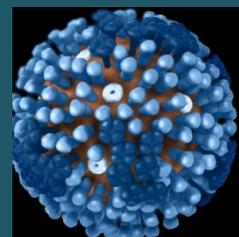
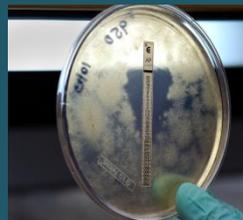


Davis County Health Department



Communicable Disease & Epidemiology Division

Communicable Diseases Davis County 2013



Communicable Diseases Davis County 2013

**Lewis Garrett, APRN, MPH
Health Officer**

**Brian Hatch, MPH, EHS
Deputy Director**

**Wendy Garcia, RN
Communicable Disease & Epidemiology Division Director**

**Sarah Willardson, MPH
Epidemiologist**

February 2014

Table of Contents

Executive Summary	1
Introduction	3
Reportable Disease Summary	6
Enteric Diseases	11
Campylobacteriosis	14
Cryptosporidiosis.....	15
Norovirus.....	16
Salmonellosis.....	18
Shiga Toxin Producing <i>Escherichia coli</i> (STEC) Infection.....	21
Vaccine-Preventable Diseases.....	23
Hepatitis A.....	26
Hepatitis B (Acute and Chronic Infections)	27
Influenza.....	28
Pertussis.....	31
Vectorborne/Zoonotic Diseases	34
Rabies	35
Invasive Diseases	36
Invasive Streptococcal Infections.....	37
Other Reportable Diseases/Conditions.....	39
Hepatitis C.....	40
Legionellosis	41
Carbapenem-Resistant Enterobacteriaceae	42
Sexually Transmitted Diseases.....	43
Chlamydia	45
Gonorrhea.....	48
Tuberculosis	50
Active Tuberculosis.....	52
Latent Tuberculosis Infection (LTBI)	53
Program Highlights	55
Appendix A - Reportable Diseases	60
Appendix B - Davis County Demographics.....	62

Executive Summary

This annual communicable disease surveillance report summarizes all communicable diseases reported in Davis County in 2013. It provides a baseline picture of the disease burden in Davis County and describes trends and highlights of those diseases that had the greatest impact on the health and well-being of our community. Unusual disease occurrences are also discussed.

The most notable disease event in 2013 was a 50% increase in gonorrhea cases. Davis County has experienced a steady incline of cases in recent years, with the exception of 2011 when only 18 cases were reported. Gonorrhea in Davis County jumped from 40 reported cases in 2012 to 60 in 2013. This increase was noted statewide and nationally, with more infections occurring in females. For Davis County, the average age of infection lowered from age 30 in 2012 to age 27 in 2013, affecting a younger population than seen in past years. Risk factors identified through disease investigations were multiple sex partners, men who have sex with men (MSM), anonymous sex partners, substance abuse, incarceration, and anal intercourse. In 2013, 85% of gonorrhea cases identified themselves as heterosexual, compared to 77% in 2012.

Other communicable diseases of concern/interest in 2013 are summarized below:

1. Chlamydia infection has again accounted for the largest disease burden in Davis County with 847 cases reported. This is a slight decrease from 2012 (862), yet still accounts for 91% of sexually transmitted diseases (STDs) reported in Davis County. Individuals infected with chlamydia are interviewed to identify sexual partners who are at risk of developing infection. These partners are contacted and offered free testing and treatment. In 2013, 41.4% of those who were tested at the Davis County STD contact clinic were infected with chlamydia, thus reinforcing the importance of contact investigations.
2. For the second year in a row, Davis County has experienced an increase in reported pertussis cases. Pertussis tends to be a cyclic infection, with outbreaks often occurring every 6-8 years. In 2012, 139 cases were reported, a significant increase from the previous year of 25 cases (2011). In 2013, 104 cases of pertussis were reported. A clustering of cases occurred in the summer months and involved a large number of children/adolescents, which mimicked the pattern of 2012. Disease investigations noted that several cases had previously been vaccinated. Transmission of infection often occurred among household members.
3. In 2013, hepatitis C infections were also very prevalent in Davis County, second only to chlamydia in the county's disease burden. Individuals diagnosed with hepatitis C reported the following risk factors: injection drug use, tattoos, skin piercings, and household/sexual partners of someone infected with hepatitis C. In 2013, new treatment regimens were made available that provided better treatment cure rates.

-
4. Salmonella cases increased significantly from 19 in 2012 to 49 in 2013. Several of the cases reported in 2013 were linked by pulsed-field gel electrophoresis (PFGE) to national/statewide outbreaks involving exposure to reptiles, chicks/ducks, and the consumption of unpasteurized milk. Foreign travel also was noted as a risk factor in four reported cases. One infected individual was linked to an out-of-state outbreak involving a food establishment where tapas are the main food item served. This outbreak affected approximately 200 individuals from 20 states and two foreign countries.
 5. Unpasteurized milk consumption was identified as a risk factor for several campylobacter cases reported in 2013. Raw milk was obtained from an out-of-county dairy. Other counties also had cases of campylobacter that consumed milk from the same dairy. Since raw milk sales (under permit and limited to certain conditions) were legalized in 2009, Davis County, as well as other counties in Utah, has seen an increase in campylobacter cases associated with the ingestion of raw, unpasteurized products.
 6. The 2012-13 influenza season started out early and reported hospitalized cases nearly tripled the case numbers seen in the 2011-12 season (27 in 2011-12 and 76 in 2012-13). Of those specimens that were sub-typed, the majority were identified as influenza A H3. The current influenza season (2013-14) has been moderate with the majority of cases identified as 2009 H1N1 – the same strain that caused a large outbreak in 2009. This strain often affects the adolescent and middle-aged populations, which is evident in the current season's reports of hospitalized cases.
 7. Gastrointestinal clusters were identified throughout the year. A cluster of gastrointestinal illnesses was reported to the health department involving a facility where immunocompromised individuals reside. Initial testing indicated an unusual occurrence of adenovirus 40/41, which manifests with diarrhea and fevers. Additional suspect cases were detected in the facility and DCHD requested testing assistance from the Centers for Disease Control and Prevention (CDC). Test results confirmed adenovirus 41 in four individuals and norovirus GII.7 in another two individuals. Environmental disinfection procedures were implemented, as well as other control measures. Disease surveillance activities continued until no new cases were identified.

Introduction

The Davis County Health Department Communicable Disease and Epidemiology Division works in partnership with the medical community and neighboring health districts to control and prevent the occurrence and spread of communicable diseases through disease surveillance, disease investigation, coordination of prevention efforts, treatment, education, training, and policy development. The program aims to:

- Interrupt and/or contain the spread of communicable diseases within the community
- Conduct surveillance for 75+ communicable diseases and syndromes
- Provide education to infected/exposed citizens
- Facilitate appropriate treatment and preventive therapy
- Enforce measures that will protect the community (e.g. isolation)
- Develop policies to address priority health issues

The Communicable Disease and Epidemiology Division is organized into four main program areas: STD/HIV, Tuberculosis Control, Infectious Disease, and Disease Surveillance. A program description follows:

STD/HIV program:

STDs affect men and women of all ages, backgrounds, and economic status. Even though the United States has made progress in identifying cases through better testing procedures, sexual partner testing/treatment, and risk-reduction education, there are still an estimated 20 million new cases of STDs reported each year. HIV/AIDS, chlamydia, gonorrhea, syphilis, and chancroid are the STDs reportable by law in the state of Utah. Hospitals, laboratories, physicians, and clinics are mandated to report these diseases to the local health department.

The STD/HIV program strives to ensure that all reported infected individuals have an interview with a skilled communicable disease nurse to:

- Verify that appropriate treatment was prescribed and taken
- Confidentially identify and notify contacts/partners of infected individuals who may have been exposed and facilitate testing and treatment
- Provide risk-reduction counseling and education

Tuberculosis Control program:

The Davis County Tuberculosis (TB) Control program is dedicated to the prevention, control, and elimination of TB disease and the identification and treatment of latent TB infection (LTBI).

The successful control of tuberculosis in Davis County is largely due to the following program activities:

- Early identification, isolation, and appropriate treatment of individuals suspected of or diagnosed with tuberculosis disease
- Effective contact investigation activities to identify individuals exposed to TB and the completion of medication therapy for those diagnosed with LTBI
- Targeted testing for those who are at higher risk for developing TB disease following an exposure (e.g. homeless, foreign-born, residents of correctional institutions, substance abusers)

Infectious Disease program:

Communicable diseases reportable in the state of Utah, with the exception of STDs and tuberculosis, fall under this program. Once reported, the Infectious Disease program implements the following activities:

- Interview infected individuals to obtain a thorough history and identify exposed contacts
- Review and interpret laboratory results
- Implement control measures to interrupt disease transmission (e.g. exclusion from work/school)
- Monitor the disease process, assessing for changes in expected manifestations
- Facilitate treatment and prophylaxis for those infected or exposed
- Provide education on the specific disease and important preventive measures
- Formalize findings and report to the Utah Department of Health (UDOH)

The Infectious Disease program has been further divided into the following categories:

- **Enteric Diseases** (Food and/or Waterborne)
 - Bacterial, viral, and parasitic diseases involving the gastrointestinal tract
- **Vaccine-Preventable Diseases**
 - Diseases that are preventable with vaccines
- **Vector/Zoonotic Diseases**
 - Diseases transmitted by insects, animals, or birds
- **Invasive Diseases**
 - Bacterial infections of the blood stream, cerebral spinal fluid (e.g. meningitis/encephalitis) or other normally sterile sites (e.g. synovial, pleural or pericardial fluid)
- **Other reportable diseases/conditions**
 - Diseases that do not fall under the above categories

Disease Surveillance program:

The Surveillance program is responsible for the systematic collection, analysis, and dissemination of data pertaining to infectious diseases of public health importance. The goal of the Surveillance program is to provide statistics that prompt public health preventive action. Core functions of the Surveillance program include:

- Providing medical professionals with access to disease reporting 24-hours a day/seven days a week
- Maintaining a computerized system for efficient storage and access to data
- Incorporating a variety of data sources including:
 - Notifiable disease reports
 - School absenteeism
 - Sentinel physician reports
 - Syndromic data
- Monitoring the occurrence and distribution of infectious disease activity
- Disseminating surveillance data to the public and medical professionals

Communicable diseases are reported to the local health department for investigation in accordance with the Utah State Health Code (R38-702). Prompt reporting of confirmed and suspect cases helps ensure necessary control and prevention actions.

Entities required to report confirmed or suspected diseases are physicians, hospitals, healthcare facilities, laboratories, schools, and daycares. All case reports should include:

- Disease
- Patient's name
- Address
- Telephone number
- Date of birth
- Pertinent clinical information.

All reports required by rule are confidential and are not open to public inspection.

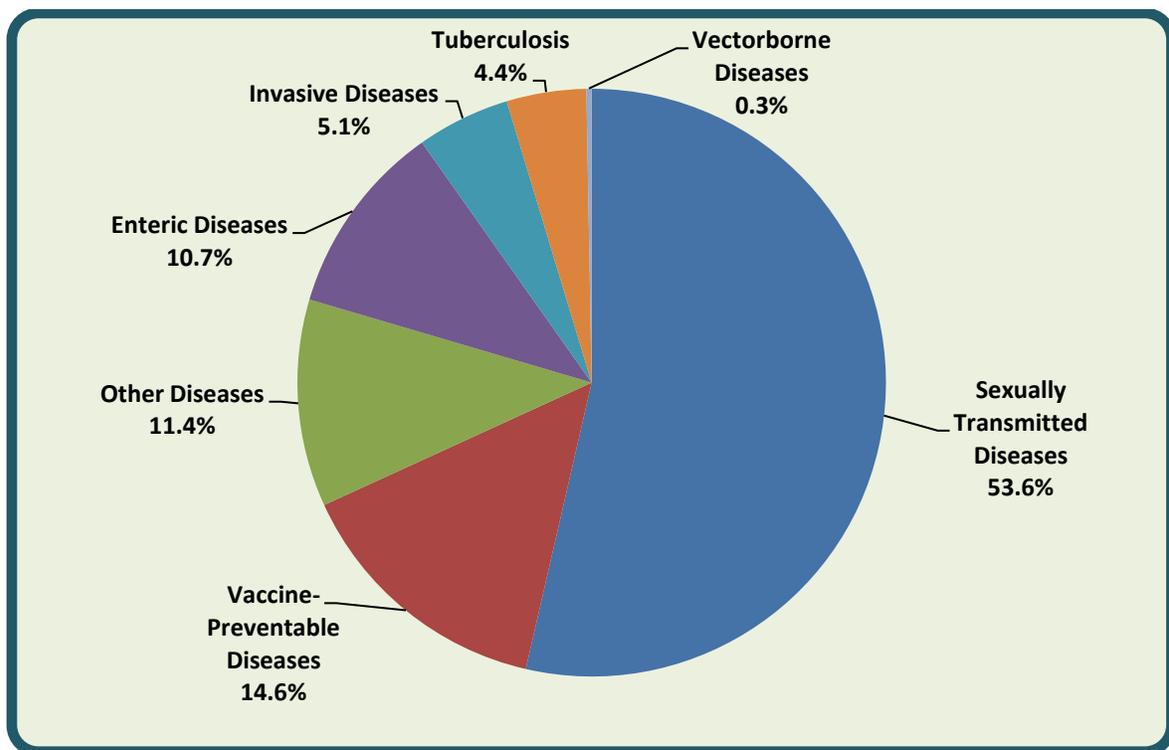
Reportable Disease Summary

Disease morbidity and mortality have decreased over the past century, partly due to the partnership between private and public health care. Unfortunately, new emerging diseases are surfacing, requiring additional efforts from both the medical community and public health. Existing pathogens are also increasing as our population increases. Disease affects all races, ethnicities, ages, and genders.

The Davis County Health Department received a total of **1,737** disease reports during 2013, slightly more than the 1,732 disease reports received in 2012.

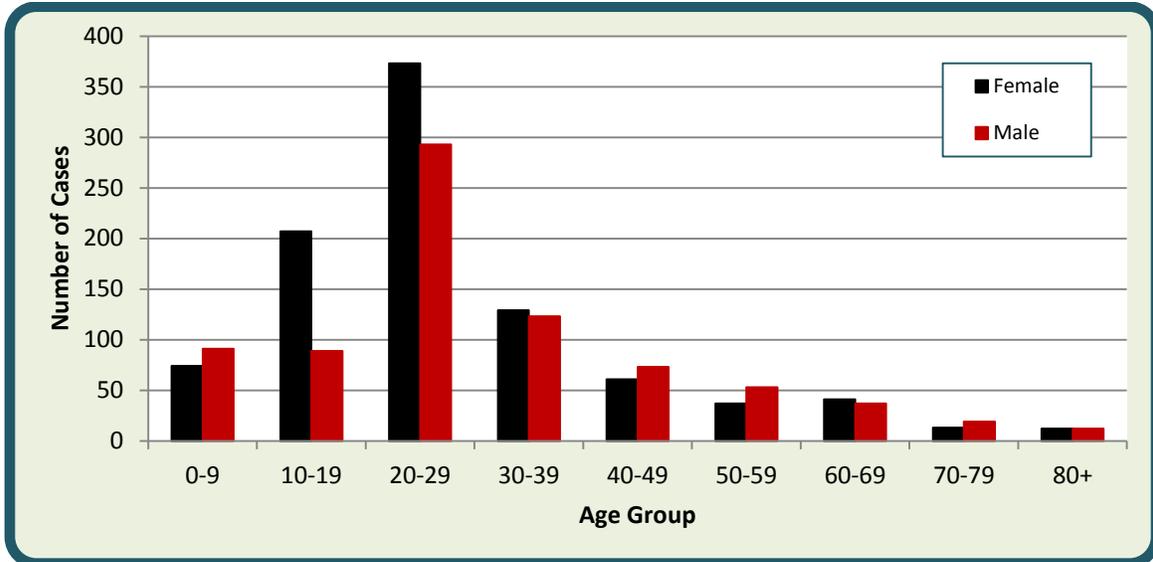
Over half (53.6%) of the diseases reported were sexually transmitted diseases, followed by vaccine-preventable diseases (14.6%), other diseases (11.4%), enteric diseases (10.7%), invasive diseases (5.1%), tuberculosis infections (4.4%) and vectorborne/zoonotic diseases (<1%).

Diseases Reported by Type, Davis County, 2013



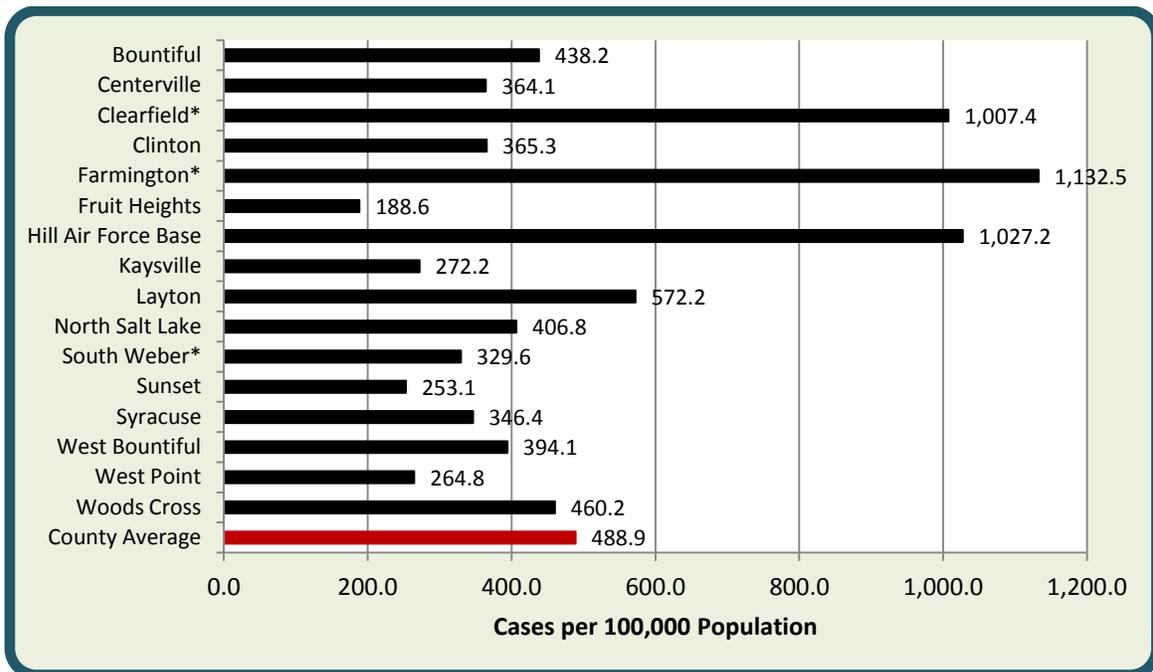
Cases were most often reported among females (54.5%) and among 20-29 year-olds. Sexually transmitted diseases had a significant impact on the 20-29 year old age group. Statistically, females are more impacted by sexually transmitted diseases.

Disease Reports by Age Group and Gender, Davis County, 2013



Disease rates by city are identified by the place of residence of the affected individual at the time of diagnosis. These rates do not suggest that one city is better or worse than another, but simply describe the disease burden in each city. Tuberculosis data are not included because most infections were acquired outside of Davis County.

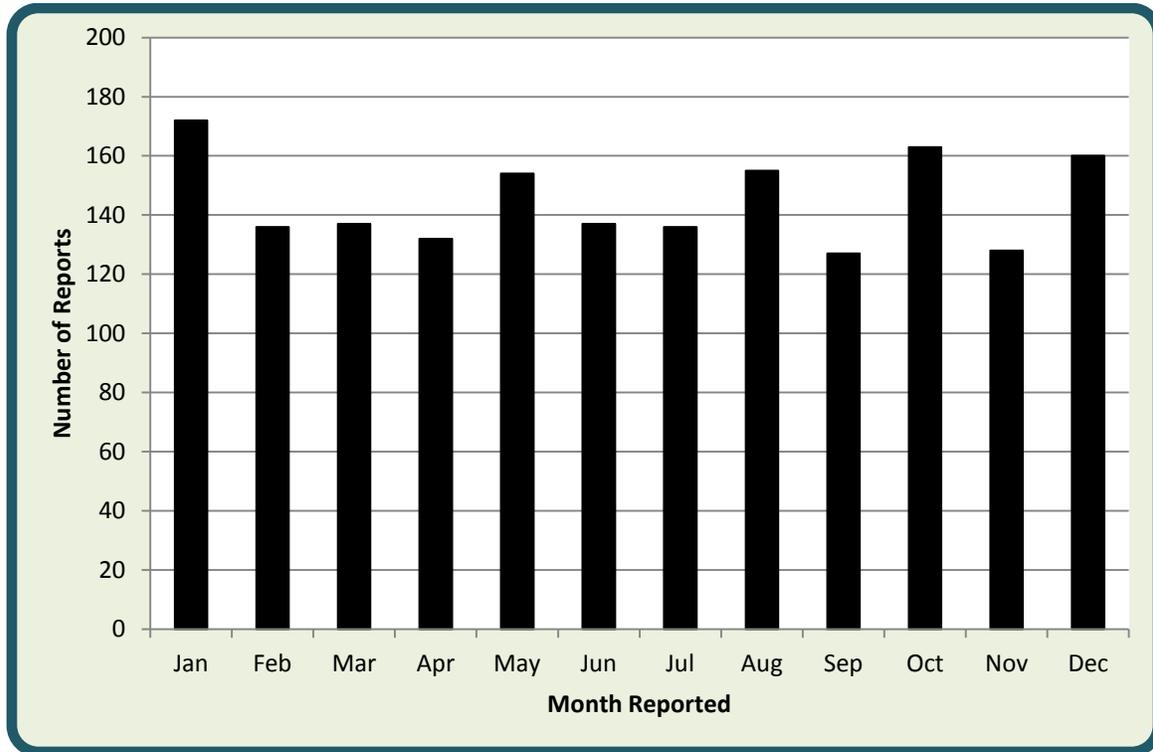
Incidence of All Reportable Diseases by City, Davis County, 2013



*These cities are impacted by temporary residential establishments (i.e. federal job corps and correctional facilities).

The disease burden in Davis County normally stays consistent throughout the year. In 2013, on average, 145 diseases were reported each month.

