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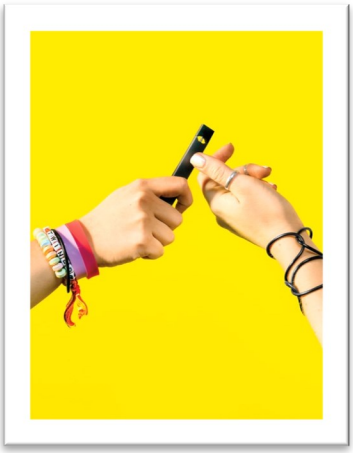
TEXAS Health and Human Services | Texas Department of State Health Services

Public Health Region 7 Epidemiology Quarterly Newsletter

OCTOBER 2019

Public Health Happenings

Vaping—What you need to know **here!**



Recommended composition of influenza virus vaccines for use in the 2020 southern hemisphere influenza season

Read more here

Frequently Asked Influenza Questions Here

Heat-Related Illness Surveillance

Lenae Warner, Epidemiologist II at DSHS Region 7

Public Health Region 7 conducted heat, dehydration and submersion illness/injury surveillance using Electronic Surveillance System for the Early Notification of Community–Based Epidemics (ESSENCE). Data collection began on June 1, 2019 and concluded on September 30, 2019. The data was then compiled into bi-weekly reports and distributed to DSHS PHR 7 staff.

Temperatures in the reports are based on a Temple, Texas location, which represents the Central Texas area. However, temperatures will differ according to the exact location.

September 23, 2019 was the official first day of fall. However, for central Texas, and the majority of the state, September 23rd was another "summer day." Temperatures remained around 90ºF for most of the month of September. Thus, central Texas residents were still at risk for heat-related illnesses and submersion injuries seen in the mid-summer months.

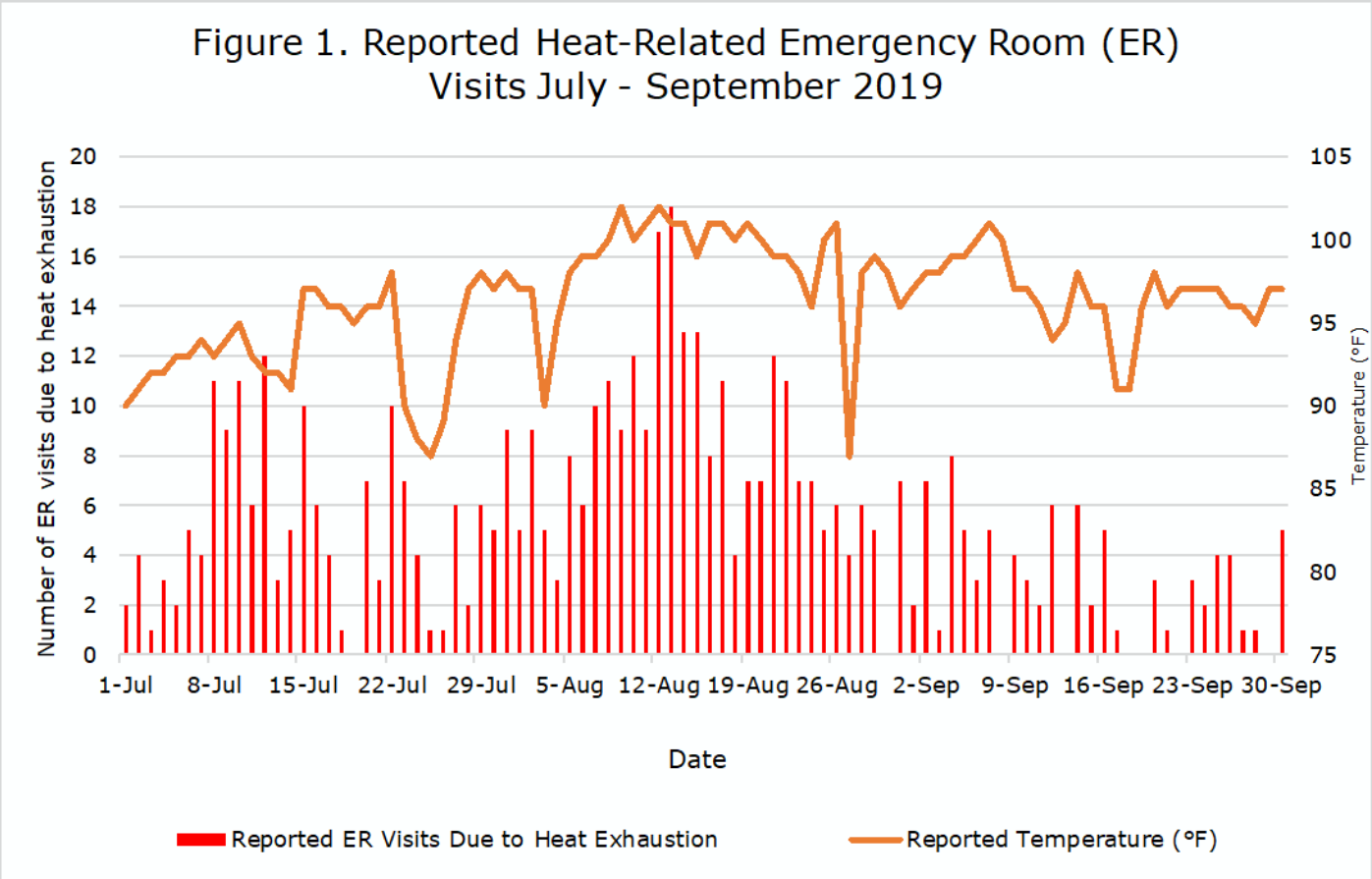
For more articles regarding the September heat, click the links below!

