CLAY COUNTY
PUBLIC HEALTH CENTER

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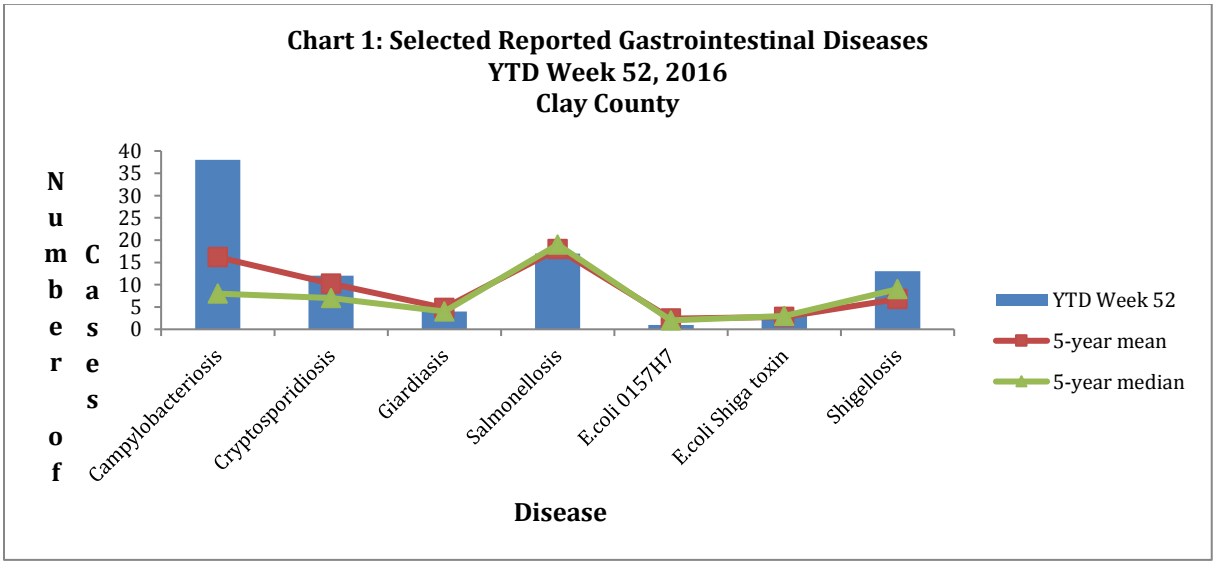
2016 Communicable Disease Report Summary

In 2016, a total of 1,887 cases (excluding animal bites and influenza) were reported to the Health Center. Of those cases, 1,748 were sexually transmitted diseases, a 44.5 percent increase (538 more cases). Eighty-nine cases of gastrointestinal diseases (GI)were also reported, mostly campylobacteriosis, cryptosporidiosis, salmonellosis and shigellosis. The other 50 reportable disease conditions also included a positive Zika virus test resulting from screening of an adult male who traveled to Zika endemic area outside the United States. No Zika virus disease was reported among Clay County residents in 2016, and no local transmission was reported in Missouri and Clay County.

Zika virus disease commonly known as Zika was made a reportable disease in the U.S.A and in the State of Missouri in 2016, following the outbreaks in Brazil, and some other countries in North America. The Clay County Public Health Center, Epidemiology Program collaborated with local physicians, hospitals, and the regional State Epidemiology Specialist to follow up on travelers with concerns of exposure(s) to the virus. Zika virus infection became a disease of public health importance because studies linked it to conditions such as microcephaly and other developmental disorders in newborn babies.

During the last week of 2016, gastrointestinal diseases; campylobacteriosis, cryptosporidiosis (crypto), and E. coli shiga toxin were above the annual average expected for the county.

Chart 1 below shows the year-to-date counts of selected reported diseases in Clay County's jurisdiction, the 5-year mean (the average count for the last five years), and the 5-year median (the middle number for each disease, and the most likely number).