Disease Reports by Month, Davis County, 2013



Top 20 Diseases

Disease	Rank	Number of Cases
Chlamydia	1	847
Hepatitis C, Acute & Chronic	2	190
Pertussis	3	104
Influenza, hospitalized	4	83
Tuberculosis, Latent	5	75
Streptococcal disease, invasive	6	73
Gonorrhea	7	60
Salmonellosis	8	49
Campylobacteriosis	9	39
Chickenpox	9	39
Cryptosporidiosis	11	33
Giardiasis	12	29
Hepatitis B, Acute & Chronic	13	24
Norovirus	14	20
Syphilis – All Stages	14	20
Shiga toxin-producing <i>E. coli</i> (STEC)	16	12
Meningitis, Aseptic/Viral	17	10
HIV/AIDS	18	4
Coccidioidomycosis	19	3
<i>Haemophilus influenzae</i>	19	3
Hepatitis A	19	3
Lyme disease	19	3

Diseases Reported by Year, 2008-2013

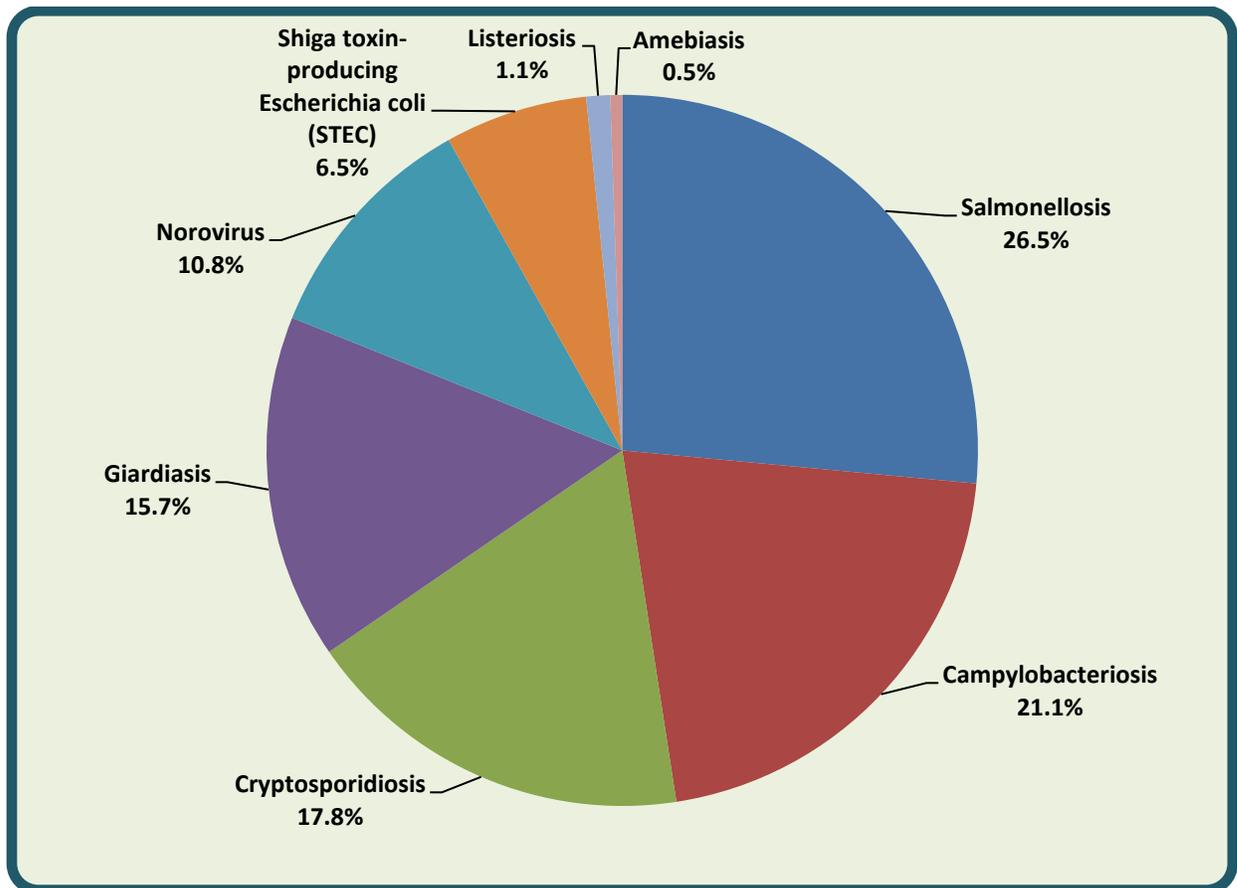
Disease	2008	2009	2010	2011	2012	2013	5 Yr Ave (2008-12)
Amebiasis	0	0	1	1	0	1	0.4
Botulism, Infant	0	0	0	1	3	0	0.8
Brucellosis	1	0	0	1	1	0	0.6
Campylobacter	60	26	19	33	36	39	34.8
Carbapenem-Resistant Enterobacteriaceae (CRE)	*	*	*	*	2	3	2.0
Chickenpox	104	97	62	42	37	39	68.4
Chlamydia	535	735	702	739	862	847	714.6
Coccidioidomycosis	2	3	1	2	9	3	3.4
Creutzfeldt-Jakob Disease (CJD)	1	2	0	1	1	0	1.0
Cryptosporidiosis	7	3	22	19	46	33	19.4
Dengue Fever	0	0	1	0	1	1	0.4
Encephalitis	0	1	1	1	1	0	0.8
Giardiasis	39	35	31	23	37	29	33.0
Gonorrhea	26	35	38	18	40	60	31.4
<i>H. influenzae</i> , invasive disease	4	4	0	3	1	3	2.4
Hemolytic Uremic Syndrome (HUS)	0	2	0	1	0	0	0.6
Hepatitis A	2	1	2	3	1	3	1.8
Hepatitis B, Acute & Chronic	37	31	24	26	21	24	27.8
Hepatitis C, Acute & Chronic	112	115	71	150	196	190	128.8
HIV/AIDS	11	10	9	4	11	4	9.0
Influenza, Hospitalized	55	157	11	43	43	83	61.8
Legionellosis	2	3	0	9	2	2	3.2
Listeriosis	1	1	2	0	1	2	1.0
Lyme Disease	4	1	0	1	4	3	2.0
Meningitis, Aseptic/Viral	19	22	9	9	16	10	15.0
Meningitis, Bacterial - Other	2	2	2	2	1	2	1.8
Meningococcal Disease	0	1	0	1	0	1	0.4
Mumps	1	1	1	0	0	0	0.6
Norovirus	1	1	7	20	6	20	7.0
Pertussis	13	18	28	25	139	104	44.6
Q fever, chronic	0	0	0	0	0	1	0.0
Salmonellosis	27	30	21	39	19	49	27.2
Shiga toxin-producing <i>E. coli</i>	12	20	15	12	12	12	14.2
Shigella	2	5	4	1	1	0	2.6
Streptococcal Disease, Invasive	56	48	74	57	78	73	62.6
Syphilis - All Stages	13	5	13	11	21	20	12.6
Tuberculosis, Active	1	3	3	0	1	1	1.6
Tuberculosis, Latent	79	100	80	66	81	75	81.2
West Nile Virus Infection	2	0	1	1	0	0	0.8
Total	1,231	1,519	1,256	1,365	1,732	1,737	1,420.6

Enteric Diseases

Enteric diseases are caused by bacterial, viral, or parasitic organisms that are shed in the feces and can be spread person-to-person or through contaminated food and water. Enteric diseases are generally characterized by gastrointestinal symptoms such as nausea, vomiting, and diarrhea.

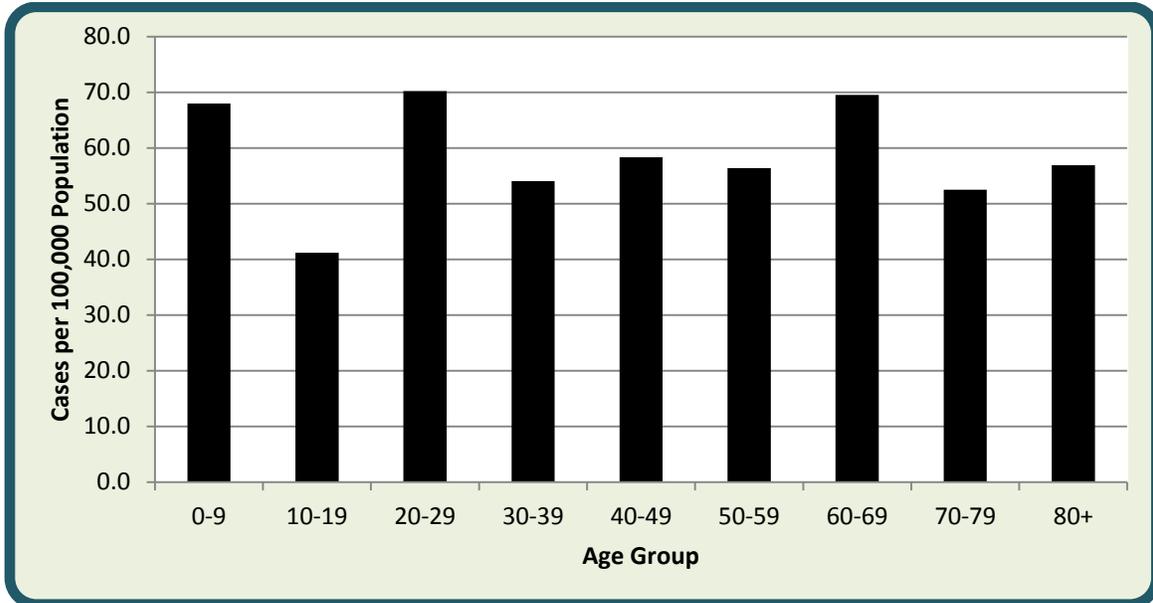
There were **185** enteric disease cases reported during 2013. Salmonellosis was the most frequently reported enteric disease with **49** cases (26.5%), followed by campylobacteriosis with **39** cases (21.1%), cryptosporidiosis with **33** cases (17.8%), giardiasis with **29** cases (15.7%), norovirus with **20** cases (10.8%), Shiga toxin-producing *E. coli* (STEC) with **12** cases (6.5%), listeriosis with **two** cases (1.1%), and amebiasis with **one** case (0.5%).

Enteric Diseases, Davis County, 2013



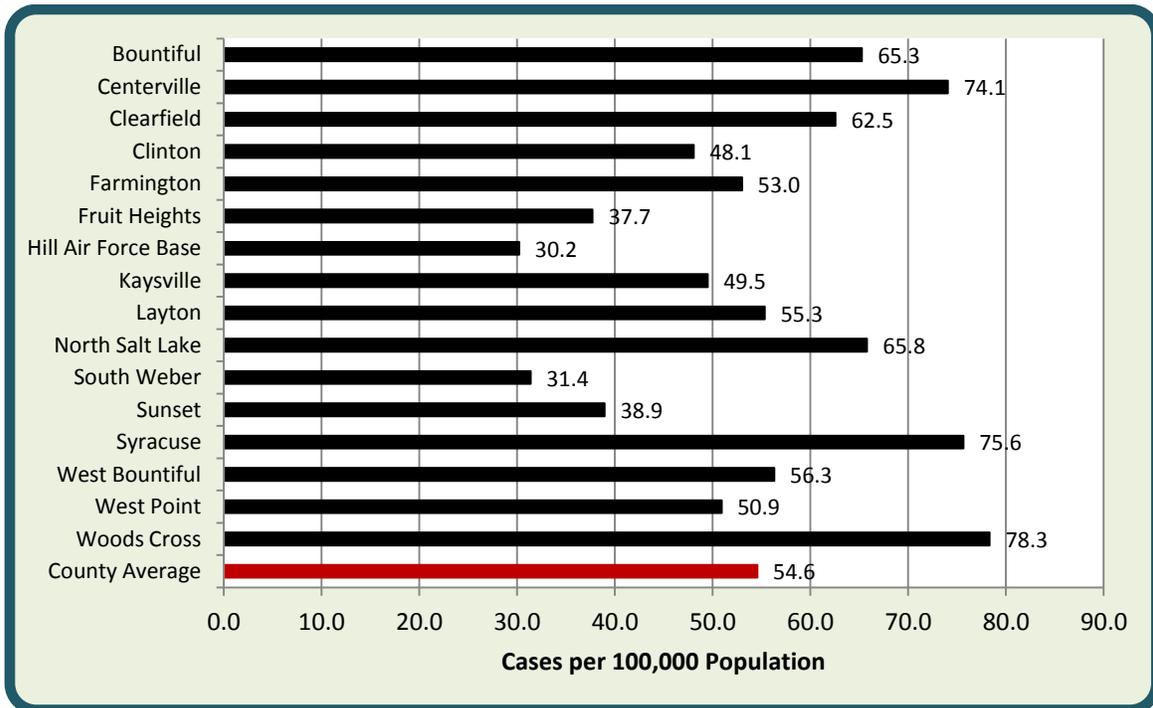
Slightly more than half of the cases were males (53.0%) and rates of illness were highest among those 20-29 years of age.

Incidence of Enteric Diseases by Age Group, Davis County, 2013



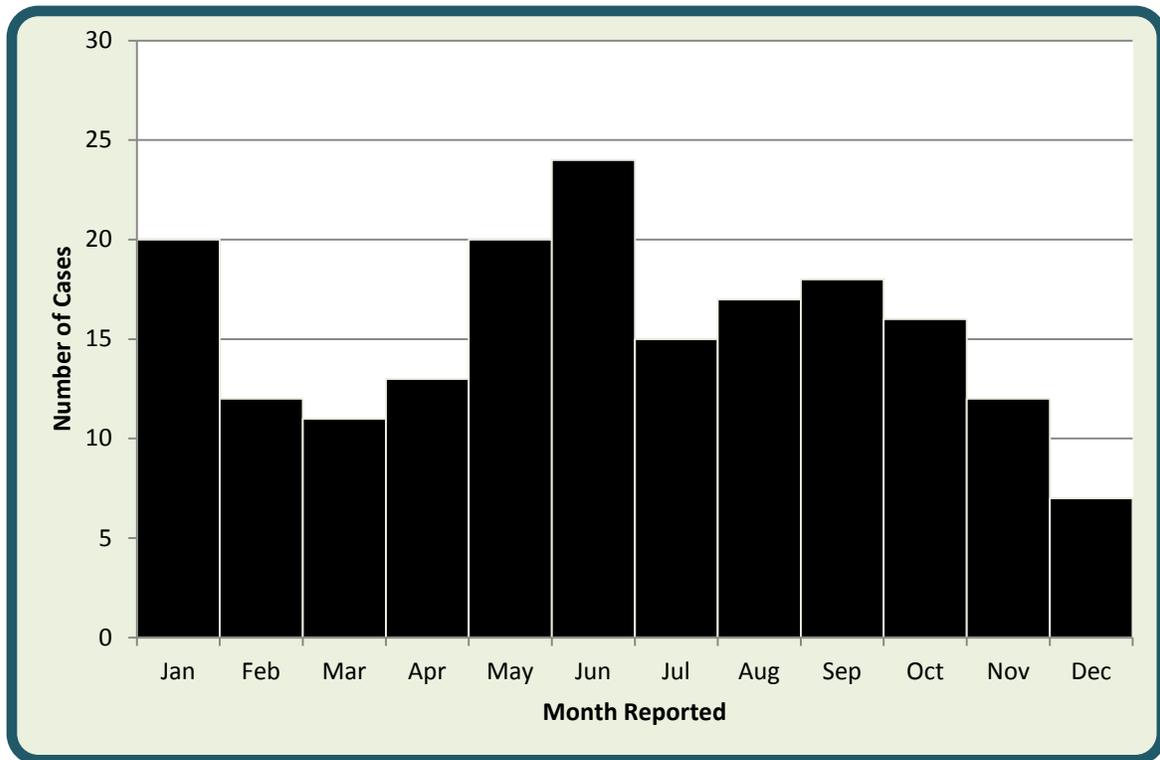
Enteric diseases were reported among residents of every city within Davis County. The rate by city varied, but the average rate of enteric diseases was 54.6 per 100,000 residents.

Incidence of Enteric Diseases by City, Davis County, 2013



Enteric diseases are reported year-round, with a higher incidence during the summer months.

Enteric Diseases by Month Reported, Davis County, 2013

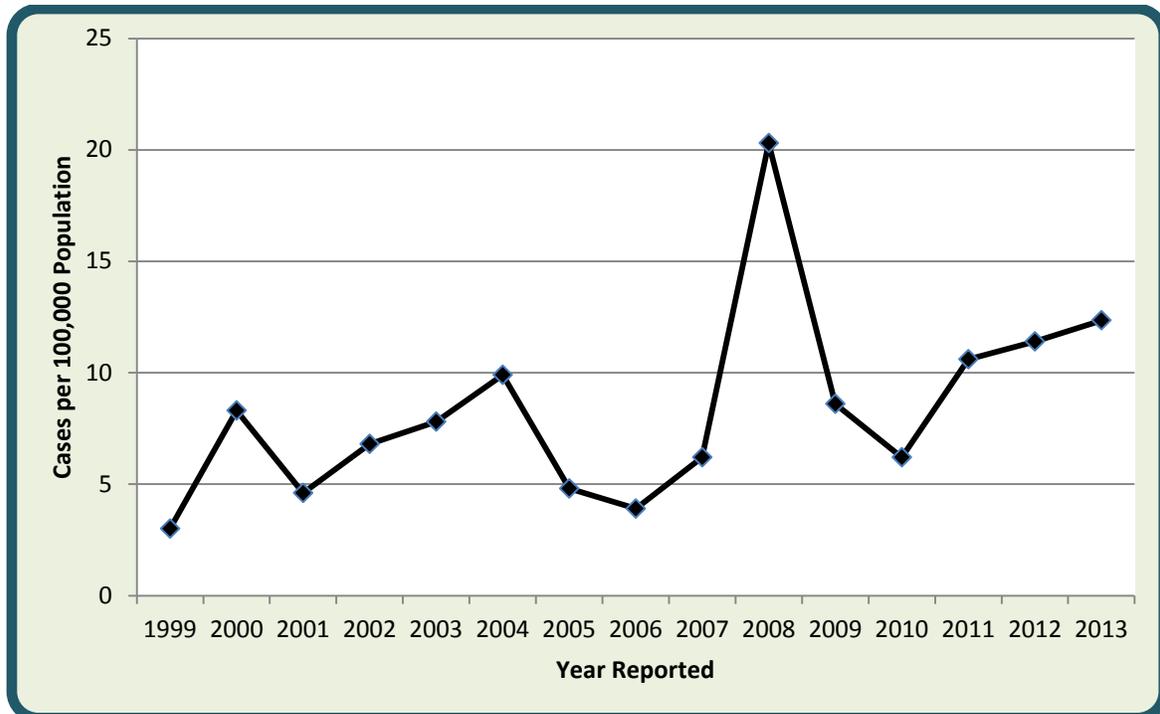


Campylobacteriosis

Campylobacteriosis is an infectious disease caused by bacteria of the genus *Campylobacter*. The bacteria are transmitted via the fecal-oral route. Improperly cooked poultry, untreated water, and unpasteurized milk are the main sources of infection. *Campylobacter* is one of the most common bacterial causes of diarrheal illness in the United States. Virtually all cases occur as isolated, sporadic events, not as part of large outbreaks. Active surveillance through CDC indicates about 15 cases are diagnosed each year for every 100,000 persons in the population. Many more cases go undiagnosed or unreported, and campylobacteriosis is estimated to affect over 1 million persons every year, or 0.5% of the general population.

During 2013, there were **39** cases of campylobacteriosis reported in Davis County.

Incidence of Campylobacteriosis, Davis County, 1999-2013



2013 Disease Highlights:

In 2013, Davis County investigated 39 confirmed cases of campylobacteriosis, the highest annual number of cases reported in the last 20 years (with the exception of 2008 when a large outbreak occurred within a youth group participating in a pioneer trek). Two cases were identified as part of a statewide cluster that included 17 cases throughout Utah. Several cases (including both Davis County cases) had exposure to raw milk products from the same vendor. The Utah Departments of Health and Agriculture & Food inspected the facility in October 2013; however, the tested milk samples did not show elevated coliform levels.

Cryptosporidiosis

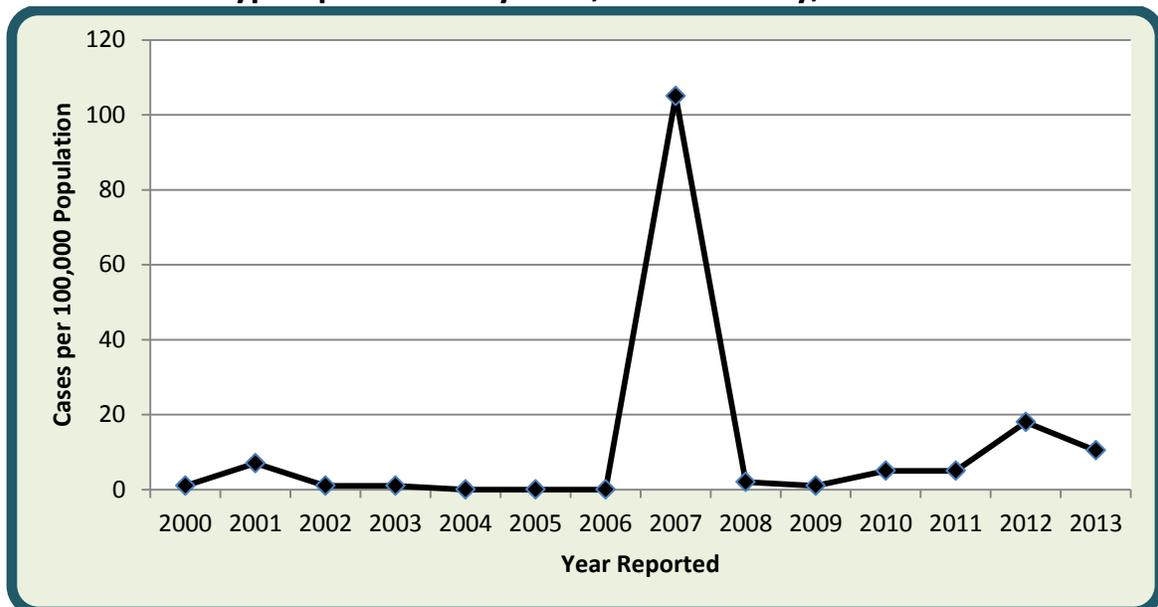
Cryptosporidiosis is an infection caused by the protozoan organism *Cryptosporidium parvum*. *Cryptosporidia* have been found in many hosts, including human, cattle and other domestic mammals. Infections occur via person-to-person, fecal-oral, animal-to-person, and waterborne transmission. During the past two decades, “crypto” has become recognized as one of the most common causes of waterborne disease in humans in the United States. The parasite may be found in drinking water and recreational water in every region of the United States and throughout the world.

During 2013, there were **33** cases of cryptosporidiosis reported in Davis County.

2013 Disease Highlights:

In 2013, Davis County had 33 confirmed cases of cryptosporidiosis – a 28% decline from 2012 when 46 cases were reported. The last outbreak of cryptosporidiosis in Utah occurred in 2007 (with 294 reported cases in Davis County) and was associated with public swimming pools. Cases have diminished since that time due to the implementation of new control measures, including installation of UV lights in several Davis County pool systems. In 2013, prevention activities consisted of joint efforts between several local health departments (including Davis County) to increase awareness among residents to actively prevent the spread of cryptosporidiosis. Utah media was used to present a commercial on cryptosporidiosis prevention. Davis County also distributed information packets (including posters) to public swimming pool operators to help prevent pool transmissions.

Incidence of Cryptosporidiosis by Year, Davis County, 2000-2013



Norovirus

Noroviruses are named after the original strain “Norwalk virus,” which caused an outbreak of gastroenteritis in a school in Norwalk, Ohio, in 1968. There are at least five known norovirus geno-groups, which in turn are divided into at least 31 genetic clusters. Noroviruses are transmitted primarily through the fecal-oral route, either by consumption of fecally contaminated food/water or by direct person-to-person contact. Environmental and fomite contamination are also sources of infection. Evidence exists for transmission via aerosolization of vomitus resulting in droplets contaminating surfaces or entering the oral mucosa and being swallowed. No evidence suggests that infection occurs through the respiratory route. CDC estimates that 23 million cases of acute gastroenteritis due to norovirus infection occur each year, and that at least 50% of all foodborne outbreaks of gastroenteritis can be attributed to noroviruses.

During 2013, there were **20** cases of norovirus reported in Davis County. Norovirus outbreaks were identified in some Davis County long-term care facilities.

2013 Disease Highlights:

Due to the fairly short duration of illness (typically 24 hours) and the self-limited, mild-to-moderate manifestation, persons infected with norovirus often do not seek medical attention. Those who do are rarely tested for norovirus because testing is not widely available. As a result, many norovirus outbreaks are missed. When suspect cases are reported to the health department, they are often received after the patient has recovered or late into the illness, making it difficult to get a confirmed diagnosis. The Communicable Disease and Epidemiology Division investigates several clusters of gastrointestinal illness each year. Most of these clusters are believed to be due to norovirus based on the symptoms and duration of the illness. Three investigations where norovirus was confirmed as the cause of illness are summarized below:

- In January 2013, the Davis County Health Department (DCHD) was notified of a cluster of gastrointestinal illnesses among patients at a long-term care facility. The Infection Control Nurse reported that 10 out of 25 patients in one unit had been ill with vomiting and diarrhea. Initially, no staff members were affected. The symptoms and duration of illness were consistent with norovirus infection. DCHD provided advice and information from CDC regarding controlling norovirus outbreaks in health care facilities. The information included cleaning guidelines and management of ill staff members. DCHD requested that the facility collect stool specimens from ill patients to confirm the diagnosis. Seven stool specimens were collected and sent to the California Department of Health Viral and Rickettsial Disease Laboratory for norovirus testing. Of these, six were positive for norovirus GII.6B and one was not tested. In all, 64 out of 740 (8.6%) patients and staff became ill during the outbreak. The most commonly reported symptoms were diarrhea (86%), vomiting (82%) and nausea (61%). Approximately 19% of cases had a documented fever. The average duration of illness was 24-48 hours. Most of the cases were limited to a single floor of the facility.