https://www.kvue.com/article/weather/fall-heat-central-texas-hot-heat/september/269-6c184b75-7c80-4a47-83bc-f7a3eb2ad27b

https://www.kxan.com/weather/6-things-to-know-about-this-septembers
https://www.washingtonpost.com/weather/2019/10/09/september-ties-second-warmest-record-lower/

For more information on syndromic surveillance using ESSENCE (TXS2), please contact Lenae Warner at Lenae.Warner@dshs.texas.gov

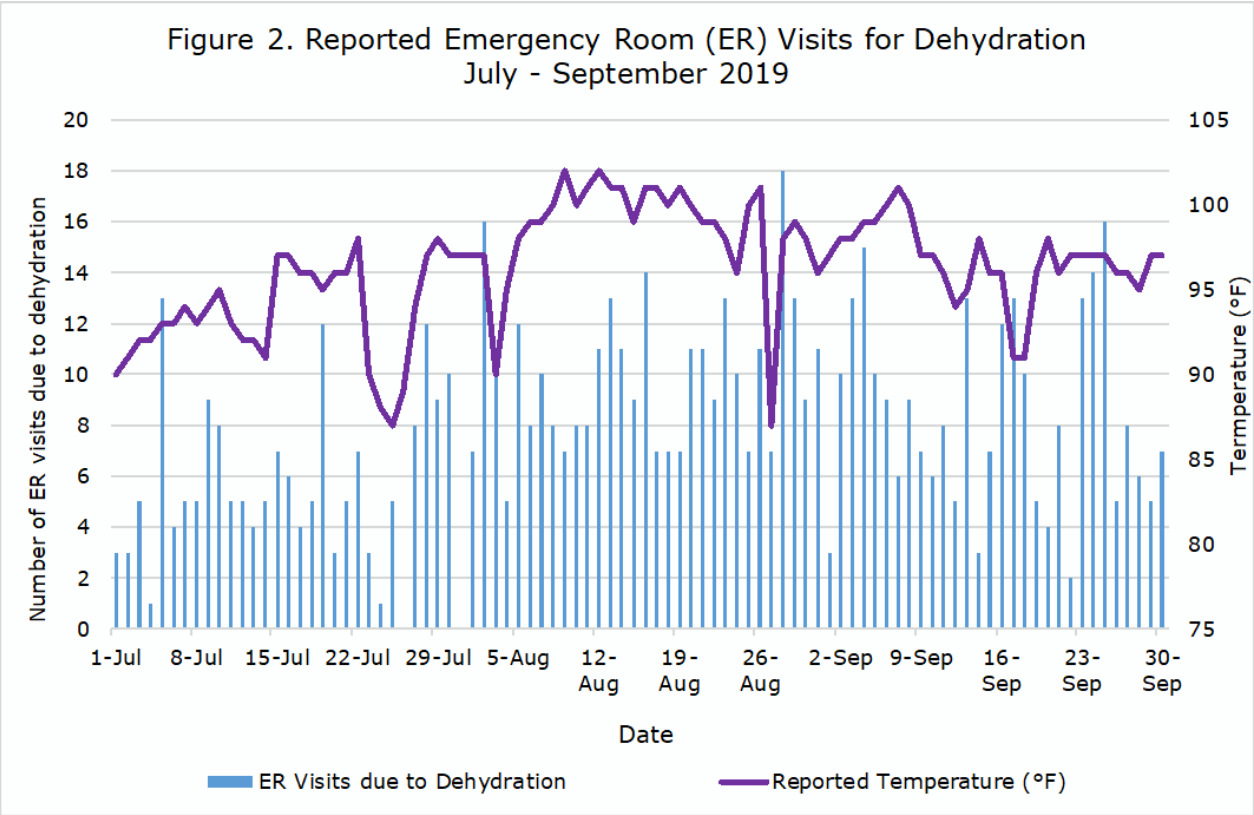
During July - September, ESSENCE reported an increase in heat-related illnesses when temperatures reached 100°F and higher. The highest number of ER visits on August 13, 2019 when the average temperature in Central Texas was 103°F. Conversely, ESSENCE reported a decrease in heat-related illnesses when the temperature dropped below 90°F.



