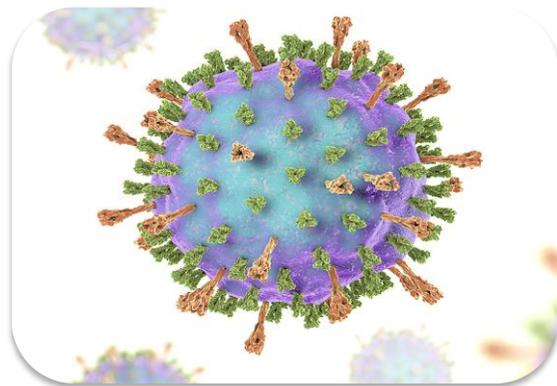


Infectious Diseases Morbidity Report

2017



ACKNOWLEDGEMENTS

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This report is found at <http://slco.org/health/epidemiology>

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EXECUTIVE SUMMARY

Utah law requires that over 80 infectious diseases be routinely reported to public health for ongoing surveillance and investigation. Reportable data are collected from laboratories, hospitals, medical providers and outpatient clinics. Salt Lake County Health Department Epidemiology and Infectious Disease Bureaus then investigate each report through patient interview and/or chart abstraction and analyze the data. The results of the data analysis are utilized to implement appropriate control and prevention measures. In 2017, over 15,000 disease reports were investigated to determine the source of infection and interrupt disease transmission.

The Salt Lake County Health Department 2017 Infectious Diseases Morbidity Report highlights diseases and events of interest and summarizes data for the most commonly reported infectious diseases affecting Salt Lake County residents. Highlights include the hepatitis A outbreak and West Nile virus, as well as other diseases with high public interest, those with higher than expected case counts and those not previously seen in Salt Lake County. One-page disease profiles follow the highlights and present relevant demographic, clinical and epidemiologic data.

I hope this report can be a resource for healthcare providers, public health practitioners, community partners and the public, and that it can be used to help target intervention and prevention efforts.

Sincerely,

A handwritten signature in black ink that reads "Dagmar Vitek". The signature is written in a cursive, flowing style.

Dagmar Vitek, MD, MPH
Medical Director

HIGHLIGHTS

Measles Outbreak

Three confirmed cases of measles were identified in January and February of 2017. Thirteen cases were investigated, with ten ruled out. Contacts assessed were 416 individuals, with 28% of contacts receiving post-exposure prophylaxis. Index case was a child who traveled to Myanmar with one vaccination due to young age.

Norovirus

Eleven norovirus outbreaks were investigated in 2017. Three confirmed and six suspect outbreaks were investigated at long-term care facilities. Norovirus GII, norovirus GI.4 and norovirus unknown type were identified among cases at these long-term care facilities. Two confirmed clusters were associated with local restaurants. Norovirus GII.P16-GII.1 and norovirus GII.P16-GII.2 were identified at the two restaurants.

Bat Exposure

Two high schools in Salt Lake County experienced bat exposures in 2017. Fifty-seven students and staff were assessed due to a bat exposure that occurred at one high school. 61% of students and staff received full post exposure prophylaxis (PEP). 28% of students and staff were assessed and deemed not to have sufficient contact with a bat. 9% of students and staff with appropriate exposure refused PEP. Four students and staff were assessed due to a bat exposure that occurred at another high school. Two students and staff received full PEP. Two students and staff with appropriate exposure refused PEP.

TOP 20 REPORTABLE DISEASES

Disease	Rank	Number of cases
Chlamydia	1	5370
Gonorrhea	2	1672
Hepatitis C, acute & chronic	3	1109
Influenza, hospitalized	4	695
Tuberculosis, latent infection	5	571
Pertussis	6	253
Campylobacteriosis	7	239
Hepatitis B, acute & chronic	8	214
Salmonellosis	9	169
Syphilis (primary, secondary, early latent)	10	144
Streptococcal disease, invasive, group A	11	143
<i>Streptococcus pneumoniae</i> , invasive disease	12	119
Hepatitis A	13	100
Chickenpox	14	95
HIV, new	15	81
Streptococcal disease, invasive, group B	15	81
Giardiasis	16	67
Streptococcal disease, invasive, other	17	52
<i>Acinetobacter</i> , carbapenem non-susceptible	18	43
Shiga toxin-producing <i>E. coli</i>	19	42
Meningitis, viral	19	42
Meningitis, aseptic	20	34

CAMPYLOBACTERIOSIS

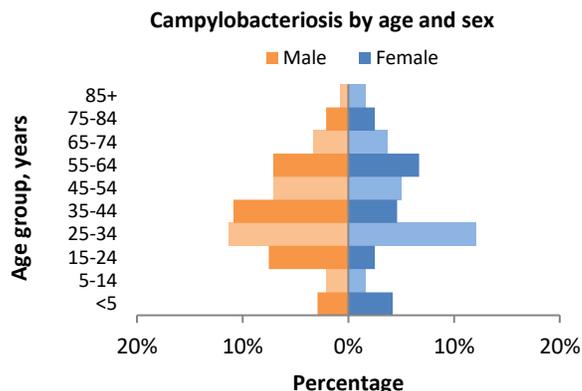
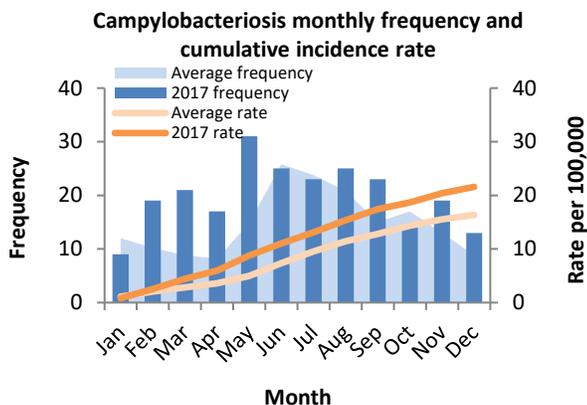
cdc.gov/foodsafety/diseases/campylobacter/index.html

239

Number of cases reported

21.6

Incidence rate per 100,000 population

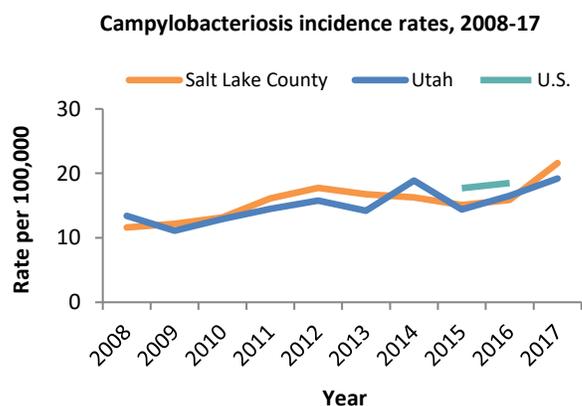
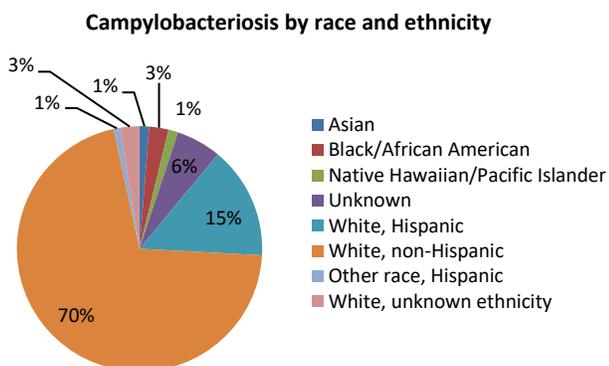


Clinical Review

- 23%** Hospitalized
- 0** Deaths
- 33%** Bloody diarrhea
- 9** Median duration of illness, days

Epidemiologic Review

- Most common risk factors for infection:
 - Immunocompromised
 - Foreign travel – most common countries include Mexico (28%) and Thailand (15%).
 - Animal exposure
 - Out of state travel – most common states include California (24%) and Colorado (17%).
- Salt Lake County was part of a national outbreak associated with Petland puppies.



CRYPTOSPORIDIOSIS

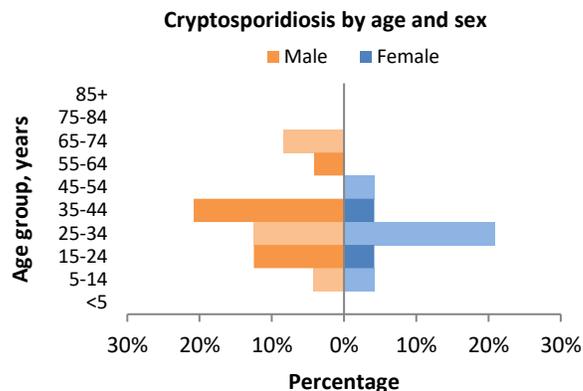
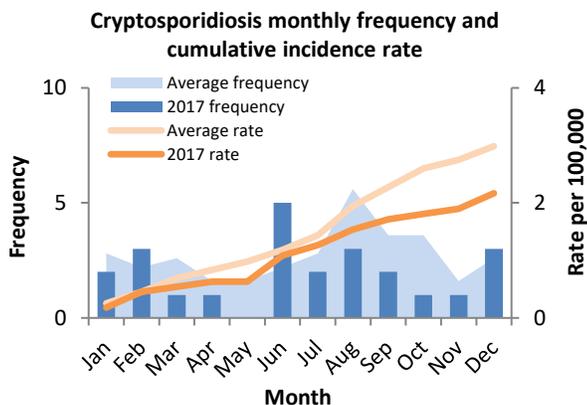
cdc.gov/parasites/crypto

24

Number of cases reported

2.2

Incidence rate per 100,000 population

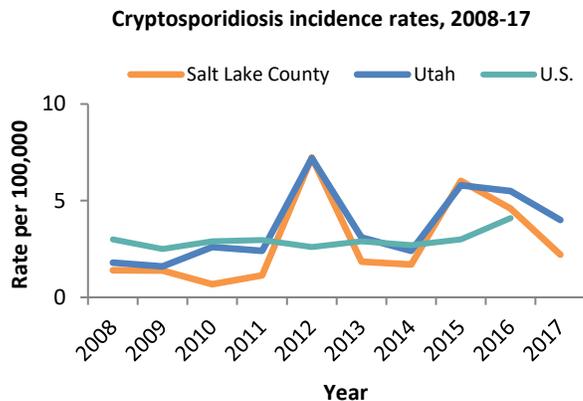
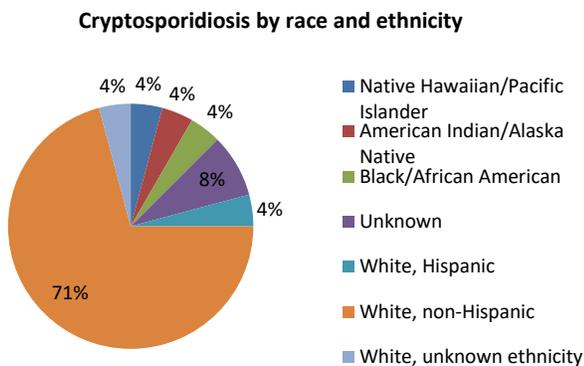


Epidemiologic Review

- Most common risk factors for infection:
 - Immunocompromised
 - Foreign travel – most common country was Mexico (33%).
 - Out of state travel – no commonalities identified.
 - Suspect water exposure – most common water exposure reported was natural water, which includes rivers, lakes and ocean.

Clinical Review

- 8%** Hospitalized
- 0** Deaths
- 96%** Diarrhea
- 12.5** Median duration of illness, days



GIARDIASIS

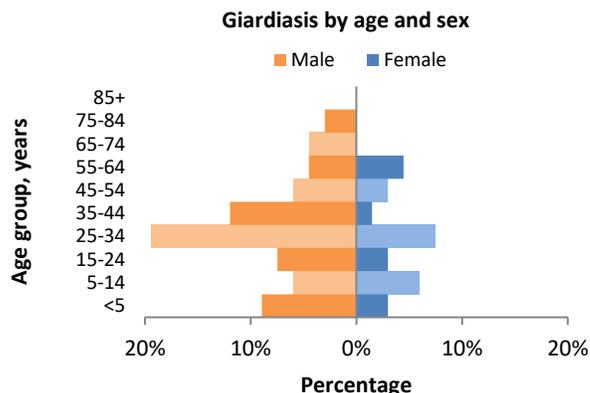
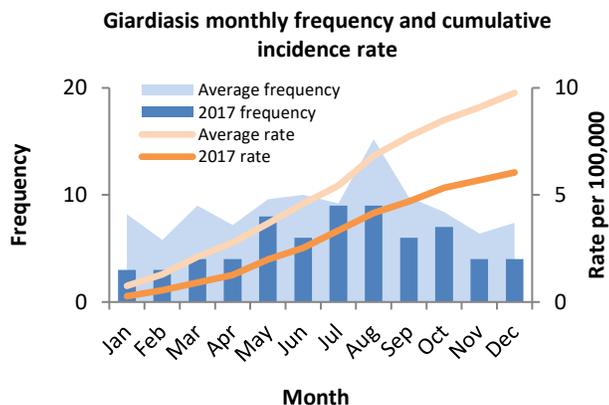
cdc.gov/parasites/giardia

67

Number of cases reported

6.1

Incidence rate per 100,000 population

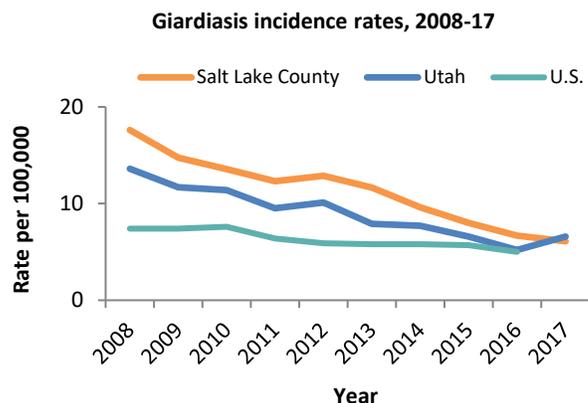
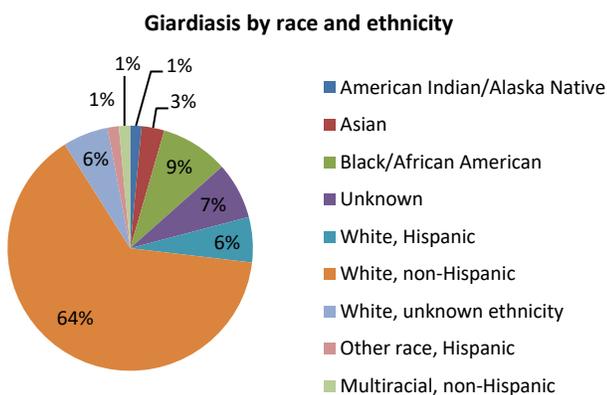


