis

Tuberculosis (TB) in Kent County has remained consistent over the past five years with an average of 17 cases reported per year. Almost half of the reported TB cases (44%) in Kent County over the past five years have been Caucasian and 35 percent of cases were reported in individuals of Asian decent. Nearly 80% of cases were reported in foreign-born individuals, with Mexico, Myanmar and Vietnam the most commonly reported countries of birth.

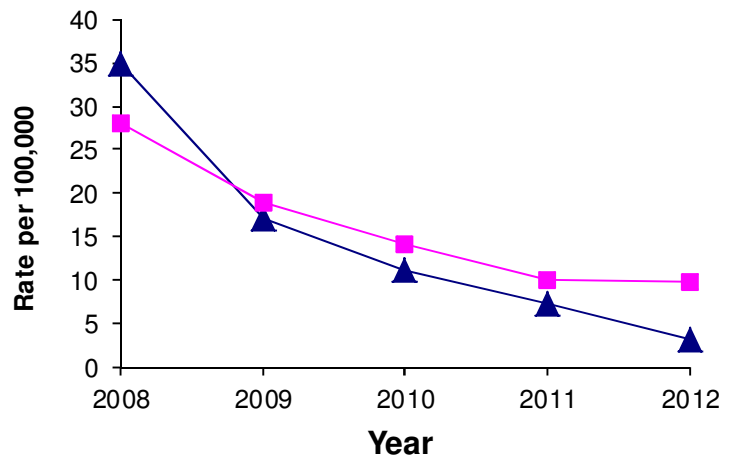
It is important to acknowledge antibiotic-resistant TB. TB infections typically become resistant after a patient fails to properly take or finish antibiotic treatment or when the incorrect dose or treatment is prescribed. Multidrug-Resistant TB (MDR TB) is a strain that is resistant to isoniazid and rifampin, two of the most potent TB treatments. In rare cases a patient can present with Extensively drug resistant TB (XDR TB) which is resistant to any fluoroquinolone, in addition to isoniazid and rifampin. This amount of resistance leaves health care providers with very few treatment options.

### Pertussis



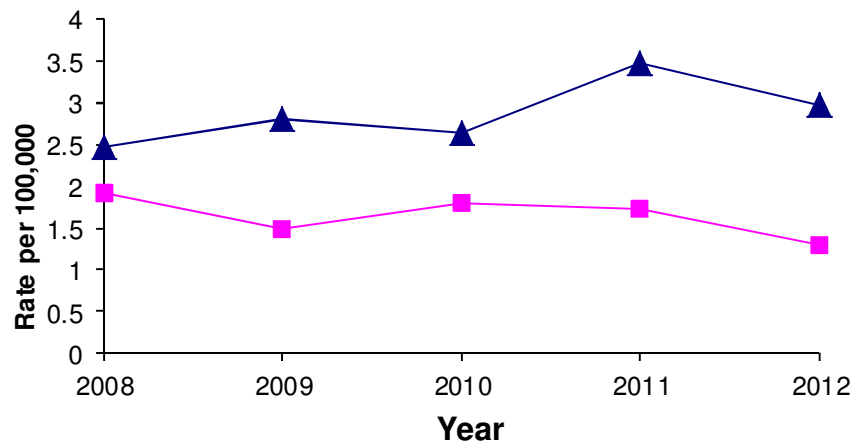
Source: Michigan Disease Surveillance System  
 Legend: Kent County (blue diamond), State (pink square)

### Chicken Pox



Source: Michigan Disease Surveillance System  
 Legend: Kent County (blue triangle), State (pink square)

### Tuberculosis



Source: Michigan Disease Surveillance System  
 Legend: Kent County (blue triangle), State (pink square)



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***Check us out on the web at  
[www.accesskent.com/health](http://www.accesskent.com/health).***



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**Additional Resources**

*Monthly Kent County Communicable Disease Reports* [www.accesskent.com/Health/CommDisease/reports.htm](http://www.accesskent.com/Health/CommDisease/reports.htm)

*The Centers for Disease Control and Prevention A-Z Index* [www.cdc.gov/az/](http://www.cdc.gov/az/)

*Michigan Department of Community Health Communicable Disease Information* [www.michigan.gov/cdinfo](http://www.michigan.gov/cdinfo)

*Michigan Emerging Diseases Website* [www.michigan.gov/emergingdiseases](http://www.michigan.gov/emergingdiseases)

*Michigan mosquito Control Association* [www.mimosq.org](http://www.mimosq.org)