Data Collected and Presented by Lenae Warner, Epidemiologist II, PHR 7
Lenae.warner@dshs.texas.gov

During July - September, we saw an increase in ER visits for dehydration on July 5th, but none were directly related to heat. An increase was also seen on August 28th. Out of the 18 ED visits on August 28th, one visit was determined to be related to heat exhaustion. Other visits were associated with other conditions associated with dehydration (i.e. viral gastroenteritis, feeding difficulties in infants, etc.).

An increase was seen on Sept 25th, two of the 16 patients reporting dehydration were heat related.



Data Collected and Presented by Lenae Warner, Epidemiologist II, PHR 7
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Severe Pulmonary Illness Among People Who Have Reported Vaping

Whitney Thomas, MPH, Lead Epidemiologist III at DSHS Region 7

In conjunction with the Centers for Disease Control (CDC), the U.S. Food and Drug Administration (FDA), and local health departments, the Texas Department of State Health Services is investigating a multistate outbreak of lung injury associated with use of e-cigarette, or vaping, products.

As of October 15, 2019, **1,479 lung injury cases** associated with using e-cigarette, or vaping, products have been reported to CDC from 49 states and 1 U.S. territory. Among those cases, **33 deaths** have been confirmed in 24 states. Most patients report a history of using THC (the main psychoactive component of the cannabis plant) - containing products. The latest national and regional finding suggest products containing THC play a role in the outbreak. However, the specific chemical exposure(s) causing lung injuries associated with e-cigarette use, or vaping, remains unknown at this time as no single product or substance has been linked to all lung injury cases.

It is believed that many users may not know what is in their e-cigarette or e-liquid solutions as many of the products and substances can be modified by suppliers or users. The products can also be obtained from stores, online retailers, from informal sources (e.g., friends, family members), or "off the street."

At DSHS Public Health Region (PHR) 7, we are conducting active surveillance for suspect cases of severe pulmonary illness among people who have reported vaping by utilizing syndromic surveillance capabilities (e.g., ESSENCE), as well as community partnerships with healthcare facilities, physicians, and local health department constituents within the region.

As of October 18, 2019, **23** suspect cases have been reported to DSHS PHR 7, with **5** confirmed and **9** probable cases.