Epidemiologic Review

- 12% of cases were refugees or recent immigrants. 26% of these cases recently immigrated from Africa.
- Most common risk factors for infection:
 - Suspect water exposure – 66% of cases reported natural water exposure, which includes lakes and streams.
 - Foreign travel -most common country was Mexico (21%).
 - Outdoor exposure – 43% of cases report backpacking as an outdoor exposure, yet no common location was identified.
 - Sexual exposure

Clinical Review

- 6%** Hospitalized
- 0** Deaths
- 9%** Co-infected
- 49%** Weight loss
- 18** Median duration of illness, days



HEPATITIS A

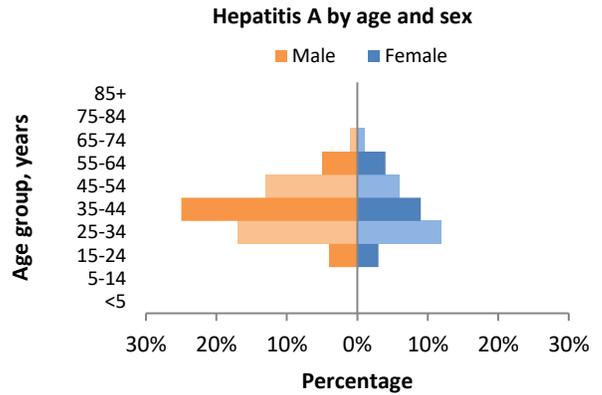
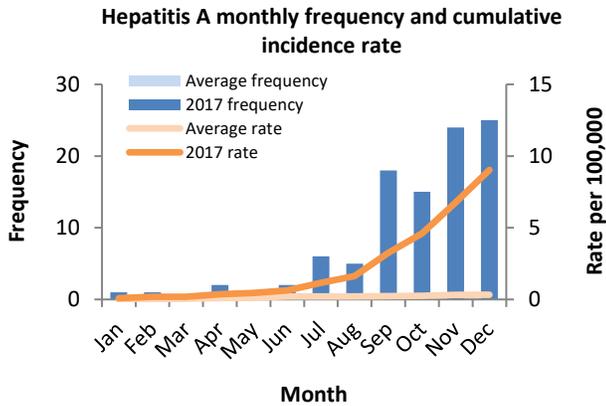
cdc.gov/hepatitis/hav/index.htm

100

Number of cases reported

9.0

Incidence rate per 100,000 population

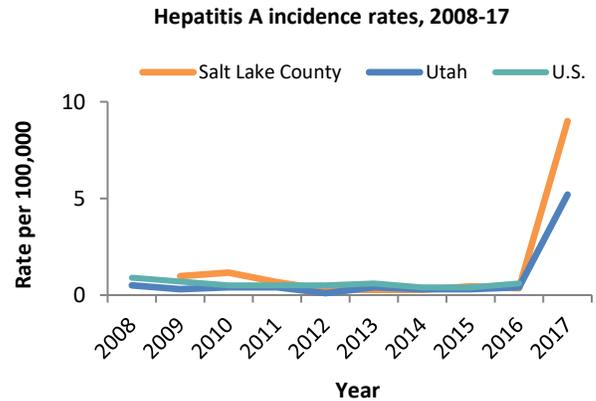
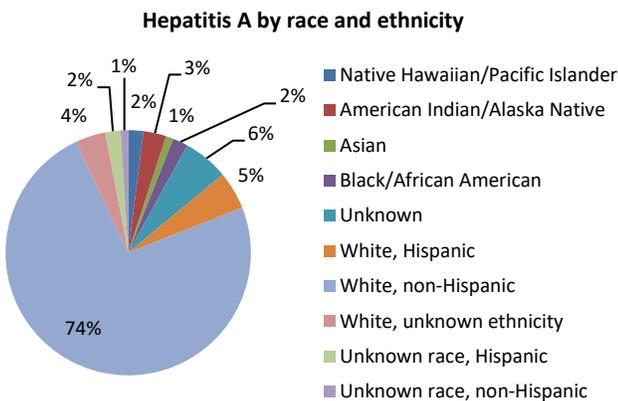


Epidemiologic Review

- Salt Lake County was part of a multistate outbreak of hepatitis A. The outbreak primarily affected persons experiencing homelessness, illicit drug users and incarcerated individuals. Viral sequencing confirmed the outbreak strain as 1B; this matched cases in at least seven states including California, Arizona, New Mexico, Illinois, Michigan, Kentucky and Virginia.
- 33% of outbreak cases were co-infected with hepatitis C.
- 17% of outbreak cases were co-infected with hepatitis B.

Clinical Review

- 58%** Hospitalized
- 0** Deaths
- 74%** Jaundice



SALMONELLOSIS

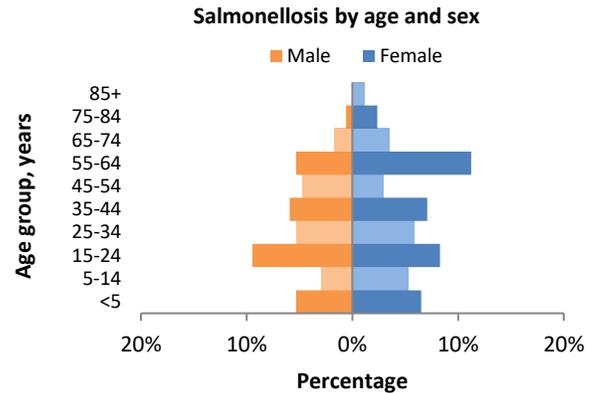
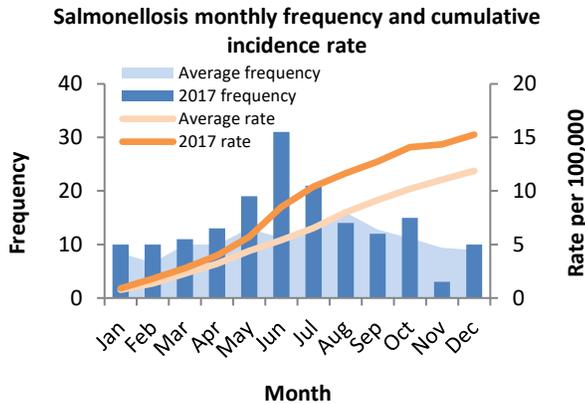
cdc.gov/salmonella

169

Number of cases reported

15.2

Incidence rate per 100,000 population

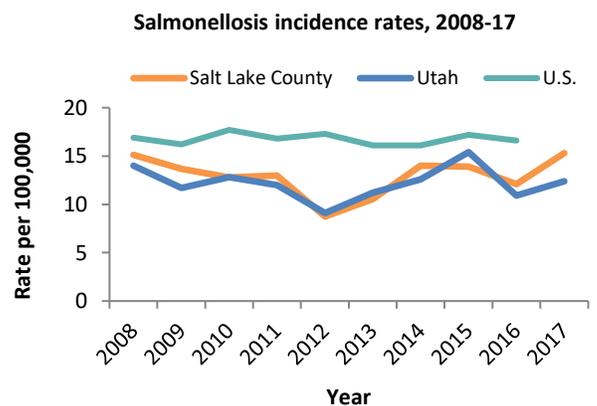
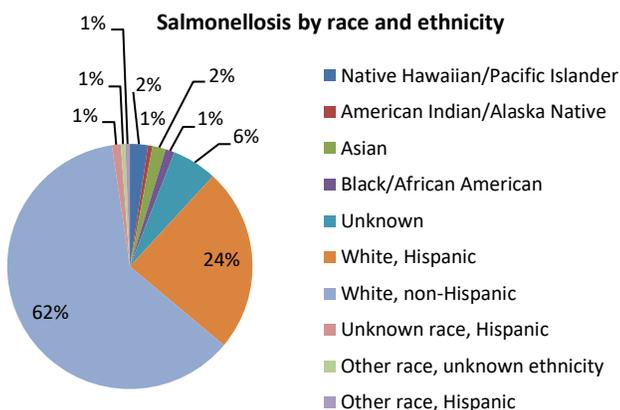


Epidemiologic Review

- Five outbreaks were identified and investigated
 - A nationwide outbreak of Salmonella (multiple serotypes) was associated with live poultry.
 - Salt Lake County had an outbreak of *Salmonella* Typhimurium associated with a birthday party. No common food sources were identified.
- Top 5 serotypes: Typhimurium (20%), Enteritidis (13%), Ohio (7%), Saintpaul (6%), Newport (5%).
- Common risk factors for infection include animal exposure, immunocompromised status, foreign travel and outbreak exposure.

Clinical Review

- 25%** Hospitalized
- 0** Deaths
- 7** Median duration of illness, days
- 31%** Bloody diarrhea
- 6%** Asymptomatic



SHIGA TOXIN-PRODUCING E. COLI

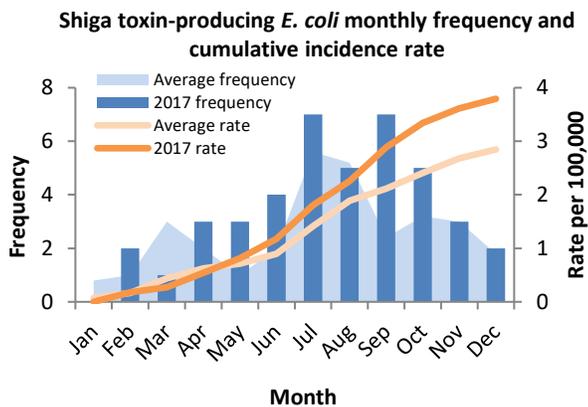
cdc.gov/ecoli

42

Number of cases reported

3.8

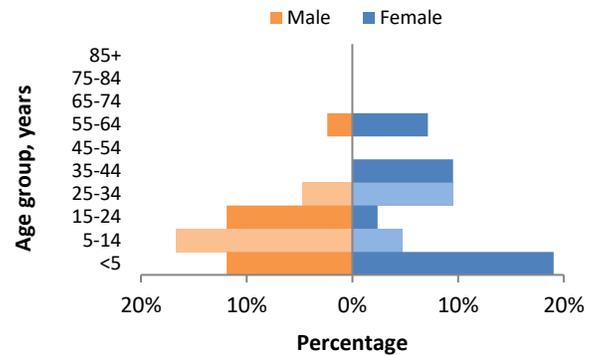
Incidence rate per 100,000 population



Clinical Review

- 21%** Hospitalized
- 0** Deaths
- 5%** Hemolytic uremic syndrome
- 57%** Bloody diarrhea
- 13** Median duration of illness, days

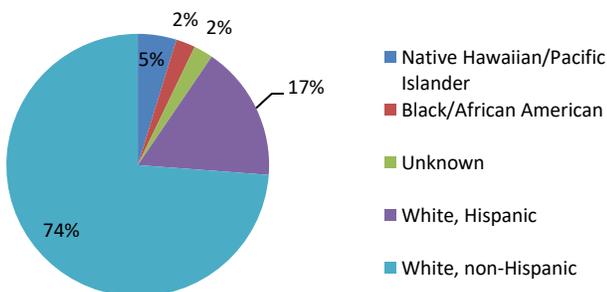
Shiga toxin-producing *E. coli* by age and sex



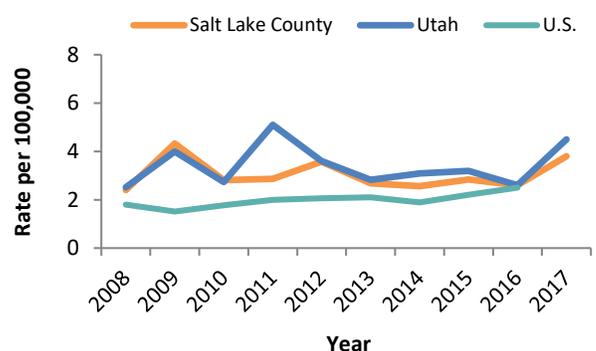
Epidemiologic Review

- Top 5 serotypes: O157:H7 (28%), O26 (17%), O103 (10%), O111 (7%), O118 (7%).
- Most common risk factors for infection:
 - Suspect water exposure – 57% of cases reported natural water exposure, which includes lakes and streams.
 - Foreign travel – most common country was Mexico (50%).
 - Out of state travel – most common state was Wyoming (30%).
 - Immunocompromised

Shiga toxin-producing *E. coli* by race and ethnicity



Shiga toxin-producing *E. coli* incidence rates, 2008-17



SHIGELLOSIS

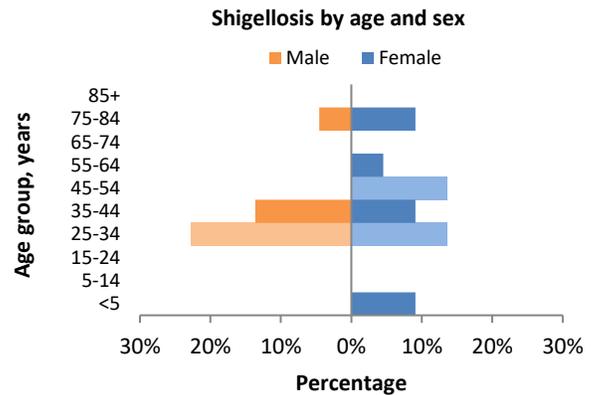
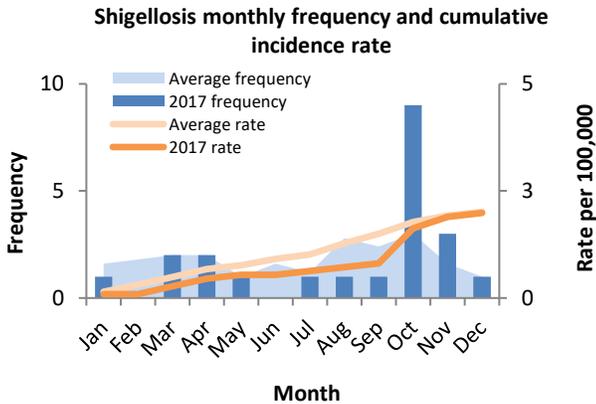
cdc.gov/shigella