The increases in numbers of some of these diseases were because of occurrences of county-specific outbreaks. Three large size daycares had outbreaks of gastrointestinal illnesses. The etiology of two of the three outbreaks was confirmed as shigella infection, while one was never confirmed due to lack of samples for testing. The outbreak investigation required the affected daycares to work more closely with CCPHC Epidemiology and Environmental staff, and strengthened the partnerships between those daycare facilities and CCPHC Epidemiology staff members. It also made those daycare managers our champions for the pilot of CCPHC new Daycare Surveillance System.

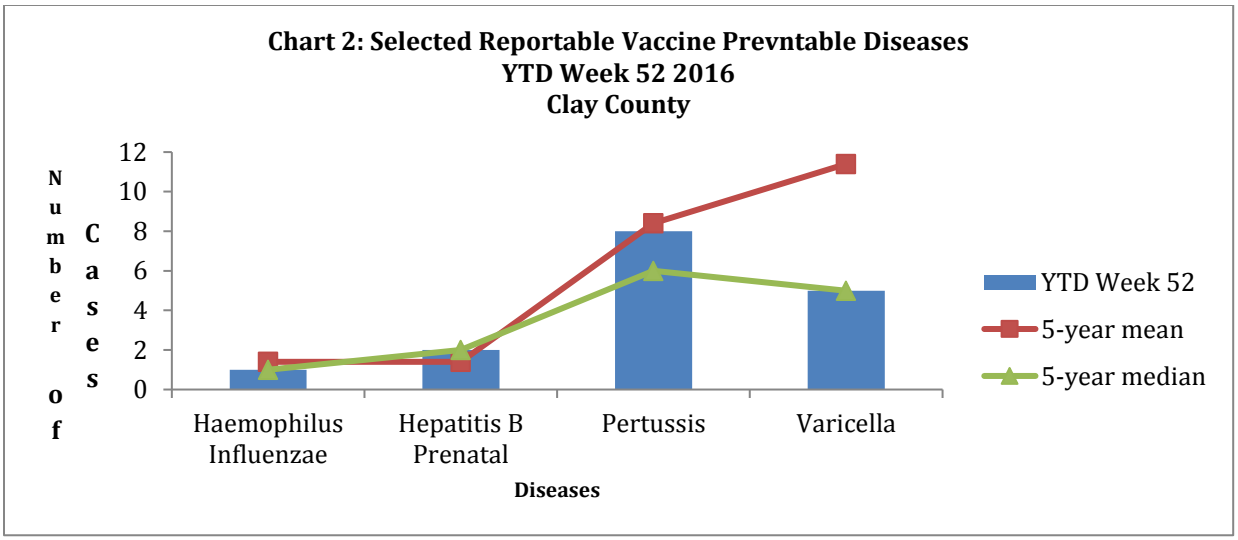
Also in 2016, there was a follow-up of possible legionellosis exposure in a manufacturing plant, following a report of Legionella associated death in an employee of the plant. No other cases were identified at the plant, and investigations did not rule out that the exposure occurred elsewhere.

The last outbreak in 2016 was a salmonella outbreak in a Casino. It happened at a busy season of the Casino operations; Christmas through New Year Holidays. During this investigation, the Health Center and the Casino had staff members on Christmas vacation, while others were on medical leave. A total of 48 cases were identified among employees, with 14 having laboratory confirmed salmonellosis. Five other cases were later identified through a DNA fingerprint test after the investigation was concluded. The follow-up continued into April 2017.

The inconvenience of the time frame of this outbreak highlighted the need for proper collaboration between Public Health and local partners; private and public. It also emphasized what is already known in outbreak investigations and emergency management, which is that a public health agency should be ready to respond at any time to any issue that threatens the publics' health. Business should also have an Emergency Operation Plan, which includes a comprehensive plan for continuity of operations.