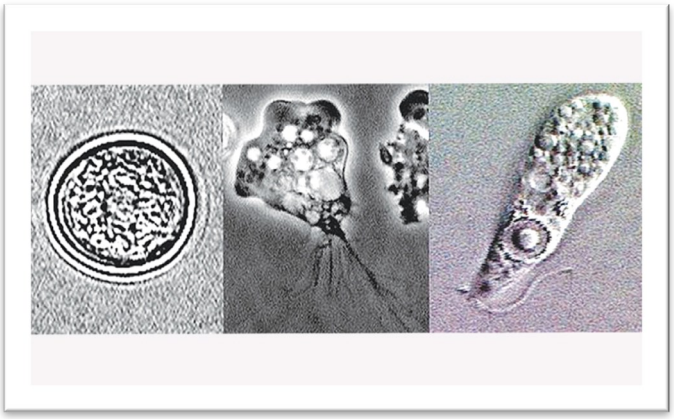
As of October 15, 2019, **202** suspect cases have been reported in Texas, with **70** confirmed and **77** probable cases. Of these cases, the majority (66%) are male, 66% reported being Caucasian, 50% reported being of non-Hispanic ethnicity, and 100% are between the ages of 13-39 years.

Vaping devices, Image, Source https://www.dshs.texas.gov/vaping/

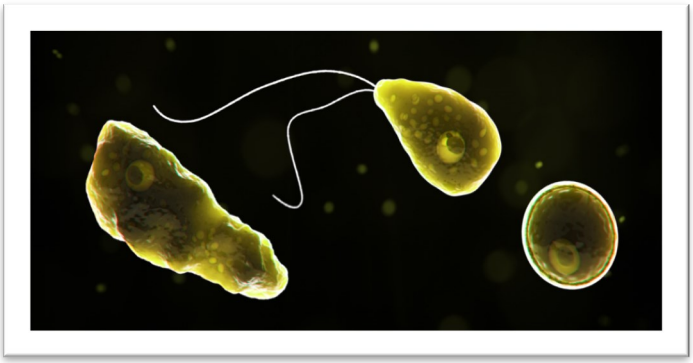
Primary Amebic Meningoencephalitis (PAM) in a ten-year-old child

Lenae Warner, Epidemiologist II at DSHS Region 7

The Texas Department of State Health Services (DSHS), Public Health Region 7 investigated a case of PAM in a ten-year-old child, who developed symptoms after swimming in a local river. An interview was conducted with the parents on September 12, 2019 using The Texas Department of State Health Services Amebic Meningitis/Encephalitis Case Investigation Form (January 2012). Additionally, medical records were provided by the infection preventionist (IP), with additional support provided by DSHS Central Office and Centers for Disease Control and Prevention staff. Eight days after swimming in a slow moving, shallow area of a freshwater river, the patient presented to a local hospital and was initially diagnosed with bacterial meningitis and sepsis. A cerebral spinal fluid (CSF) sample was tested. Free-living amebas were visualized and additional testing by CDC was positive for *Naegleria fowleri.* The patient was treated with therapeutic hypothermia and antimicrobial miltefosine upon diagnosis. However, the infection and subsequent global cerebral and cerebellar edema and acute herniation of the hindbrain culminated in the death of the patient five days after admission. PAM is a rare condition that almost always results in death. From 1962–2018 there have been 145 reported cases in the United States with four survivors. Texas leads the nation with 36 cases reported between 1962–2018. The main sources of exposure have been freshwater lakes, ponds, and reservoirs.



Naegleria fowleri, Image, Source https://www.dawn.com/news/1140067



Naegleria fowleri, Image, Source https://www.cdc.gov/parasites/naegleria/index.html#asterisktwo

Naegleria fowleri (also known as "brain-eating ameba"), is a free-living microscopic ameba. It can cause a rare and devastating infection of the brain called primary amebic meningoencephalitis (PAM). The ameba is commonly found in warm freshwater (e.g. lakes, rivers, and hot springs) and soil.

Naegleria fowleri usually infects people when contaminated water enters the body through the nose, where it travels to the brain and causes PAM, which has a case fatality rate of 98.5%.

Infection typically occurs when people swim or dive in warm freshwater. In very rare instants, *Naegleria* infections may also occur when contaminated water from other sources (e.g., inadequately chlorinated swimming pool water or heated and contaminated tap water) enters the nose.

You **cannot** get infected from **swallowing** water contaminated with *Naegleria fowleri*.

Read more here

Gastrointestinal Illness Trends within DSHS Public Health Region 7 (July 2019-September 2019)

Mariana Martinez, MPH, CHES Epidemiologist I at DSHS Region 7

Overview:

From July 1, 2019—September 30, 2019, DSHS Region 7 Epidemiology investigated **220** foodborne/waterborne illnesses. During this time there was a sharp increase of reported cases in July with a steady decrease in August and September (Figure 1). This sharp spike reflects an increase of Campylobacteriosis and Salmonellosis cases.