22

Number of cases reported

2.0

Incidence rate per 100,000 population

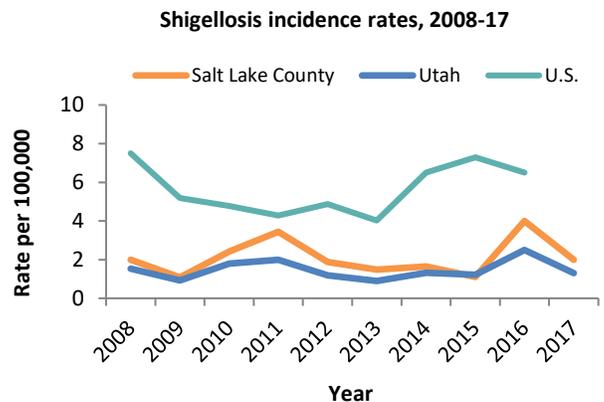
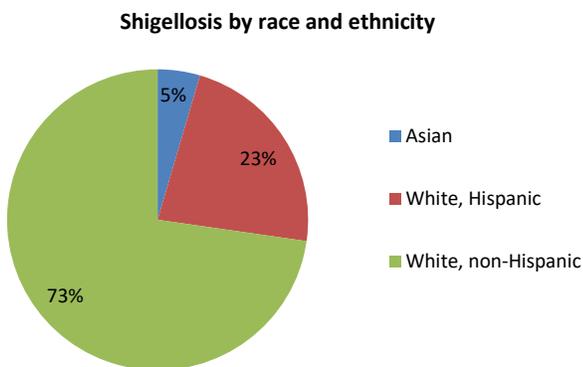


Epidemiologic Review

- One outbreak was identified and investigated:
 - Local restaurant had a small cluster of illness.
- Common risk factors for infection:
 - Foreign travel – no commonalities identified.
 - Sexual exposure – majority of cases identified as men who have sex with men.
 - Immunocompromised

Clinical Review

- 41%** Hospitalized
- 0** Deaths
- 32%** Bloody diarrhea
- 6** Median duration of illness, days



HAEMOPHILUS INFLUENZAE

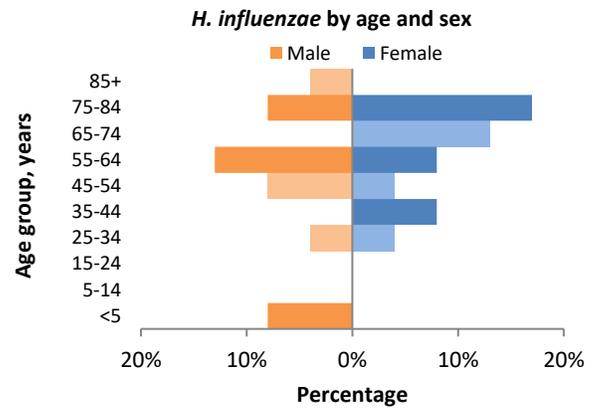
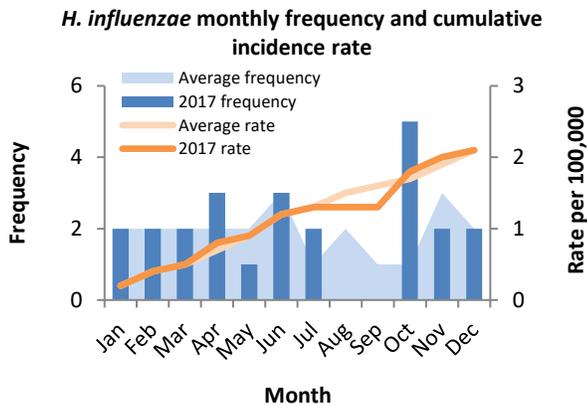
cdc.gov/hi-disease

24

Number of cases reported

2.1

Incidence rate per 100,000 population



Epidemiologic Review

- Types include nontypeable (67%), type F (13%), type E (13%), type A (4%) and unknown type (4%).
- 21% of cases were individuals experiencing homelessness.
- There were 8 weeks in 2017 that were statistically elevated. Consecutive elevations occurred during October, with no commonalities detected among cases.

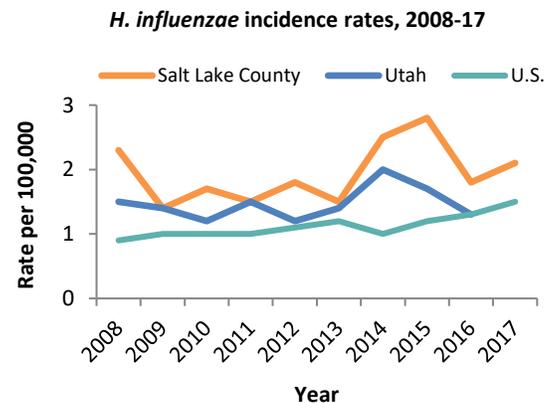
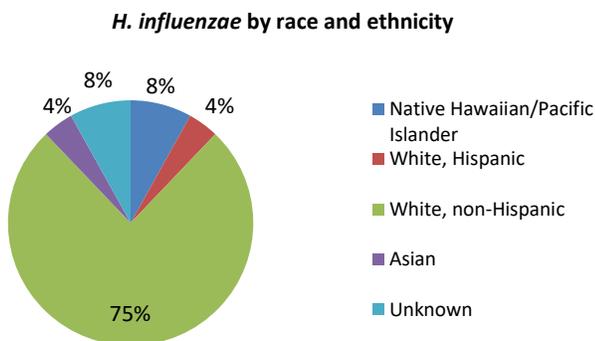
Clinical Review

100% Hospitalized

3 Deaths

63% Bacteremia

0 HIB cases



MUMPS

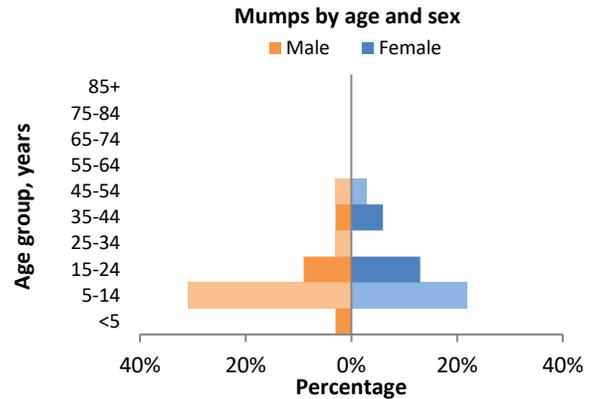
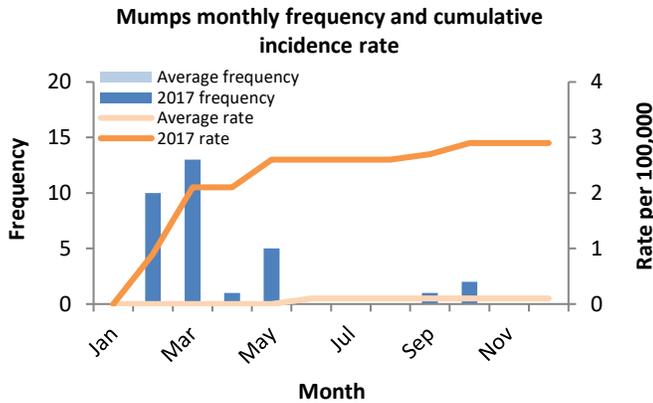
cdc.gov/mumps/index.html

32

Number of cases reported

2.9

Incidence rate per 100,000 population

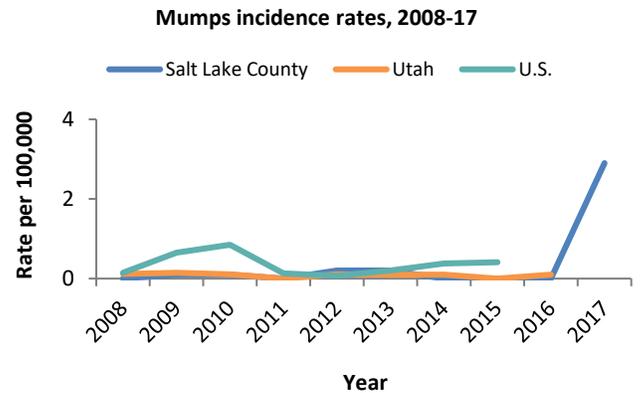
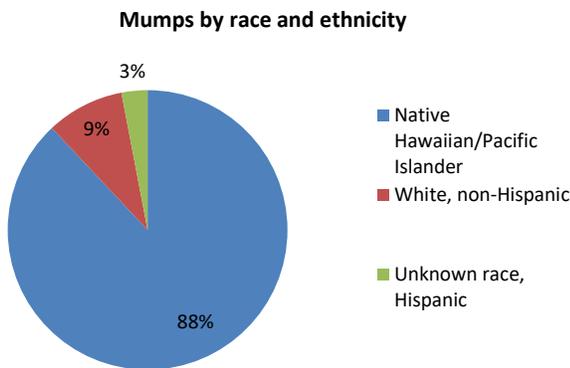


Epidemiologic Review

- One outbreak was identified and investigated.
 - Outbreak occurred at a charter school.
 - 1,948 contacts were assessed, and 67 people received post-exposure prophylaxis.
 - 4 cases were typed and identified as genotype G.
 - Onsets ranged from 1/20/17-5/15/17.

Clinical Review

- 6%** Hospitalized
- 0** Deaths
- 94%** Parotitis
- 78%** Vaccinated
- 21** Cases epi-linked to another case



PERTUSSIS

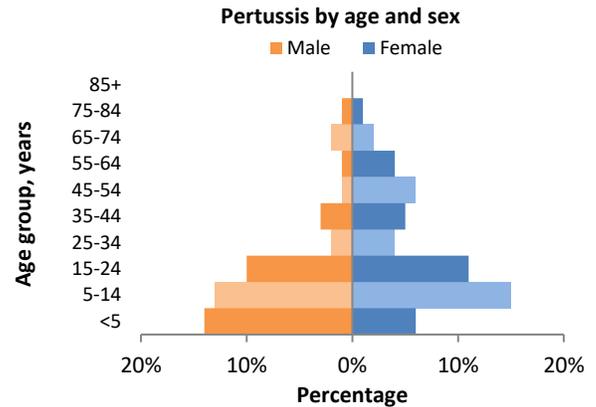
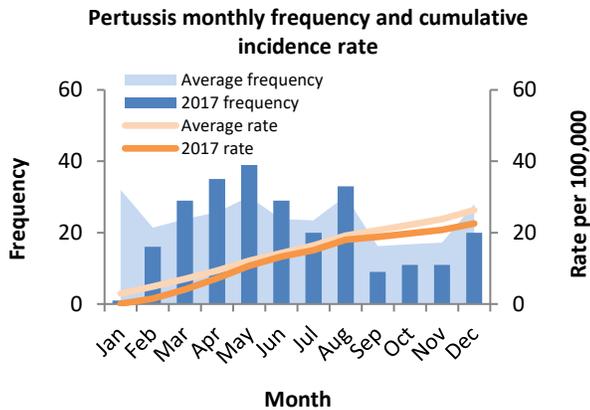
cdc.gov/pertussis

253

Number of cases reported

22.6

Incidence rate per 100,000 population

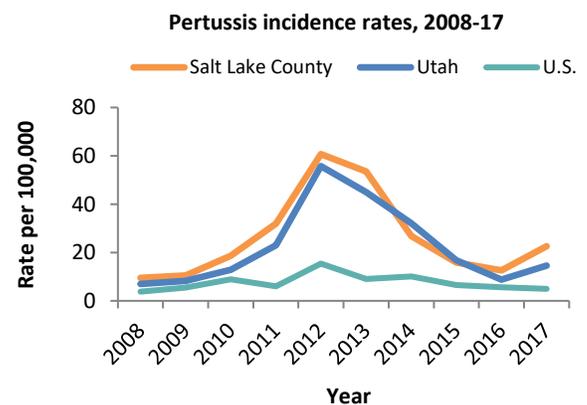
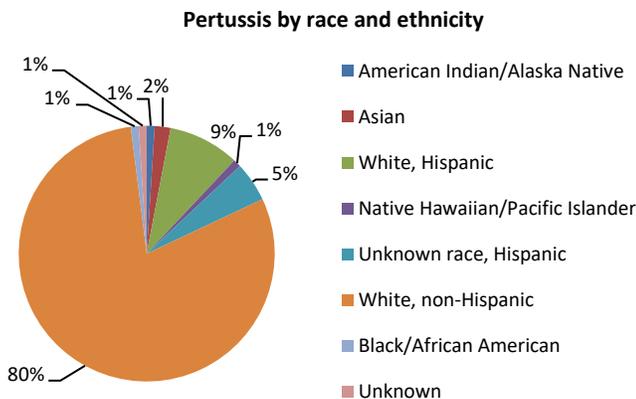


Clinical Review

- 2%** Hospitalized
- 0** Deaths
- 95%** Paroxysmal cough
- 52%** Inspiratory whoop
- 49%** Post-tussive vomiting

Epidemiologic Review

- Thirteen outbreaks were identified and investigated. Outbreaks occurred at four high schools, four daycares, two elementary schools, one charter school, one school for children with disabilities and a middle school.
- 17% of cases were not vaccinated. Of those cases, 66% sited philosophical objections as the reason for not vaccinating.
- 81% of cases reported receiving at least one vaccine. 72% of those cases were up to date.