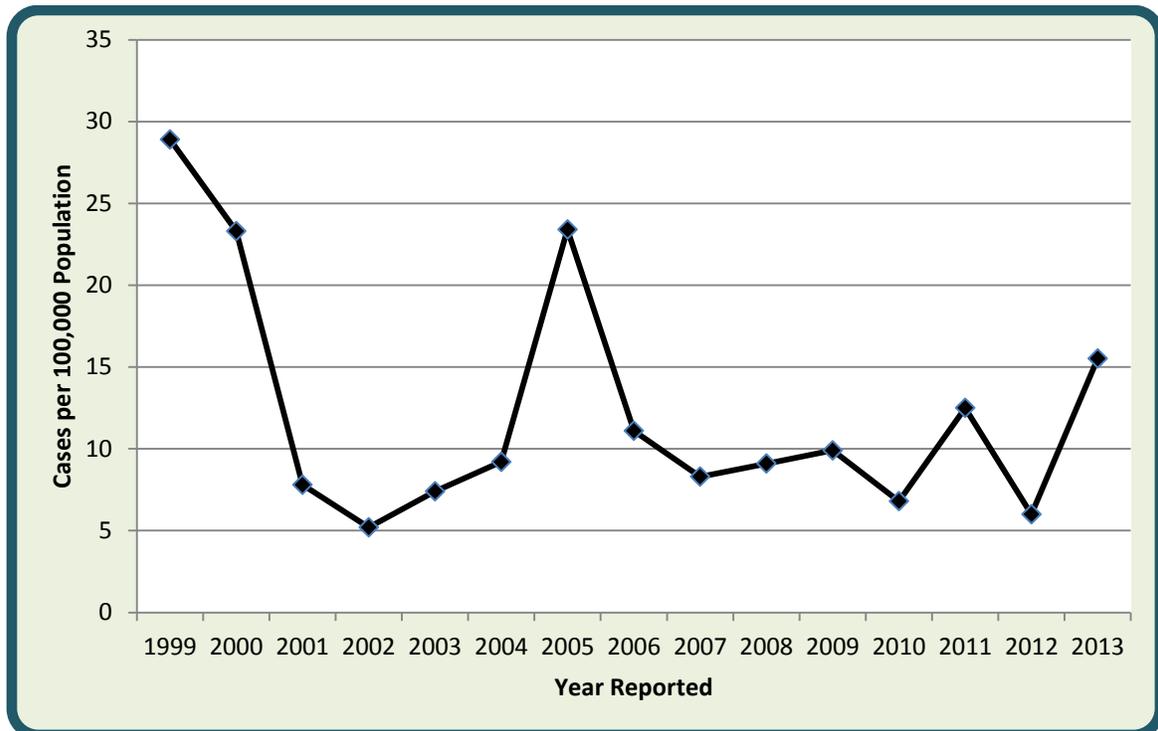
-
- In May 2013, a cluster of staff and residents with vomiting and diarrheal symptoms was reported at an assisted-living facility. The Infection Control Nurse reported that symptoms generally lasted between 24-48 hours and suspected a possible norovirus outbreak. The facility implemented disinfection and isolation measures to inhibit additional cases. At the request of DCHD, the facility collected two stool specimens that were sent to the California Department of Public Health Viral and Rickettsial Disease Laboratory for confirmation. One of these was positive for norovirus GII. In total, 43 out of 118 residents/staff members (36.4%) were symptomatic during the outbreak. Reported symptoms included abdominal pain (100.0%), diarrhea (93.0%), nausea (46.5%), and vomiting (23.3%).
 - The state Epidemic Intelligence Service (EIS) Officer notified DCHD in December 2013 of two children from a long-term care facility that had been transferred to Primary Children's Hospital with severe bloody diarrhea. Both children had genetic disorders and were immunocompromised. Initial cultures revealed that both children were positive for adenovirus 40/41. The children had been roommates at the long-term care center and became ill within a day of each other. Unfortunately, one of the children did pass away from complications related to an existing medical condition. DCHD requested the facility implement contact and droplet control measures. The Infection Control Nurse conducted surveillance measures to identify any other patients with diarrheal symptoms. In total, 21 of 35 patients (60.0%) were symptomatic with diarrhea (90.5%), vomiting (38.1%), and fever (23.8%). Nine specimens were collected and cultured for bacteria at the Utah Public Health Laboratory. All returned with negative results for *Salmonella*, *Shigella*, *Campylobacter*, and STEC. Thirteen specimens from twelve patients were also shipped to CDC for additional viral testing. These results confirmed the initial two children as positive for adenovirus 41 and indicated two additional cases as positive for adenovirus 41, with another two positive for norovirus GII.7. Additional testing through the facility revealed that one patient was positive for *Clostridium difficile*. Surveillance continued until no further cases were identified.

Salmonellosis

Salmonellosis is a bacterial infection generally transmitted through ingestion of contaminated food or water. Salmonellosis can also be transmitted by direct contact with an infected human or animal. *Salmonella* bacteria are commonly found in food products and are carried by many domestic animals. Every year, approximately 40,000 cases of salmonellosis are reported in the United States. Because many mild cases are not diagnosed or reported, the actual number of infections may be thirty or more times greater. Salmonellosis is more common in summer than in winter. Children are the most likely to be diagnosed with salmonellosis. Young children, the elderly, and those who are immunocompromised are most likely to have severe infections. It is estimated that approximately 450 persons die each year from salmonellosis.

The number of salmonellosis cases reported in Davis County in 2013 increased significantly from 2012. A total of **49** cases were reported, an increase of over 157% from the 19 cases reported in 2012.

Incidence of Salmonellosis, Davis County, 1999-2013



2013 Disease Highlights:

Because of the many different strains of *Salmonella*, determining the serotype and PFGE pattern of *Salmonella* isolates is critical to identifying sources and epidemiological links among cases. Private laboratories are required to submit *Salmonella* isolates to the Utah Public Health Laboratory for serotyping and PFGE analysis. PFGE patterns are compared with other Utah and U.S. *Salmonella* isolates to identify possible clusters and suspect sources.

Salmonella Enteritidis was the most commonly reported *Salmonella* serotype during 2013 with **12** cases (24.5%) followed by *Salmonella* Typhimurium with **eight** cases (16.3%), and *Salmonella* Altona and Saint Paul each with **three** cases (6.1%). Additional serotypes were reported in 2013, but were not as common. The number of cases of salmonellosis among Davis County residents by serotype is shown in the table below.

Salmonellosis Serotypes, Davis County, 2013

Serotype	Number of Cases	Percent
Enteritidis	12	24.5%
Typhimurium	8	16.3%
Unknown	5	10.2%
Altona	3	6.1%
Saint Paul	3	6.1%
Schwarzengrund	2	4.1%
Oranienburg	2	4.1%
Infantis	2	4.1%
Heidelberg	2	4.1%
Stanley	1	2.0%
Rissen	1	2.0%
Poona	1	2.0%
Paratyphi B	1	2.0%
Newport	1	2.0%
Muenchen	1	2.0%
Montevideo	1	2.0%
Javiana	1	2.0%
Carrau	1	2.0%
B:i (monophasic)	1	2.0%
Total	49	100.0%

Salmonellosis Clusters

Salmonella Typhimurium

Three Davis County residents were linked to a national cluster of *Salmonella* Typhimurium infections that were matched by PFGE to 40 cases in nine other states. CDC noted this pattern had previously been associated with carne asada. In their investigation, CDC found that 14/23 (61%) reported beef exposure; 6/13 (46%) reported carne asada exposure, and 8/23 (35%) reported freshkill beef. Farm animal exposure to cows or chickens were reported in 6/18 (33%) of cases. Two of the three (67%) Davis County cases had exposure to new pets. CDC closed the investigation of this cluster with no single source identified.

Salmonella Stanley

A Davis County resident was linked to a national cluster of *Salmonella* Stanley infections. CDC and the California Department of Public Health Food and Drug Branch found the outbreak to be associated with a cashew cheese product that is produced in California and distributed to Northern California and Nevada. The Davis County case had traveled out of the country during his exposure period and was consequently not included in the case count.

Salmonella Montevideo

A state cluster of *Salmonella* Montevideo was also identified in residents of Davis and Weber Counties. Both cases had an onset within five days of the other and reported drinking raw milk from a local dairy.

Salmonella Altona

Three members of a Davis County family were identified as part of a state cluster of *Salmonella* Altona. Four other cases across the state were also identified by PFGE. No common source has been identified, but a multi-state outbreak of *Salmonella* Altona in 2011 was linked to baby chicks.

Salmonella Typhimurium

Two residents in Davis County were also infected with a strain of *Salmonella* Typhimurium that was reported in 39 states. CDC determined that most of the cases, including both Davis County residents, had contact with chicks, ducklings, and other live baby poultry that were sourced from a hatchery in New Mexico.

Salmonella B:i (monophasic)

A Davis County resident was infected with *Salmonella* B:i (monophasic) after eating tapas at a restaurant out-of-state. Approximately 200 other individuals were affected from 20 states and two foreign countries.

Shiga Toxin Producing *Escherichia coli* (STEC) Infection

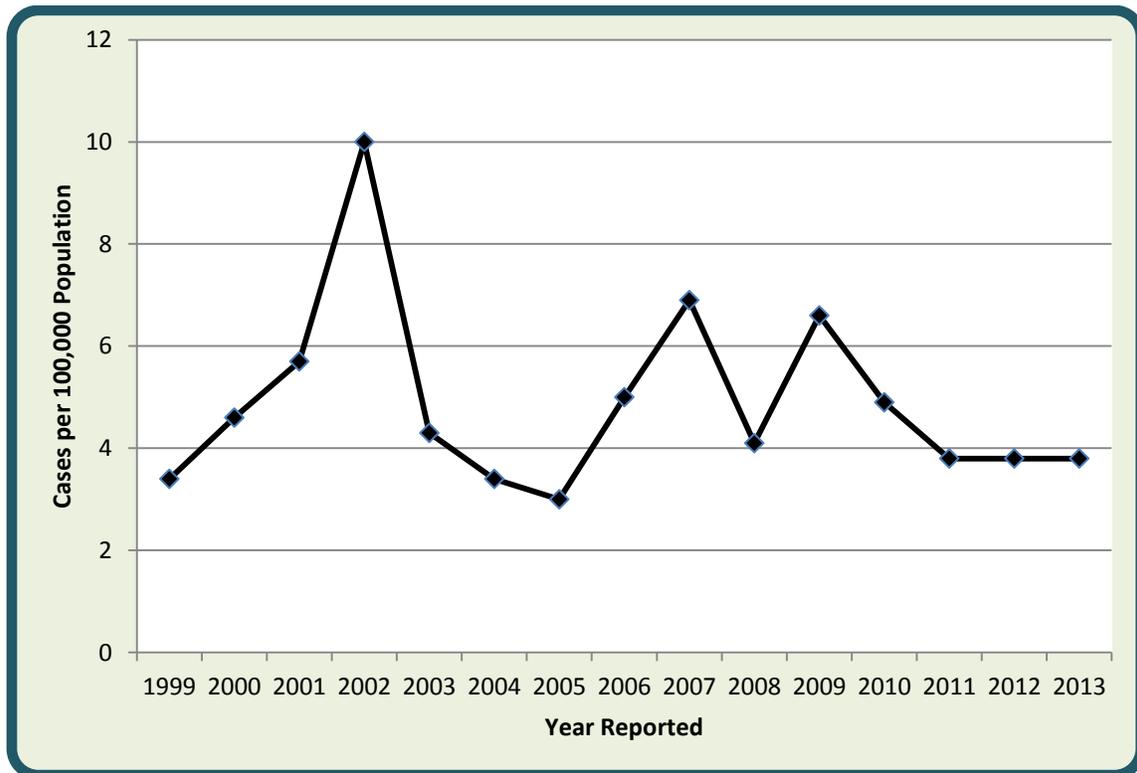
E. coli are bacteria that normally live in the intestines of humans and animals. Certain strains of *E. coli*, including O121, O11, O26 and O157:H7 produce Shiga toxins that can cause hemorrhagic colitis, manifested as bloody stools. The most serious complication of the infection is Hemolytic Uremic Syndrome (HUS), which can lead to permanent kidney damage or death.

Sources of transmission include consumption of undercooked, contaminated ground beef and other beef products, unpasteurized milk, drinking or swimming in water that is contaminated with sewage, or eating unwashed fruits or vegetables. Person-to-person transmission can occur within households, childcare centers, and long-term care facilities.

Due to the potential severity of STEC and the fact that it spreads easily, public health investigates all reported cases thoroughly. Individuals in high-risk settings (e.g. food-handlers and day care workers or attendees) must be cleared by public health before returning to the facility.

In 2013, there were **12** cases of STEC reported in Davis County.

Incidence of STEC Infections, Davis County, 1999-2013



2013 Disease Highlights:

In 2013, the most common strain of STEC reported in Davis County was O26 with **five** cases (41.7%). Other strains identified included O111, O157:H7, and O121. No Davis County clusters were associated with any national or state STEC clusters this year.

The cases ranged in age from three to 33, with a median age of 14. A total of eight cases (67%) were male. STEC is most commonly reported during the summer months. In 2013, eight cases (67%) were reported in June, July, and August.

Two of the Davis County cases were hospitalized, but no HUS or deaths were reported. Possible exposures reported by patients included: animal contact, international travel, swimming in untreated recreational water, and drinking untreated water.

The number of cases of STEC among Davis County residents by serotype is shown in the table below.

Shiga Toxin Producing *E. coli* Serotypes, Davis County, 2013

Serotype	Number of Cases	Percent
O26	5	41.7%
O111	3	25.0%
O157:H7	2	16.7%
O121	1	8.3%
Unknown	1	8.3%
Total	12	100.0%

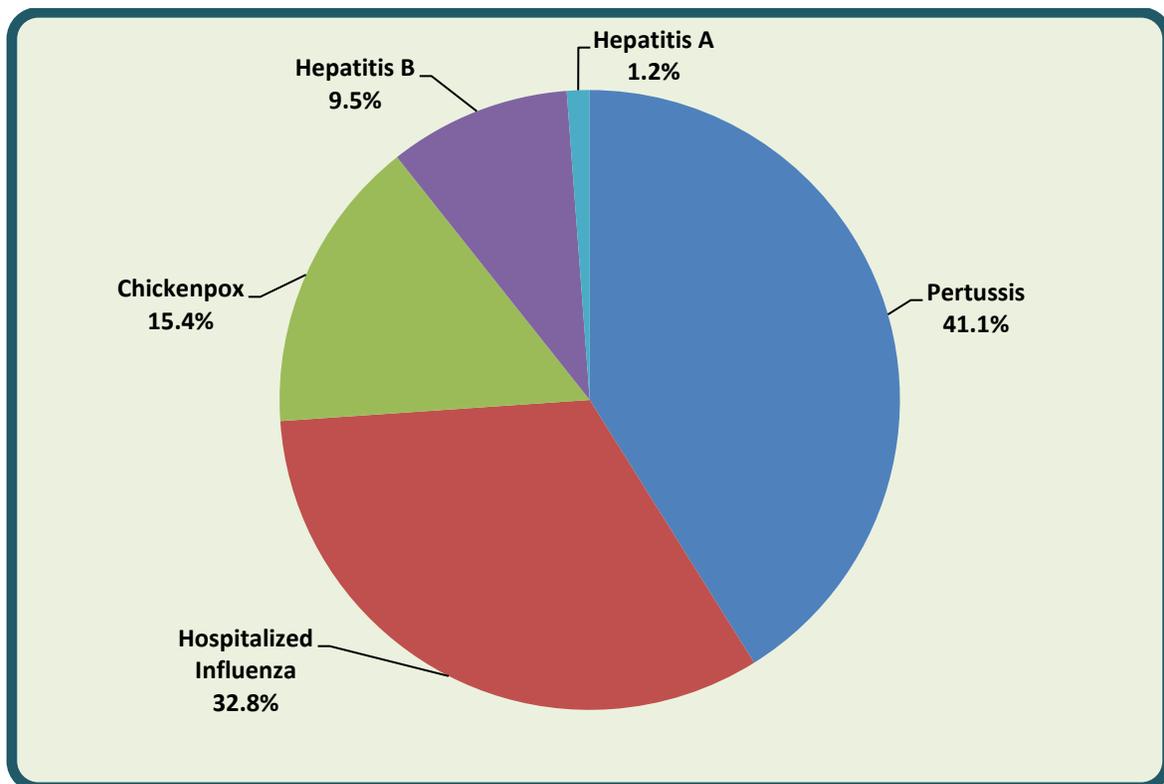
Vaccine-Preventable Diseases

Vaccine-Preventable Diseases are diseases that are preventable through the use of immunizations. Historically, many vaccine-preventable diseases caused a great deal of morbidity and mortality in children. Rates of VPDs have dramatically declined in large part because of immunizations. Yet worldwide each year, 27 million children do not receive basic vaccines and 2-3 million people die of vaccine-preventable diseases. Immunizations are the most effective step in protecting the community against VPDs. However, these diseases still occur because of importation, vaccine failure or breakthrough, and incomplete or no vaccinations.

Once a VPD is diagnosed, it is important that public health measures be quickly implemented to contain the spread. These measures include the administration of prophylactic medications and vaccines, isolation of the infected individual, quarantine of exposed individuals, and public education.

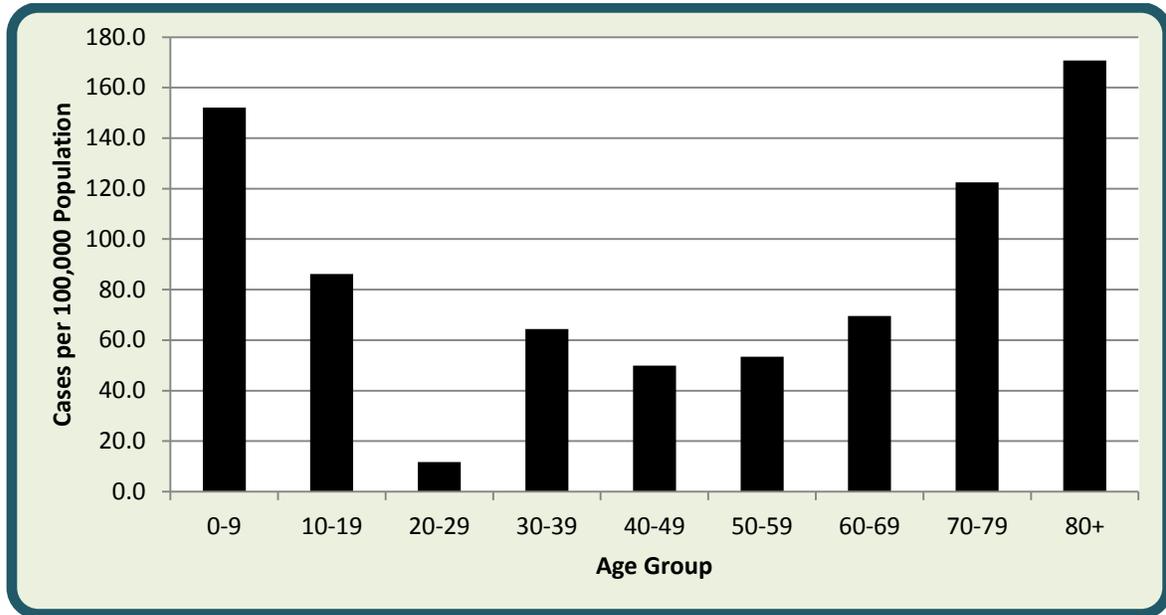
In 2013, pertussis was the most commonly reported VPD with **104** cases (41% of all VPDs). Hospitalized influenza was the next most common disease in this category with **83** cases (33%), followed by chickenpox with **39** cases (15%), hepatitis B with **24** cases (10%), and hepatitis A with **three** cases (1%).

Vaccine-Preventable Diseases, Davis County, 2013



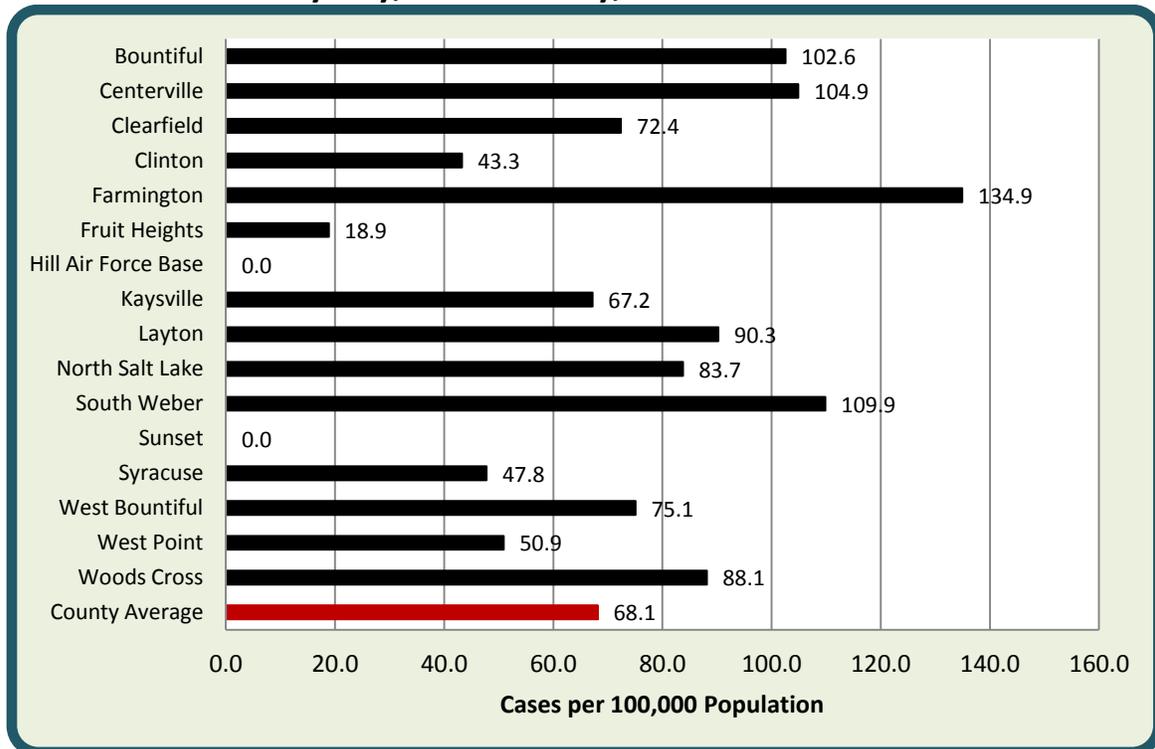
The incidence of vaccine-preventable diseases is highest among children under the age of 10 and the elderly.