An increase in food and waterborne cases during the summer months is not unusual as the warm and humid environment allows the bacteria to replicate faster in addition to people spend an increased amount of time outside during the summer attending activities such as barbeques, parties, potlucks, and swimming.

Proper food handling can be difficult with outdoor cooking such as hand hygiene issues and the preparation and serving of food at improper temperatures, leading to an increased risk of food and waterborne illness.

As seen in figure 2, the five most prevalent gastrointestinal illnesses reported to DSHS Region 7, which accounted for **96%** of all food and waterborne illnesses investigated include:

Salmonella, non-Paratyphi/non-typhi

Campylobacteriosis

Shigellosis

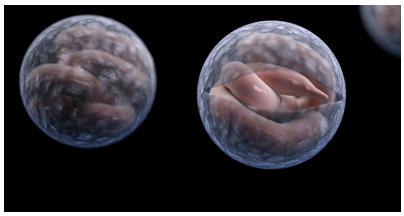
Cryptosporidium

Shiga toxin-producing Escherichia coli (STEC)

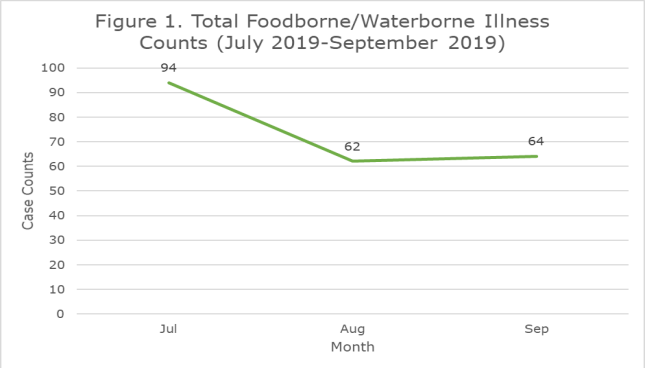
Interestingly, Salmonella, non-Paratyphi/non-typhi cases accounted for **41%** of the gastrointestinal illnesses investigated.

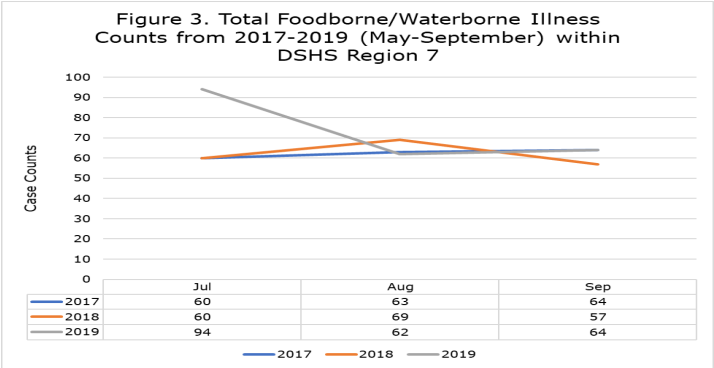
In conjunction,Campylobacteriosis cases accounted for **37%** of all gastrointestinal illnesses investigated.

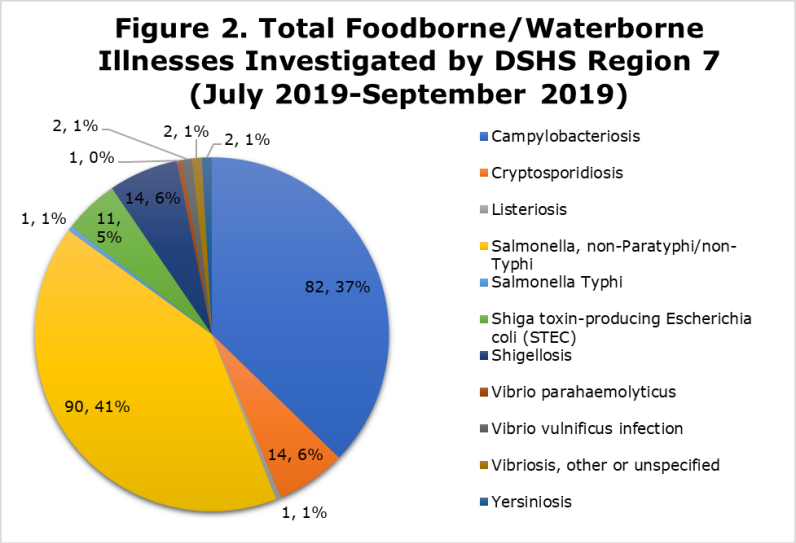
Figure 3 illustrates the food and waterborne case counts during July - September for 2017-2019. As seen below, cases peaked during July 2019 before steadily decreasing. In contrast, 2018 experienced a peak during August, whereas cases in 2017 steadily increased during the three month period.