VARICELLA (CHICKENPOX)

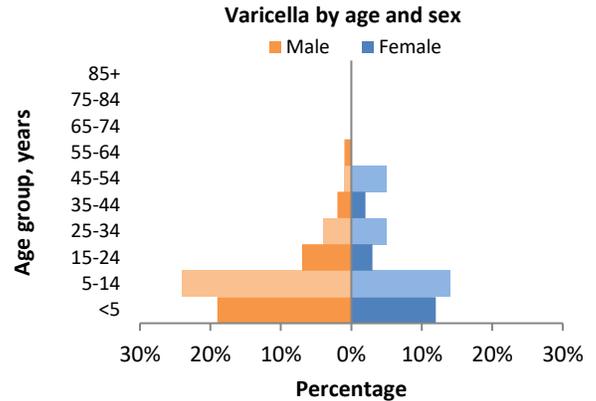
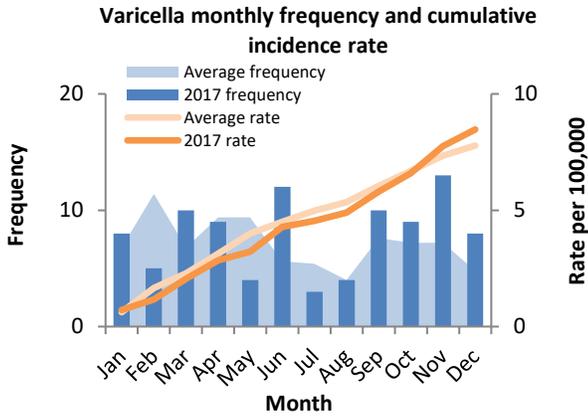
cdc.gov/varicella

95

Number of cases reported

8.6

Incidence rate per 100,000 population

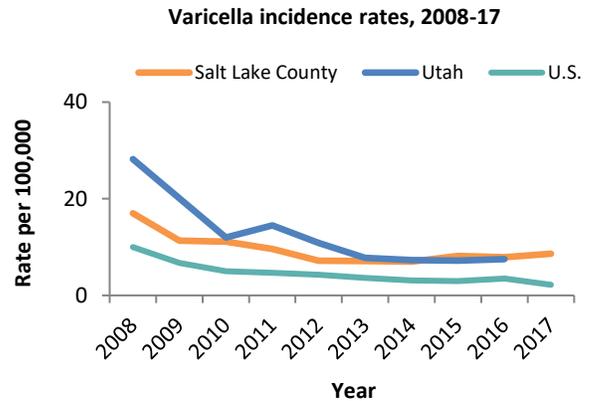
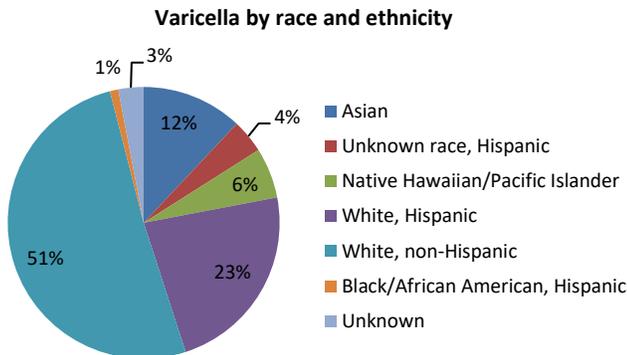


Epidemiologic Review

- One outbreak was identified and investigated. Outbreak occurred at an elementary school which involved seven students.
- 44% of cases were not vaccinated. Of these cases, 21% were philosophically opposed to vaccine, 19% were outside the recommended age range to receive vaccine, 16% were behind schedule for their immunizations and 8% had a contraindication to vaccine.
- 8% of cases had prior history of disease.

Clinical Review

- 3%** Hospitalized
- 0** Deaths
- 51%** Cases with 50 lesions or less



GROUP A STREPTOCOCCUS (GAS)

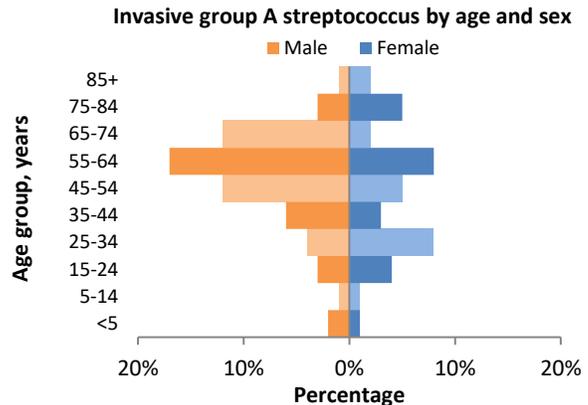
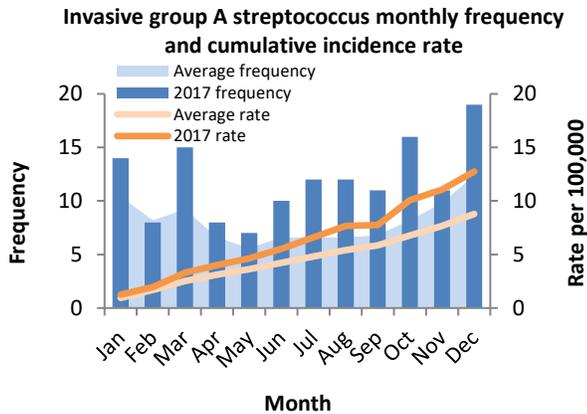
cdc.gov/groupastrep

143

Number of cases reported

12.8

Incidence rate per 100,000 population

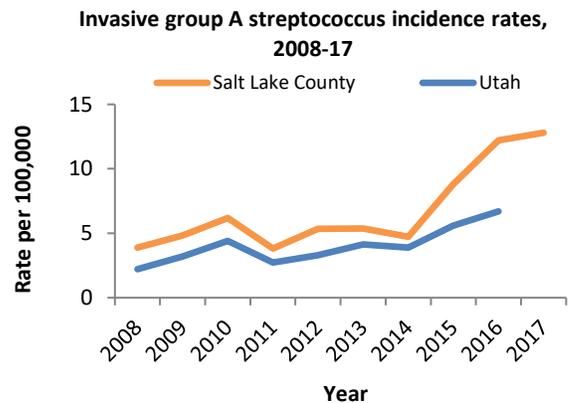
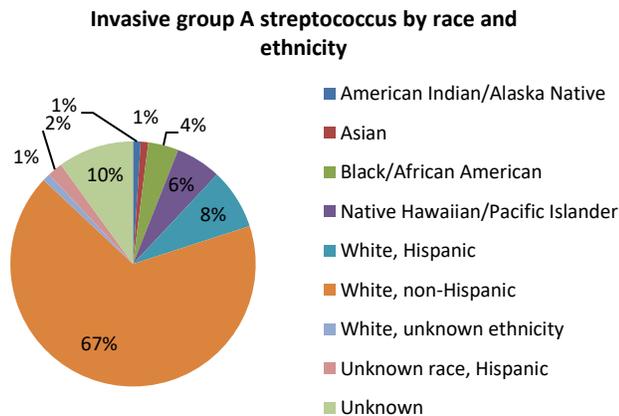


Epidemiologic Review

- One ongoing outbreak that was identified in 2016. Primary populations affected continues to be individuals experiencing homelessness and injection drug users.
- 25% of cases are individuals experiencing homelessness.
- 27% of cases report injection drug use.
- 24% of cases had diabetes, 14% were immunocompromised and 13% had chronic pulmonary disease.

Clinical Review

- 97%** Hospitalized
- 14** Deaths
- 50%** Chronic heart, liver or kidney disease



GROUP B STREPTOCOCCUS (GBS)

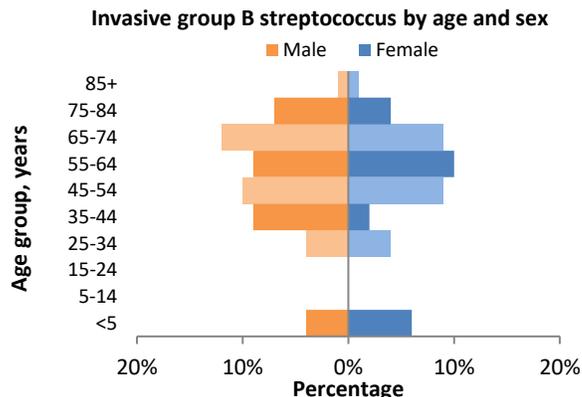
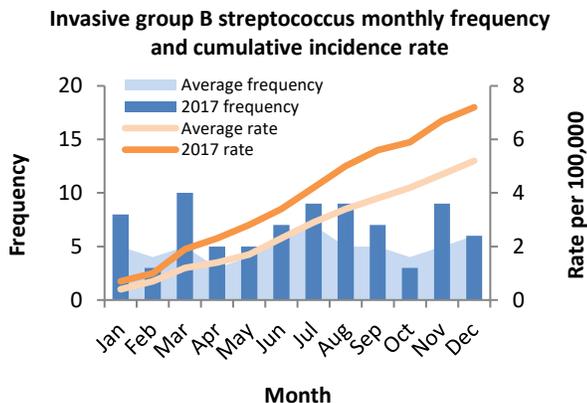
cdc.gov/groupbstrep/

81

Number of cases reported

7.2

Incidence rate per 100,000 population



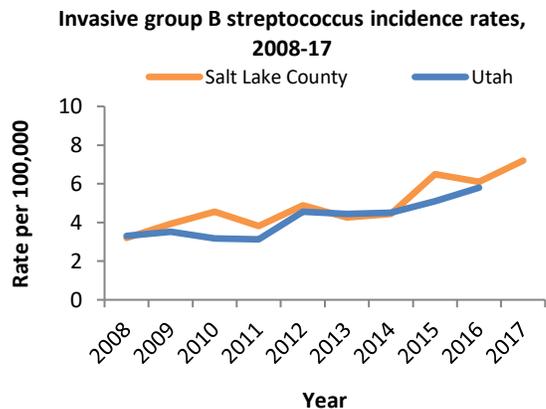
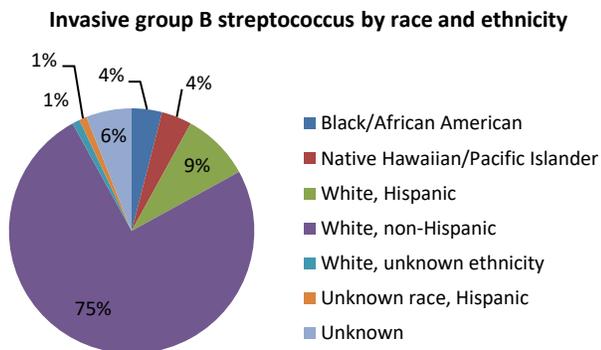
Epidemiologic Review

- There were 13 weeks in 2017 that were statistically elevated. No consecutive elevations and no commonalities detected among cases.
- 83% of infected newborns were born via vaginal delivery.
- Six newborns were positive for GBS. 100% of the mothers received prenatal care and 83% of these mothers were screened for GBS prior to delivery.
- One infant was still born due to sepsis and intrauterine infection.

Clinical Review

96% Hospitalized

1 Death



STREPTOCOCCUS PNEUMONIAE

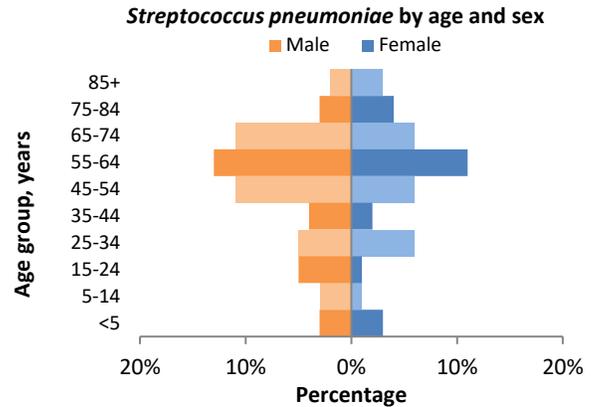
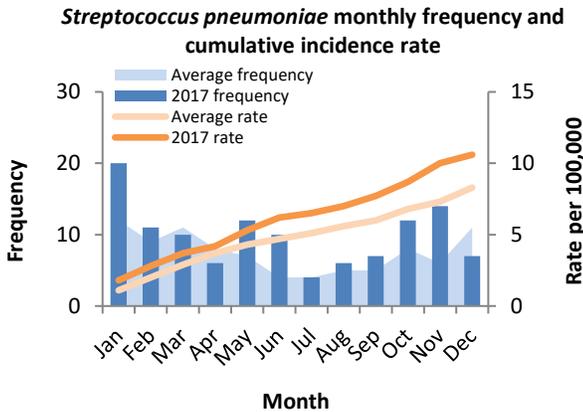
cdc.gov/pneumococcal

119

Number of cases reported

10.6

Incidence rate per 100,000 population

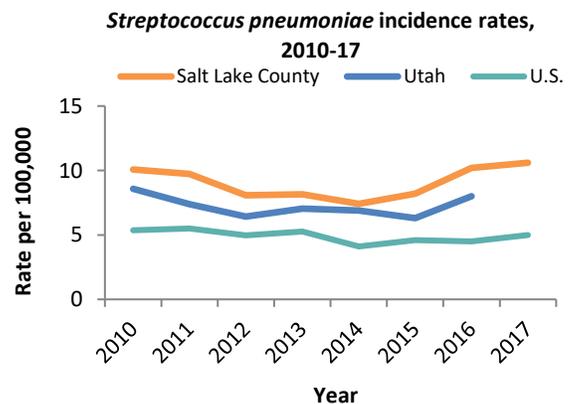
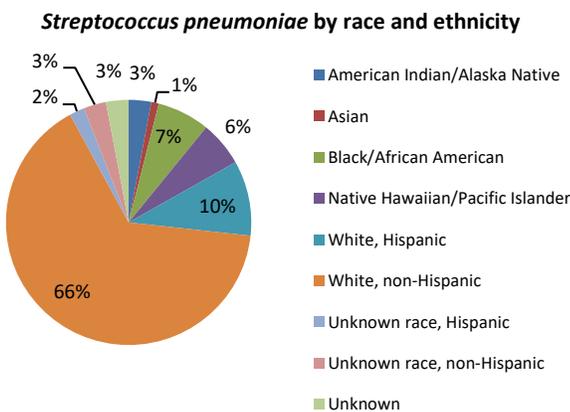


Epidemiologic Review

- 32% of cases received PCV-23 prior to admit. Of those cases, 74% received the vaccine before age 65.
- 26% of cases received at least one dose of PCV-7 prior to admit.
- There were 14 weeks in 2017 that were statistically elevated. Consecutive elevations occurred in January with no commonalities detected among cases.
- 60% of deaths were age 50 and older. 45% of deaths reported substance abuse.