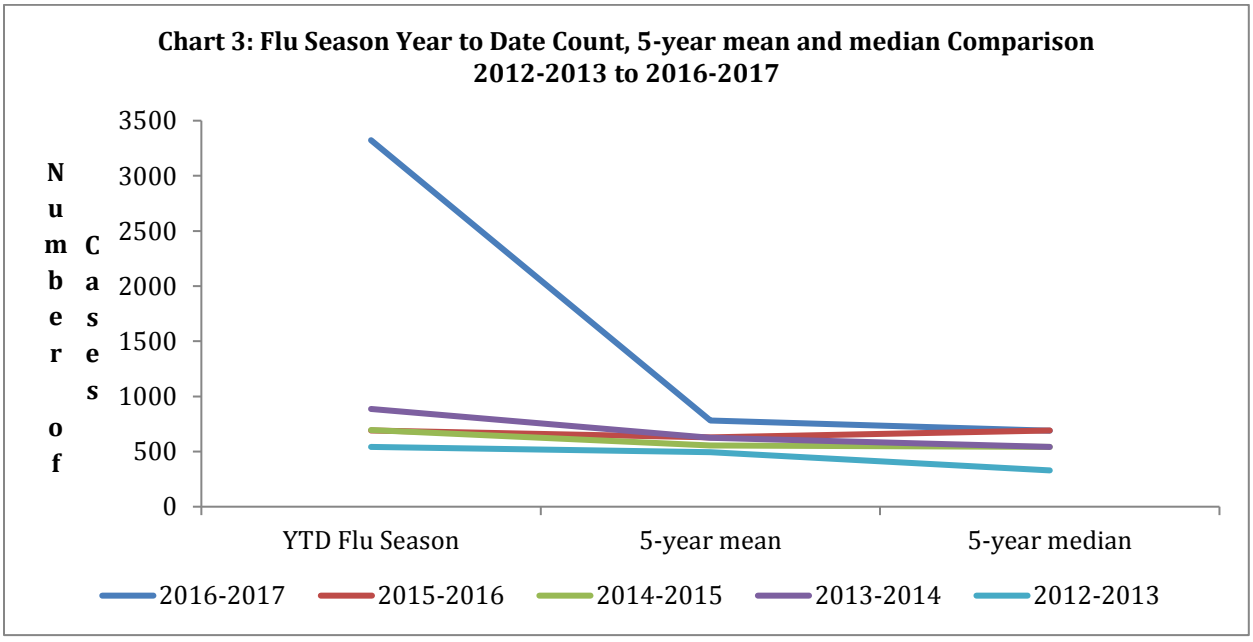
The collaboration of the Casino Management and the CCPHC Outbreak Team opened more opportunities for future collaborations between the two agencies. The CCPHC Emergency Planner has initiated talks with the Casino Management regarding the Casino being a Closed Point of Dispensing in the event of a public health emergency.

Collaborative efforts between the Health Center, area providers, the School Districts and other partners in the local public health system continue to support prompt diagnosis and proper treatment of cases and their contacts, disease surveillance, containment, and control.



Pertussis was the most commonly reportable vaccine-preventable disease in the county in 2016, followed by varicella.