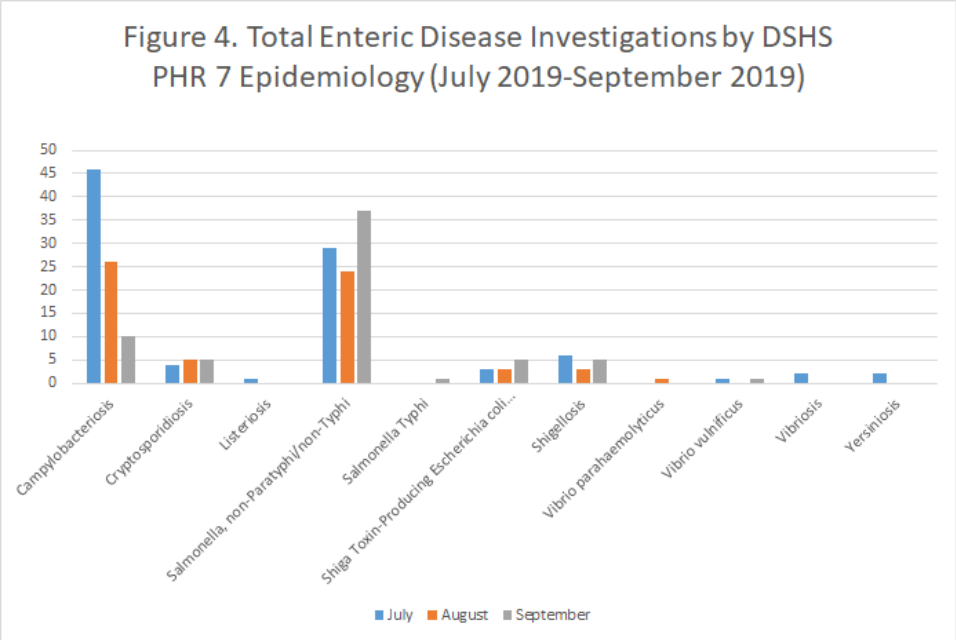


1) ***Shigella*. Digital Image. Centers for Disease Control. https://www.cdc.gov/shigella/index.html**
2) ***Campylobacter*. Digital Image. Hygiene in practice.** https://www.hygiene-in-practice.com/pathogen/campylobacter-jejuni-coli_en/
3) ***Cryptosporidium*. Digital Image. Centers for Disease Control. https://www.cdc.gov/parasites/crypto/**









*Includes confirmed and probable notifiable conditions reported to and investigated by the Texas Department of State Health Services, Region 7 Health Department. Year to Date (YTD) for 2019 includes cases reported and entered from July 2019-September 2019. Additional cases may be entered/updated.

*Data is provisional and may change as investigations are completed or updated.

*Date used is based off the Investigation Start Date provided by NEDSS.