Incidence of VPDs by Age Group, Davis County, 2013



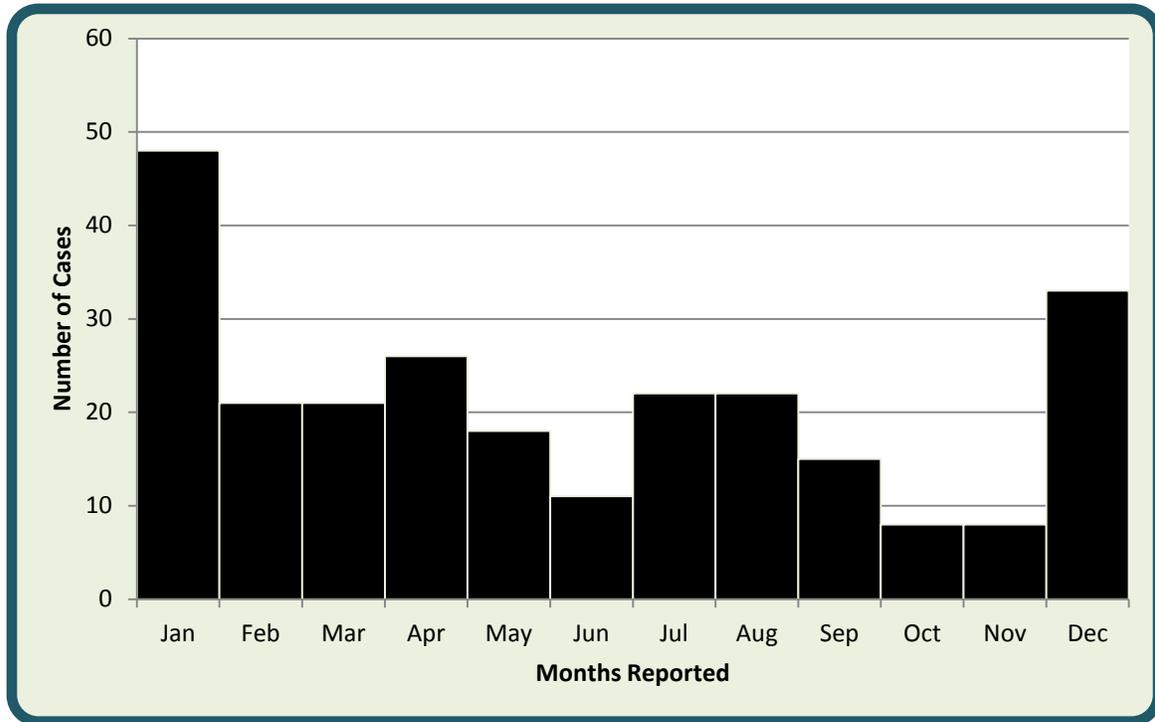
Vaccine-preventable diseases occurred in residents throughout the county. The average rate of vaccine-preventable diseases was **68.1** cases per 100,000 residents.

Incidence of VPDs by City, Davis County, 2013



Vaccine-preventable diseases (particularly pertussis and chickenpox) are usually reported more frequently during the school year. Influenza cases typically peak in January - February.

VPDs by Month Reported, Davis County, 2013



Hepatitis A

Hepatitis A is a vaccine preventable disease caused by the hepatitis A virus. It is transmitted via the fecal-oral route either by direct contact or by consumption of contaminated food or water.

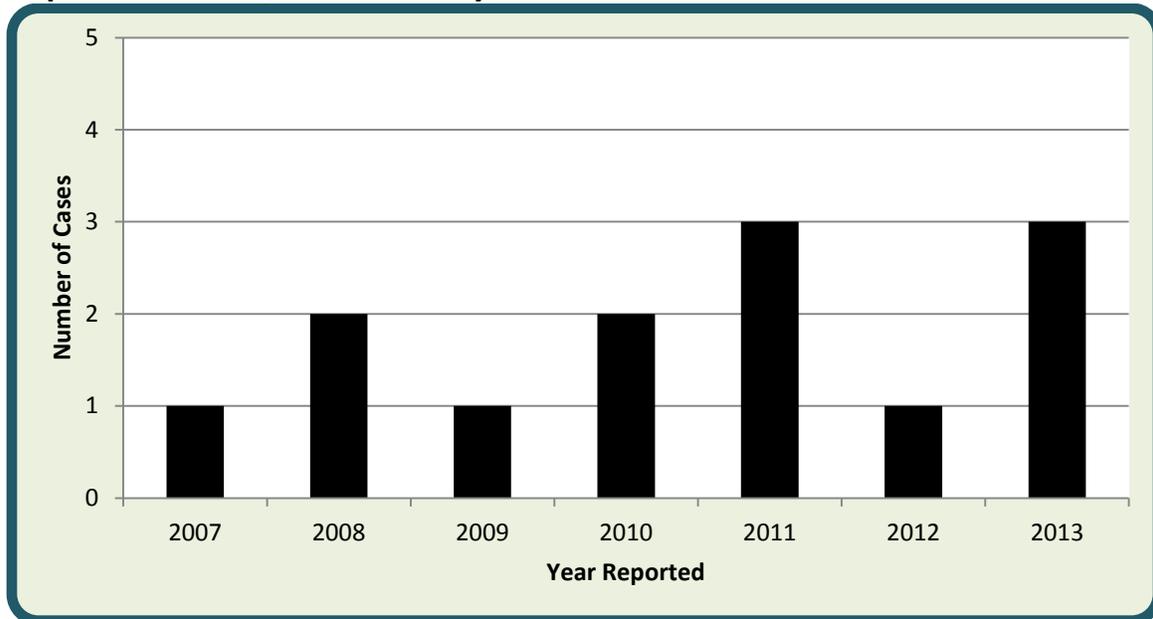
Hepatitis A rates have declined steadily since 1999 when routine vaccination was recommended for children living in states with highest incidence, including Utah. In 2004, the U.S. incidence dropped to an all time low of 1.9 cases/100,000 population.

Davis County had **three** cases of Hepatitis A in 2013.

2013 Disease Highlights:

Suspect cases of hepatitis A are reported throughout the year. Disease investigations are often able to rule out most infections. In 2013, three Davis County residents were confirmed with hepatitis A. Two of the individuals were linked to a national outbreak associated with the consumption of frozen berries. The outbreak consisted of approximately 162 cases from 10 states. A total of 71 individuals were hospitalized as a result of the infection - no deaths occurred. Townsend Farms Organic Antioxidant Blend (frozen berries) was recalled as a safety precaution. This strain of hepatitis A (1B), which was found in 117 clinical specimens, is rarely seen in the Americas, but circulates in northern Africa and the Middle East. This genotype was also linked to frozen berries in an outbreak in Europe in 2013 and in British Columbia in 2012.

Hepatitis A Cases, Davis County, 2007-2013



Hepatitis B (Acute and Chronic Infections)

Hepatitis B (HBV) is a vaccine preventable disease caused by the hepatitis B virus. It is transmitted through blood or body fluids. Common modes of transmission include percutaneous and permucosal exposure to infectious body fluids, sharing needles or syringes, sexual contact with an infected person, and perinatal exposure to an infected mother. In the U.S., 5-8% of the total population is infected, and 2-9% of the population has chronic infection. Acute HBV infection occurs most commonly among adolescents and adults in the U.S.

During 2013, there were **24** cases of HBV reported in Davis County—23 were chronic infections and one was determined to be a perinatal case. Of the chronic cases, **two** tested positive during pregnancy and were referred to the Perinatal Hepatitis B Program for further interventions. Several of the non-pregnant HBV cases were at high risk for infection (e.g. foreign born, IDU, sexual/household exposure to a positive contact).

Perinatal Hepatitis B Program:

The Perinatal Hepatitis B program is responsible for the case management (evaluation, monitoring, testing and facilitation of HBIG and hepatitis B vaccination) of all reported cases of HBsAg positive pregnant females in Davis County. Prior to the baby's birth, arrangements are made with the delivering hospital to administer hepatitis B immune globulin (HBIG) and the first dose of hepatitis B vaccine to the newborn within 12 hours after delivery in an effort to prevent the newborn from acquiring the virus. The newborn is monitored until all three doses of vaccine have been administered. After vaccination, serology testing is conducted to ensure antibody protection. If the infant is a non-responder to the vaccine, a second series is given. Testing is repeated at completion of the second series. Women, who are prenatally tested and determined to be chronic hepatitis B carriers, are interviewed to identify close contacts. Identified close contacts (sexual partners, household contacts, and children) are recommended to have testing to determine their infection status. If serology testing is negative, the hepatitis B vaccination series is encouraged. The case management of HBsAg positive pregnant females can range from 8-18 months.

As many as 90% of infants who acquire HBV infection from their mothers at birth become chronically infected. Of children who become infected with HBV between 1-5 years of age, 30-50% become chronically infected. By adulthood, the risk of acquiring chronic HBV infection is approximately 5%.

Influenza

Influenza is an acute respiratory disease caused by RNA viruses from the *Orthomyxoviridae* family. Humans are the primary reservoir for human influenza, but many influenza species can also infect birds and mammals. Influenza is transmitted via respiratory droplets and direct contact.

The 2012-13 influenza season was very active. There were **76** cases of hospitalized influenza reported in Davis County compared to 27 cases reported during the 2011-12 season.

2013 Disease Highlights:

Because of the large number of cases that occur each season, traditional surveillance methods are impractical for influenza. Therefore, the disease is monitored using a variety of mechanisms. One method is through the use of “sentinel sites.” Davis County tracks physician visits for influenza-like illness at sentinel sites throughout the county. These sites report data weekly in order to identify when influenza season begins and ends and to monitor the burden of disease in the county. These sites also submit specimens for influenza testing/typing to the Utah Public Health Laboratory so that circulating strains can be identified. During the 2012-13 influenza season, four sentinel sites reported data to the health department and UDOH.

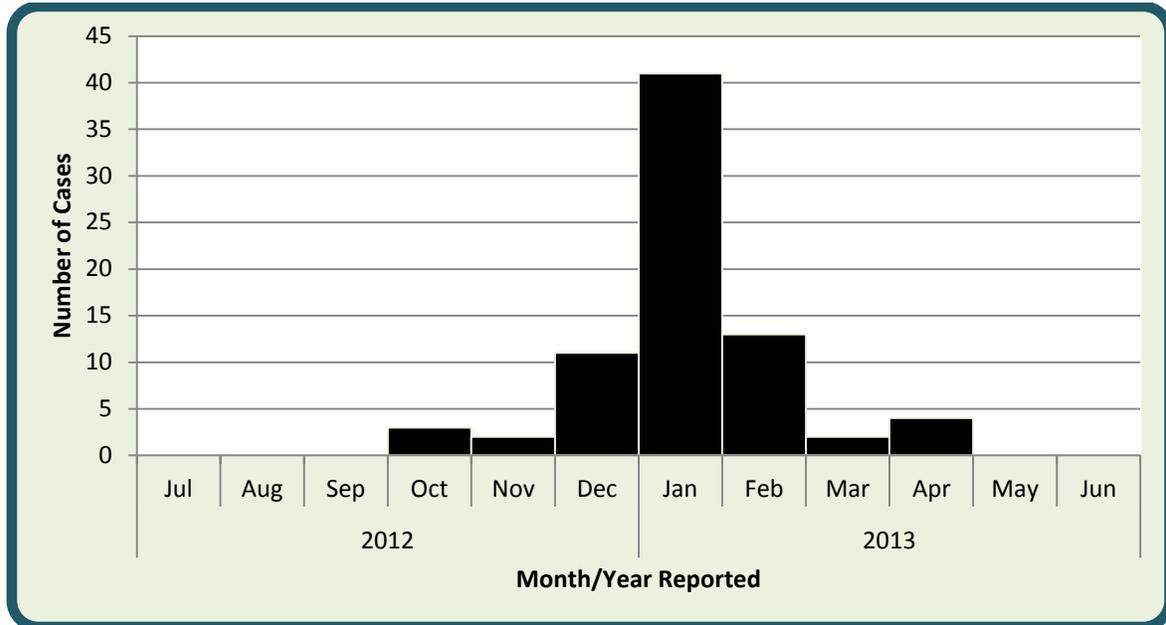
In addition, medical providers, hospitals and laboratories are required by state law to report hospitalized influenza cases and pediatric influenza deaths to the local health departments. These two levels of reporting help DCHD evaluate disease severity, which is another important aspect of surveillance.

Davis County also partners with the Davis School District to monitor elementary school absentee data. When schools experience a higher than expected absentee rate, the district is notified and an investigation is conducted to determine cause of the excess absences.

During the 2012-13 influenza season, the incidence of influenza in Davis County was higher than expected, with 76 cases of hospitalized influenza reported. The 2013-14 influenza season has been less severe thus far, but current reports indicate that it will be another moderate influenza season. Type A (H1N1) has been the most common circulating strain – significantly affecting young and middle-aged populations.

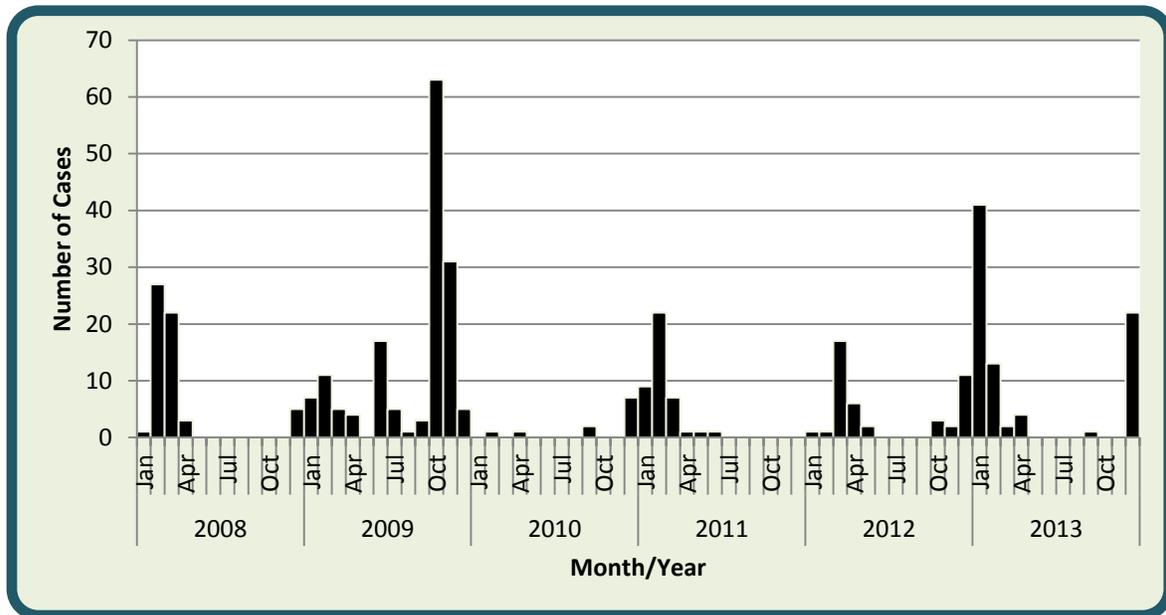
New procedures implemented this influenza season require that all hospitalized influenza cases include demographic, laboratory, and hospitalization information. Only pediatric influenza deaths and novel/pandemic influenza are investigated. Salt Lake County Health Department currently participates in a project with CDC to collect extensive information on influenza hospitalizations. As influenza risk factors vary little across jurisdictions, UDOH believes the information gathered through this project will adequately represent hospitalized influenza activity for the entire state’s population.

Hospitalized Influenza Cases by Month, Davis County, 2012-13 Influenza Season



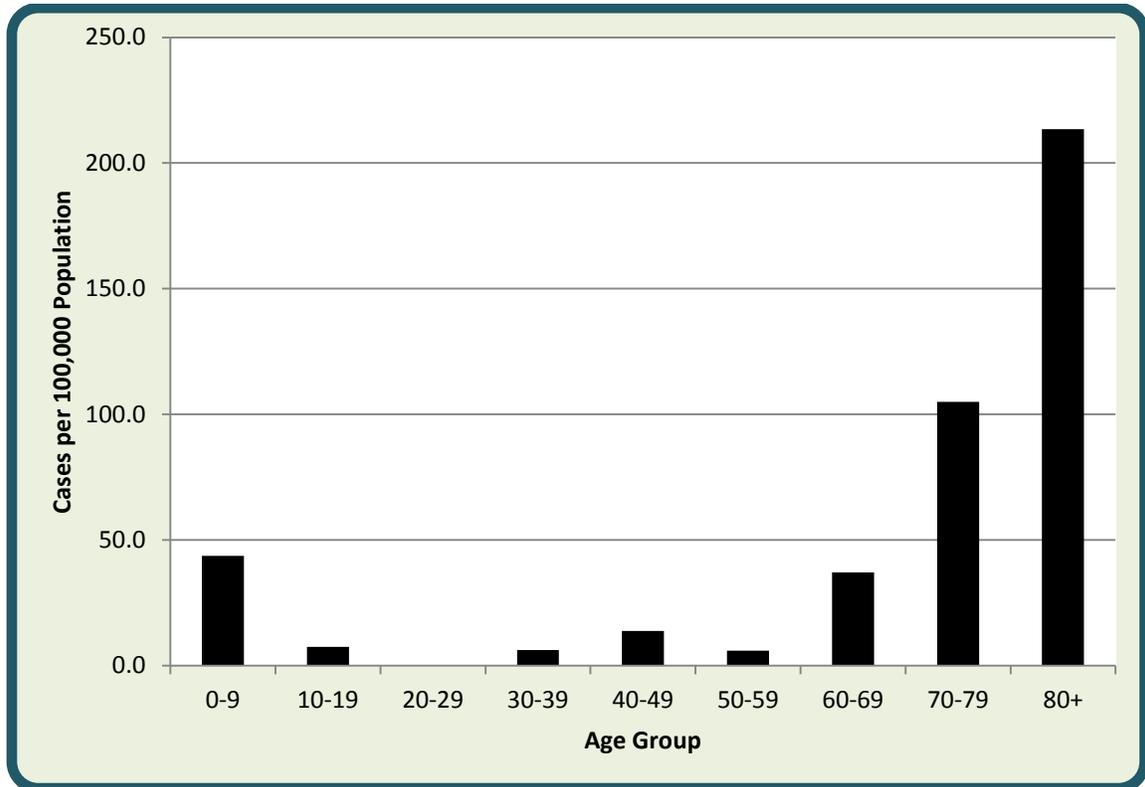
Although influenza cases can occur at any time of year, influenza viruses thrive in cold weather and cases typically peak in the winter months (January and February). The 2012-13 influenza season began early with high influenza activity being reported in January. It had the second highest incidence of hospitalized flu cases since 2009 when H1N1 was epidemic. The most common circulating strain was seasonal influenza A H3. The 2013-14 has also reported high levels of activity, but has not reached the same reported levels as the previous year. It appears that this will be a moderate season.

Hospitalized Influenza Cases by Month, Davis County, 2008-2013



The very young and very old are the populations most severely affected by influenza infection. These groups had the highest rates of hospitalizations and deaths due to the disease in the 2012-13 influenza season.

Incidence of Hospitalized Influenza Cases by Age Group, Davis County, 2012-13 Influenza Season

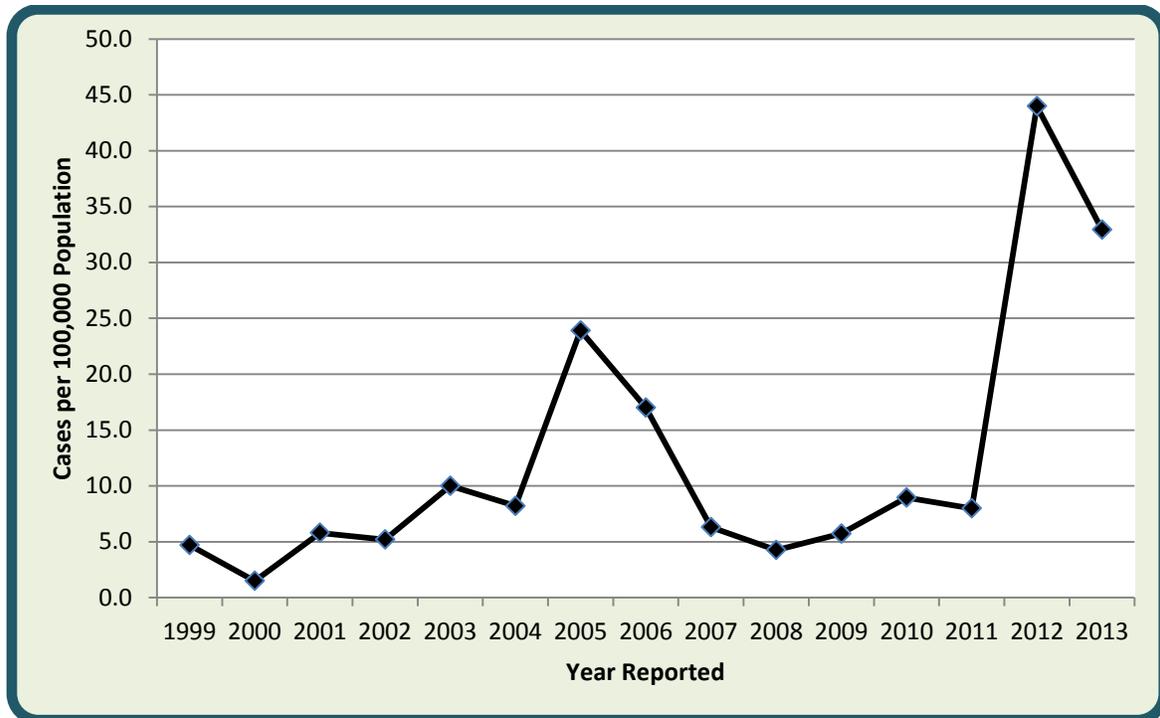


Pertussis

Pertussis is a vaccine-preventable disease caused by the bacteria *Bordetella pertussis*. The disease is of particular concern in infants because of higher rates of hospitalization, pneumonia, and death—compared with older children and adults.

During 2013, there were **104** cases of pertussis reported in Davis County.

Incidence of Pertussis, Davis County, 1999-2013



2013 Disease Highlights:

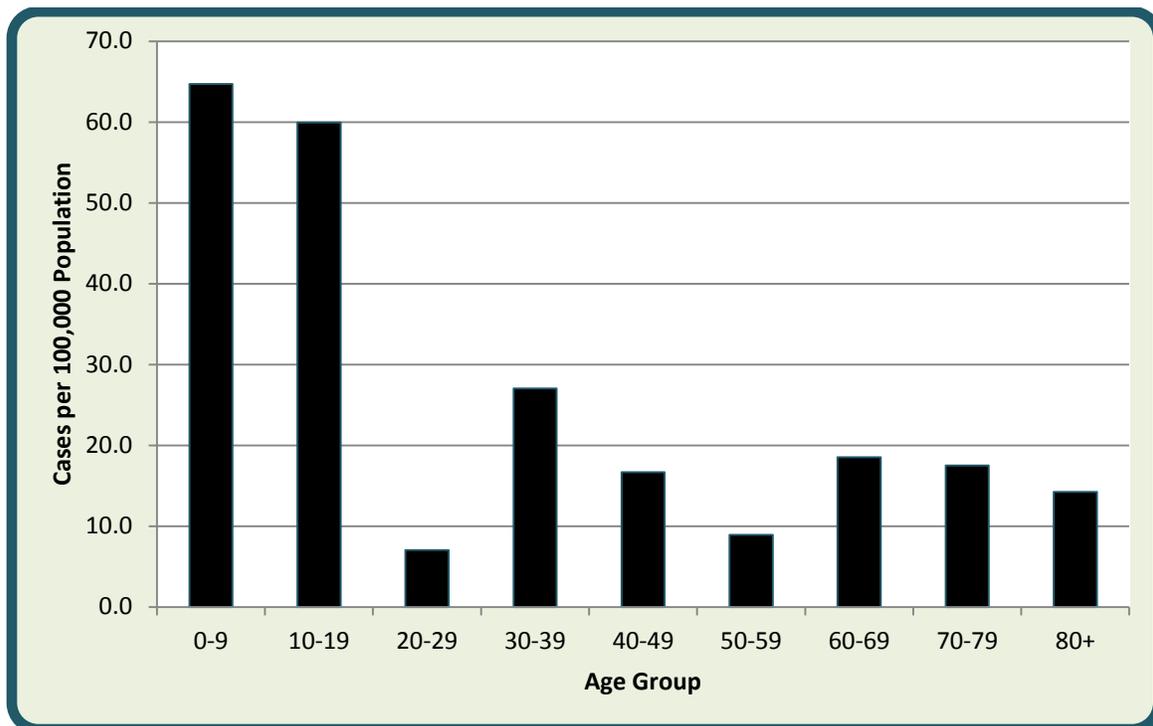
DCHD investigates approximately 45 pertussis cases each year (based on a 5-year average). In 2013, 104 cases were reported. This corresponds to a 25% decrease in comparison to the 139 cases reported in 2012. In 2013, the elevated presence of pertussis was again noted across the state and nation. There were 1,092 cases of pertussis reported in Utah and 24,231* cases in the United States. Disease investigations conducted by DCHD found symptomatic contacts, indicating a greater disease impact than was initially reported. Risk factors for development of disease included: 1) no vaccination or under-vaccination, 2) waning antibody response, 3) household exposures, and 4) exposure to symptomatic individuals in the community via mass gatherings (e.g. schools, worksite, and religious meetings). In 2013, a clustering of cases occurred during the summer months. This same pattern was also noted in 2012.