Clinical Review

- 95%** Hospitalized
- 11** Deaths
- 89%** Bacteremia
- 57%** Pneumonia
- 51%** Smoke, alcohol abuse, injection drug use



STREPTOCOCCAL TOXIC SHOCK

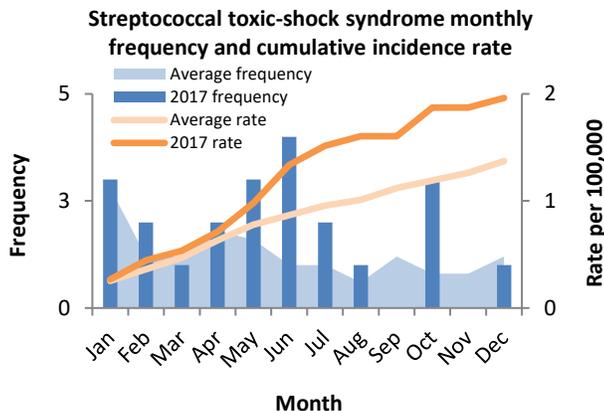
cdc.gov/groupastrep

22

Number of cases reported

2.0

Incidence rate per 100,000 population



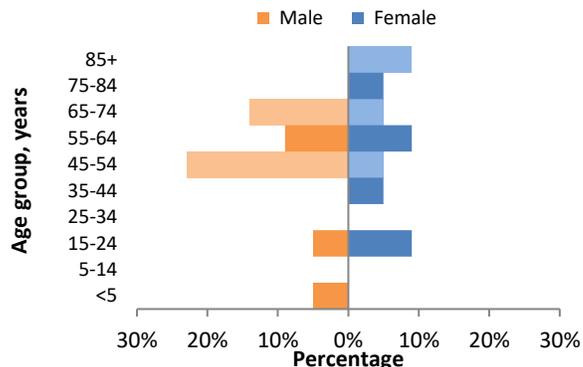
Clinical Review

100% Hospitalized

9 Deaths

55% Acute Respiratory Distress Syndrome

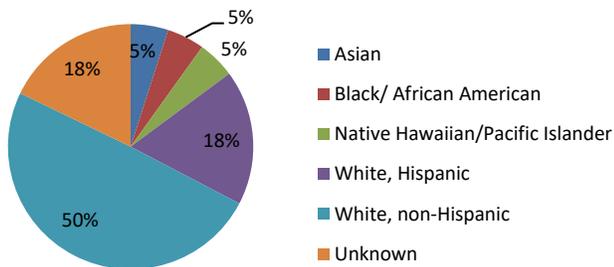
Streptococcal toxic-shock syndrome by age and sex



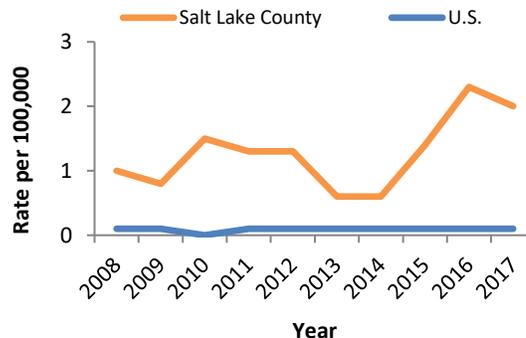
Epidemiologic Review

- 14% of cases were individuals experiencing homelessness and/or injection drug users.
- 32% of cases reported alcohol abuse.
- 32% of cases had underlying lung conditions.
- 27% of cases had underlying heart conditions.

Streptococcal toxic-shock syndrome by race and ethnicity



Streptococcal toxic-shock syndrome incidence rates, 2008-17



CHLAMYDIA

cdc.gov/std/chlamydia

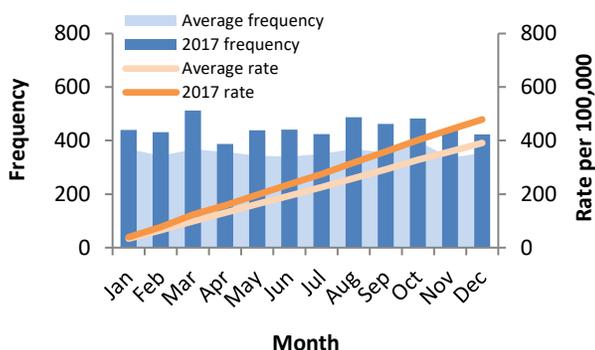
5370

Number of cases reported

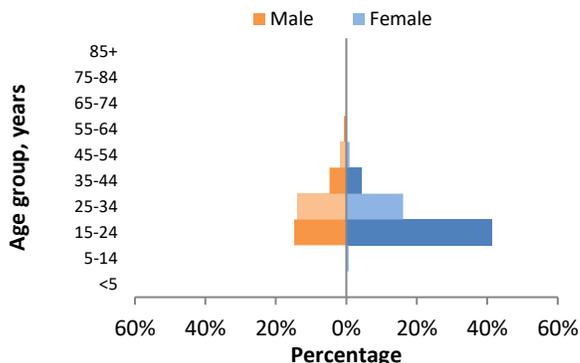
478.9

Incidence rate per 100,000 population

Chlamydia monthly frequency and cumulative incidence rate



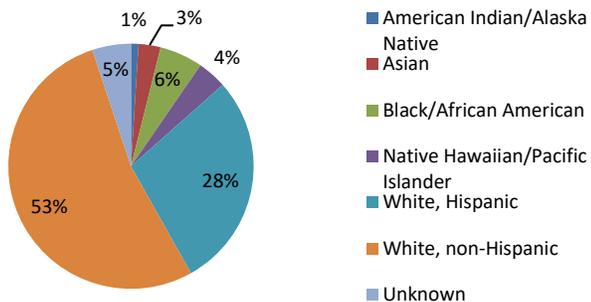
Chlamydia by age and sex



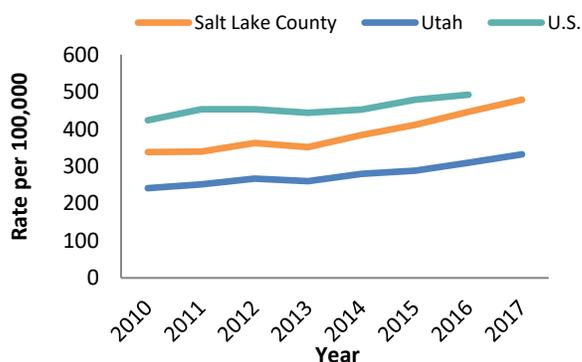
Epidemiologic Review

- Males and females of color are disproportionately infected, based on rates comparison (rate not shown).
- Females were more likely to receive testing services.
- Males and females aged 15-24 years comprised over half of all infection.

Chlamydia by race and ethnicity



Chlamydia incidence rates, 2010-17



GONORRHEA

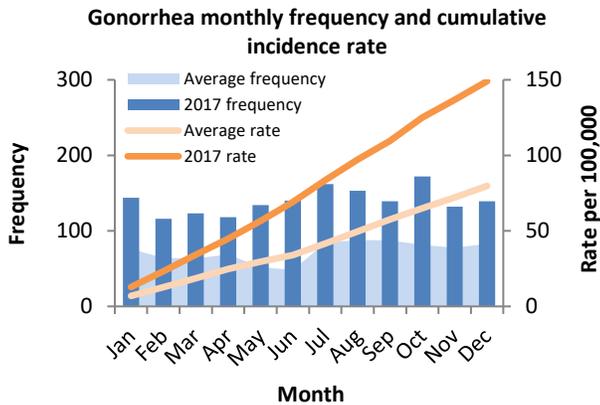
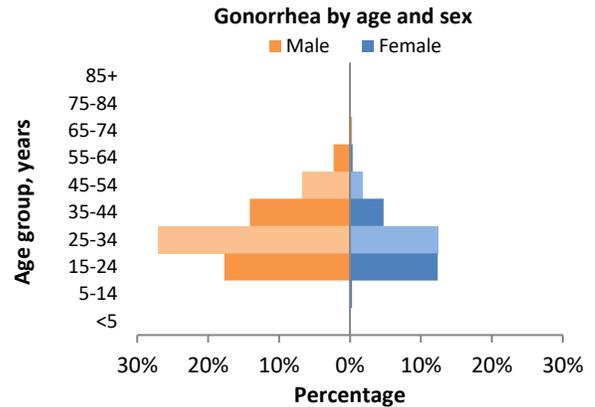
cdc.gov/std/Gonorrhea

1672

Number of cases reported

149.1

Incidence rate per 100,000 population

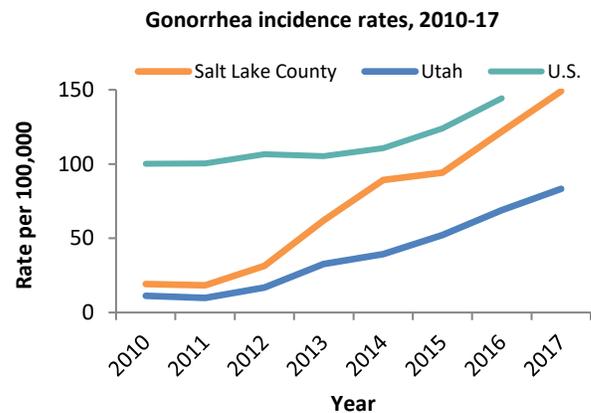
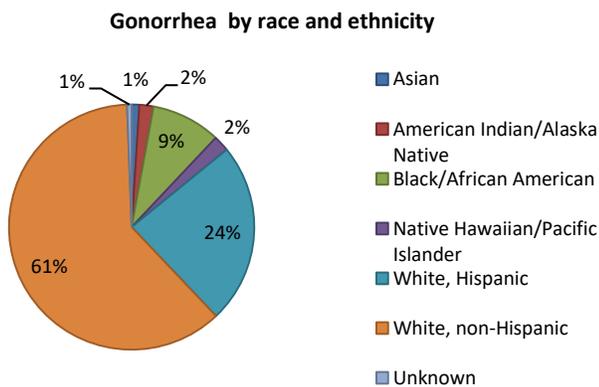


Epidemiologic Review

- Salt Lake County has been experiencing increasing rates of gonorrhea for the past 6 years.
- African Americans are disproportionately infected, based on rate (rate not shown).
- Males were disproportionately infected, based on rate (rate not shown).

Clinical Review

0 Hospitalized
0 Deaths

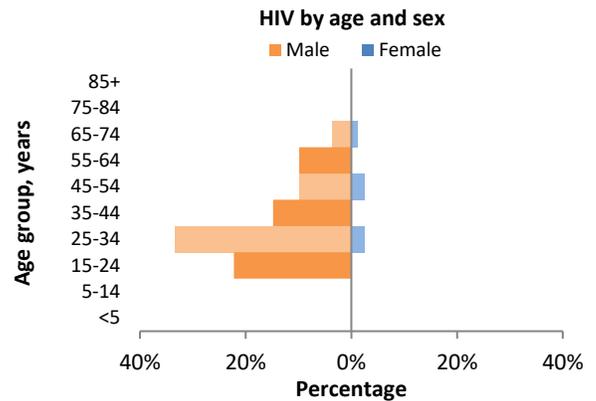
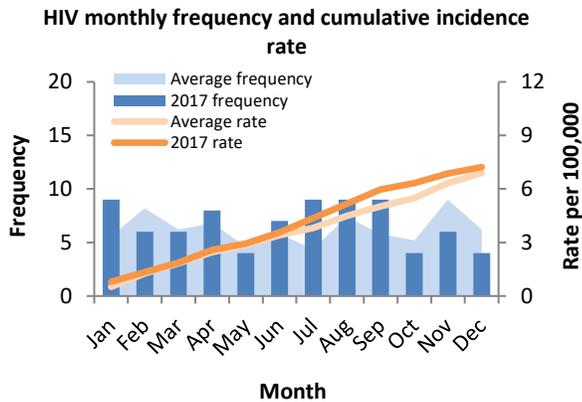


HIV, NEW

cdc.gov/hiv

81
Number of cases reported

7.2
Incidence rate per 100,000 population

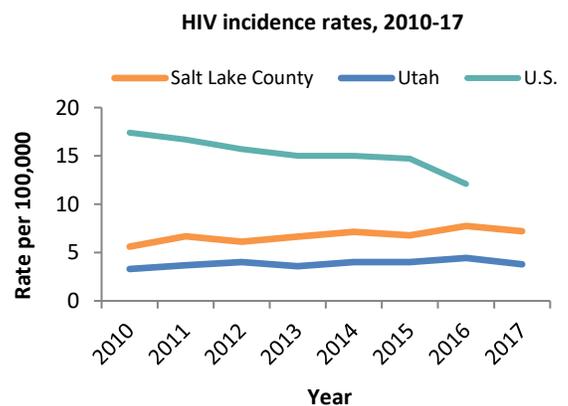
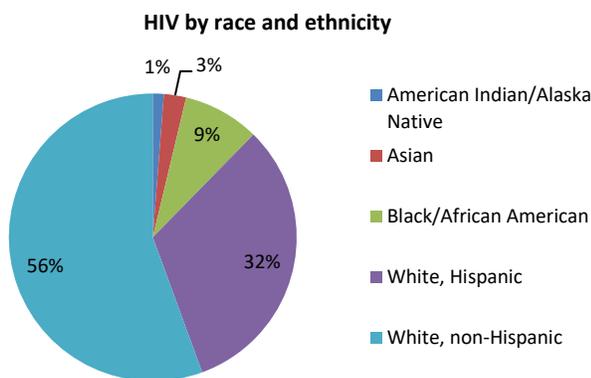


Epidemiologic Review

- 94% of all infections were males.
- Hispanic and African American males and females were disproportionately infected, based on rates comparison (rate not shown).