Vaccine Preventable Disease Trends within DSHS Public Health Region 7

Dolores Mojica, Vaccine Preventable Disease Investigator at DSHS Region 7

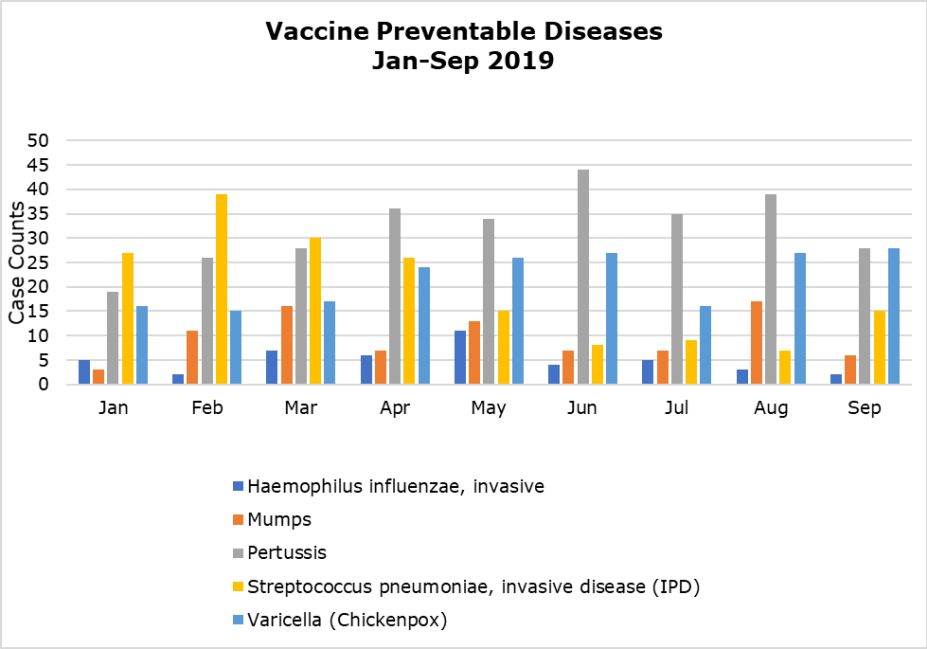
From January through September 2019 PHR 7 saw an increase in reported mumps and pertussis cases.

An overall increase in mumps cases have been related to a surge in unvaccinted immigrants and refugees who are sheltered in county and federal immigration detention centers. Many immigrants and refugees migrate from countries where the mumps component of the MMR vaccine has only been recently added and therefore mumps is still endemic in those countries. Therefore, PHR 7 has investigated several cases of mumps in detention facilities. This situation is complicated further complicated by federal detention centers transferring asymptomatic detainees who have been identified as contacts to a confirmed case of mumps to county jails. The mumps virus is spread by contact with infected respiratory secretions. Those with mumps are considered contagious from two days before the onset of symptoms, or parotitis, to five days after the onset of illness. However, if immigrant health histories are unreliable, detainees with mumps could be considered contagious from five days prior to the onset of symptoms up to nine days after onset of symptoms. The PHR 7 Epidemiology team would like to thank Public Health Nurse Ashley Carroll and Health Service Tech Nia Slaughter for their assistance in assisting with specimen collection and shipping with suspect cases of mumps in a detention facility.

In addition, PHR 7 saw an increase in pertussis cases from April to August. Pertussis, also known as "whooping cough", is a highly contagious respiratory disease. It is caused by the bacterium *Bordetella pertussis*. Pertussis is known for uncontrollable, violent coughing which often makes it hard to breathe. Increase in pertussis cases, could be related to parents filing exemptions not to have their child vaccinated due to adverse effects or the children not being up-to-date on their immunizations. In addition, travel is another factor that affects the spread of vaccine preventable diseases. When an unvaccinated person travels to an area experiencing an increase of cases of pertussis, they are at an increased risk of developing the illness. Of course, even if vaccinated, you can still get the infection. However, in many cases it is not as severe as for those who are completely or only partially protected by vaccination.

Click here for more on making decisions about vaccines!

Figure 1: Case Counts for all VPDs in 30 counties of Public Health Region 7



DSHS Public Health Region 7 Epidemiology

Mission Statement:

"To develop or enhance regional epidemiology services for the rapid detection and control of disease outbreaks or other adverse health outcomes. This includes evaluating, enhancing and when necessary creating new surveillance and investigation systems, analyzing data, preparing recommendations and working with appropriate programs to implement interventions for desired outcomes."

Epidemiology Team Members:

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Sandi Arnold, RN, CIC	Healthcare-Associated Infections Epidemiologist
Conner Carlsen, MPH, CPH	Preparedness Epidemiologist
Lenae Warner	Surveillance Epidemiologist
Marinana Martinez, MPH, CHES	Enteric Disease Epidemiologist
Dolores Mojica	Vaccine Preventable Disease Investigator

To report notifiable conditions , please contact a member of the DSHS PHR 7 Epidemiology staff.

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