*provisional data

All reported pertussis cases are investigated promptly in an effort to stop disease spread. Contacts that experience a prolonged exposure to an infected case may benefit from antibiotic prophylaxis – if administered in a timely manner. Children are routinely vaccinated against pertussis before entry into the school system. Upon entry into junior high, a booster dose is required. The Tdap (tetanus, diphtheria and acellular pertussis) is recommended for anyone aged 11-64 and is a one-time dose. Recent guidance from CDC recommends pregnant women receive Tdap vaccine with every pregnancy, preferably given between weeks 27-36. Tetanus vaccination, however, is recommended every 10 years. The age groups most often affected by pertussis are those who are under-vaccinated including infants/children under five (because they have not completed the full vaccination series) and adolescents/adults (because of waning immunity).

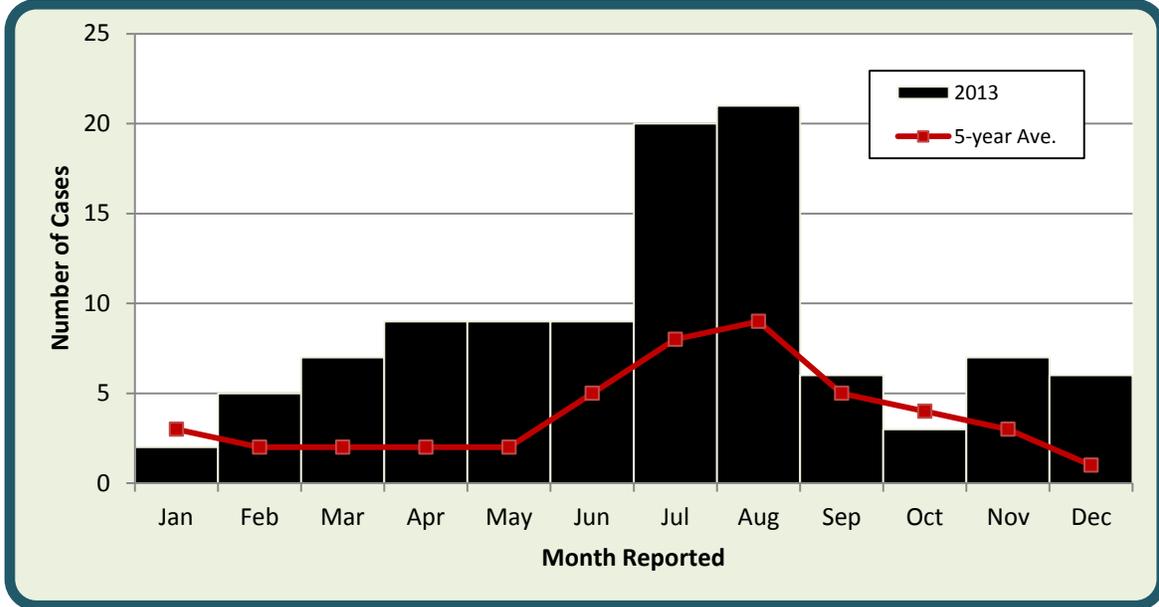
Infants and young children are the groups most severely impacted by pertussis. Although cases are common in older children and adults due to waning immunity, illness in these age groups is usually mild, and the diagnosis is often missed.

Incidence of Pertussis by Age Group, Davis County, 2013



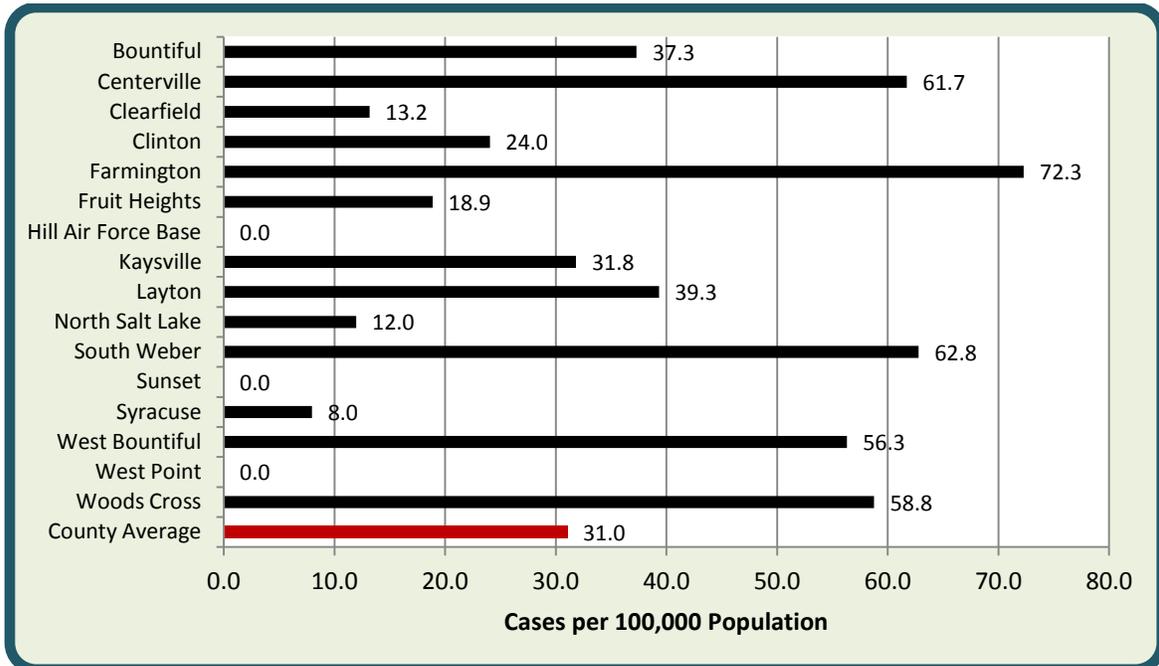
Cases of pertussis began to rise in July of 2013 and peaked in August. Although the number of cases dropped substantially by the end of the year, the total was still above expected levels. DCHD continues to closely monitor pertussis cases.

Pertussis by Month Reported, Davis County, 2013



In 2013, pertussis cases were reported throughout Davis County. However, the incidence of disease was highest in Farmington, South Weber, and Centerville.

Incidence of Pertussis by City, Davis County, 2013



Vectorborne/Zoonotic Diseases

Vectorborne/zoonotic diseases are those diseases transmitted by an animal or insect. Vectorborne/zoonotic diseases do not often occur in Davis County. Some of these diseases, such as malaria and dengue fever, are typically acquired outside of the United States.

In 2013, there were **five** cases of vectorborne/zoonotic diseases reported in Davis County.

Disease	Location of Exposure	Suspected Source of Infection	Number of Cases
Q fever, acute & chronic	Utah	Animal exposure	1
Lyme Disease	1 – Germany 1 – Maryland 1 – unknown	Tick bite	3
Dengue fever	El Salvador	Mosquito bite	1
Total			5

Three of the cases of vectorborne/zoonotic diseases were male and two were female. One of the cases was 10-19, while all of the remaining cases were adults.

Vectorborne/zoonotic diseases are rare in Davis County. At least three of the Davis County cases reported in 2013 were acquired outside of Utah, and at least two cases were acquired outside of the United States.



Rabies

Rabies is a preventable viral disease of mammals most often transmitted through the bite of a rabid animal. The vast majority of rabies cases reported to CDC each year occur in wild animals such as raccoons, skunks, bats, and foxes. Domestic animals account for less than 10% of reported rabies cases, with cats, cattle, and dogs most often infected. In Utah, the majority of cases are reported in bats.

During 2013, there were **no cases** of human rabies and **no cases** of animal rabies reported in Davis County.

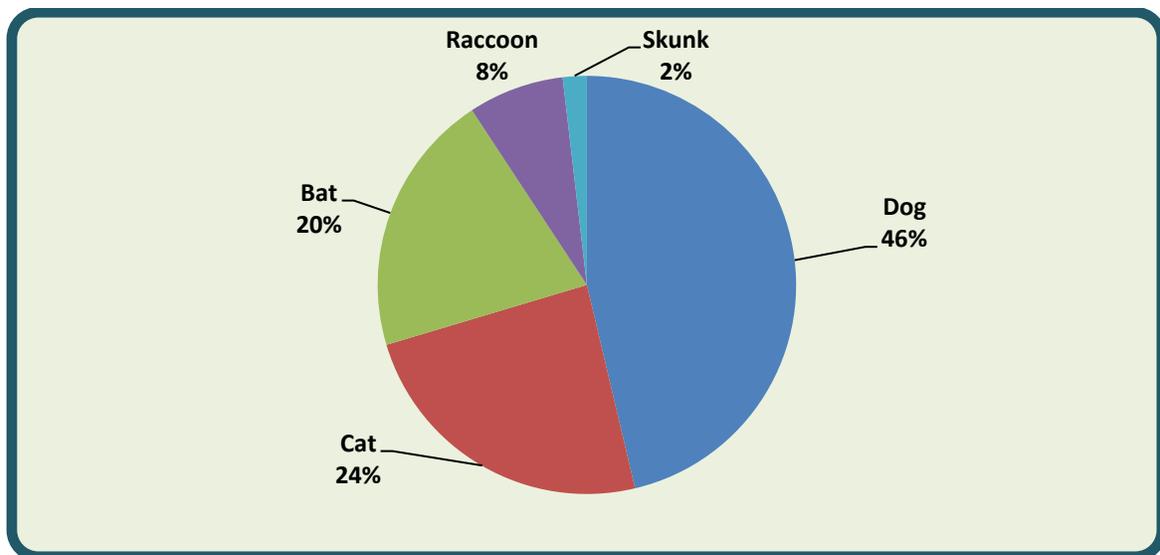
2013 Disease Highlights:

The Communicable Disease and Epidemiology Division evaluated 125 individuals who reported an exposure to an “at-risk” animal in 2013. Each case was evaluated for need of rabies post-exposure prophylaxis (PEP). Those who were recommended PEP were tracked through completion of therapy or until PEP discontinued (either by choice or due to negative testing results of the suspect animal). Of those that were recommended PEP, **eight** completed, **six** declined, and **three** elected to stop after initiation of therapy.

During the late spring and summer months, reports of animal bites become more prevalent. Surveillance of rabies-positive animals helps guide the decision making process. Rabies PEP is available through some hospital emergency rooms. However, individual insurance plans often dictate where prophylaxis must be obtained.

In 2013, the Davis County Environmental Health Division submitted 54 animals for rabies testing; none of the samples tested positive. Of these, 45 (83%) involved a human exposure and nine (17%) were animal-to-animal exposures.

Animals Tested for Rabies, Davis County, 2013

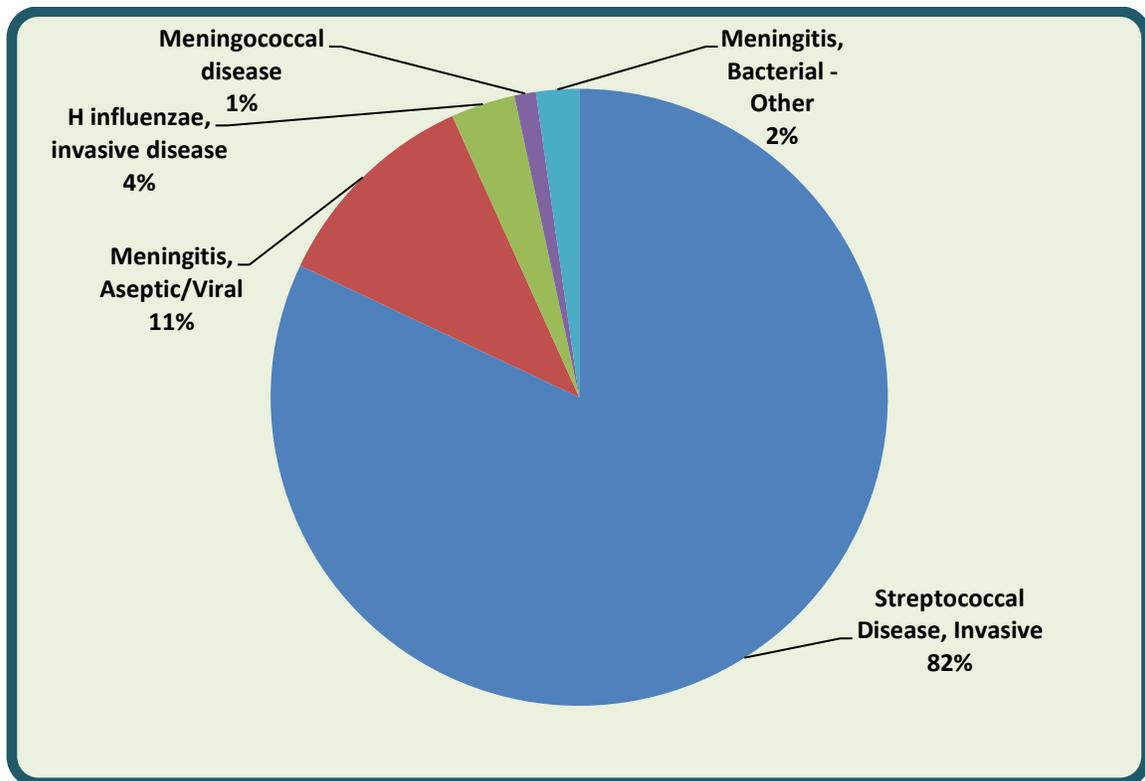


Invasive Diseases

Invasive diseases include infections of the bloodstream as well as meningitis and encephalitis. All cases of meningitis, encephalitis and toxic shock syndrome are reportable to the health department, regardless of the causative organism. In addition, all cases of invasive streptococcal disease (isolation of *Streptococcus* from a normally sterile site) must be reported.

The most common invasive diseases reported in Davis County in 2013 were invasive streptococcal infections. These included Group A *Streptococcus*, Group B *Streptococcus*, Group C & G *Streptococcus*, *Streptococcus pneumoniae*, and other streptococcal infections.

Invasive Diseases, Davis County, 2013



Invasive Streptococcal Infections

The primary invasive streptococcal diseases of public health concern are Group A, Group B and *Streptococcus pneumoniae*.

Group A streptococcal invasive disease manifests as necrotizing fasciitis (NF), streptococcal toxic shock syndrome (STSS), bacteremia, and pneumonia. It is transmitted person-to-person by contact with infectious secretions. Asymptomatic pharyngeal carriage occurs among all age groups, but is most common among children.

Group B streptococcal invasive disease (GBS) in neonates manifests as sepsis, pneumonia and meningitis. Infection in the first week of life is called "early-onset disease." In adults, sepsis and soft tissue infections are most common. Pregnancy-related infections include sepsis and amnionitis. Asymptomatic carriage in gastrointestinal and genital tracts is common and intrapartum transmission via ascending spread from vaginal and/or gastrointestinal GBS colonization occurs. Mode of transmission of disease in non-pregnant adults and older infants (>1 week) is unknown.

Group C streptococcus is typically a zoonotic illness and the organisms can be found as pathogens in domestic animals such as horses, cows, birds, rabbits, and guinea pigs. Laboratories may misidentify them as Group A strep. They can also be found as part of normal human flora. Many people with Group C infection have underlying health problems, but more recent studies have implicated this disease as an emerging human pathogen.

Group G streptococci are normal human flora and individuals infected with this organism usually have underlying health problems, especially cancer.

Streptococcus pneumoniae invasive disease manifests as pneumonia, bacteremia, meningitis, and arthritis. More than 90 serotypes exist, and of the strains causing invasive disease, 88% are serotypes included in the 23-valent polysaccharide vaccine. Before the new pneumococcal conjugate vaccine was introduced in 2001, over 80% of invasive isolates in children <5 years old were those that are included in the 7-valent vaccine.

In 2013, there were **73** cases of invasive streptococcal infections reported among Davis County residents (the 5-year average is 62). The majority of cases were due to strains that do not require an investigation or the implementation of public health control measures (e.g. *S. mutans*, *sanguinis* and *mitis*).

2013 Disease Highlights:

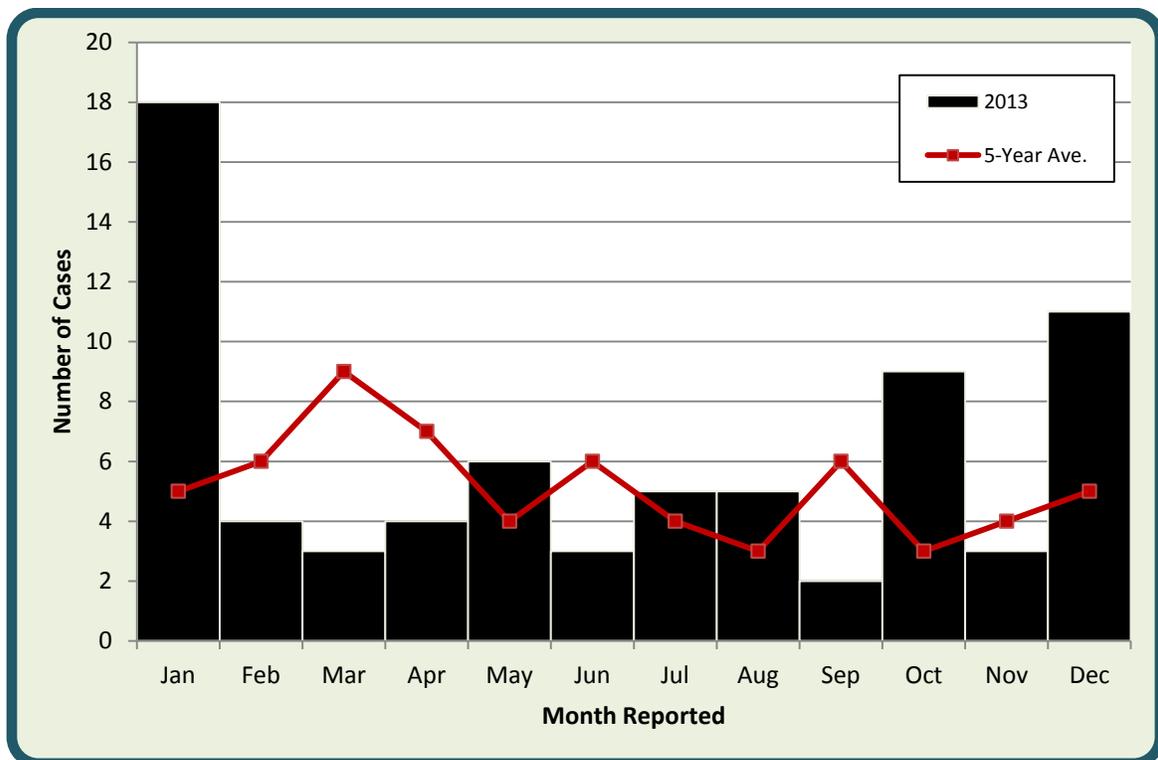
Invasive streptococcal infections tend to cause severe illness. In 2010, over 12% of reported invasive streptococcal infections were fatal. Since then, the fatality rate among streptococcal infections has declined. In 2013, three out of 73 cases were fatal, a case fatality rate of 4.1%.

Types of Invasive Streptococcus Infections, Davis County, 2013

Type	Number of Cases
Group A <i>Streptococcus</i>	7
Group B <i>Streptococcus</i>	19
Group C & G <i>Streptococcus</i>	7
Other <i>Streptococcus</i> (<i>mitis</i> , <i>viridans</i> , etc...)	22
<i>Streptococcus pneumoniae</i>	18
Total	73

Infection with *Streptococcus pneumoniae* is particularly serious. Fortunately, in 2013 none of the 18 reported *S. pneumoniae* cases were fatal. This organism is the leading cause of vaccine-preventable illness and death in the United States. Pneumococcal pneumonia kills approximately one out of 20 people who are infected. Bacteremia kills roughly one person in five and meningitis about three in ten. There are more than 90 strains of pneumococcal bacteria. Fortunately, there are vaccines available to prevent some infections.

Invasive Streptococcal Infections by Month, Davis County, 2013



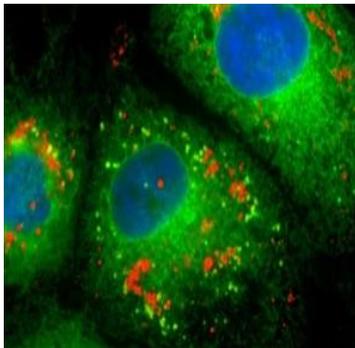
Other Reportable Diseases/Conditions

Diseases that do not fall under a specific identified category will be discussed in this section.

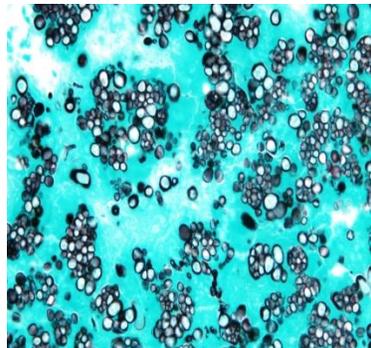
Hepatitis C infections made up the majority of this category, followed by coccidioidomycosis, legionellosis, and carbapenem-resistant Enterobacteriaceae (CRE).

Other Reportable Disease/Conditions, Davis County, 2013

Disease	Number of Cases
Hepatitis C, acute and chronic	190
Coccidioidomycosis	3
Legionellosis	2
Carbapenem-Resistant Enterobacteriaceae (<i>Acinetobacter</i>)	3



Hepatitis C



Coccidioidomycosis



Acinetobacter

Hepatitis C

Hepatitis C is a disease caused by a virus that infects the liver. Over time it can cause liver damage including cirrhosis, liver failure and cancer. Approximately 15-25% of those infected with HCV will recover from the infection. The remaining ~80% develop chronic infection. Each year 8,000-10,000 people die from the complications of liver disease caused by hepatitis C.

Most of those who develop chronic HCV infection remain asymptomatic for many years. Some experience a range of symptoms including fatigue, headache, joint aches, muscle aches, nausea, jaundice, loss of appetite and abdominal pain.

HCV is a bloodborne pathogen that is predominantly spread by exposure to contaminated blood or blood products. Currently, the most prevalent mode of transmission is sharing needles or syringes to inject drugs. Blood transfusions pose an extremely limited risk now, but for patients who received a blood transfusion prior to June 1992, the risk of infection was approximately 1.5% per transfusion recipient. Sexual transmission of HCV can occur, but does not appear to be an efficient mode of transmission. However, recent studies indicate that persons with multiple partners have a higher incidence of transmission. Other potential risks for transmission include long-term hemodialysis, sharing straws for intranasal cocaine use, mother-to-infant transmission, occupational blood exposure, various medical procedures (including dental), and tattooing or body piercing with non-sterile equipment. HCV is not spread through casual contact, kissing, sneezing, hugging, sharing glasses/utensils, or from breast milk.