Clinical Review

10% Hospitalized
0 Deaths



SYPHILIS

(PRIMARY, SECONDARY, EARLY LATENT)

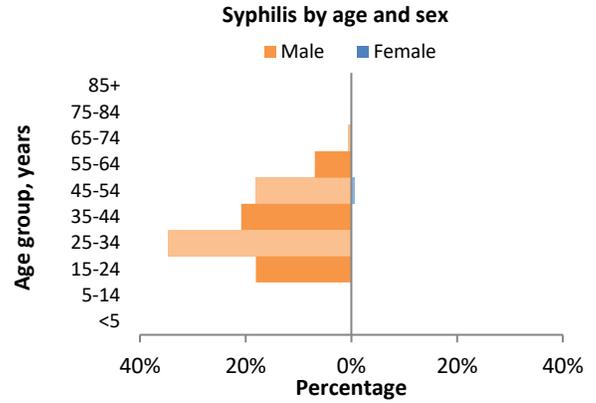
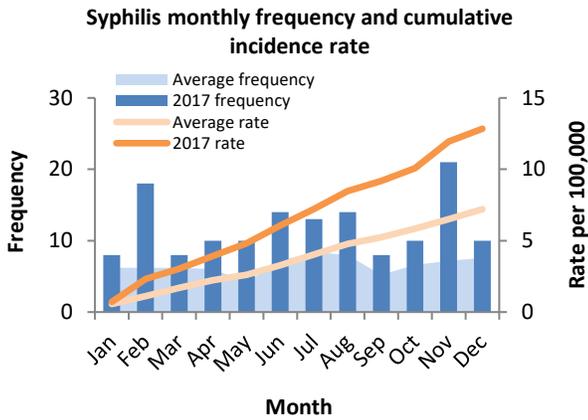
cdc.gov/std/syphilis

144

Number of cases reported

12.8

Incidence rate per 100,000 population



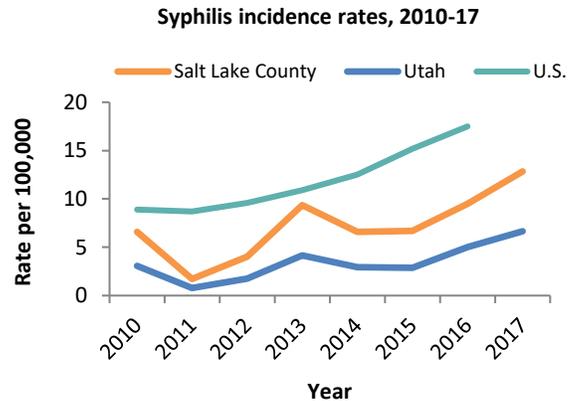
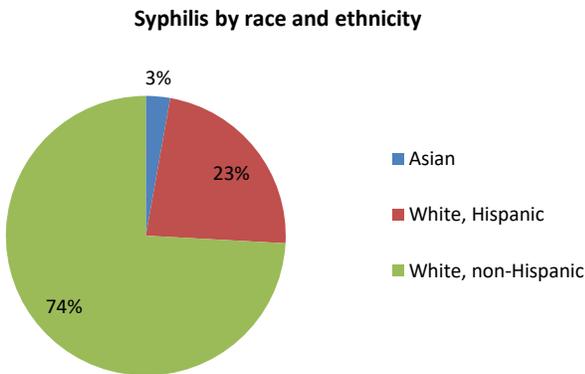
Clinical Review

4 Neurological involvement

0 Deaths

Epidemiologic Review

- 2017 saw the largest number of diagnosed, early stage syphilis cases in Salt Lake County on record.
- 94% of cases were males who have sex with males.
- 35% of cases were co-infected with HIV.



ACINETOBACTER (CARBAPENEM NON-SUSCEPTIBLE)

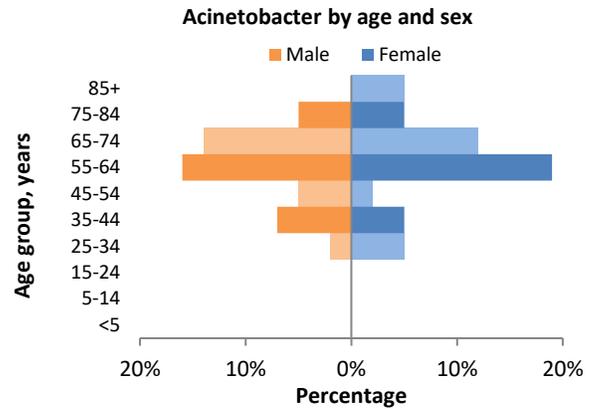
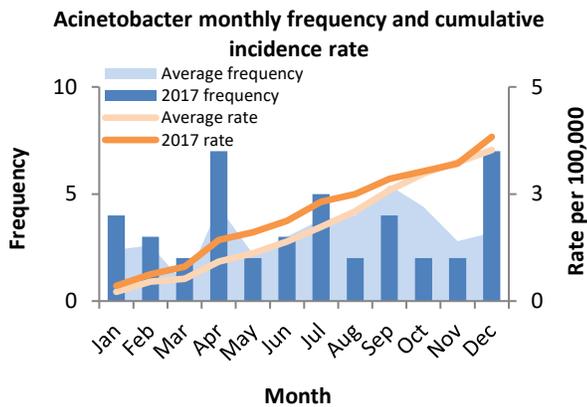
cdc.gov/HAI/organisms/acinetobacter.html

43

Number of cases reported

3.8

Incidence rate per 100,000 population

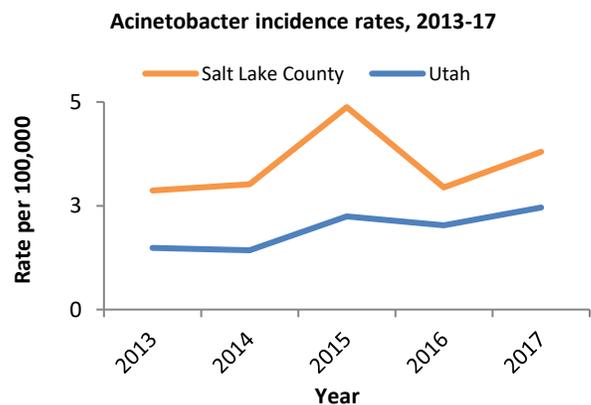
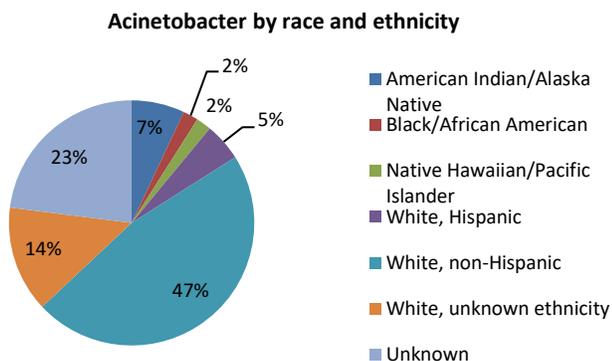


Epidemiologic Review

- One outbreak occurred in 2017, which was a continuation of 2016 pan-resistant *Acinetobacter* cases at a long-term acute care hospital.
- 84% of isolates were identified as *Acinetobacter baumannii*.
- 84% of isolates were resistant to meropenem, 41% were resistant to imipenem and 35% were resistant to both meropenem and imipenem.
- Comorbidities include respiratory conditions (17%), diabetes (16%), heart conditions (14%), and current smokers (12%).

Clinical Review

- 49%** Hospitalized
- 6** Deaths
- 23%** Patients with tracheostomies
- 23%** Patients seeking wound care



COCCIDIOIDOMYCOSIS

cdc.gov/fungal/diseases/coccidioidomycosis

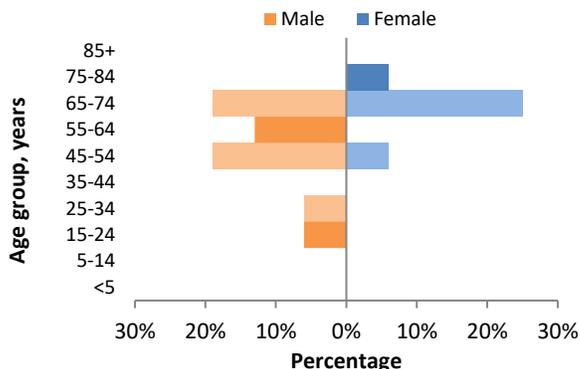
16

Number of cases reported

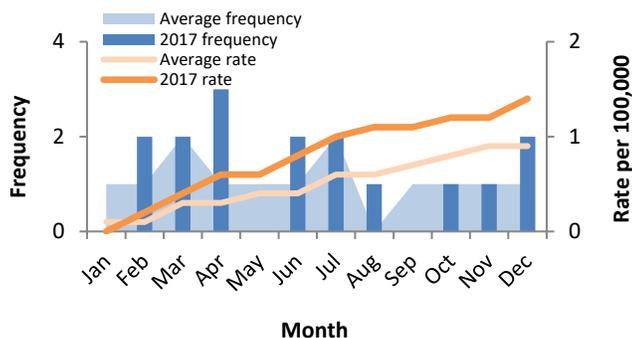
1.4

Incidence rate per 100,000 population

Coccidioidomycosis by age and sex



Coccidioidomycosis monthly frequency and cumulative incidence rate



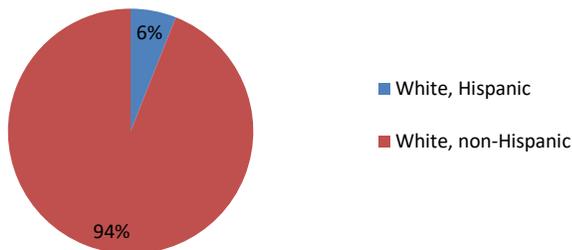
Epidemiologic Review

- Cases report travel to California, Nevada, Arizona, New Mexico and Texas prior to illness.
- 44% of cases report outdoor exposures, which include camping, hiking and ATV riding.
- Frequently reported symptoms include cough (63%), arthralgias and fatigue (44%), and chest pain (38%).
- 25% of cases report construction as an occupational exposure.

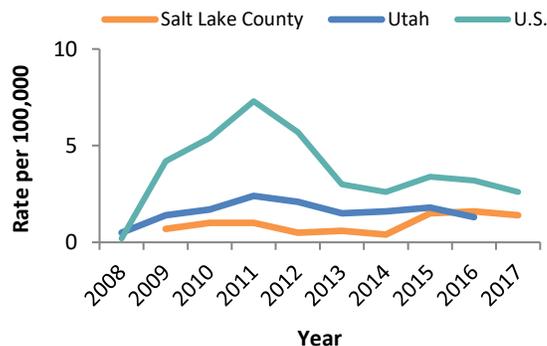
Clinical Review

- 25%** Hospitalized
- 0** Deaths
- 25%** Immunocompromised

Coccidioidomycosis by race and ethnicity



Coccidioidomycosis incidence rates, 2008-17



ENTEROBACTER (CARBAPENEM NON-SUSCEPTIBLE)

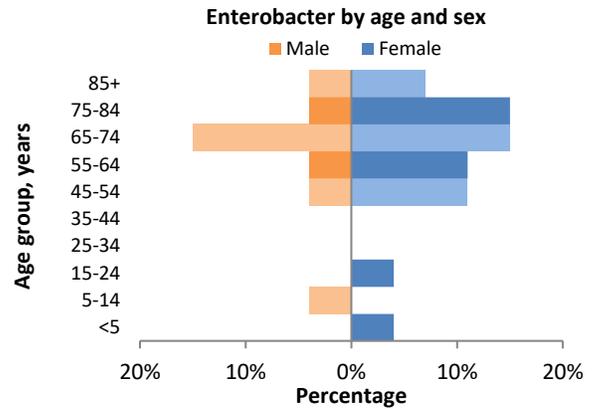
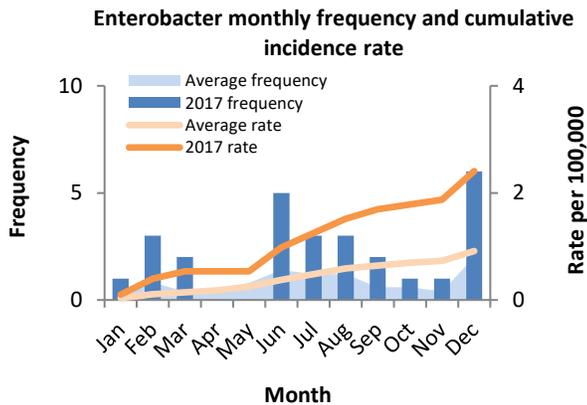
cdc.gov/hai/organisms/cre/index.html

27

Number of cases reported

2.4

Incidence rate per 100,000 population

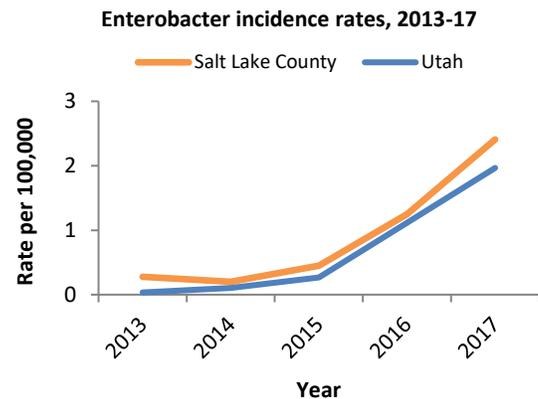
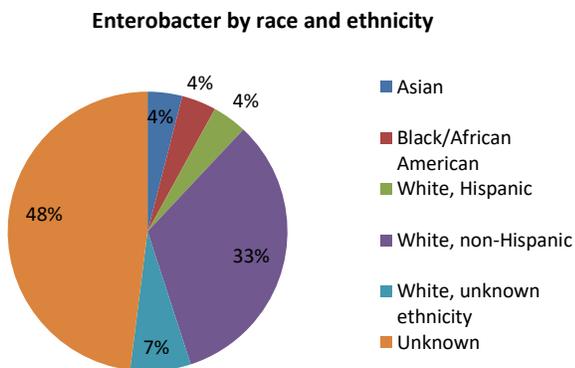


Epidemiologic Review

- 56% of isolates were identified as Enterobacter cloacae. 15% of isolates were identified as Enterobacter aerogenes.
- 59% of isolates were resistant to imipenem.