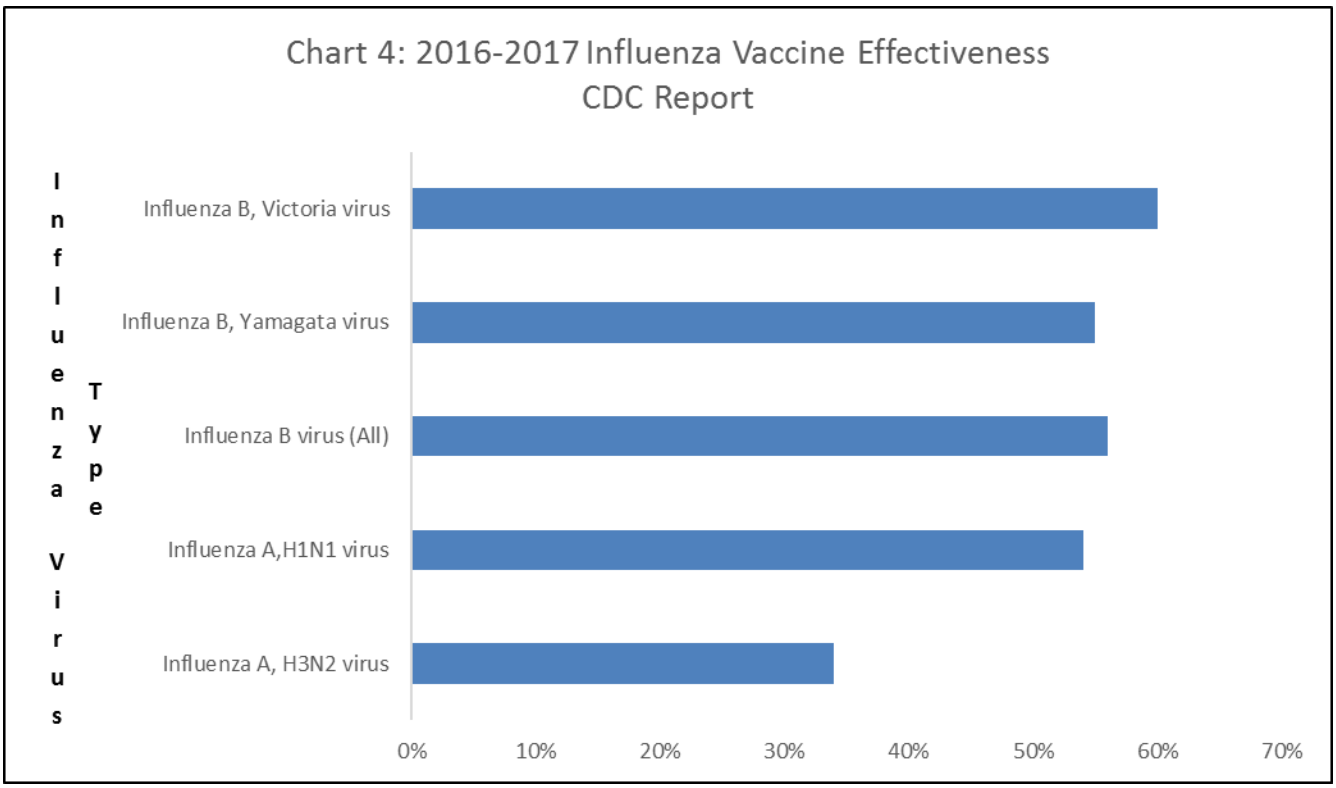
A total of 3,323 influenza cases were reported for the flu year 2016-2017.[1] It is the highest number of flu cases in recent years, with the second highest number of 1,032 cases seen in 2008-2009 season during the novel influenza (H1N1) season. Next to that is the total of 886 cases in the 2014-2015 season, when per the CDC, the flu vaccine was not a total match to the circulating flu viruses. The cause of the unusual number of flu cases for 2016-2017 is unknown. However, the Epidemiology program through the flu reporting and data collection quality improvement (QI) process is putting measures in place, to gather more information on the vaccination status of flu cases going forward.



Per the CDC National Center for Immunization and Respiratory Diseases Report on 2016-2017 Influenza Vaccine Effectiveness, overall flu vaccines for the 2017-2018 season reduced a vaccinated person's risk of getting sick and having to go to the doctor because of flu by less than half." [1] The 2016-2017 overall vaccine effectiveness (VE) was 42 percent, compared to 59 percent for 2015-2016 flu season. This percentage was lower comparable to past estimates for seasons when most circulating flu viruses and vaccines have been similar. The seasonal vaccine effectiveness was highest for age group 6 months to 8 years at 61 percent and lowest for age groups 18-49 at 19 percent. Due to the 2016-2017 flu vaccines being less effective at the expected level, individuals that received the vaccine were more likely to get sick with flu.

Also, there were sufficient data from the U.S. Flu VE Network to calculate more specific VE estimates.

Chart 4 below shows the individual percent effectiveness of the vaccines against each influenza virus type during the 2016-2017 flu season.



Flu vaccines are designed to protect against the main flu viruses that research suggests will be the most common during the upcoming season.

World Health Organization recommended that trivalent vaccines for use in the 2017-2018 influenza season (northern hemisphere winter) contain the following:

- an A/Michigan/45/2015 (H1N1) pdm09-like virus

- an A/Hong Kong/4801/2014 (H3N2)-like virus
- a B/Brisbane/60/2008-like (B/Victoria lineage) virus

Four-component vaccines, which protect against a second lineage of B viruses, are recommended to be produced using the same viruses recommended for the trivalent vaccines, as well as a B/Phuket/3073/2013-like (B/Yamagata lineage) virus. [2]