In 2013, Davis County received reports on **190** cases of HCV, a 3.1% decrease from 2012 (196 cases).

2013 Disease Highlights:

Hepatitis C is typically reported as a positive screening test for HCV antibodies. Investigation of this disease is focused on determining whether the case is acute, chronic, or a false-positive test. Additional confirmatory testing is necessary. Several reports of hepatitis C come from blood donation centers, which have limited contact information on the person donating. Therefore, investigation of the disease is difficult. Of those investigated, the most prevalent risk factor identified was injecting drugs, currently or in the past. Most infected individuals were unaware of their infection. Treatment for HCV infection is becoming more available with a greater success rate. Unfortunately, there is no vaccine for hepatitis C.

Davis County received a grant in 2013 which facilitated screening in the incarcerated population. A total of 146 incarcerated individuals tested positive for hepatitis C through grant activities. In late 2013, a window of opportunity was made available where individuals who had a positive screening test could receive free confirmatory testing through the Utah Public Health Laboratory. A special testing event was conducted in the community and several new cases of hepatitis C were identified or confirmed.

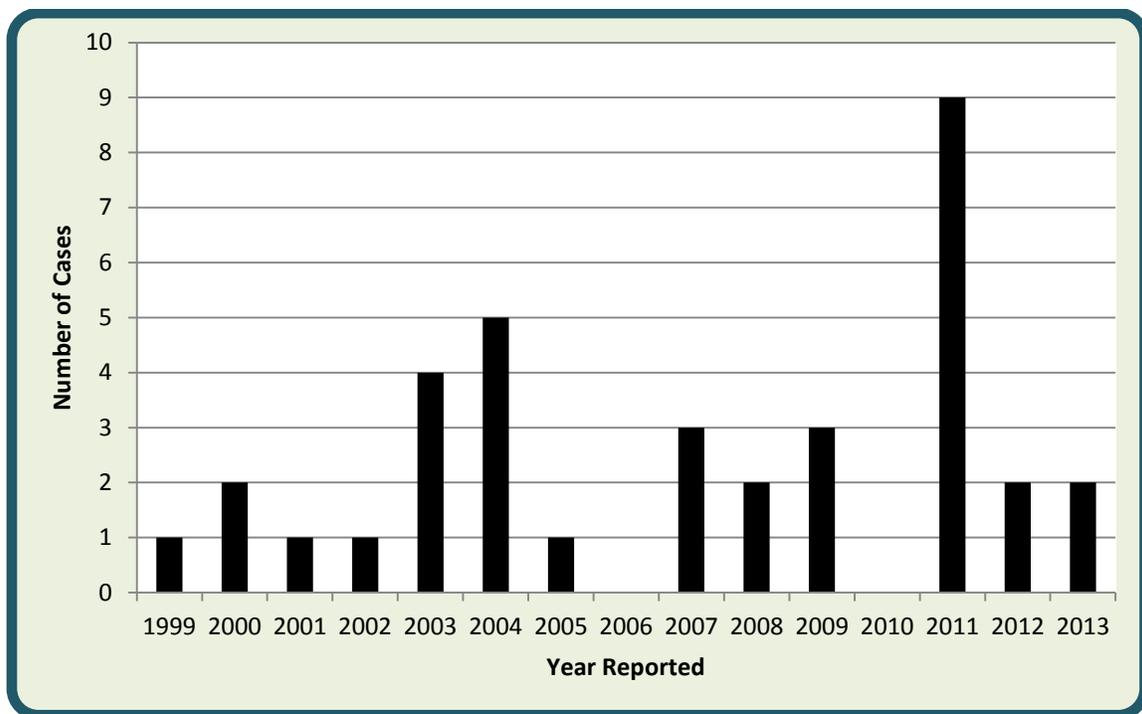
Legionellosis

Legionellosis is a bacterial infection caused by *Legionella pneumophila*. The disease is transmitted through the air from a soil or water source. All studies to date have shown that the organism cannot be spread from person-to-person. Outbreaks occur following the exposure of many individuals to a common source of *Legionella pneumophila* bacteria in the environment.

An estimated 8,000-18,000 cases occur each year in the United States, but only a fraction of these are reported. Most legionellosis cases are sporadic; 23% are nosocomial (hospital acquired) and 10%-20% can be linked to outbreaks.

During 2013, there were **two** cases of legionellosis reported in Davis County.

Legionellosis Cases, Davis County, 1999-2013



2013 Disease Highlights:

Davis County receives an average of one to two cases of legionellosis each year. It is important for public health to identify a source of the infection before an outbreak occurs. Often, the source remains unknown. Aerosolizing of water, such as showers, humidifiers, swamp coolers, and spas, provide a good mechanism for transmission. Healthy individuals, when exposed, typically do not develop disease. However, those who are immunocompromised are at higher risk. The cases reported in Davis County in 2013 both had pre-existing medical conditions that made them more susceptible. Unfortunately, one of the cases was fatal.

Carbapenem-Resistant Enterobacteriaceae

The public health problem of antibiotic resistance is not new. However, due to the overuse of antibiotics in humans and animals, the problem is increasing in magnitude and new multidrug-resistant organisms (MDROs) are emerging. Carbapenem-resistant Enterobacteriaceae (CRE) are particularly concerning. Some CRE bacteria have developed resistance to most available antibiotics. CRE infections are very difficult to treat, can spread quickly, and may contribute to death in 40% of patients who become infected. Although these organisms are rare, they are increasingly identified in health care facilities throughout the United States.

To address this issue, UDOH has created a coalition of stakeholders to identify areas where improvement is needed to prevent the spread of MDROs. Areas of focus for the group include:

- Laboratory identification
- Surveillance
- Isolation Signage/Personal Protective Equipment
- Patient Transfer Communication
- Environmental Cleaning

In addition, beginning in 2013, Utah laboratories and health care facilities now are required to report the following CREs to the state or local health department:

- **Acinetobacter** species with resistance or intermediate resistance to carbapenem (meropenem and imipenem) from any site
- **Escherichia coli** with resistance or intermediate resistance to carbapenem (meropenem, ertapenem, and imipenem) from any site
- **Klebsiella** species with resistance or intermediate resistance to carbapenem (meropenem, ertapenem, and imipenem) from any site

It is hoped that better surveillance of these organisms will facilitate a more clear understanding of where they are occurring and how to prevent their spread within and between facilities.

2013 Disease Highlights:

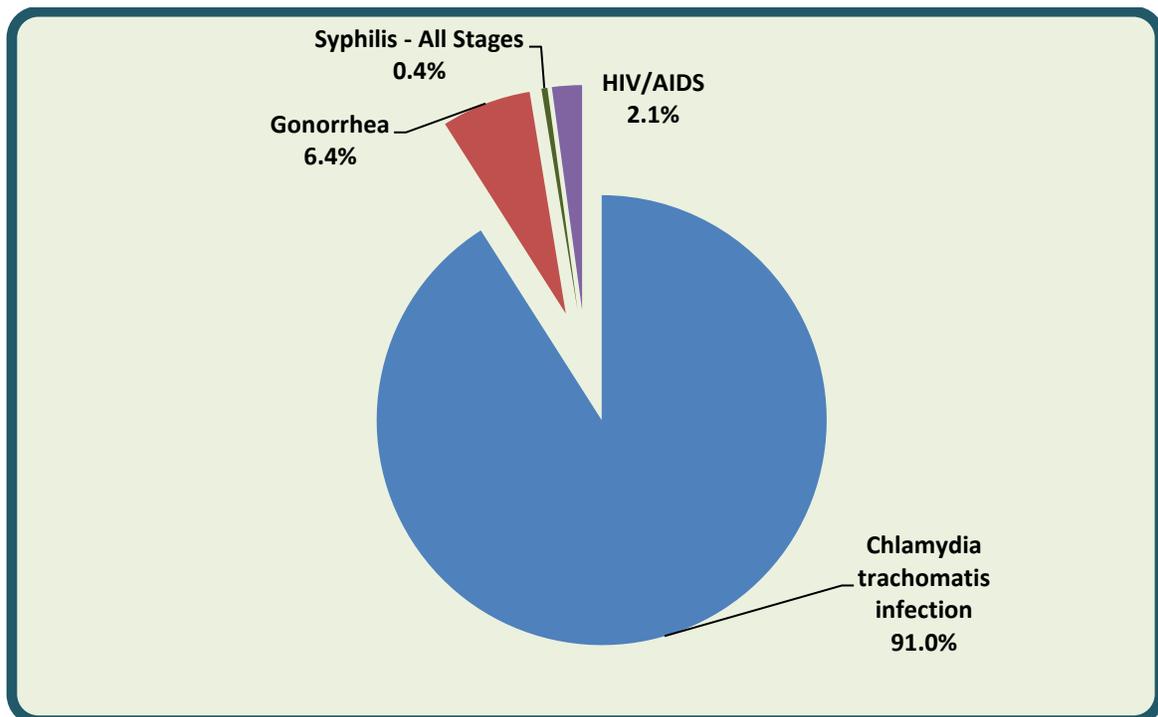
A total of **three** CREs were reported to the Davis County Health Department during the year. Only one of these patients was at a Davis County health care facility when they developed their respective infection. Appropriate control measures to prevent spread were implemented at the facility.

Sexually Transmitted Diseases

Sexually transmitted diseases are caused by bacteria, viruses, and other organisms transmitted from one person to another through sexual activity. Bacterial STDs such as chlamydia, gonorrhea, and syphilis are curable – using appropriate antibiotic therapy. However, permanent damage may occur (e.g. pelvic inflammatory disease, sterility), especially if treatment is delayed. Viral STDs such as herpes simplex virus (HSV) and human immunodeficiency virus (HIV) are not curable, but medication is available to improve quality of life by lessening the symptoms. Human papillomavirus (HPV) and hepatitis B can be treated and frequently cured; some individuals are able to clear the virus themselves. Complications from STDs range from mild/moderate illness to infertility, chronic pain, cancer, and even death. Less invasive testing techniques (e.g. urine testing) have made chlamydia and gonorrhea testing more acceptable and convenient.

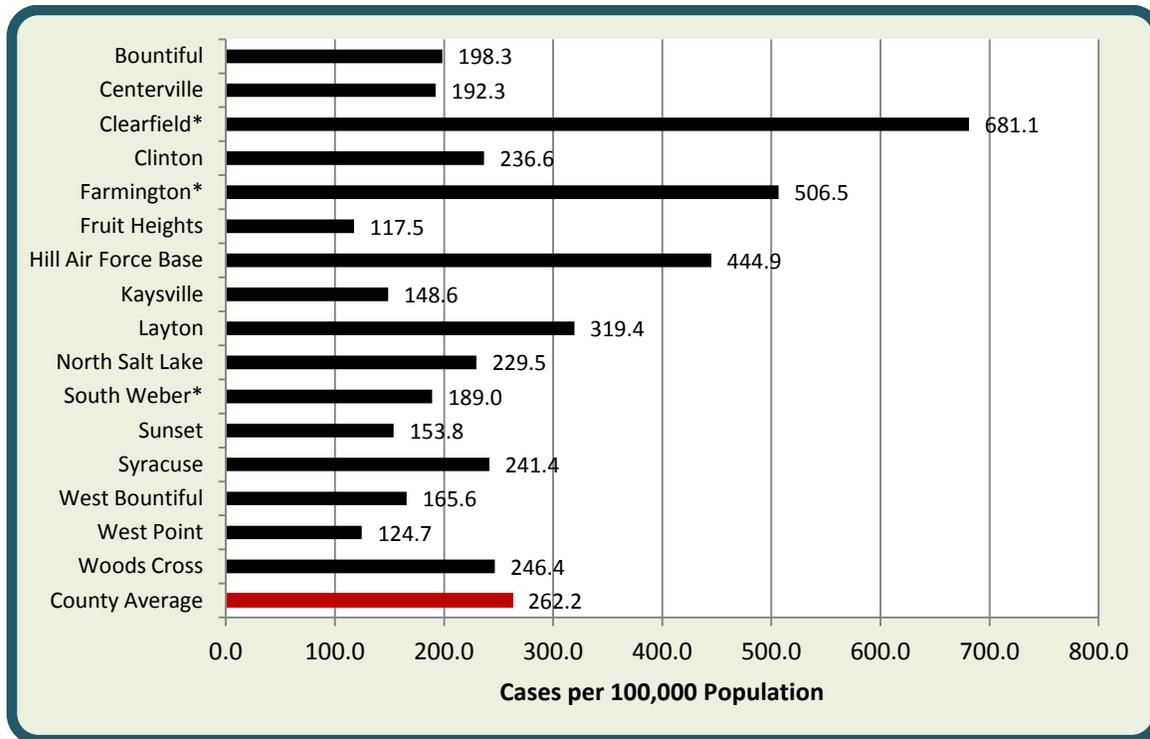
Sexually transmitted diseases reported in Davis County during 2013 included chlamydia, gonorrhea, syphilis, and HIV/AIDS. Chlamydia was the most commonly reported STD with **847** cases, followed by gonorrhea with **60** cases, syphilis with **20** cases, and HIV/AIDS with **four** cases.

Sexually Transmitted Diseases, Davis County, 2013



Sexually transmitted diseases occurred among residents of every city in Davis County. The average rate in the county was **262.2** cases per 100,000 residents.

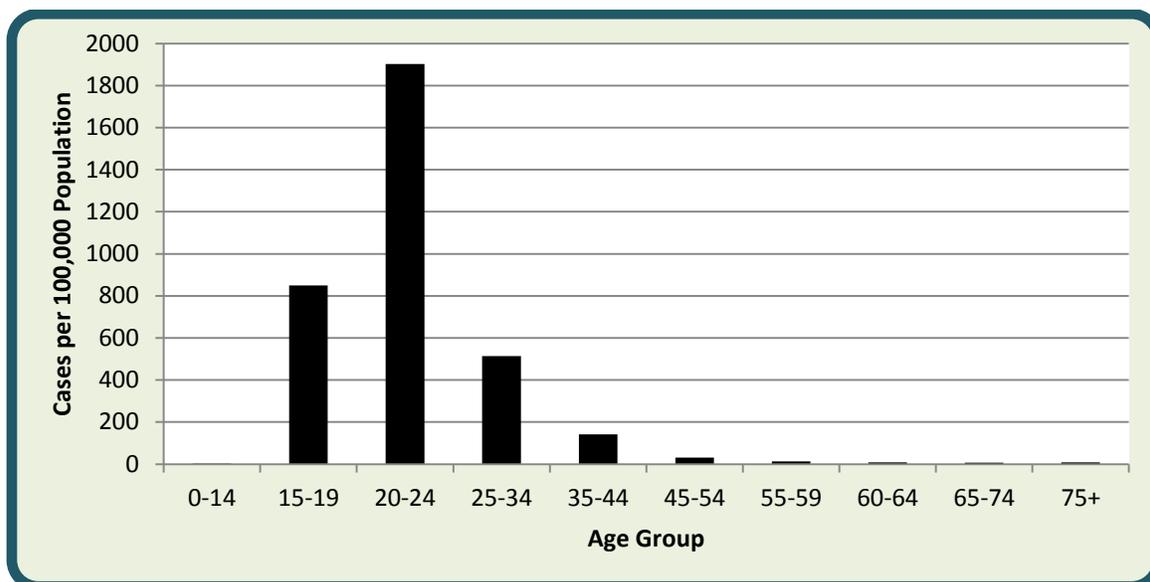
Incidence of all STDs by City, Davis County, 2013



*These cities are impacted by temporary residential establishments (i.e. federal job corps and correctional facilities).

Sexually transmitted diseases were most often reported among women (62%) and among 20-24 year olds.

Incidence of all STDs by Age Group, Davis County, 2013



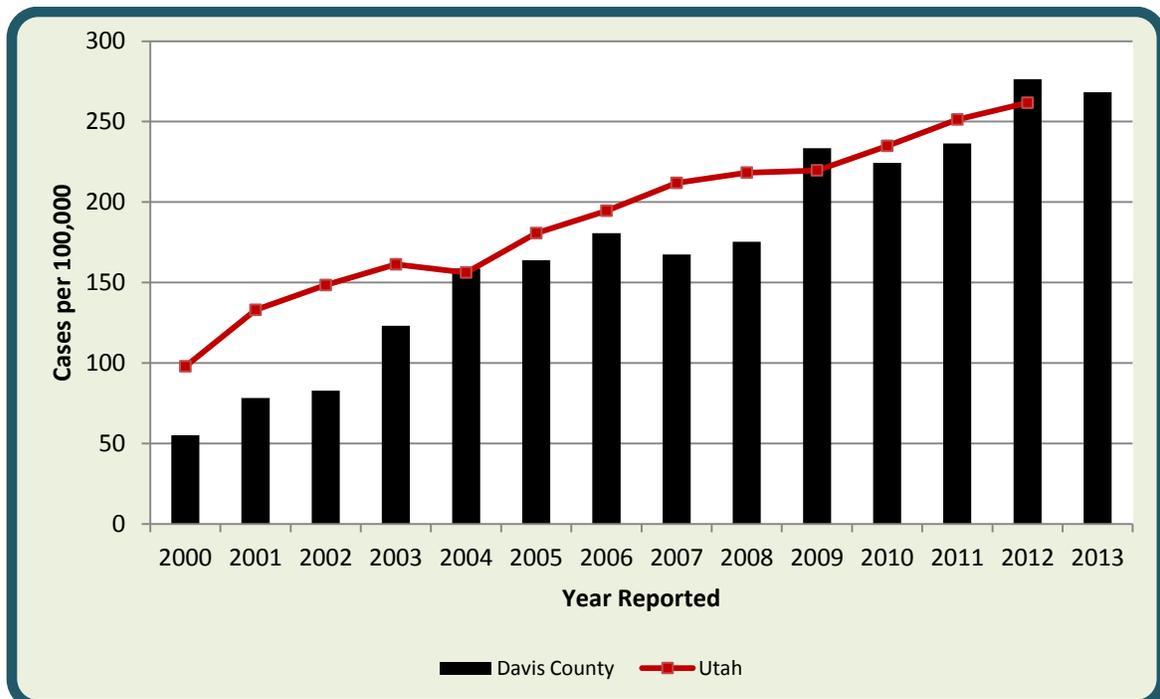
Chlamydia

Chlamydia is a sexually transmitted disease caused by the bacteria *Chlamydia trachomatis*. Chlamydia is one of the most common STDs reported in the United States. The vast majority of chlamydia infections are asymptomatic. Approximately 75% of females and 50% of males who are infected do not have obvious symptoms. Serious complications include chronic pain and sterility in both males and females.

Chlamydia and gonorrhea rates have been increasing for the past several years. This is partially due to increased screening of high risk individuals.

During 2013, there were **847** cases of chlamydia reported in Davis County, a 1.7% decrease from the 862 cases reported in 2012.

Incidence of Chlamydia, Davis County & Utah, 2000-2013



2013 Disease Highlights:

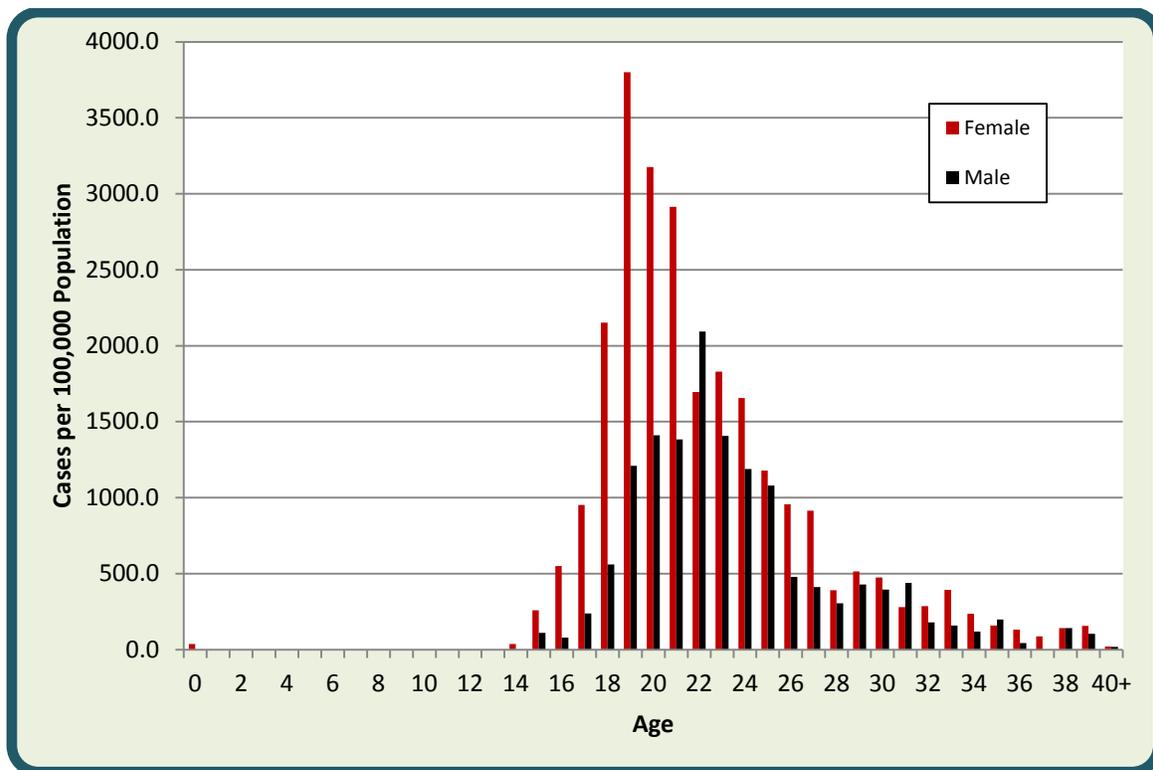
The largest disease burden in Davis County continues to be chlamydia infections. Davis County data show a steady increase in cases over the past several years. In 2013, the number of cases reported decreased slightly, but is still occurring at a high rate. Most concerning to public health is the age group most commonly affected (16-24 year olds). During disease investigation interviews, a number of high-risk behaviors were identified including early initiation of sexual activity, multiple sex partners, unprotected sex with anonymous partners, group sex and anal intercourse.

Those infected with chlamydia are frequently asymptomatic. Females are often diagnosed during routine medical visits. Their male partners are typically diagnosed following contact investigations. It is the goal of the health department to locate these partners, offer free testing and treatment, provide disease education, and assist in the development of a risk-reduction plan. Re-infections occur when appropriately treated infected individuals engage in sexual activity with their untreated partners.