Clinical Review

- 26%** Hospitalized
- 1** Death
- 30%** Recurrent urinary tract infections



HEPATITIS B, ACUTE

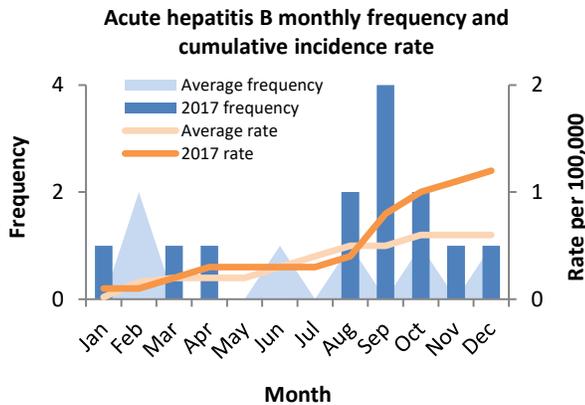
cdc.gov/hepatitis/hbv/index.htm

13

Number of cases reported

1.2

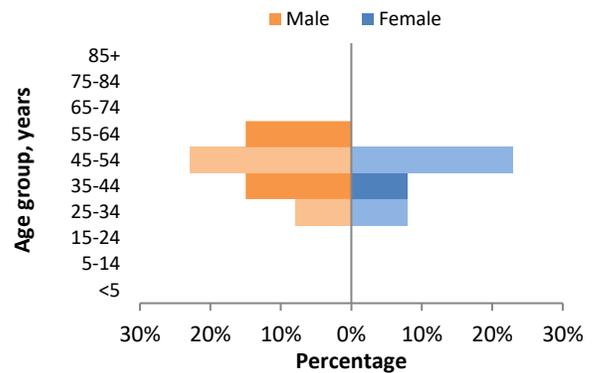
Incidence rate per 100,000 population



Clinical Review

- 38%** Hospitalized
- 0** Deaths
- 69%** Jaundice
- 54%** Fatigue, nausea, abdominal pain

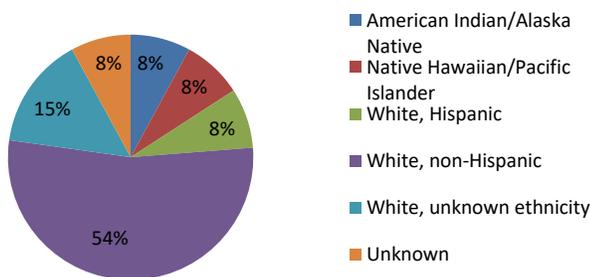
Acute hepatitis B by age and sex



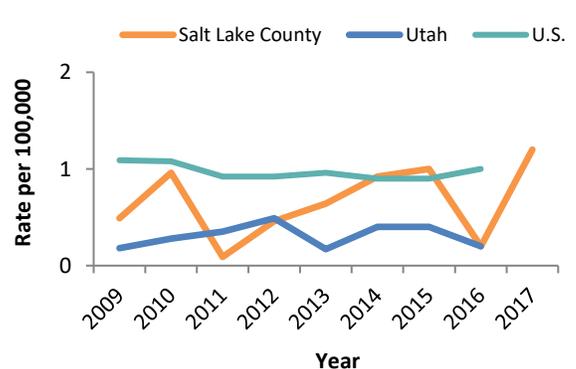
Epidemiologic Review

- 46% of cases are individuals experiencing homelessness.
- 54% of cases endorse illicit drug use. Of those cases, 86% report injection drug use.
- There were 4 weeks in 2017 that were statistically elevated. No consecutive elevations or commonalities among cases.
- 23% of cases were coinfecting with hepatitis A. 38% of cases were coinfecting with hepatitis C.

Acute hepatitis B by race and ethnicity



Acute hepatitis B incidence rates, 2009-17



HEPATITIS C, ACUTE

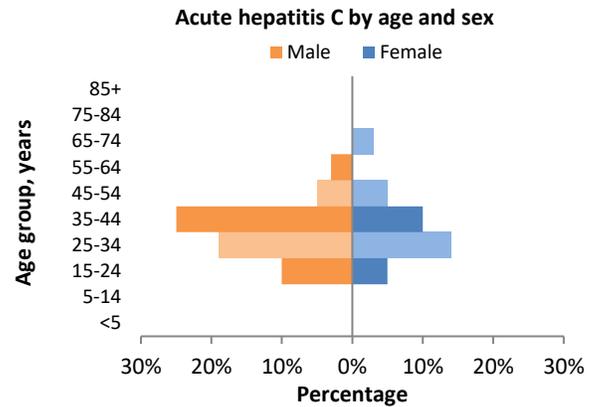
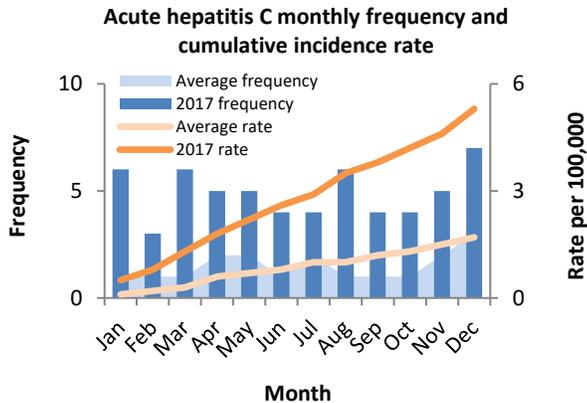
cdc.gov/hepatitis/hcv

59

Number of cases reported

5.3

Incidence rate per 100,000 population

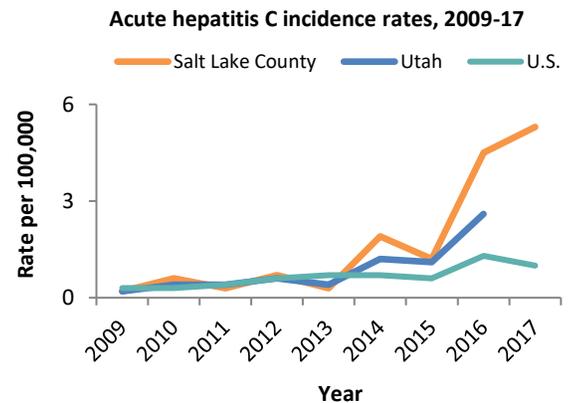
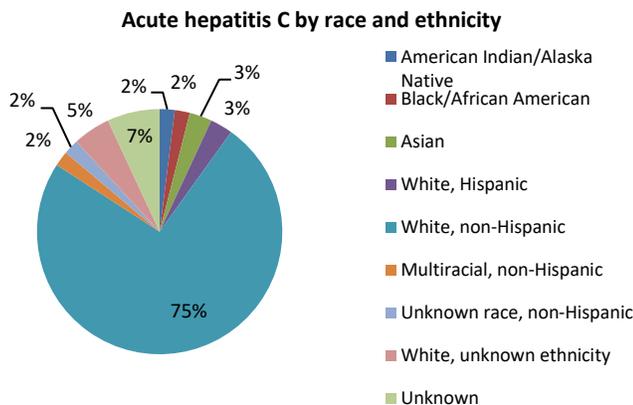


Epidemiologic Review

- Risk factors for infection include injection drug use (IDU) (48%), incarceration (17%), homelessness (19%) and high risk sexual contacts (15%).
- Genotypes identified include 1a or 1b (12%), 3a (8%), 1a (3%) and 1(undifferentiated) (2%).
- There were 17 weeks in 2017 that were statistically elevated. Consecutive elevations occurred in February, April and June with no commonalities identified among cases.

Clinical Review

- 24%** Hospitalized
- 0** Deaths
- 20%** Jaundice

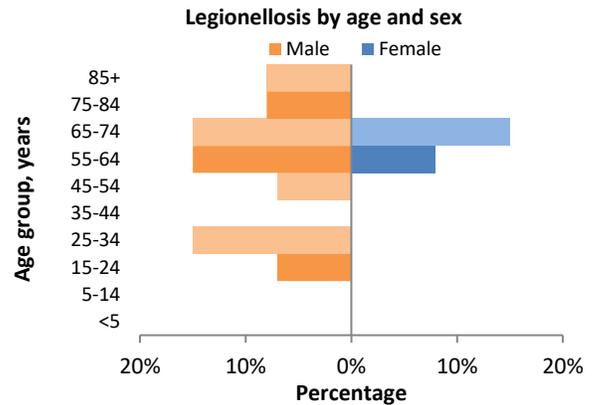
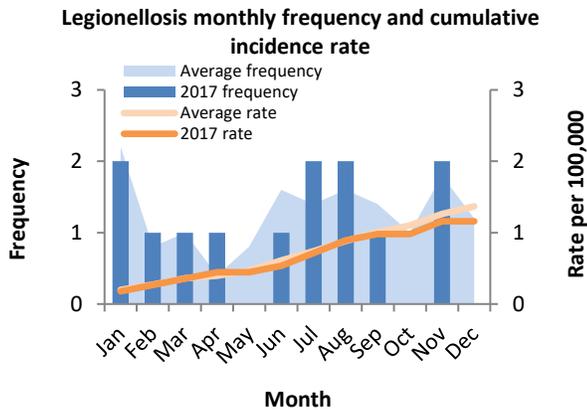


LEGIONELLOSIS

cdc.gov/legionella

13
Number of cases reported

1.2
Incidence rate per 100,000 population



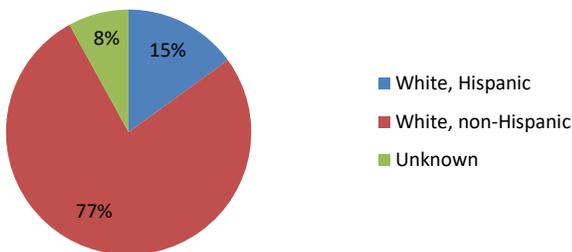
Clinical Review

- 100%** Hospitalized
- 3** Deaths
- 46%** Immunocompromised

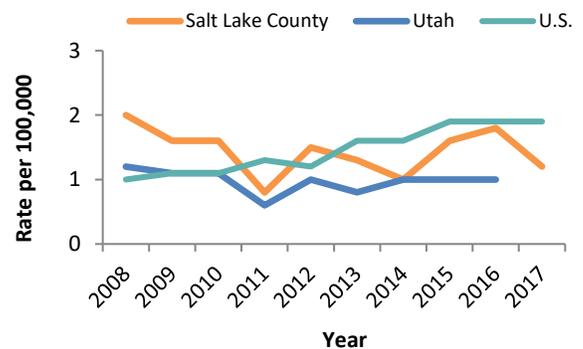
Epidemiologic Review

- Common risk factors include smoking (38%) and chronic lung disease (23%).
- 15% of cases were possibly nosocomial.
- 46% of cases had an exposure in Utah.
- 54% of cases stayed in a hotel during their incubation period.

Legionellosis by race and ethnicity



Legionellosis incidence rates, 2008-17

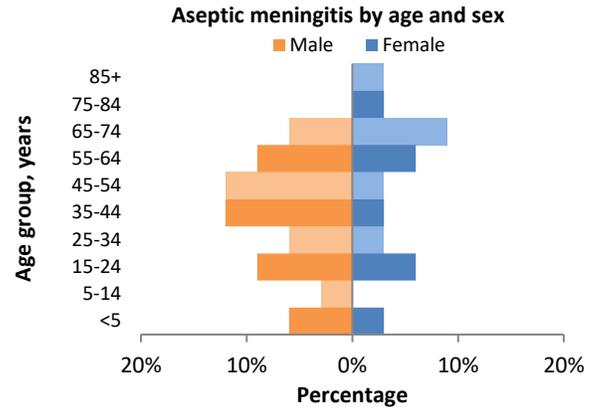
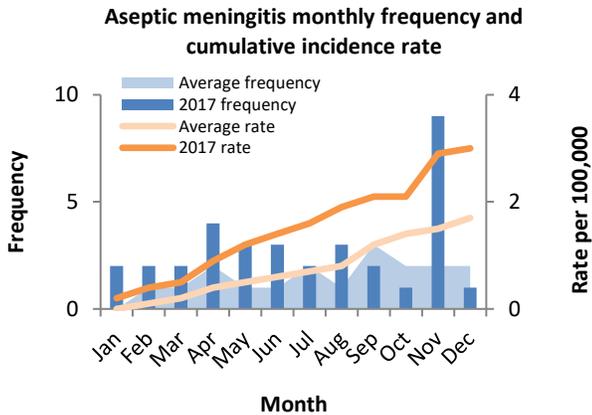


MENINGITIS, ASEPTIC

cdc.gov/meningitis/viral.html

34
Number of cases reported

3.0
Incidence rate per 100,000 population



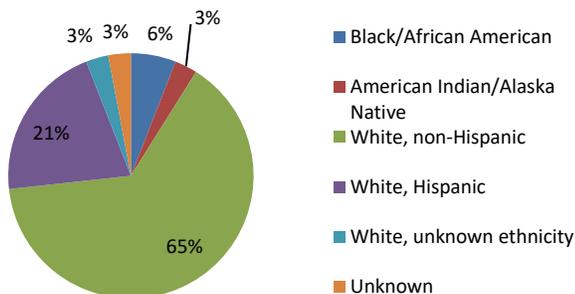
Clinical Review

- 97%** Hospitalized
- 1** Death
- 71%** Meningitis
- 15%** Encephalitis
- 9%** Meningoencephalitis

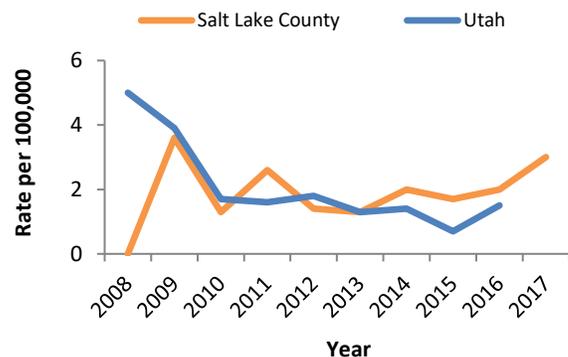
Epidemiologic Review

- Common symptoms include headache (65%), fever (56%), altered mental status (47%), nausea/vomiting (44%) and stiff neck (32%).
- There were 15 weeks in 2017 that were statistically elevated. Consecutive elevations occurred from October to November with no commonalities identified among cases.
- Common comorbidities include current/former smokers (21%) and migraines (15%).

Aseptic meningitis by race and ethnicity



Aseptic meningitis incidence rates, 2008-17



MENINGITIS, VIRAL

cdc.gov/meningitis/viral.html

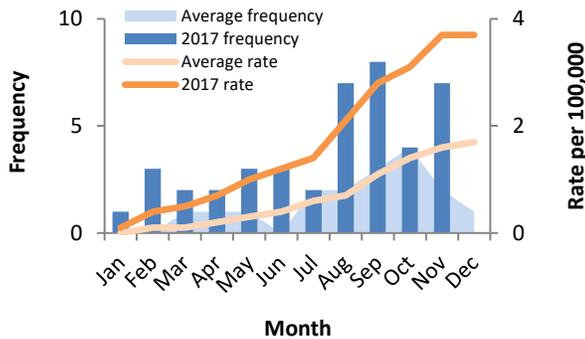
42

Number of cases reported

3.7

Incidence rate per 100,000 population

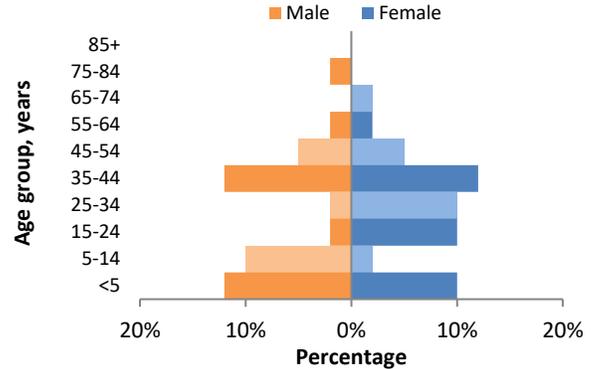
Viral meningitis monthly frequency and cumulative incidence rate



Clinical Review

- 95%** Hospitalized
- 1** Death
- 90%** Meningitis
- 12%** Encephalitis

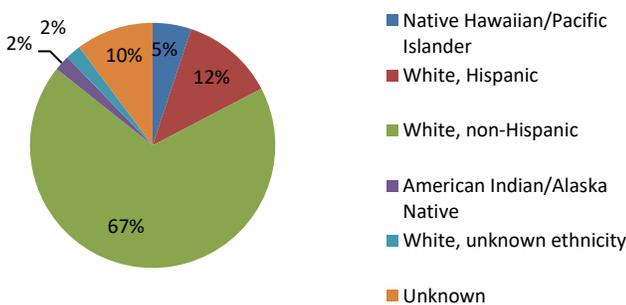
Viral meningitis by age and sex



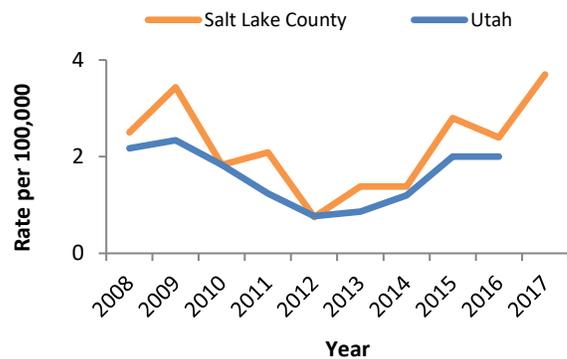
Epidemiologic Review

- Viruses identified include enterovirus (50%), herpes simplex viruses (29%) and varicella-zoster virus (22%).
- Death was positive for enterovirus and rhinovirus.
- Common symptoms include fever (69%), headache (60%), nausea and/or vomiting (43%), stiff neck (38%) and photophobia (36%).
- There were 14 weeks in 2017 that were statistically elevated. Sporadic elevations with no commonalities identified among cases. Did not follow the same elevation pattern as aseptic meningitis cases.

Viral meningitis by race and ethnicity



Viral meningitis incidence rates, 2008-17



TUBERCULOSIS, ACTIVE

cdc.gov/tb

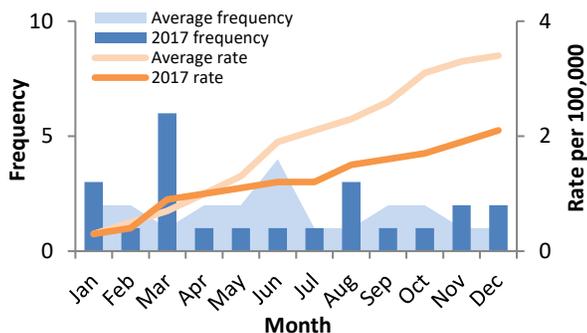
23

Number of cases reported

2.1

Incidence rate per 100,000 population

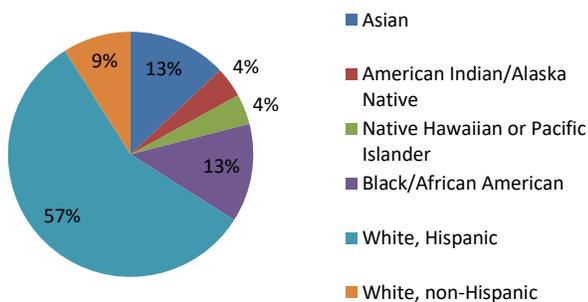
Active tuberculosis monthly frequency and cumulative incidence rate



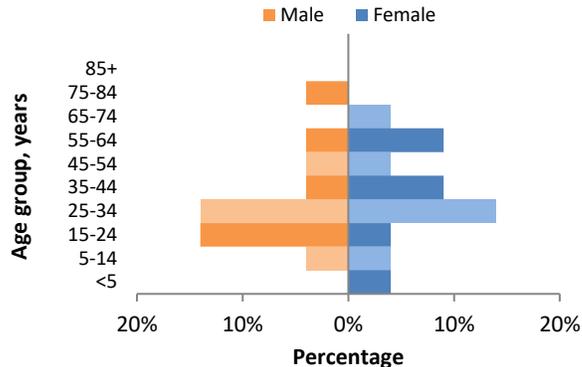
Clinical Review

- 52%** Hospitalized
- 0** Deaths
- 0** Multi-drug resistant cases

Active tuberculosis by race and ethnicity



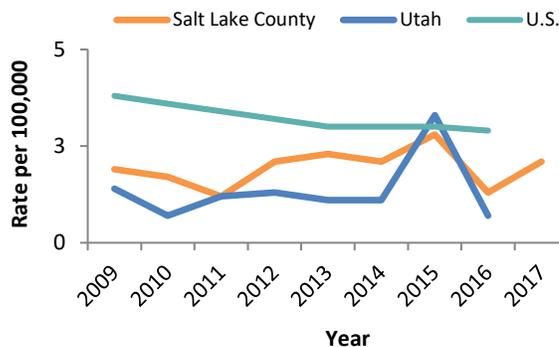
Active tuberculosis by age and sex



Epidemiologic Review

- 26% of cases were smear positive. Two contacts to smear positive cases became active cases.
- Mexico was the most common country of foreign origin (35%). Other countries of origin for cases include the United States, Philippines, Marshall Islands, Cambodia, Israel, Democratic Republic of Congo, Peru and Myanmar.

Active tuberculosis incidence rates, 2009-17



WEST NILE VIRUS

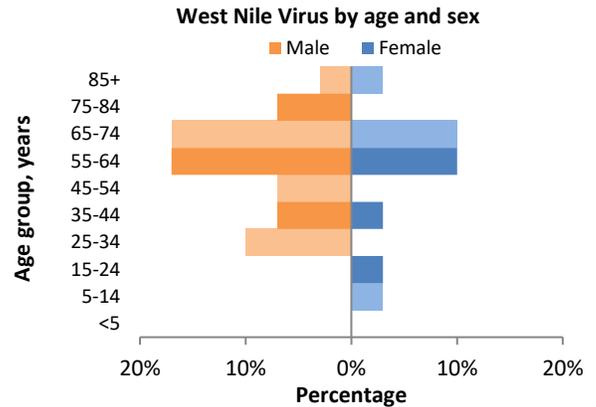
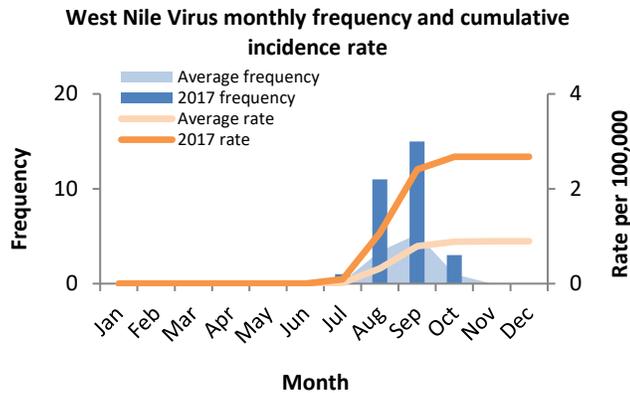
cdc.gov/westnile

30

Number of cases reported

2.7

Incidence rate per 100,000 population

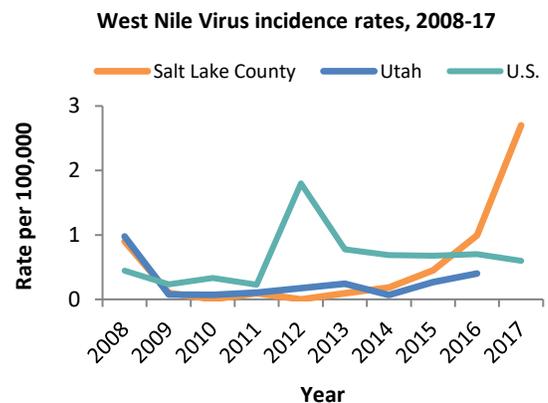
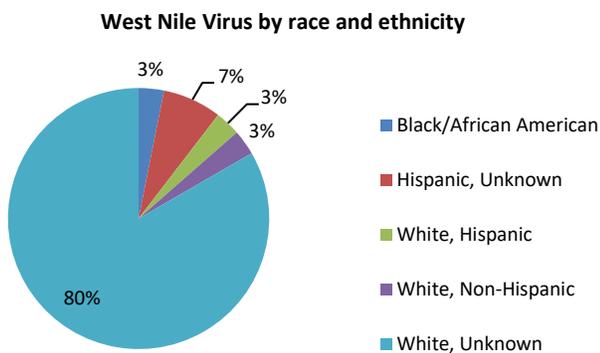


Epidemiologic Review

- 20% of cases reported having seen mosquitos near their home.
- 80% of cases are known to have acquired the disease in Utah.
- 10% of cases are individuals experiencing homelessness.
- 70% of cases report not using insect repellent or other preventative measures while outside.

Clinical Review

- 67%** Hospitalized
- 4** Deaths
- 53%** Neuroinvasive
- 10%** Immunocompromised



DATA NOTES

Summarized diseases include reportable conditions with a 2017 count ≥ 10 . Diseases with a 2017 count < 10 are not included and influenza data are summarized in a separate report. Analysis included data based on date reported to public health (1/1/17-12/31/17) and case status (Table 1). Outbreak data are only provided for diseases where outbreaks were identified (Table 1). Rates were calculated per 100,000 population. Population denominators were obtained from the Utah Indicator-Based Information System (IBIS). U.S. incidence rates are not available for diseases that are not nationally notifiable or whose data are otherwise unavailable. Historical incidence rates for carbapenem non-susceptible *Acinetobacter* and *Enterobacter* are only available for 2013 when they became notifiable diseases. Race and ethnicity data may not sum exactly to 100% due to rounding error. Age and sex data may not sum exactly to 100% due to the exclusion of unknown data.

Table 1. Reportable disease case statuses and outbreak definitions used in data analysis.

Reportable Disease	Case status			Outbreak definition*
	confirmed	probable	suspect	
Enteric Diseases				
Campylobacteriosis	x	x		
Cryptosporidiosis	x	x		
Giardiasis	x			
Hepatitis A	x			†
Salmonellosis	x	x		†
Shiga toxin-producing <i>E. coli</i>	x	x	x	
Shigellosis	x	x		†
Vaccine-Preventable Diseases				
<i>Haemophilus influenzae</i>	x	x		
Mumps	x	x		†
Pertussis	x	x		§
Varicella (chickenpox)	x	x		†
Invasive Diseases				
Group A streptococcus	x			†
Group B streptococcus	x	x		
<i>Streptococcus pneumoniae</i>	x	x		
Streptococcal Toxic Shock	x			
Sexually Transmitted Diseases				
Chlamydia	x	x		
Gonorrhea	x	x		
HIV	x	x		
Syphilis (primary, secondary, early latent)	x	x		
Other Reportable Diseases				
<i>Acinetobacter</i> , carbapenem non-susceptible	x	x	x	†
Coccidioidomycosis	x	x		
<i>Enterobacter</i> , carbapenem non-susceptible	x	x	x	
Hepatitis B, acute	x	x		
Hepatitis C, acute	x	x		
Legionellosis	x	x		
Meningitis, aseptic	x	x		
Meningitis, viral	x	x		
Tuberculosis, active	x			
West Nile virus	x	x		

* Outbreak definition is only provided for diseases where outbreaks were identified.

† ≥ 2 related cases

§ ≥ 2 related cases in 21 days

‡ 1 case