Epi Focus Foodborne Illness Highlight

Communicable Disease Summary
Kent County Health Department

2011 Review

Inside this issue:

Quick view of Trends for 2011 in Kent County:

Diseases at higher rate of occurrence in Kent County:

- Chlamydia: 3539 cases compared to average* of 3322
- Influenza-like Illness: 54677 cases compared to average* of 49103.
- Strep Group A: 28 cases compared to average* of 14.

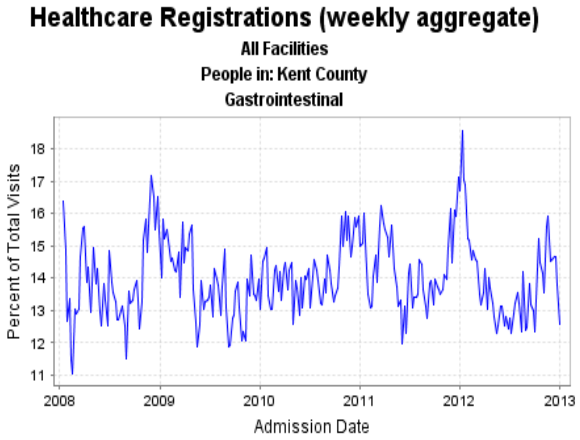
Diseases lower than the average rate in Kent County:

- Chicken Pox: Reduced to 42 cases in 2011 compared to average* of 214 per year.
- Gonorrhea: 724 cases reported compared to average* of 1030 a year.

Notifiable Diseases of Low Frequency present in Kent County in 2011:

- Malaria: 6 cases
- Listeriosis: 1 case
- Crutzfeldt-Jakob Diease: 2 cases
- Guillain-Barre Syndrome: 1 case
- Kawasaki Syndrome: 4 cases
- Toxic Shock Syndrome: 1 case
- Hemolytic Uremic Syndrome: 1 case

Norovirus



Norovirus is a very contagious viral infection most commonly associated with foodborne illness. Norovirus spreads through infected individuals, food items, drinks or contaminated surfaces. Individuals are most contagious while showing symptoms and the three days following the end of their symptoms. The most common foodborne outbreaks involving norovirus include leafy greens, shellfish and fresh fruits. Norovirus is known to spread quickly through areas of close contact such as daycare facilities, schools, nursing homes, and cruise ships. Due to the rapid spread in these environments, it is imperative to have proper hand hygiene procedures in place for staff and present individuals.

The incubation period for norovirus is usually 24-48 hours after the first exposure. The symptoms associated with norovirus are stomach pain, nausea, diarrhea, and vomiting. Symptoms typically last about one to three days. The most concerning complication with norovirus is dehydration. Individuals infected with norovirus should be encouraged to drink water and supplements to ensure they maintain adequate water and nutrients while experiencing diarrhea and vomiting.

The graph to the left displays the percentage of individuals presenting to local emergency departments with complaints of gastrointestinal (GI) illness by week. GI illness complaints increased near the end of November 2011 and this increase extended into the beginning of 2012, peaking at 17.9% during the first full week of the year. With a five year average of 13.9 percent anything above 15 percent is alarming. This spike in GI related complaints was determined to most likely be caused by norovirus infection.

Tips for Preventing Norovirus:

1. Practice proper hand hygiene: wash your hands carefully with soap and water especially after using the toilet and changing diapers. Make sure to wash your hands prior to eating, preparing or handling food.
2. Wash fruits and vegetables and cook seafood completely. Noroviruses are relatively resistant and can survive temperatures as high as 140 degrees F.
3. When you are sick, do not prepare food or care for others who are sick.
4. Clean and disinfect contaminated surfaces. After vomiting or having diarrhea, immediately clean and disinfect the surrounding area using chlorine bleach solution with a concentration of 1000-5000 ppm or other disinfectant registered as effective against norovirus by the EPA.

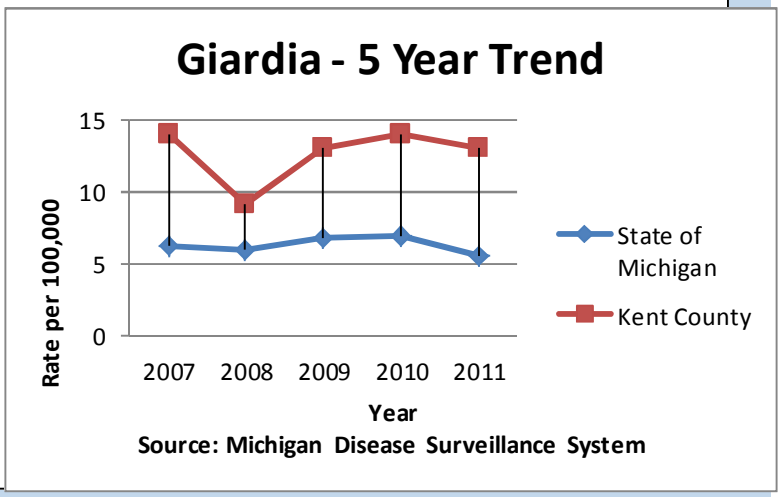
Giardia

Giardiasis is a diarrheal diseased caused by the parasite *Giardia*. The parasite is found all over the world and is able to survive outside the body for weeks to months. This makes *Giardia* a hard parasite to avoid, particularly for travelers and those who rely on natural sources (rivers and lakes) for their water, such as campers.

Giardiasis is marked by typical foodborne illness symptoms including diarrhea, gas or flatulence, upset stomach, nausea, greasy stool that can float, dehydration and cramps. Less common symptoms sometimes seen in *Giardia* infections include itchy skin, hives and swelling of the eye joints. The symptoms of Giardiasis typically last around 2 to 6 weeks, but the incubation period may last 1 to 3 weeks. The long incubation period can make it difficult to determine the origin of the infection and contain the spread.

Giardia can spread in multiple ways. Common methods of infection transmission include swallowing *Giardia* from a contaminated surface, consuming water or ice from contaminated sources, swallowing water while swimming, eating undercooked food, or having contact with an ill person.

Kent County typically sees around 79 cases of *Giardia* a year, with 74 cases in 2011. The rate of infection per 100,000 people is higher than the average seen at the state level. Kent County tends to see many cases of *Giardia* through refugee populations coming into the county through the Kent County refugee program.

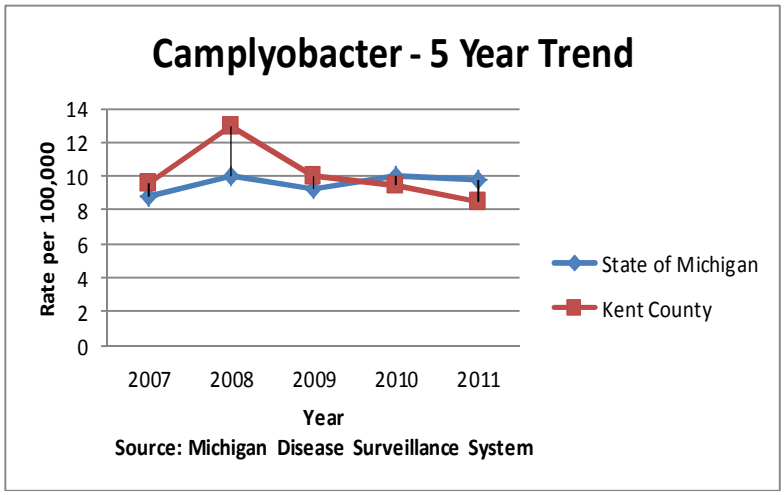


Campylobacter

Campylobacter is a bacterial infection that causes diarrhea, cramping, abdominal pain and a fever within 2-5 days after exposure to the bacteria. Patients may also experience bloody diarrhea, nausea and vomiting. The symptoms of Campylobacter infection normally last about a week, and clear up without the need for treatment. Some infected individuals will show no symptoms at all, making them more likely to spread the disease to others. Other individuals will develop a more serious illness. Serious illness can develop when the infection moves into the blood stream, and this can be life threatening. More serious infections require the use of antibiotic treatments.

In addition to serious bacterial infection, around 1 in 1,000 cases of *Campylobacter* infection leads to Guillain-Barré syndrome. Guillain-Barré is a disorder in which the immune system attacks the body's nerves. This attack of the nerves leads to weakness and tingling in the extremities that can lead to more severe paralysis. Fortunately, in most cases patients recover without treatment.

Campylobacter is one of the most common cause of diarrheal illness in the United States. Normally, the Kent County Health Department receives 59 confirmed cases of *Campylobacter* infections a year, with 50 reported in 2011. *Campylobacter* tends to be more frequent in the summer months and more common in the youth population. Outside of 2008, Kent County's rate of *Campylobacter* infections per 100,000 is consistent with the State of Michigan.



Shiga Toxin-producing Escherichia coli (STEC)

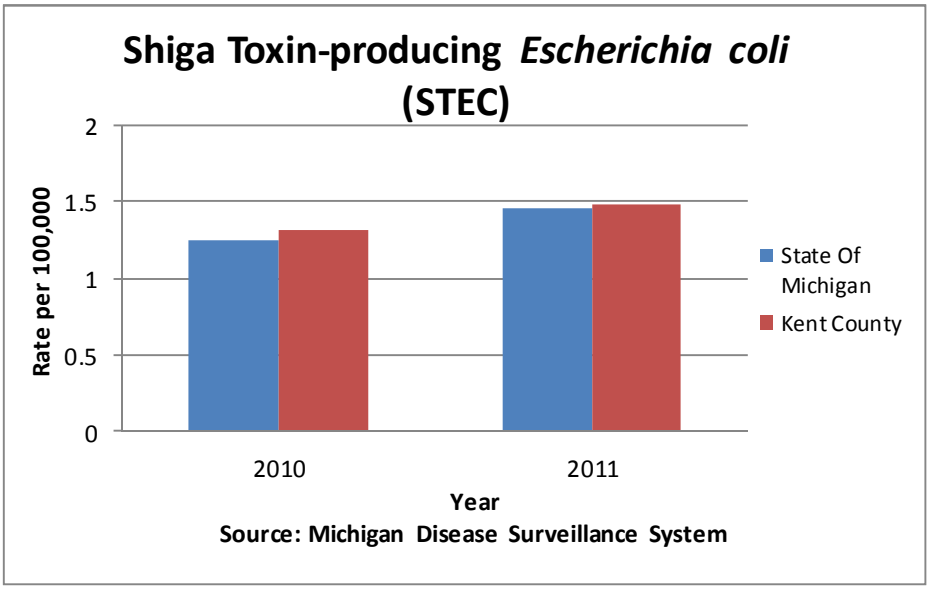
Shiga toxin-producing *Escherichia coli* (STEC) is just one strain of the bacterium *Escherichia coli*. While many strains are present in the body and cause no harm, STEC can cause severe illness and is unfortunately one of the most common causes of foodborne illness outbreaks in the United States. In 2011, both Kent County and the State of Michigan observed an increase in STEC infections compared to 2010. This increase is especially troublesome due to the potential for complications associated with STEC infections. While the number of STEC infections rose in 2011, it is still one of the most infrequent foodborne illnesses in Kent County. The chances of acquiring a *Campylobacter* or *Salmonella* infection is almost ten times greater compared to STEC infection.

STEC can infect people of any age, but young children and the elderly are the most likely to develop serious infections. Symptoms for STEC typically appear three to four days after exposure to the bacteria and the symptoms remain for five to seven days after onset. The symptoms associated with STEC include severe stomach cramps, diarrhea (often bloody), and vomiting. A fever may be present but rarely high enough to cause concern.

Complications of STEC infections include dehydration and Hemolytic Uremic Syndrome (HUS). One case of HUS was reported in Kent County in 2011,which was the result of a STEC infection. HUS is diagnosed in 5-10% of STEC infections. Patients are diagnosed based on decreased urination, feeling tired, and loss of pink color in cheeks and inside lower eye lids. Suspected HUS patients should be hospitalized for risk of kidney failure.

Almost everyone is at risk for a STEC infection. STEC lives in the gastrointestinal system of cattle, goats, sheep, deer, elk, and other ruminant animals. This means raw milk, unpasteurized products, and undercook meats are at risk for contamination with STEC. In addition to food products, individuals can become ill after being in contact with these animals or their feces. Places where these exposures occur include petting zoos, farms, and lakes where animals are present. The following precautions should be taken to prevent the transmission of STEC infections.

1. Practice proper hand hygiene: Wash your Hands. Especially after contact with animals, changing diapers, preparing raw meat, and using the restroom.
2. Avoid swallowing water in lakes, ponds, rivers and streams.
3. Prevent cross contamination in food preparation. Do not cut vegetables and other raw products on surfaces used to prepare raw meat.
4. Avoid raw milk and unpasteurized products.

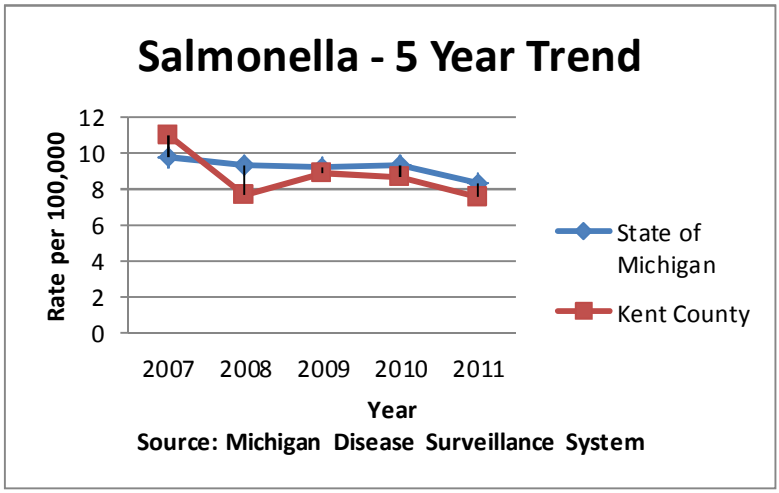


Salmonella

Salmonellosis is a bacterial infection responsible for an estimated 1.2 million illnesses a year in the United States. The large number of cases per year in the United States is likely the result of multiple outbreaks linked to *Salmonella* each year. A list of outbreaks can be found on the CDC's *Salmonella* information webpage. Kent County typically sees 50 cases of salmonella a year, with 44 cases in 2011. Kent County's case rate per 100,000 people is consistent with the state of Michigan.

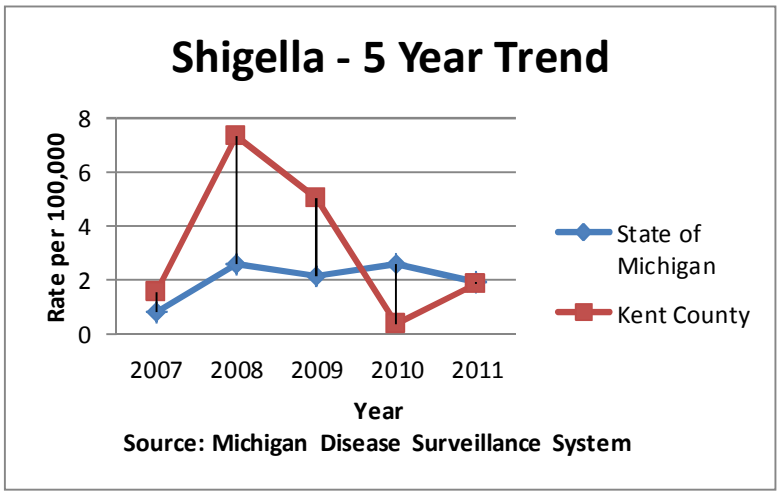
The symptoms of a *Salmonella* infection include diarrhea, fever, and abdominal cramps. *Salmonella* infection typically resolves itself within five to seven days without the need for any antibiotic intervention. The infection is most typically transmitted to humans by consuming foods contaminated with the bacteria. Contaminated foods most commonly associated with salmonella infections are beef, poultry, milk, eggs and vegetables. In addition to contaminated food, another way to transmit the infection is through handling reptiles and birds, especially young birds. To prevent the spread of *Salmonella* follow these simple tips:

1. Cook meat thoroughly
2. Wash hands, kitchen surfaces, utensils with soap and water after contact with raw meat.
3. Prevent cross contamination in food preparation. Do not cut vegetables and other ready-to-eat products on surfaces used to prepare raw meat.
4. Wash hands immediately after contact with birds or reptiles.



Shigella

Shigellosis is a bacterial infection that presents 1 to 3 days after exposure. The symptoms associated with *Shigella* infection include diarrhea, fever, and stomach cramps. The diarrhea associated with *Shigella* is often bloody but the overall infection usually resolves itself within 5 to 7 days. Antibiotics are not usually required but may shorten the duration of the illness and also decrease the rate at which it spreads. Most first line of defense drugs are no longer effective due to resistance, but many drugs are still available, although it is important to note that resistance is growing.



A small percentage of patients (~2%) may develop post-infectious arthritis that can last months to years. This is marked by pain in joints, irritation of eyes, and painful urination. This infection normally only occurs in patients who are already predisposed to arthritis.

Patients with a *Shigella* infection can infect others while sick and for an additional 1 to 2 weeks after the symptoms have cleared. A *Shigella* infection can be prevented through basic hygiene and hand washing practices. Toddlers who are not potty trained are one of the greatest risk groups because of their constant potential risk for contact with feces and poor hand hygiene. The toddlers then increase the risk of spreading the infection to families, caretakers, playmates and friends. Food can also be contaminated with the bacteria, and the contaminated food typically looks and smells normal.

Shigella in Kent County returned to a rate similar to the State of Michigan in 2011 after aberrations from 2008-2010.

Tips to prevent *Shigella*:

1. Wash hands with soap and water.
2. Dispose of soiled diapers properly.
3. Disinfect diaper changing area.
4. Keep children with diarrhea out of childcare setting.
5. Supervise children's hand washing.
6. Do not prepare food for others when ill with diarrhea.
7. Avoid swallowing water from ponds, lakes or untreated pools.

Kent County Health Department

Communicable Diseases/Epidemiology Unit

700 Fuller Ave. NE

Grand Rapids, MI

49503

Phone: (**616) 632-7228**

Fax: **(616) 632-7085**

Check us out on the web at

www.accesskent.com/health

Additional Resources

Monthly Kent County Communicable Disease Reports www.accesskent.com/Health/CommDisease/reports.htm

The Centers for Disease Control and Prevention A-Z Index www.cdc.gov/az/

Michigan Department of Community Health Communicable Disease Information www.michigan.gov/cdinfo

Prepared by Katie Olson, BS and Brian Hartl, MPH