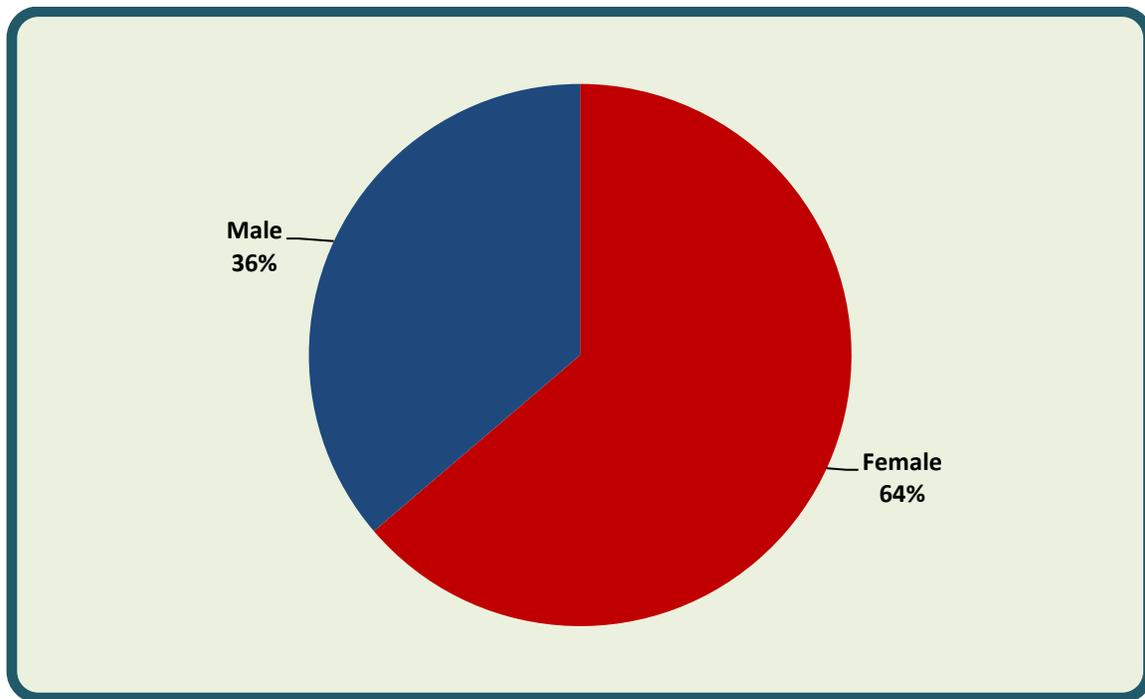
Because the majority of infected individuals have no symptoms of an STD, it is important for public health to encourage the medical community to routinely test their sexually active patients, especially those under the age of 25. Efforts continued in 2013 to educate medical providers on the 2010 STD treatment guidelines (the most current version) and increase awareness of STD disease trends.

Communicable disease and epidemiology staff participate in annual trainings to enhance their knowledge base and counseling skills to identify and educate those infected with or exposed to sexually transmitted diseases.

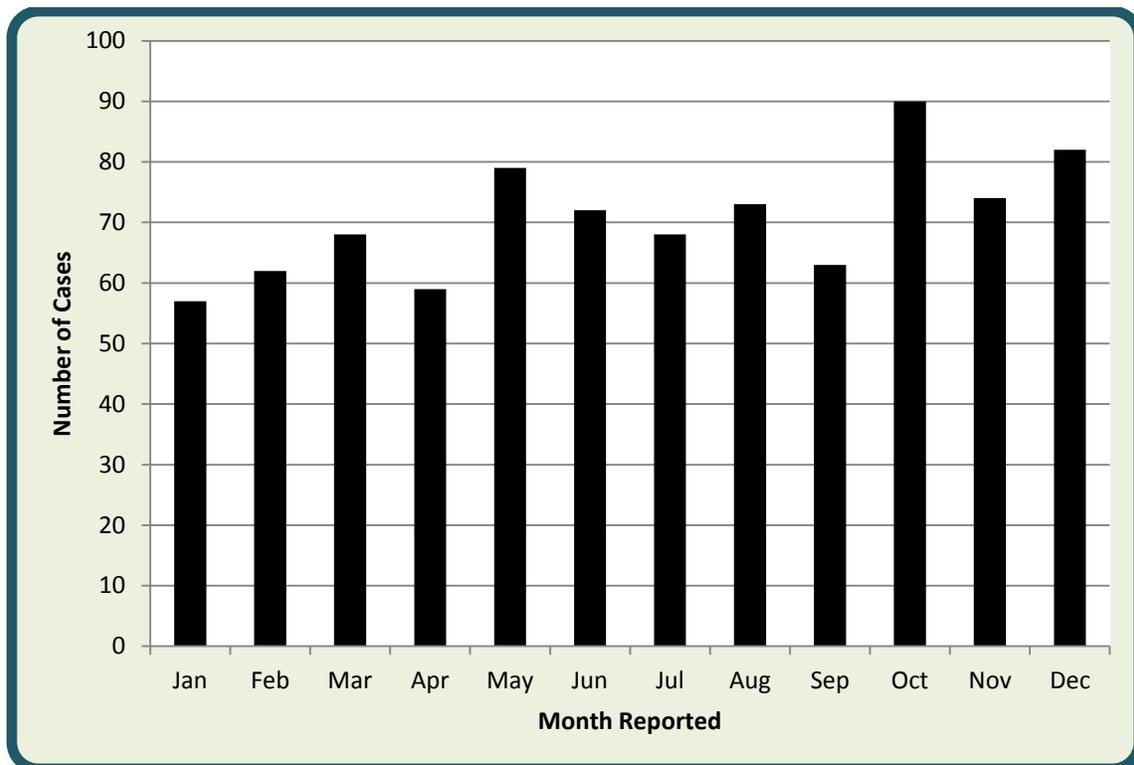
Incidence of Chlamydia by Age and Gender, Davis County, 2013



Chlamydia by Gender, Davis County, 2013



Chlamydia by Month Reported, Davis County, 2013

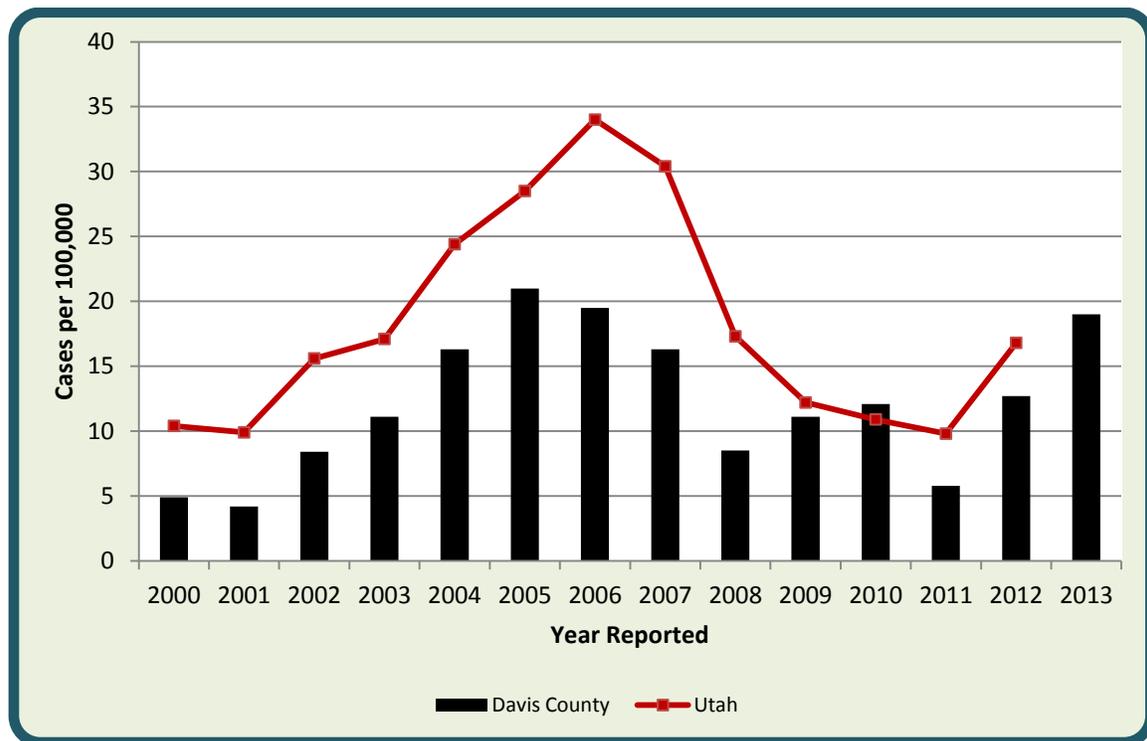


Gonorrhea

Gonorrhea is a sexually transmitted disease caused by the bacteria *Neisseria gonorrhoeae*. Gonorrhea infections are often asymptomatic in women, and sometimes in men. If left untreated, gonorrhea may result in serious complications including chronic pain and infertility/sterility in both males and females.

During 2013, there were **60** cases of gonorrhea reported in Davis County, a 50% increase from the 40 cases reported during 2012.

Gonorrhea Rates by Year, Davis County & Utah, 2000-2013

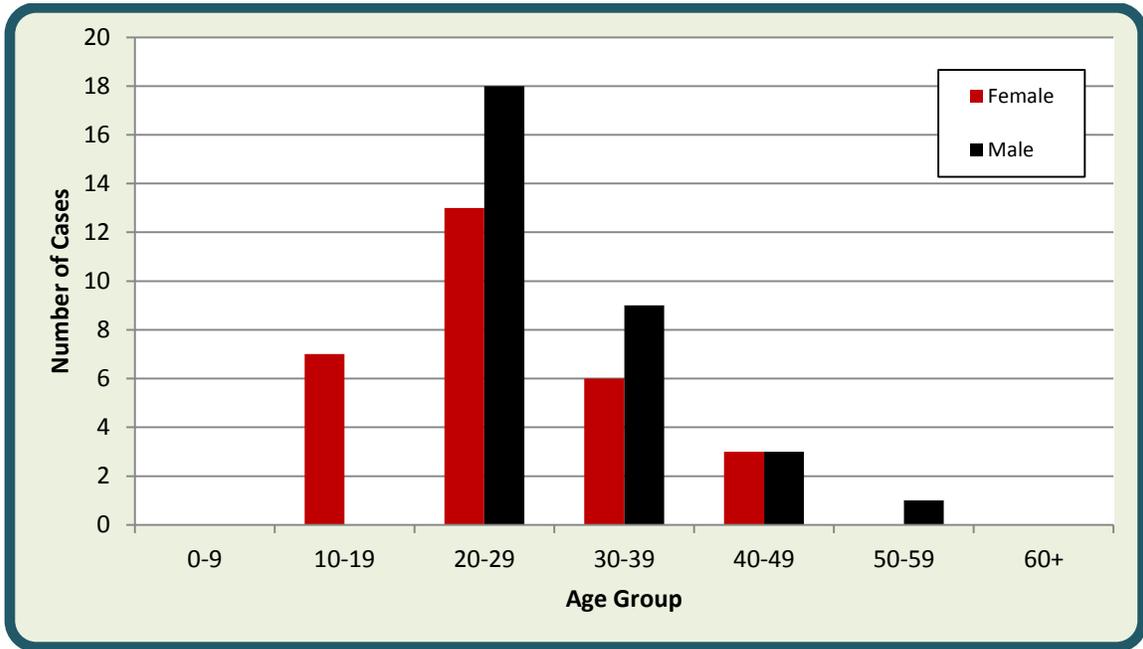


2013 Disease Highlights:

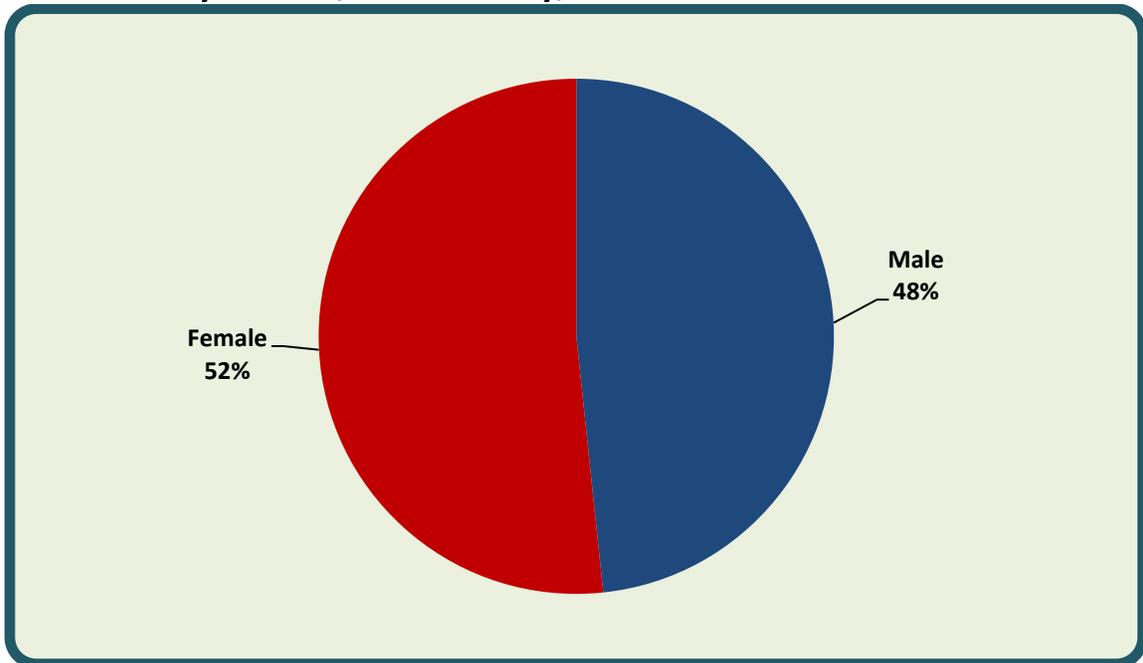
In 2013, Davis County noted a significant increase in gonorrhea cases. Like chlamydia, gonorrhea also tends to be an asymptomatic infection. Treatment guidelines recommend treating all gonorrhea cases for chlamydia as well, regardless of chlamydia test results. The most frequently used laboratory tests involve a urine sample that is screened for both gonorrhea and chlamydia. This less invasive testing process is more appealing to patients and may help encourage sexually active individuals to seek testing. Unfortunately, with the increasing trend of anal/oral intercourse, some STDs will be missed by using the urine test alone. Medical providers are encouraged to include rectal and oral swabs as part of their STD screening for those who engage in anal and oral intercourse.

In August 2012, CDC released changes to the gonorrhea treatment guidelines due to decreased effectiveness of cefixime (Suprax), a current first-line treatment option. New guidance recommends a combination therapy of injectable ceftriaxone (Rocephin) and an effective oral antibiotic (azithromycin or doxycycline). The Communicable Disease and Epidemiology Division continue to update and educate providers on this important change in guidelines.

Gonorrhea by Age and Gender, Davis County, 2013



Gonorrhea by Gender, Davis County, 2013



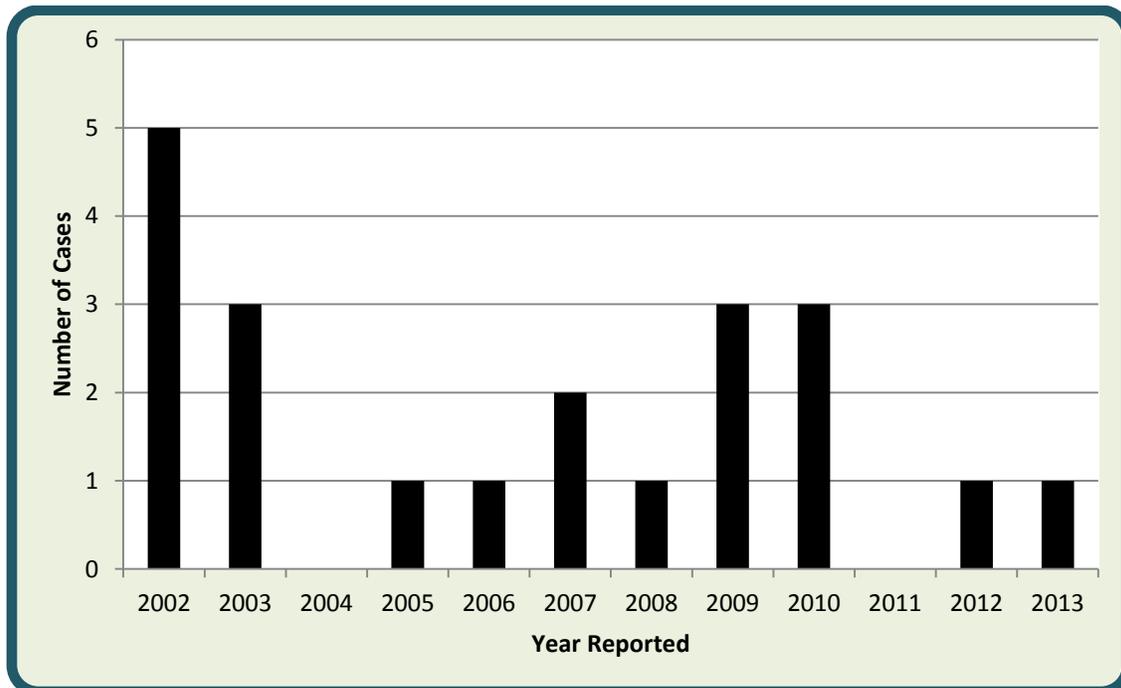
Tuberculosis

Approximately one-third of the world's population and an estimated 9-14 million people in the United States are infected with *M. tuberculosis*. On average, about 10% of infected individuals will develop active tuberculosis disease at some point in their lives. There were 9,945 TB cases in the United States in 2012 (3.2/100,000) – a 5.5% decline compared to 2011 (3.4/100,000) and the lowest number reported since national reporting began in 1953. Utah had 33 (1.1/100,000) cases reported in 2013.

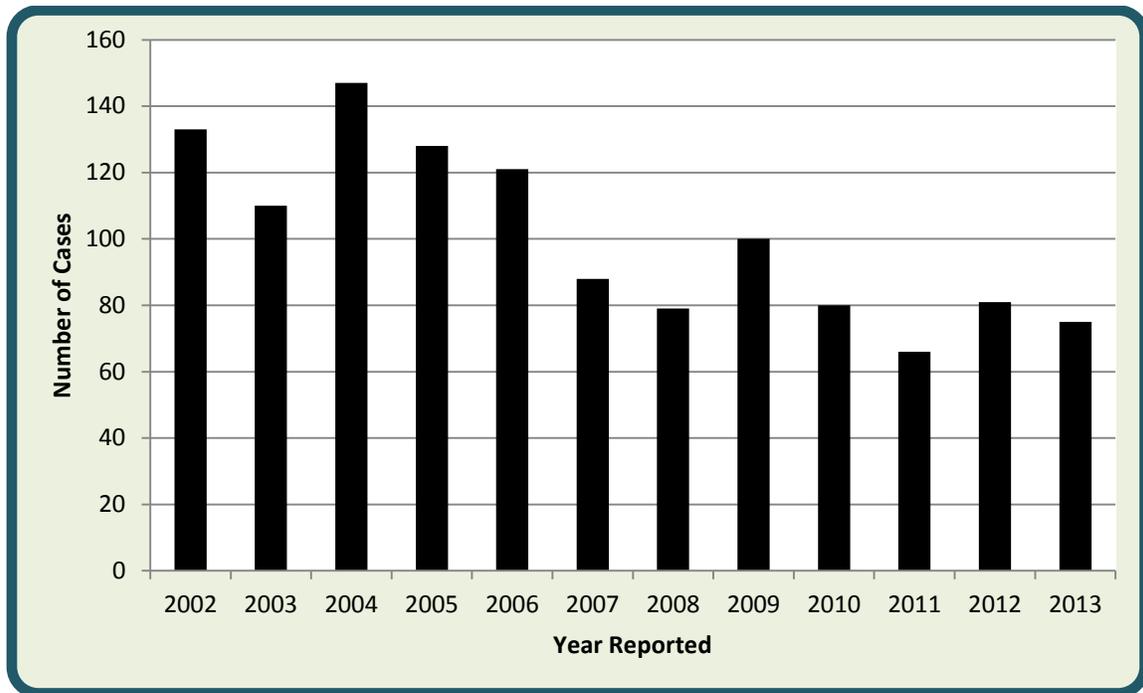
By the early 1980s, TB was considered to be under control and many states and cities redirected TB prevention and control funds to other programs. As a result of this, the country experienced a resurgence of TB, with a 20% increase in cases reported between 1985 and 1992. Many of these were persons with difficult-to-treat drug-resistant TB. This resurgence caused a new look at TB and aggressive prevention and control efforts were initiated. Since the 1992 TB resurgence peak in the United States, the number of TB cases reported annually has decreased. With the introduction of HIV, TB rates remain a constant threat as it is a leading cause of death among people who are infected with HIV. Also, a new virulent strain of TB has been identified, extensively drug-resistant tuberculosis (XDR-TB). This strain is resistant to many of the drugs used to treat tuberculosis and has a high mortality rate.

Davis County had **one new** active tuberculosis disease (ATBD) case (0.3/100,000) in 2013 and **75** latent tuberculosis infection (LTBI) cases.

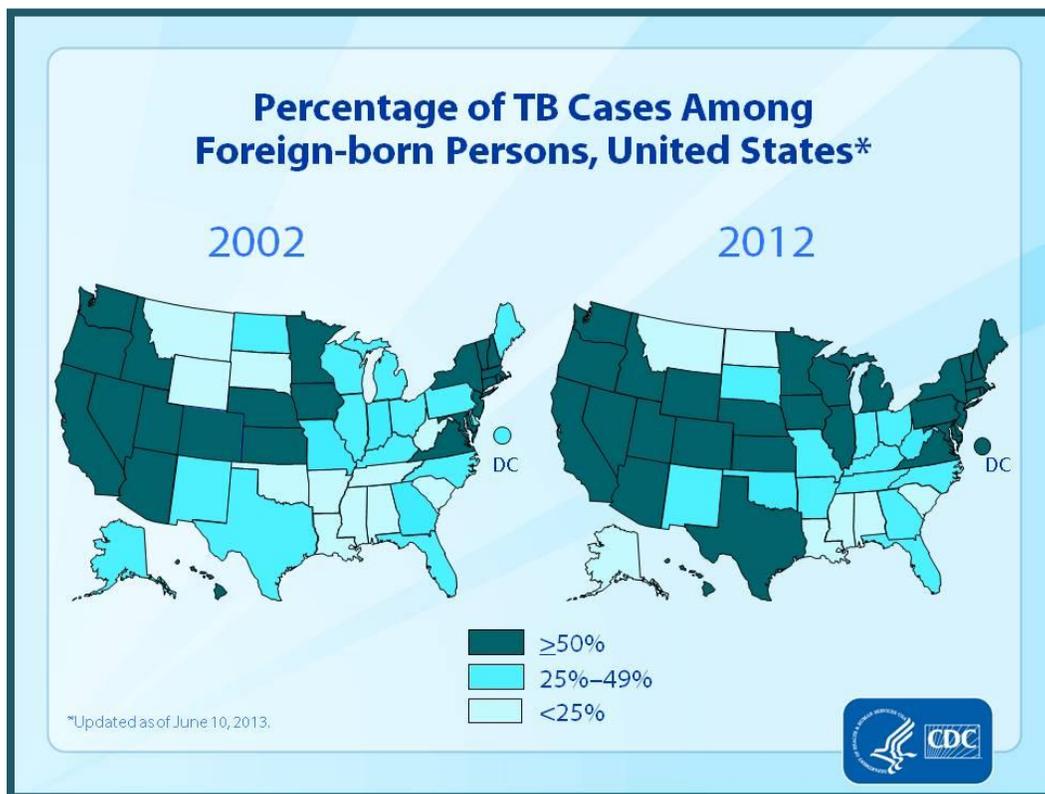
Active Tuberculosis Cases by Year, Davis County, 2002-2013



Latent Tuberculosis Infections (LTBI) by Year, Davis County, 2002-2013



In Davis County, active disease and LTBI are primarily seen in individuals who are foreign-born or have traveled/lived in endemic countries.



Active Tuberculosis

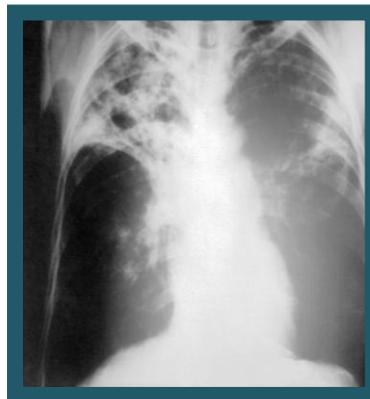
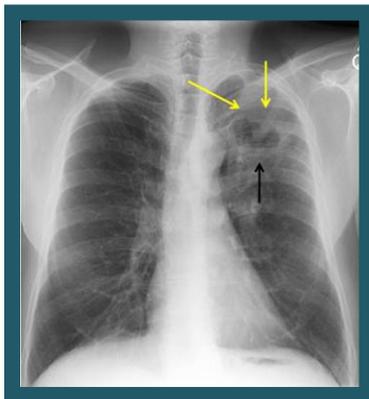
Tuberculosis is caused by a type of bacteria called *Mycobacterium tuberculosis*. The bacteria usually attack the lungs (pulmonary) but may attack any part of the body (extrapulmonary). TB is typically spread through the air when a person with TB disease of the lungs or throat expels tiny airborne particles (droplet nuclei). People nearby may breathe in these particles and become infected. People who have latent TB infection do not feel sick, do not have any symptoms, and cannot spread TB. However they may develop active TB disease at some time in the future. The U.S. experienced a resurgence of ATBD between 1985 and 1992, when the number of TB cases increased by 20%. Early detection and treatment of ATBD are essential to control the spread of the disease and to prevent outbreaks.

In 2013, Davis County had **one new** case of active tuberculosis.

2013 Disease Highlights:

On average, Davis County investigates two cases of active tuberculosis a year. In 2013, there was one new active extra-pulmonary TB case reported. Both pulmonary and extra-pulmonary TB typically require six months of treatment. Management of active tuberculosis cases requires close collaboration between several agencies including local health departments, medical providers, Utah Department of Health, Utah Public Health Laboratory and a commitment by the infected individual.

Patients with infectious pulmonary tuberculosis, which is of most concern for public health, are isolated until sputum sample tests indicate the individual is no longer infectious. To ensure drug treatment compliance, medication is administered under Directly Observed Therapy (DOT). Because DOT can seem personally invasive to the patient, strategies to promote a less intrusive and more flexible schedule are implemented whenever possible. These include bi-weekly/tri-weekly treatments, home visits, and video-conferencing.



Latent Tuberculosis Infection (LTBI)

Latent tuberculosis infection is a condition in which TB bacteria are alive but inactive in the body. People with LTBI have no symptoms, cannot spread TB to others, and usually have a positive skin test reaction or interferon gamma release assay (blood test). Development into active disease occurs in about 10% of those who do not receive treatment for LTBI.

Davis County Health Department provided **837** tuberculin skin tests to the public in 2013. However, these numbers only account for a small percentage of all TB tests performed in the community.

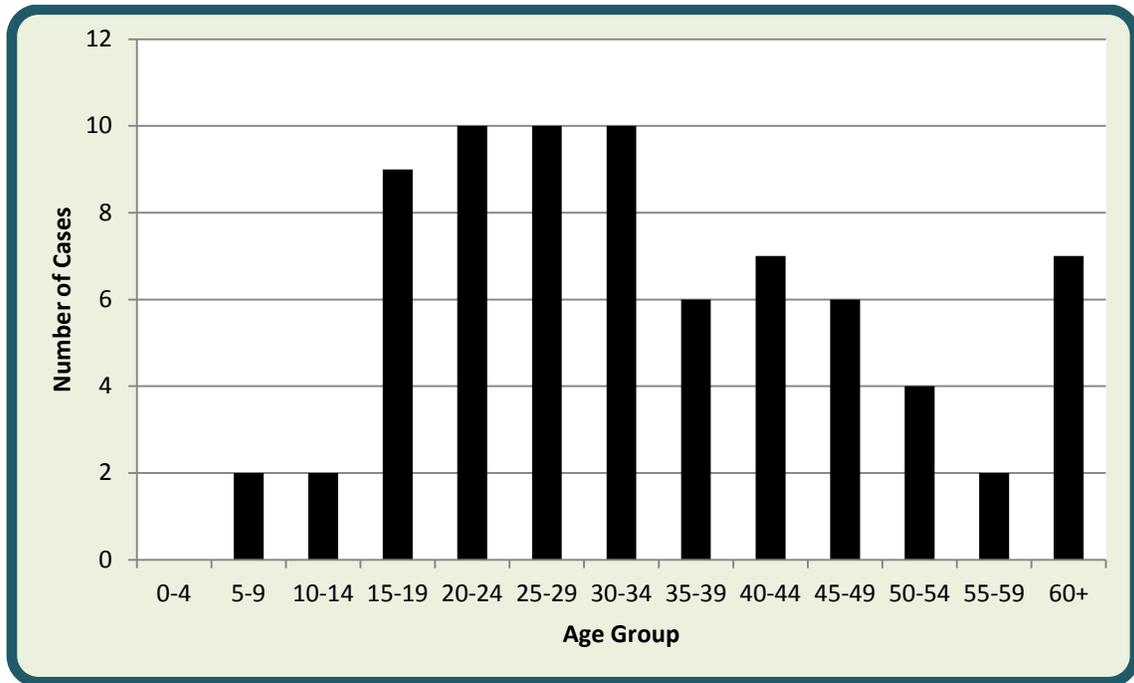
2013 Disease Highlights:

With the low incidence of active tuberculosis in Davis County and Utah as a whole, the largest disease burden for tuberculosis falls under LTBI. During 2013, Davis County managed **75** clients with LTBI, with an average of **28** LTBI patients per month. Treatment of LTBI reduces the risk that latent TB will progress to active disease and is essential to the control and elimination of tuberculosis disease. Case management includes initial testing to rule out active disease and ensuring appropriate treatment of the infection. The majority of individuals who receive LTBI treatment in Davis County are foreign-born or returning LDS missionaries, who served missions in endemic countries. Typically, treatment for LTBI consists of daily antibiotic therapy for nine months. Individuals are monitored throughout therapy, but DOT is not necessary. In October 2012, use of a new LTBI treatment recommended by CDC was implemented in Utah. This new regimen is a combination of two drugs, administered by DOT once weekly for 12 doses. It is recommended for persons age 12 or older who are otherwise healthy, but who also meet a certain set of criteria.

Davis County receives referrals for suspect active/latent tuberculosis from various medical facilities and providers. Screening tests consist of a tuberculin skin test (TST) or in-vitro serological test (e.g. Quantiferon-Gold). Those with positive test results are often referred to the health department for evaluation and treatment. LTBI is not a reportable condition, but free or low cost services are available for the community.

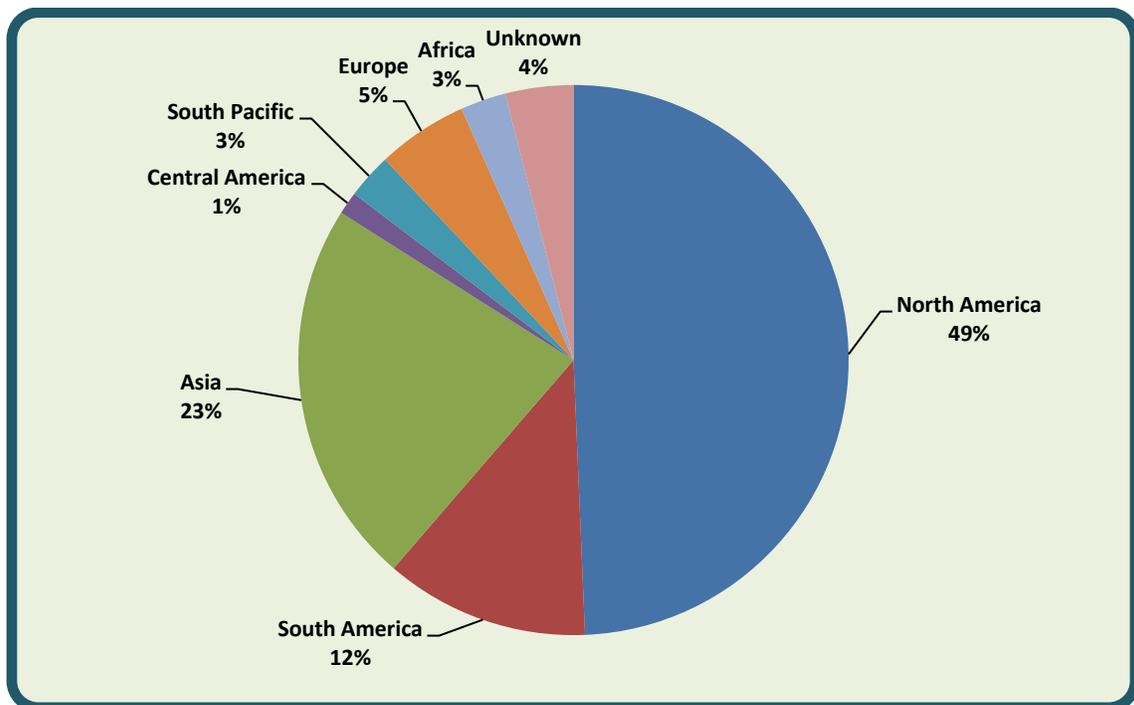


LTBI by Age Group, Davis County, 2013



In Davis County, ATBD and LTBI are primarily seen in individuals who are foreign-born or have traveled/lived in endemic countries.

LTBI by Place of Birth, Davis County, 2013



Program Highlights

During 2013, several program activities were implemented to address disease trends and enhance community education.

STD/HIV Program Highlights:

- The Communicable Disease and Epidemiology Division applied for a grant in 2012 and was awarded funds to conduct STD (HIV, chlamydia & gonorrhea) and hepatitis C screening in the incarcerated population. The Davis County jail collaborated with DCHD to implement the grant. A full year of grant activities was completed in 2013. The grant focuses on new admissions to the jail facility in an effort to identify the baseline infection rate of entering inmates. Incoming inmates are tested prior to moving into an established housing unit to begin their sentences. The testing is an “Opt-Out” process – therefore, inmates sign a declination if they elect to not be tested. Those who are initially arrested and booked into the facility, but make bail and are released before entering a holding unit, are not included in the screening.

As an extension of the grant, the Communicable Disease and Epidemiology Division was able to expand STD and hepatitis C screening opportunities to clients of Davis Behavioral Health (DBH) in 2013. Many clients in this facility are individuals with high-risk behaviors who also have recently been or are currently under court-ordered treatment/care. Routine outreach clinics were conducted at two DBH locations within Davis County. The program has been very successful in identifying new infections within the incarcerated population that would otherwise have not been detected – especially hepatitis C.

In 2013, the following results were noted:

- **1,560** inmates/DBH clients were screened
 - 479 females
 - 1,081 males
- **146** (9%) tested positive for hepatitis C
- **101** (7%) tested positive for chlamydia
- **15** (1%) tested positive for gonorrhea

Risk behaviors identified among participants included: injection drug use, unprotected sex while intoxicated or high on drugs, the exchange of sex for drugs or money, group sex, and sexual activity with an anonymous partner. Upon release from the jail, inmates were offered a packet which contained STD/HIV educational literature, free condoms, testing locations, and a donated Deseret Industries voucher for \$20.00. Those who tested positive for any of the tested diseases were given additional information in their packet related to treatment options and linkage to care locations.

-
- **School District STD Education:** To help address the STD disease burden among adolescents, DCHD continued their partnership with the Davis School District (DSD) to provide STD/HIV education in the secondary schools. Davis County is one of the few local health departments that offer this service to students in the secondary school system. The presentation was created in collaboration with the curriculum department at DSD and was approved by the board for teaching within the junior high and high school settings. In 2013, 100 presentations were provided, reaching approximately 3,998 students in grades 8, 10, and 11. For high school students, abstinence pamphlets were provided with STD/HIV facts and locations for STD testing. A modified version of the presentation is offered to the junior high age group. Students are given information on how to access the Davis County Health Department STD Hotline – which is staffed by a nurse Monday-Friday (8:00am – 5:00pm).

Surveys are provided to teachers and students at the secondary schools to help assess the satisfaction of the presentations. The results of the survey have been highly rated with many expressing appreciation for the services provided.

- **Community Outreach Education:** DCHD partners with the two local Job Corps Centers (Clearfield and Weber-Basin) to provide STD education to students in their facilities. Classes are taught weekly at the Clearfield Job Corps Center and monthly at the Weber-Basin location. For the year 2013, the following results were noted:
 - **34** presentations were conducted at the two Job Corps centers
 - **897** students participated in the presentations at the Job Corps centers
 - **450** (50%) of the students who participated at the Job Corps centers were of ethnic minority

NOTE: Due to the temporary government shutdown in 2013, new admissions to both job corps centers were halted and presentations were not conducted during that time.

Outreach STD/HIV training was also offered to various entities within the county upon request.

- Access to STD testing has been noted as a barrier by those who are sexually active and at risk. As a result, DCHD partners with Midtown Community Health Center – Davis to offer free/low cost screening to residents through their clinic. Two options are available to the community:
 - **Free STD screening clinic:** This is a walk-in clinic where individuals can access STD screening Monday – Friday (8:00am – 5:00pm). Individuals are provided educational materials on STD/HIV and offered testing (there is no physical exam performed). Those testing positive are reported to the health department for further investigation and treatment. Testing supplies are provided by the health department. Midtown provides a medical assistant who is responsible for the collection of specimens.

During 2013, approximately **517** clients received testing through the free clinic. Davis County identified **52** positive chlamydia, **three** gonorrhea, **six** syphilis and **two** HIV infections—an STD infectivity rate of roughly 12%.

- Low cost STD examination and testing: Individuals who are symptomatic can receive low cost STD services through the Midtown clinic. Clients are given an appointment to see a medical provider, obtain a physical examination and be tested for chlamydia, gonorrhea, syphilis and HIV. Additional tests are available for an added fee. Testing is provided by Midtown. If test results are positive, Midtown treats the patient with medication provided by the health department and reports the case for further investigation. In 2013, **145** clients were tested by Midtown through this program.
- Individuals who test positive for any of the reportable STDs (chlamydia, gonorrhea, syphilis, HIV, and chancroid) are interviewed to identify exposed sexual contacts. These contacts are located and brought into the health department for testing and treatment. In 2013, approximately **181** individuals were seen in the Davis County contact clinic. Of those, **75** tested positive for chlamydia (41%), **two** tested positive for gonorrhea (1.1%). Of the 33 who were tested for syphilis, **10** (30.3%) were positive. In addition, **one** (7.7%) of the 13 who was tested for HIV had positive results. These contacts are at high risk of acquiring infection and the data reiterates the importance of contact tracing.
- Traditional HIV testing may take up to 10 days for return of results. To decrease the wait time, Davis County conducts free rapid HIV clinics throughout the year, often in conjunction with national HIV and STD events. Results are available within 15-20 minutes. Those performing the tests are trained on giving positive test results and provide important resources to infected clients. Individuals using this clinic can also obtain chlamydia, gonorrhea and syphilis testing.

Tuberculosis Program Highlights:

- Residents who have developed active tuberculosis need to receive appropriate treatment for their disease. Failure to comply with the established treatment regimen can result in the development of drug resistance. To prevent this from occurring, treatment must be administered under directly observed therapy (DOT). This requires a health department staff member to observe the patient taking their medication daily or when possible, twice/thrice-weekly. This process can make it difficult for the clients to maintain normal day-to-day activities and can incur travel costs to the patient and/or health department staff. To address this issue, Davis County offers clients a video-conferencing option where those with a history of compliancy can be observed taking their medication via the internet through applications such as Skype or FaceTime. The tuberculosis control nurse conducts periodic face-to-face encounters to ensure that any possible treatment side effect is recognized. Video

conferencing will only be considered for individuals who display responsible behaviors and are at low risk for complications.

Overall Division Highlights:

- The Communicable Disease and Epidemiology Division website remains a valuable resource for the community.

http://www.daviscountyutah.gov/health/communicable_disease/default.cfm

Visitors to the website can access program specific information, as well as links to other important websites. Materials are available for each of the programs within the Communicable Disease and Epidemiology Division:

- Epidemiology (surveillance data)
- STD/HIV Program
- Tuberculosis Control Program
- Infectious Disease Program

The website also offers information specific to healthcare professionals and medical providers. Within this section are reporting guidelines, including the communicable disease rule for Utah and links to disease data for Davis County. Health education, public health emergency preparedness, Boy Scout Public Health Merit Badge, and Emergency Medical Services (EMS) information are also included on the website and provide quick and easy access to resources provided by the Communicable Disease and Epidemiology Division.

- The “Ask-A-Nurse” email system is routinely utilized by the public for answers to communicable disease issues. This system is monitored daily by health professionals who can provide information on health issues pertaining to infectious diseases or other reportable conditions. An email link is found on each page of the Communicable Disease and Epidemiology web pages or can be directly accessed at: Ask-A-Nurse@daviscountyutah.gov.
- During 2013, the Communicable Disease and Epidemiology Division participated in additional program activities designed to enhance the Division’s ongoing goals:
 - **Healthcare Associated Infections (HAI) Grant**: Davis County again received funding to assist in the identification and control of healthcare associated infections. In 2012, local infection control employees received training and reporting information. This training was put together to raise awareness of national and state HAI issues, familiarize healthcare facilities with the reporting rules and processes, and improve communication and

interactions between DCHD and their community partners. In 2013, HAI outbreaks were detected and control efforts were implemented smoothly as a result of this training and partnership. DCHD continues to work closely with the medical community on HAI issues and keeps healthcare partners updated on new and emerging infections.

- **BioSense Grant:** Davis County Health Department continued grant activities related to the implementation of the BioSense surveillance system. This surveillance tool provides public health with real-time data regarding the health status of the community. BioSense pulls information on emergency department visits and hospitalizations from multiple sources, which provides users the ability to confidentially track health issues as they evolve. The Communicable Disease Epidemiologist assists UDOH in collecting and analyzing the information obtained from Davis County hospitals.
- **Internship Program:** The Communicable Disease and Epidemiology Division provided opportunities for public health interns to gain work experience in the public health field. During 2013, interns accomplished several projects, under the direction of staff, which assisted the Division in fulfilling some of their public health goals.
- **Animal Control Collaboration:** In 2013, DCHD worked closely with Davis County Animal Control to develop a county-wide regulation on rabies prevention and control. This new regulation outlines a multidisciplinary approach to rabies control and prevention and standardizes procedures among Davis County jurisdictions. It establishes requirements for reporting and provides guidance on pre/post rabies exposure management of animals and humans. The Davis County Board of Health approved the regulation on November 11, 2013.

In addition to the regulation, the Communicable Disease and Epidemiology Division, in collaboration with Davis County Animal Control, developed a human rabies exposure reporting system which has facilitated a more timely and efficient process. The health department evaluates and monitors all reported human exposures and helps facilitate rabies post-exposure prophylaxis when recommended. In 2013, 125 human exposures were reported. This is a unique collaboration that is providing a template for other counties within Utah.

Appendix A - Reportable Diseases

REPORTABLE DISEASES

UTAH LAW REQUIRES THAT THE FOLLOWING CONFIRMED AND SUSPECTED DISEASES BE REPORTED TO YOUR LOCAL HEALTH DEPARTMENT OR THE UTAH DEPARTMENT OF HEALTH IMMEDIATELY BY TELEPHONE

Davis County Health Department Disease Reporting Line: **(801) 525-5220**

- | | | |
|---|---|---|
| <ul style="list-style-type: none"> • Anthrax • Botulism • Cholera • Diphtheria • <i>Haemophilus influenzae</i> (invasive) • Hepatitis A • Measles (Rubeola) • Meningococcal disease • Plague | <ul style="list-style-type: none"> • Poliomyelitis (paralytic) • Rabies (human and animal) • Rubella • Severe Acute Respiratory Syndrome (SARS) • Smallpox • <i>Staphylococcus aureus</i> with resistance (VRSA) or intermediate resistance | <ul style="list-style-type: none"> (VISA) to vancomycin, isolated from any site • Tuberculosis • Tularemia • Typhoid (cases and carriers) • Viral hemorrhagic fever • Yellow Fever • Unusual Diseases or Outbreaks of any kind |
|---|---|---|

UTAH LAW REQUIRES THAT THE FOLLOWING DISEASES BE REPORTED TO YOUR LOCAL HEALTH DEPARTMENT OR THE UTAH DEPARTMENT OF HEALTH WITHIN **3 WORKING DAYS AFTER IDENTIFICATION.**

Davis County Health Department Disease Reporting Line: **(801) 525-5220**
Or FAX **(801) 525-5210**

- | | | |
|--|---|--|
| <ul style="list-style-type: none"> • <i>Acinetobacter</i> species with resistance or intermediate resistance to carbapenem from any site • Acquired Immunodeficiency Syndrome (AIDS) • Adverse event resulting after smallpox vaccination • Amebiasis • Arbovirus infection, including Saint Louis encephalitis and West Nile virus infection • Babesiosis • Botulism, infant • Brucellosis • Campylobacteriosis • Chancroid • Chickenpox • <i>Chlamydia trachomatis</i> infection • Coccidioidomycosis • Colorado tick fever • Creutzfeldt-Jakob disease and other transmissible human spongiform encephalopathies • Cryptosporidiosis • <i>Cyclospora</i> infection • Dengue fever • Echinococcosis • Ehrlichiosis (human granulocytic, human monocytic, or unspecified) • Encephalitis | <ul style="list-style-type: none"> • <i>Escherichia coli</i> with resistance or intermediate resistance to carbapenem from any site • Giardiasis • Gonorrhea (sexually transmitted and ophthalmia neonatorum) • Hansen's disease (leprosy) • Hantavirus pulmonary syndrome • Hemolytic Uremic Syndrome (post-diarrheal) • Hepatitis B (cases and carriers) • Hepatitis C (acute and chronic infection) • Hepatitis (other viral) • Human Immunodeficiency Virus (HIV) infection • Influenza-associated hospitalization • Influenza-associated death in a person less than 18 years of age • <i>Klebsiella</i> species with resistance or intermediate resistance to carbapenem from any site • Legionellosis • Listeriosis • Lyme disease • Malaria • Meningitis (aseptic, bacterial, fungal, parasitic, protozoan and viral) • Mumps • Norovirus (formerly called Norwalk-like virus) infection • Pertussis | <ul style="list-style-type: none"> • Poliovirus infection (nonparalytic) • Psittacosis • Q Fever • Relapsing fever (tick-borne or louse-borne) • Rubella (congenital syndrome) • Salmonellosis • Shiga toxin producing <i>Escherichia coli</i> (STEC) infection • Shigellosis • Spotted fever rickettsioses (including Rocky Mountain spotted fever) • Streptococcal disease (including <i>Streptococcus pneumoniae</i> and Groups A, B, C, and G streptococci isolated from a normally sterile site) • Syphilis (all stages and congenital) • Tetanus • Toxic-Shock Syndrome (staphylococcal or streptococcal) • Trichinosis • Vibriosis |
|--|---|--|



Davis County Health Department – revised May 2013

Appendix B - Davis County Demographics

Davis County Demographics – 2013

Population: 315,809

Age Group	
Less than 1 year	5,561
1 – 14 years	85,148
15 – 24 years	45,689
25 – 44 years	88,635
45 – 64 years	63,205
65 – 84 years	24,225
More than 85 years	3,346

Gender	
Male	158,844
Female	156,965

Race	
White	293,887
Black	4,227
American Indian or Alaskan Native	1,979
Asian	6,146
Native Hawaiian or Pacific Islander	2,109
2 or More Races	7,461

Ethnicity	
Hispanic or Latino (of any race)	27,544

Source: Retrieved January 2014 from Utah Department of Health, Center for Health Data, Indicator-Based Information System for Public Health. Website: <http://ibis.health.utah.gov/>.

Population by City *	
Unincorporated County	502
Bountiful	42,898
Centerville	16,203
Clearfield	30,376
Clinton	20,805
Farmington	20,750
Fruit Heights	5,302
Hill Air Force Base	3,310
Kaysville	28,283
Layton	68,677
North Salt Lake	16,717
South Weber	6,372
Sunset	5,136
Syracuse	25,118
West Bountiful	5,329
West Point	9,819
Woods Cross	10,212
Total	315,809

*Population by city was only available for 2012. Population estimates by city for 2012 were obtained from the U.S. Census Bureau. Website: http://www.census.gov/popest/data/cities/totals/2012/files/SUB-EST2012_49.csv. The Hill Air Force Base estimate is for 2010 and was obtained from the U.S. Census Bureau, American Fact Finder: <http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml>