

**Community Health  
Division**

# **Annual Report 2020**

**December 2021**

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**Fresno County Department of Public Health**



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# Fresno County Department of Public Health

## Community Health Division

# Annual Report

## 2020

**This report was produced by:  
The Epidemiology Program  
Fresno County Department of Public Health**

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### *Acknowledgements*

The Fresno County Department of Public Health recognizes Fresno County health providers, clinic and hospital staff, and local public health and clinical laboratories whose disease reports constitute the basis for this report.

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[FCDPH Epidemiology Webpage](#)

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Fresno, California  
93721

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# Technical Information

## Acronyms

CalREDIE : California Reportable Disease Information Exchange  
CDC : Centers for Disease Control and Prevention  
CDPH : California Department of Public Health  
COVID-19 : Coronavirus Disease of 2019  
DOT : Directly Observed Therapy  
FCDPH : Fresno County Department of Public Health  
HBV : Hepatitis B Virus  
HCV : Hepatitis C Virus  
HIV : Human Immunodeficiency Virus  
NH : Non-Hispanic  
SARS-CoV-2 : Severe Acute Respiratory Syndrome Coronavirus 2  
STD : Sexually Transmitted Disease  
STI : Sexually Transmitted Infection  
TB : Tuberculosis  
US : United States

## Key Definitions

CalREDIE: The California Reportable Disease Information Exchange is a secure California Department of Public Health database for electronic disease reporting and surveillance.

Incidence: Number of new (incident) cases of a disease occurring during a specific period of time in a population at risk for developing the disease. In this report incidence is always calculated as per 100,000 persons for the disease episode year.

$$\text{Incidence} = \frac{\text{\# New Cases in Population at Specified Time}}{\text{Population at Risk}} \times 100,000 \text{ people}$$



# Introduction

## What is the Community Health Division

The Fresno County Department of Public Health (FCDPH) provides health promotion, surveillance, and disease prevention services designed to protect the health of the public, population groups, and individuals throughout Fresno County.

In 2020 the Community Health Division was comprised of an administration branch and nine different program areas: Tuberculosis (TB) Control, Immunizations, Laboratory, Communicable Disease Investigations, Childhood Lead Poisoning Prevention Program (CLPP), Vital Statistics, Epidemiology, Health Education, and HIV/STD Services. Community Health also played a critical role in the COVID-19 response. In 2020, as the pandemic progressed, a new division was developed exclusively for COVID-19 management.

In 2021, the COVID Division merged back into the Community Health Division and the Epidemiology, Vital Statistics, and Laboratory programs branched off to form the new of Division of Epidemiology, Surveillance, & Data Management.



## What Guides Us

### Values

Accountability

Adaptability

Creativity

Integrity

Mutual Respect

Professionalism

Teamwork

### Our Core Purpose

To promote, preserve, and protect the well-being of the community and to ensure the optimal health of the public

### Our Vision

To address the public health needs through employee integrity, dedication, knowledge, and expertise; exemplary service to our diverse community; and effective community partnerships

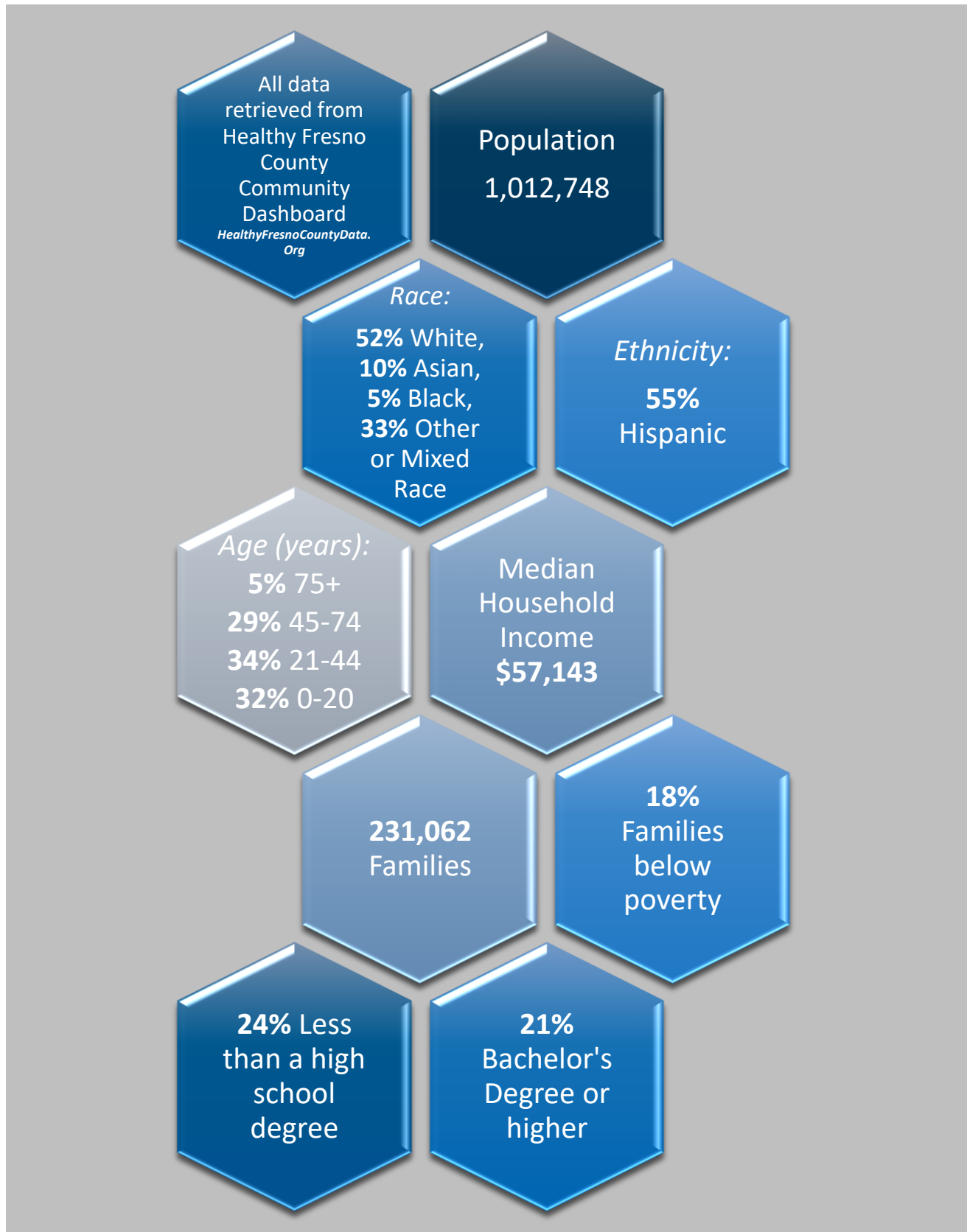
### Mission

The promotion, preservation, and protection of the community's health achieved through identifying community health needs, assuring the availability of quality health services, and providing effective leadership in developing public health policies

**The Fresno County Department of Public Health is committed to working in partnerships with our communities to eliminate health disparities**



## About Fresno County







## Report Summary

### Highlights of 2020

- ✓ The COVID-19 Pandemic brought on a new and unique challenge to Public Health
  - The number of disease reports received by the FCDPH in the CDPH CalREDIE reporting system rose from a little over 18,300 total in 2019 to over 119,000 in 2020
    - COVID-19 related reports surpassed the cumulative total for all other reported diseases, accounting for over 85% of all reports
- ✓ The COVID-19 response was a substantial part of FCDPH 2020 efforts; however, the Community Health Division addressed and maintained several other public health measures during this year, such as
  - 1,022 patients seen in the TB clinic
  - 4,308 DOT visits by the TB program
  - Provided almost 3,000 Influenza vaccine doses
  - Ran several health campaigns on topics such as STDs/HIV, Flu, Mumps, and Rabies
  - Registered 15,402 births and 9,094 deaths
  - Investigated 707 disease cases (number excludes STD, TB, and COVID investigations)

### 2020 Disease Trends

The 2020 COVID-19 Pandemic brought with it many elements that could impact reported disease trends. Some of these are associated with changes that could result in true decreases of the disease burden, such as behaviors that reduced exposure. Others are associated, not with a true decrease in circulating disease, but with reduced health care seeking behaviors or other health care disruptions resulting in lower levels of diagnosed diseases and potentially reduced reporting of non-COVID-19 infectious diseases.

- Compared to 2019 incidence, 2020 trends
  - *Increased for the following select disease: Mumps- cases associated with an outbreak* (Page 33), Meningitis- *slight increase* (\*)
  - *Decreased for the following select diseases: Coccidioidomycosis* (Figure 1), new reports of chronic Hepatitis B Virus (Figure 7), new reports of chronic Hepatitis C Virus (Figure 13), Campylobacteriosis (Figure 19), Salmonellosis (Figure 25), Pertussis (Page 33), West Nile Virus (Page 35), Shiga Toxigenic E. Coli (\*), Giardia (\*), Shigellosis (\*), Syphilis (total) (\*)
- 2020 communicable disease trends by demographics
  - Coccidioidomycosis remains endemic in Fresno County, with more cases seen among males than females (Figure 6)
  - Asians saw substantially higher levels of newly reported chronic Hepatitis B virus than any other race/ethnicity (Figure 10-11), whereas, Blacks had the highest incidence for newly reported chronic Hepatitis C virus (Figure 16-17)
  - Compared to 2016-2019, 2020 saw a decrease percentage of cases attributed to younger ages (Figure 9)
  - Children under 10 made up 38% of Campylobacteriosis (Figure 20-21) and 29% of Salmonellosis (Figure 26-27)

\*Data not shown in this report



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# **Section 1:**

# **Disease Control**



## COVID-19 Response

### Highlights

- From its start on March 3, 2020 until the end of the year, the PL answered 14,013 calls
- By July, over 12,000 persons of interest for COVID-19 had been monitored. From the summer of 2020 to the end of the year, over 50,000 additional positive cases were entered and tracked in the COVID-19 case investigation database
- From April through December 2020 CSMIT managed 193 facilities representing 9,489 staff, inmates, and residents
- ASMIT worked with 269 schools and provided assistance for 93 school outbreaks
- Lab X, from February-December 2020, processed 92,360 incidents, including 73,334 positive labs

### What We Do

In January 2020 the FCDPH began to watch the emerging situation in Wuhan, China. As it was made clear that this emerging virus, SARS-CoV-2, would extend beyond China, FCDPH began to plan on what the department needed to do to support efforts around COVID-19 prevention and management. Initially the department's Communicable Disease Investigation (CDI) program managed incoming calls from providers and the public related to COVID-19 and monitored returning travelers that were identified through CDPH. Throughout 2020 COVID work expanded to include specialized programs for case investigation, contact tracing, incoming phone calls for COVID-19 related questions, and outbreaks in congregate and other settings. Multiple programs expanded, training of other department staff continued, and the division of COVID-19 was born. The following programs were developed to assist with the COVID-19 pandemic:

**Provider Line (PL)** – Acted as both a triage line for Providers and to answer calls from the public, schools, business, and other entities who had questions related to COVID.

**Medical Investigation Team (MIT)** - As cases increased, the ability to complete both COVID monitoring and regular communicable disease cases became unmanageable, so a specialized team for COVID-19 case investigation and contact tracing was formed.

**Contact Tracing Team (CTT)** - Split from the MIT, to focus solely on contacts of positives. Provided guidance on quarantine, referrals for financial support through the Harvest Project, and COVID prevention information.

**COVID Information Team (CIT)** –Specialized in COVID to develop work processes; training of all new MIT, CTT, and partnering organization staff; provided updates to all staff; and assisted with development of educational materials.

**Congregate Setting Medical Investigation Team (CSMIT)** –Developed to focus on outbreaks in congregate settings, such as skilled nursing facilities, assisted living facilities, prisons and jails, and other facilities. CSMIT worked with congregate facilities to prevent outbreaks and to mitigate case transmission in the facility.

**Academic Setting Medical Investigation Team (ASMIT)** –Created in the summer of 2020 to manage outbreaks of COVID in schools and other academic settings. ASMIT supported schools through the fall and winter, with education to support the prevention and management of both individual cases and outbreaks at schools' sites.

**Facility Liaison Team (FLT)** – Supported outbreaks of COVID in businesses, with a primary focus of preventing initial outbreaks and mitigating infection prior to outbreaks.

**Lab Extra Team (Lab X)**- Carefully reviewed, processed, and prepared COVID-19 incidents. Created workflows that adhered to the goals of other teams, jurisdictions, and medical facilities to assist in tracking of COVID cases and to comply with federal testing requirements.



## Health Education

### What We Do

The Community Health Division, Health Education Unit (HEU) provides community health information through varying media campaigns, literature on various health topics, and conducts several presentations to local groups in a variety of languages. 2020 brought new challenges to the communication team as they had to shift to meet the needs of the pandemic. Events such as Health Fairs came to a halt, and staff were reassigned to assist the COVID emergency response assisting with the vaccine distribution team and contact tracing team. The Supervising Health Educator took on the role of the Lead Public Information Officer, leading a team that developed a vast variety of outreach COVID-19 activities.

### Highlights and Accomplishments

The Public Information Officer (PIO) team led COVID-19 activities which included:

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>600 TV, radio and print interviews

---

92 media availabilities with media partners

---

42 Health Notifications to medical providers

---

37 News Releases

---

COVID website creation with 15 sub-pages

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4 Comprehensive COVID Campaigns

### Non-COVID

**Although the Pandemic greatly impacted the work HEU conducts, non-COVID work was still conducted.**

**The team developed campaigns, news releases, health notifications, and interviews on topics such as:**

Back to School  
immunizations

STDs/HIV

Flu

Poison Prevention

Lead Poisoning

Mass Vax

Mumps

West Nile Virus

Rabies in bats



## Immunizations

### Clinic Info

#### ***Mission:***

To reduce vaccine-preventable diseases and increase immunization rates throughout Fresno County

1221 Fulton Street,  
1st Floor  
(559) 600-3550  
Clinic Hours:  
Monday thru Friday,  
8-12, 1-5  
Patients are seen by  
appointment only.

#### ***Did you Know?***

*Data has shown that the current US vaccine supply is the safest in history!*

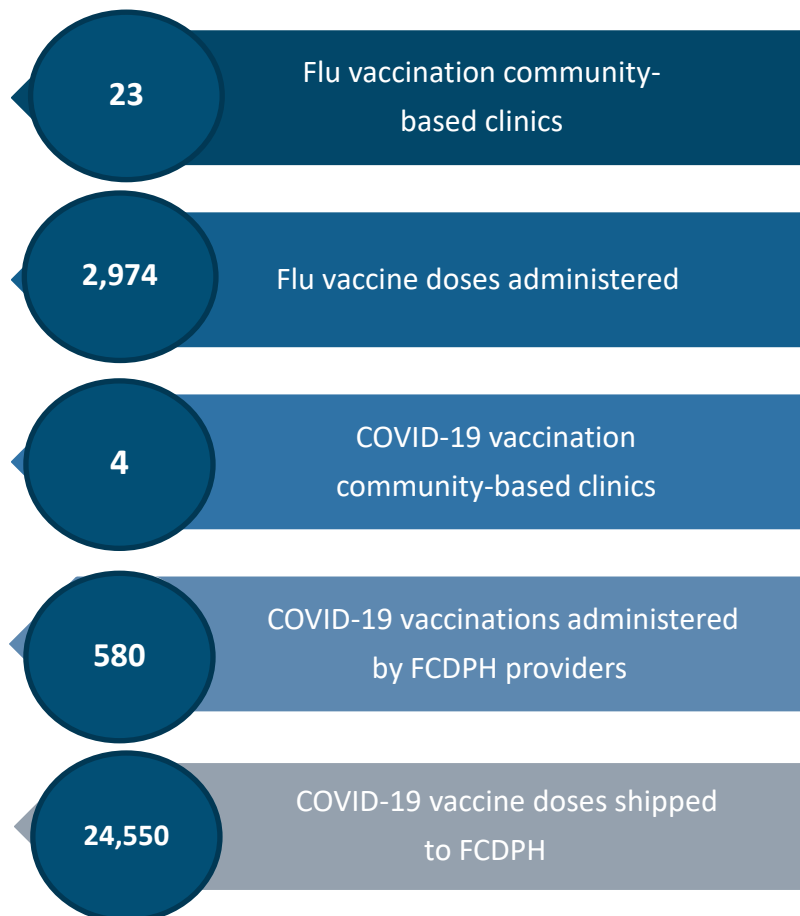
*For more information on Vaccine Safety please visit:*

[www.cdc.gov/vaccine-safety](http://www.cdc.gov/vaccine-safety)

### What We Do

The Fresno County Immunization Program Clinic typically provides immunizations for children, who qualify for the Vaccines for Children (VFC) program, and eligible adults to protect them against vaccine-preventable diseases. In addition to the on-site clinic, typically during influenza (flu) season, the Immunization program provides several influenza vaccine clinics at many different community sites throughout Fresno County. In an effort to reduce vaccine-preventable diseases in children, the program also works with schools to monitor compliance with state-mandated student vaccination requirements. However, 2020 was not a typical year. For 2020, this program's primary focus was assisting with the COVID-19 investigations and preparations, management, and execution of COVID-19 vaccinations.

### 2020 Highlights and Accomplishments





## Communicable Disease Investigation (CDI)

### What We Do

The Communicable Disease Investigation program provides essential services, working closely with healthcare professionals, California Department of Public Health (CDPH), and Centers for Disease Control and Prevention (CDC) to promote good health, well-being, and preventing the spread of disease. The team does this through conducting confidential investigations on reportable diseases (as required by the California Code of Regulations, Title 17) to determine the source of an illness and control spread, preparing for and responding to disasters, and assisting with education of healthcare professionals.

The program is comprised of Communicable Disease Specialists and Public Health Nurses with support from clerical staff. At the start of the pandemic, this team lead all COVID-19 related investigations and staff from this program went on to lead multiple COVID-19 sub-teams.

### Highlights and Accomplishments

In addition to the work done for COVID-19 management, CDI investigated and managed:

|     |   |  |
|-----|---|--|
| 707 | { | • Cases of Communicable Disease (excluding COVID, TB, and STDs/HIV investigations) |
| 23  | { | • Non-COVID Outbreaks  |

### Reporting Facts



- ✓ **Disease reporting is the foundation of public health surveillance!**
- ✓ **The reporting of specific diseases is not only critical to public health but required by law**
- ✓ **All health care providers knowing of or in attendance on a case or suspected case of any of the mandated reportable diseases need to report the case**
- ✓ **Laboratories are also required to send in positive labs on mandated reportable diseases**



## TB Control Program

### Program Mission

To eliminate TB by initiating prompt treatment and ensuring completion of effective therapy to cure disease regardless of patient's ability to pay.

To reduce further transmission through contact investigation and disease surveillance.

Promote medication adherence to prevent the development of drug-resistance TB.

Provide resources such as referrals to specialists for comorbidities, housing, food banks, and incentives to assist in completion of treatment.

1221 Fulton Street,  
1st Floor

(559) 600-3413

### What We Do

This program provides diagnosis, treatment, nurse case management, contact investigations, and Directly Observed Therapy (DOT) for active and suspected tuberculosis (TB) patients. TB Control Program services center around the prevention and treatment of TB. Patients diagnosed with or suspected of having TB are evaluated by our medical staff, the patient receives treatment, and is closely monitored to ensure that treatment is effective through case management.

Communicable Disease Specialists also conduct contact investigation of people who have been in contact with someone known or suspected to have TB. Contacts are provided tuberculin skin tests or QuantiFERON test; and if indicated, a chest X-Ray and preventative treatment may be started.

### Highlights and Accomplishments

1,022 patients seen in Clinic

36 Active TB Patients  
204 Hospital Reports

237 TB  
skin tests  
to  
homeless

4,308  
DOT  
visits

334 contact  
investigations

241 TB  
morbidity  
reports  
received



## HIV/STD Services

### What We Do

HIV/AIDS Surveillance and investigation includes reporting, tracking, and follow-up of cases in Fresno County. The program conducts routine assessment of hospital HIV/AIDS cases and surveillance data to identify newly diagnosed individuals, assists medical providers with reporting requirements, and performs case investigation to identify mode of transmission. The program, through funding from the California Department of Public Health, Office of AIDS (CDPH/OA), also offers free anonymous and confidential HIV testing at various locations throughout the community. In collaboration with clinics and private providers throughout the County, the program links newly identified HIV positive individuals into HIV Care services and offers partner notification services. Biomedical HIV prevention methods such as Pre-exposure Prophylaxis (PrEP) and Post-exposure Prophylaxis (PEP) education and referrals are available.

### Highlights and Accomplishments

- ❖ The Office of AIDS approved the use of HIV Prevention grant funds to purchase of OraQuick In-Home HIV test kits. Individuals interested in receiving a test kit were asked to complete a short survey administered by our certified test counselors. The kits were available for pickup here at the Health Department or could be mailed or delivered within the county. The test kits were also utilized for in-person “no contact” testing through the end of 2020.
- ❖ *Central Valley Harm Reduction Coalition:* This meeting was facilitated by Jena Adams, FCDPH STD/HIV Supervisor, and Dallas Blanchard, Fresno Harm Reduction Services. The group meets quarterly and consists of representatives from Tulare, Kings, Fresno, and Kern counties.
- ❖ Due to limited staffing and restricted public access to FCDPH, syphilis investigation staff delivered Bicillin to providers willing to provide syphilis treatment to their patients.

### Congenital Syphilis

The Congenital Syphilis Case Management program (CSCMP) provides case management to children identified to have been exposed to syphilis and their mothers.

The program includes a social worker and a public health nurse. The social worker assists with linkage to providers, completes risk assessments, and refers to the Maternal Child and Adolescent Health division and medical providers. The Public Health Nurse completes home visits to assess medical issues and needs and conduct infant assessments. The PHN also provides consultation to the Communicable Disease Specialists related to Syphilis and Congenital Syphilis.





## Vital Statistics

### Services

#### Birth & Death Certificates

- **Authorized & informational certified copy**
- **English & Spanish forms**
- **Out of hospital registration**
- **Parentage Opportunity Program**

#### Funeral Homes

- **Death Certificate application**
- **Application & permit of Human remains**

1221 Fulton Street, 1st  
Floor, Rm 128

(559) 600-3310

Hours: Monday -  
Friday, 8:00am –  
4:30pm

*(Closed 12:00p -1230p)*

### What We Do

The Vital Statistics program is responsible for providing vital records registration certification and documentation services. This program's services include registration of birth and death certificates, issuing certificate copies, and issuing burial permits. The team also provides guidance with birth and death amendments; information on related vital statistics laws; and information about rules and regulations to the general public, hospital staff, funeral directors, and interment authorities. 2020 brought another critical task to this team, which was helping in the management and tracking of COVID-19 associated death reporting.

### Highlights and Accomplishments

- Issue COVID-19 guidance to local funeral home and cemetery managers and staff as it pertained to the industry
- Develop and issued Cause of Death Resource guides to local funeral home and hospital staff
- Track and maintain workbook of COVID-19 associated deaths
- Increase hours of availability for funeral home staff to accommodate increase in death registration



**15,402 births  
registered**



**9,094 death  
registered**



**9,816 burial  
permits issued**



## Public Health Laboratory

### What We Do

The Public Health Laboratory provides surveillance and detects the presence of disease producing agents which have the potential to adversely affect the health of an entire community. The information generated by Lab testing is furnished to other programs, agencies, and departments to be used for the purpose of monitoring infectious disease outbreaks and environmental threats to the public's health. The information can then be used to plan containment strategies and also assess the effectiveness of various health education programs. In 2018, a flood at the Public Health Department destroyed Fresno County's Public Health Lab and thus it needed to be rebuilt.

### Highlights and Accomplishments

The Department, in partnership with the Internal Services Department, Facility Division, and Public Works and Planning Department worked through planning, laboratory requirements, permit process, and construction to rebuild the Department's laboratory

#### 5 different COVID Testing Platforms

Testing capabilities between 1,500-8,000 SARS-CoV-II samples a day

#### Biosafety Level 2 (BSL2) room

For work with moderate-risk agents that are present in the community and associated with humans

#### Biosafety Level 3 (BSL3) room

For work on microbes that are either indigenous or exotic, and can cause serious or potentially lethal disease through inhalation

#### Other Assays

Ready to bring onboard: HIV, CT/NG, Syphilis, TB, Norovirus, Measles, Rabies

### Collaboration

*The Pandemic brought an urgent need for a Public Health Lab thus a collaboration with California Fresno State University (CFSU) was developed so that County lab personnel could continue testing while the new Health Department lab was being designed and constructed.*

**2,529**  
*COVID-19 specimens  
tested  
between  
6-20-2020 &  
12-31-2020*



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## **Section 2:**

# **Surveillance & Statistics**



## Epidemiology Program

The Epidemiology program focuses on the health of the various populations that make up Fresno County. The primary aim of the program is to use data to monitor and improve the health of the local community. Epidemiologists, in collaboration with other Department of Public Health programs, participate in disease surveillance and health data collection; disease investigation; data analysis, assessment, and management; and health communication. The program works with other divisions within the Department, as well as providing services to other agencies and the public. In 2020, the Epidemiology program took on several additional responsibilities to try to aid in the Public Health Department's ability to handle and track the pandemic, investigations, and vaccination efforts.

## Importance of Surveillance

2020 highlighted that disease surveillance plays a critical role in the management and prevention of disease. Surveillance systems provide data that help public health professionals identify and understand existing and emerging infectious and non-infectious diseases. The data allows for the monitoring of public health threats and provides data that can be used to lead intervention and prevention methods to protect and improve the health of the community.

## Disease Reporting

Since surveillance is only as good as the data available, disease reporting is the foundation of public health surveillance. California law specifies key diseases of public health importance that health care providers and laboratories must report. Control of diseases relies on health care providers and laboratories reporting these diseases to the Department of Public Health. FCDPH reviews these cases and investigates cases to characterize the illness and collect information about the case in order to attempt to identify possible sources of infection and causes of disease and then develop steps to prevent further spread and future cases.

- Title 17, California Code of Regulation, Section 2500 (Division 1, Chapter 4, Subchapter 1, Article 1) requires all health care providers knowing of or in attendance on a case or suspected case of any of the mandated reportable diseases or conditions to report the case to the local health department where the patient resides.
- Section 2505 requires laboratories to report positive laboratory-testing results on reportable diseases.
- Section 2508 requires anyone in charge of a public or private school, kindergarten, boarding school, or day nursery to report the presence or suspected presence of any of the reportable diseases to the local health department.

**A list of Reportable Diseases can be found the FCDPH [Disease Reporting Requirements](#) Page.**



## This Report

This report presents an overview of the demographic and temporal trends of high-frequency reported diseases in Fresno County.

### Materials and Methods

Fresno County case data for this report were gathered from the California Reportable Disease Information Exchange (CalREDIE) surveillance system. CalREDIE data starting on January 1, 2015 and ending December 31, 2020 was exported on 11-23-2021. Disease data trends were based on episode dates. Episode date was calculated as the earliest of the following dates available: symptom onset date, diagnosis date, specimen collection date, test result date, date received, and date of death. It serves as the best approximation of the date of infection. Data in CalREDIE is continually updated so it is possible the numbers presented in this report do not match previous or future exports. Data is per individual case; efforts were taken to remove duplicated cases reported in error or mark them as 'previously reported' in the database (previously reported cases were excluded in analyses). However, it is possible a person may have had more than one case of the same disease (re-infection) or the same person may have had multiple disease during the allotted timeframe. Data for the total number of reported diseases was not based on episode date but based on date the report was received in CalREDIE and included only reports received in 2020. With expectations noted below, all Fresno County cases in the trend section of this report include all newly confirmed, probable, or suspected cases of the disease among Fresno County residents that were reported to the local Health Department. For COVID-19, only confirmed and probable cases are reported due to data collection based primarily on laboratory reporting and not provider reporting.

Race/ethnicity was not known for all cases, when known it was categorized as Hispanic, inclusive of all races; non-Hispanic (NH) Asian; NH Black or African American; and NH Whites. All other racial groups represented smaller population sizes and were censored for confidentiality reasons or omitted due to possible unstable rates. Transgender cases were categorized into the gender with which they identify. For comparison purposes, in addition to Fresno County case data, California incidence data for select disease was retrieved, when available, from California Department of Public Health (CDPH).

Population estimates used in Fresno County incidence calculations are retrieved from the California Department of Finance. Total population estimates were used as a proxy for population at risk in incidence calculations.

Counts of less than 10 are not included in this report for confidentiality and unstable rate limitation reasons. *All statistical analyses were performed in SAS software, Version 9.4 (SAS Institute Inc., Cary, NC).*

### Limitations

Depending on the condition, it is likely that surveillance systems underestimate the true number of cases due to cases not seeking medical care, confirmatory tests not being conducted, and/or cases not being appropriately reported to the local health department. These issues were likely heightened in 2020 due to the Pandemic. Typically, diseases that are severe, as well as highly contagious, are more likely to be reported. Despite underreporting, reportable disease data is the best available data to estimate incidence and allows for a better understanding of disease trends and control.



## Reported Communicable Diseases Overview

**2020**

**119,049 Communicable Conditions Reported to the Health Department\***

**76,429**

Cases marked  
as confirmed

**5,374**

Cases marked  
as probable

**17,821**

Cases marked  
as suspected\*\*

**15,905**

Reports  
determined to  
be not a case

**3,520**

Reports marked  
with other  
statuses

*\*Only includes cases reported into CalREDIE, excluding HIV cases and bite reports. If cases were reported through different databases and not required to be entered into CalREDIE they will not be in these counts. Counts include all cases with a received date in CalREDIE from 1-1-2020 through 12-31-2020. The majority of conditions are reportable disease cases; however, reports also include other reports helpful for surveillance, such as SARS-Cov-II serology testing and syphilis contacts.*

*\*\*For all diseases, except COVID, to obtain a suspect classification a Health Department assessment was required. COVID suspect cases, were reported to the Health Department as such but laboratory or epidemiological evidence could not be located.*

- **FCDPH saw a 549% increase in reported incidents in CalREDIE from 2019 to 2020**
  - **Over 85% of all reports were COVID-19 related**



## Highlighted Notifiable Communicable Diseases

*\*Report disease sections (airborne, bloodborne, foodborne, sexually transmitted, vaccine preventable, and zoonotic) are not mutually exclusive categories, diseases listed under one category may also fall under different categories as well.*

### Pandemic

#### COVID-19

A new coronavirus was first identified in Wuhan, China in December 2019: SARS-CoV-2. SARS-CoV-2 causes the disease now known as COVID-19. By mid-January 2020 the United States reported its first known case, by March the World Health Organization (WHO) declared COVID-19 an official pandemic, and by early April most U.S. states were reporting widespread cases <sup>1</sup>

Transmission: COVID-19 is typically spread when an infected person breathes out small particles and droplets containing the SARS-CoV-2 virus. A person is then thought to become infected by three main routes: 1) breathing in contaminated air, 2) contaminated droplets landing on a person's eyes, nose, or mouth, and 3) a person touching their eyes, nose, or mouth with hands that are contaminated with the virus. COVID-19 is highly transmissible, with transmissibility changing depending on variant type.<sup>2</sup> In December of 2020, the Food and Drug Administration issued Emergency Use Authorizations for Pfizer BioNTech and Moderna COVID-19 vaccines.<sup>1</sup>

For more data on COVID-19 trends, please see the [FCDPH COVID Data Page](#)

#### Multisystem Inflammatory Syndrome in Children (MIS-C)

MIS-C, also called pediatric multisystem inflammatory syndrome (PMIS), is a serious inflammatory syndrome that can impact the heart, lungs, kidneys, brain, skin, eyes, and/or gastrointestinal organs. It was first identified in April 2020 and shares similar features to toxic shock syndrome and Kawasaki disease. Although the exact cause is unknown, the condition has been associated with the COVID-19 virus.

##### Fresno County had 22 reported cases of MIS-C in 2020

- 77% Male
- 54% under 10 years of age
- 72% Hispanic



## Airborne

Several diseases are transmitted through the air, such as coccidioidomycosis, influenza, legionellosis, measles, meningococcal disease, mumps, pertussis, and tuberculosis. This section will highlight coccidioidomycosis and TB. Pertussis will also be highlighted but in the Vaccine Preventable section of the report.

### Coccidioidomycosis

Coccidioidomycosis, also referred to as Valley Fever or Cocci, is a fungal infection caused by *Coccidioides*.<sup>3</sup> This fungus is considered endemic in the southwestern US and highly endemic in southern Arizona and the California Central Valley and Central Coast.<sup>3-4</sup>

*Transmission:* Coccidioidomycosis is transmitted by breathing in fungal spores from the air. Anyone who lives or travels to an area with Coccidioidomycosis present, such as Fresno County, can be infected by breathing in the spores in dust. Coccidioidomycosis can range in severity from no symptoms, a minor illness that clears on its own, to a severe possibly deadly illness.<sup>3</sup> This disease is not contagious and does not spread from human to human.

**Since 2017, the number of reported coccidioidomycosis cases in Fresno County has decreased**

### Tuberculosis (TB)

TB is a bacterial infection caused by the bacterium, *Mycobacterium tuberculosis*. There are two related TB conditions, latent TB infection (LTBI) and active TB disease. The bacteria lives in those with LTBI but they typically have no symptoms and cannot spread the illness. LTBI may or may not turn into active TB. Active TB is when the immune system cannot stop the bacterium growth and a person becomes ill and can spread the disease.<sup>5</sup>

*TB data will not be repeated in this report as an independent report dedicated exclusively to TB is available. For an in-depth look at data and trends in TB please see our [Annual Reports on Tuberculosis](#) page.*

### Data Methodology Notes

Beginning in January 2019, the state of California changed its coccidioidomycosis case definition to only require a laboratory confirmation to be a confirmed case. Prior to 2019, a case required both a laboratory and clinical confirmation of disease. This change allowed for more consistent reporting and no longer relied on the presence of symptoms. Reporting changes may impact the ability to compare trends prior to and after 2019. Note that from 2016-2020, the vast majority of Coccidiomycosis reported Fresno County cases were classified as confirmed, with only 3 classified as suspect or probable.

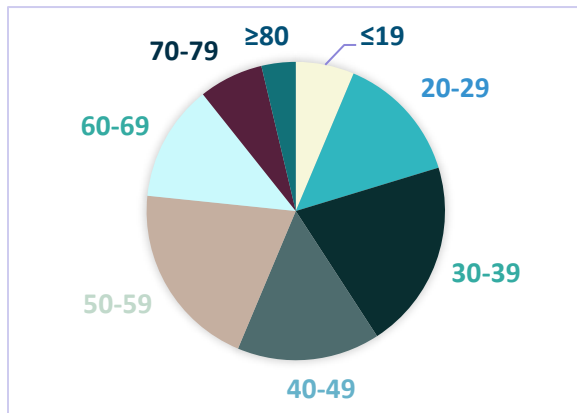
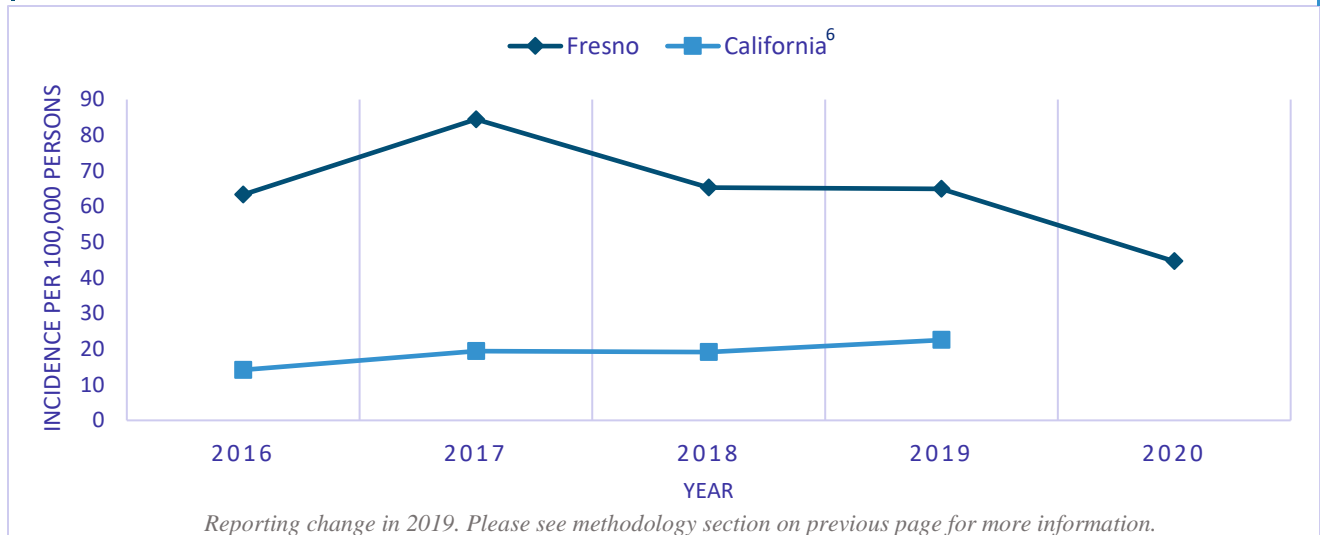




## Coccidioidomycosis (Valley Fever)

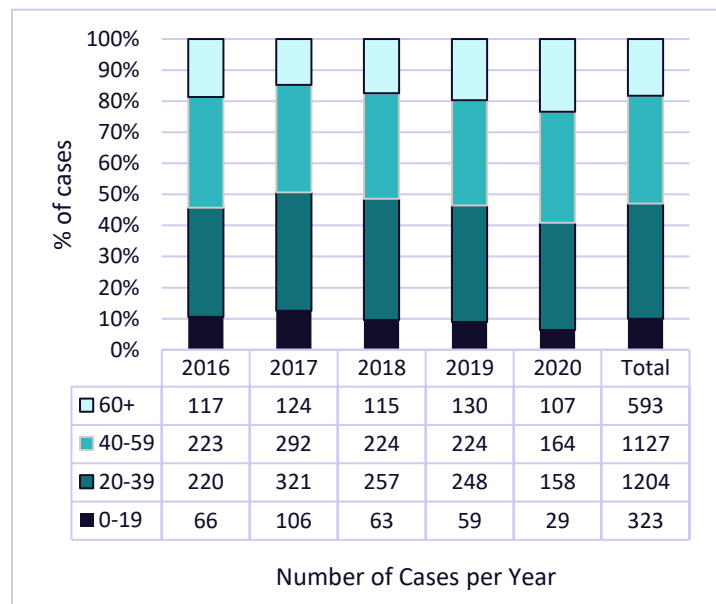
**Figure 1. Annual incidence for reported cases of Coccidioidomycosis by Geographic Area\***

\* CA data only available until 2019



**Figure 2. Reported Coccidioidomycosis in Fresno County by Age (in years), 2020**

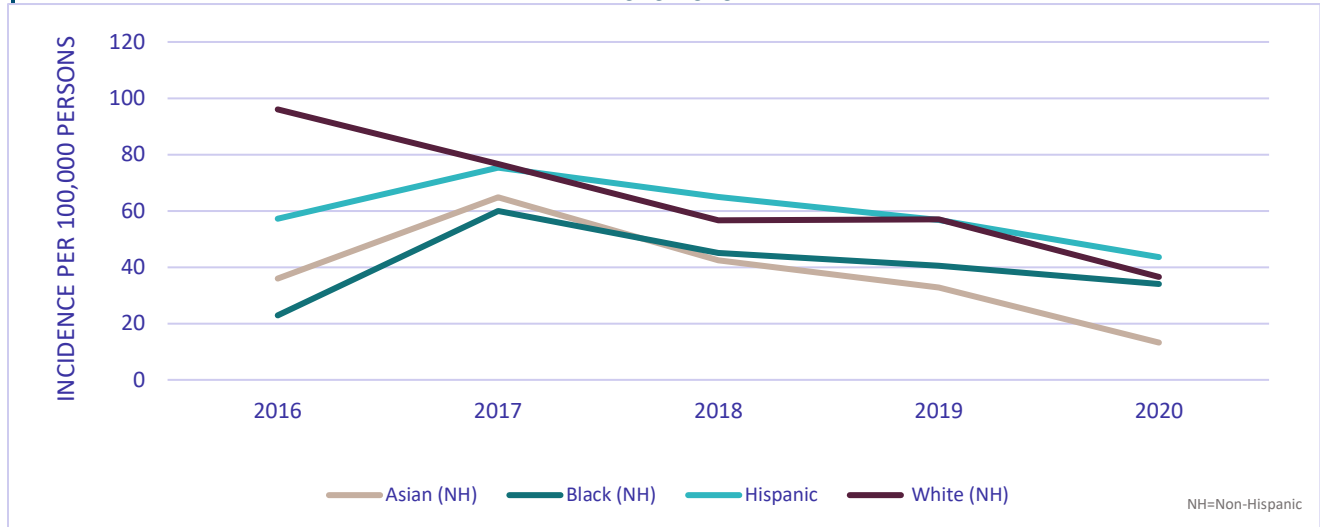
**Figure 3. Annual number of cases and percentage of reported Coccidioidomycosis in Fresno County by Age**





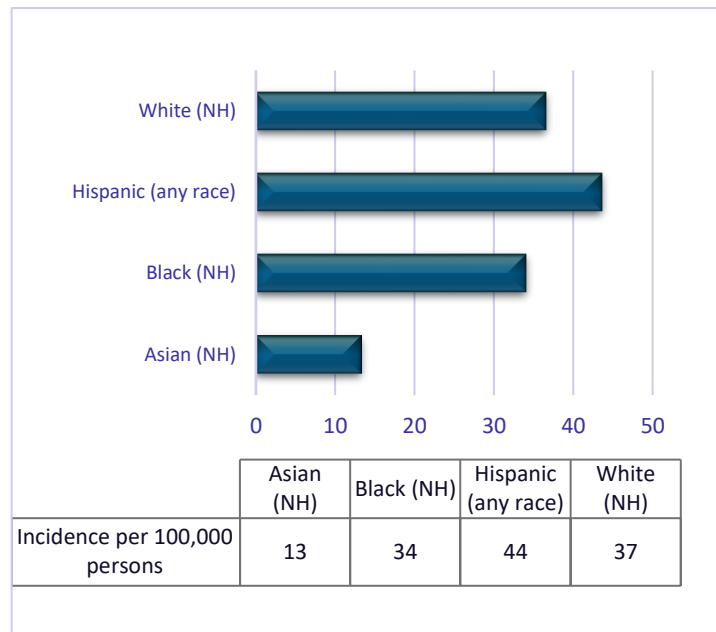
## Coccidioidomycosis (Valley Fever) Continued

**Figure 4. Annual Incidence for reported cases of Coccidioidomycosis by Race/Ethnicity in Fresno County, 2016-2020**



**Figure 5. Incidence for reported cases of Coccidiomycosis by Race/Ethnicity\* in Fresno County, 2020**

\*Other race categories (<10 cases each) and unknown race/ethnicity for 79 cases



**Figure 6. Reported cases of Coccidioidomycosis by Gender in Fresno County, 2020**

**Females represented 1.5 out of every 5 new Coccidioidomycosis cases**





## Bloodborne and other Bodily Fluids

Bloodborne illnesses are caused by pathogenic microorganisms that are carried in the blood. These diseases are transmitted through contact with contaminated blood and potentially other bodily fluids.

Several diseases can be transmitted through infected blood. The most notable bloodborne diseases are human immunodeficiency virus (HIV), hepatitis B virus (HBV), and hepatitis C virus (HCV).<sup>7</sup> This section will highlight HBV and HCV. HIV is included in the Sexually Transmitted Annual Report.

### Hepatitis B & C

The hepatitis B and hepatitis C virus can cause both acute and chronic infection. Approximately 30% of those infected with HCV will clear the virus without any treatment. The other 70%, without proper treatment, will develop a chronic HCV infection. A significant number of those who develop a chronic infection will go on to develop liver disease.<sup>8</sup> In the United States, HCV is the number one reason for liver transplants. The risk of chronic HBV infection is associated with age. In infants, about 90% will develop a chronic infection, this reduces to 25-50% among 1-5 year olds, and drops to only 2-6% of adults.<sup>9</sup>

*Transmission:* HCV is most commonly transmitted through contact with infected blood. It can be spread through sharing injection drug equipment, inadequate sterilization of medical equipment, needlestick injuries, passed from an infected mother to child during birth, and sexual contact; however, some of these hold a lower risk for transmission. It is not spread through casual contact, sharing food/drinks, and breastmilk.<sup>8-9</sup> HBV is a vaccine preventable disease that is transmitted through percutaneous or mucosal contact with infectious blood or other bodily fluids such as semen or saliva.<sup>9</sup>

**Asians had the highest incidence for HBV but the lowest for HCV. Similar trends seen nationwide.**

### Data Methodology Notes

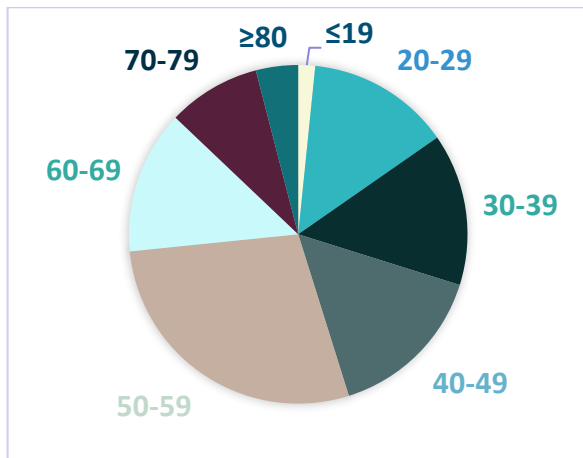
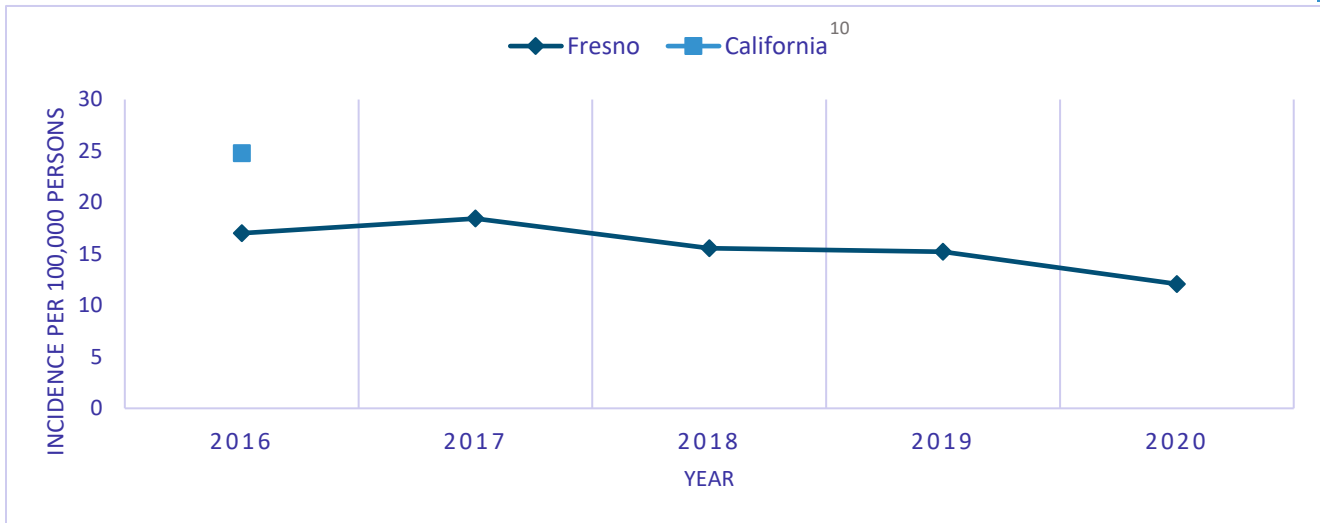
The data in this report focuses on newly reported chronic HBV and HCV cases. This data does not represent the total number of people living with chronic infection or newly reported acute cases. Fresno data includes all confirmed, probable, or suspected cases. California data includes only confirmed and probable. Data for California incidence has only been published up until 2016 for HBV and 2018 for HCV.



## Hepatitis B Virus (HBV), Chronic

**Figure 7. Annual incidence for newly reported cases of chronic HBV by Geographic Area\***

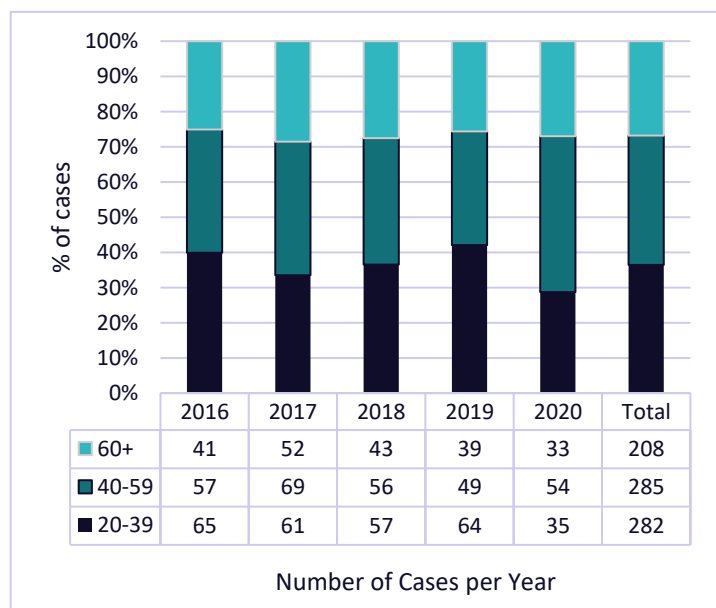
\* CA data only available for 2016



**Figure 8. Newly reported chronic HBV in Fresno County by Age (in years), 2020**

**Figure 9. Annual number of cases and percentage of newly reported HBV cases in Fresno County by Age**

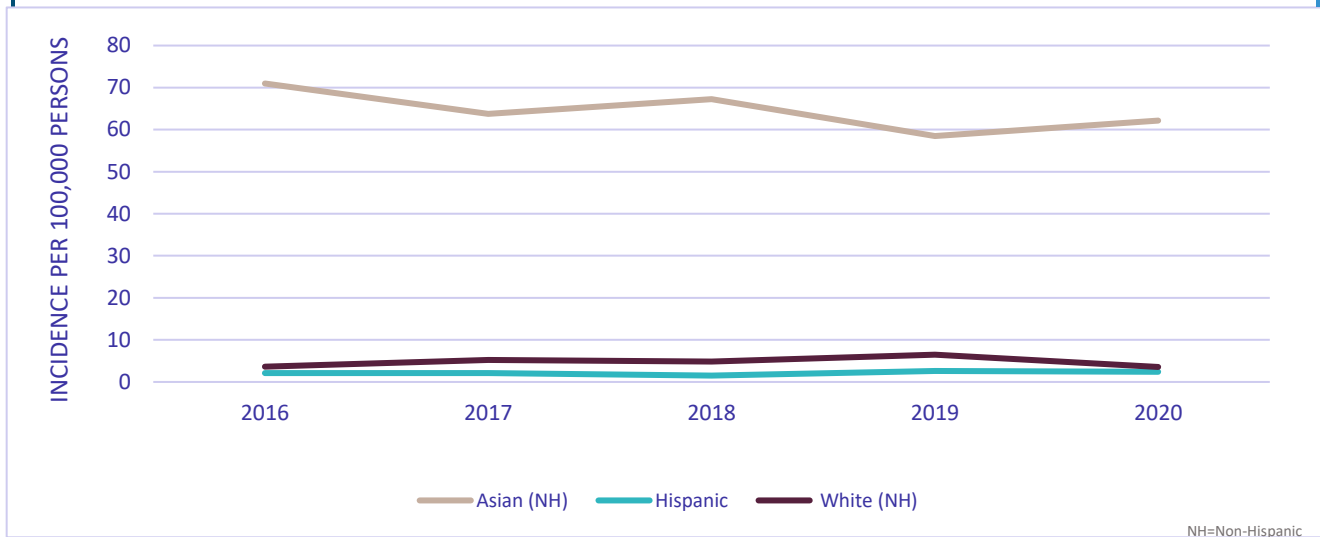
\*Cases in under 20-year-olds excluded due to low case counts (<15 per year)





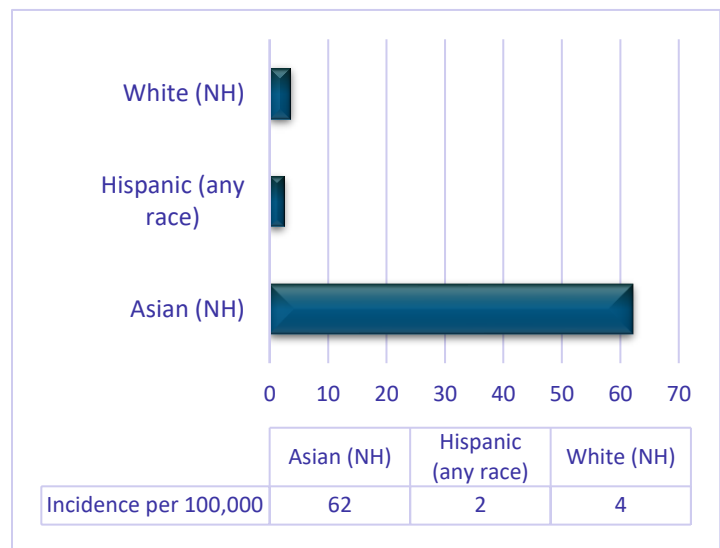
## Hepatitis B Virus (HBV), Chronic Continued

**Figure 10. Annual Incidence for newly reported chronic cases of HBV by Race/Ethnicity in Fresno County, 2016-2020**



**Figure 11. Incidence for newly reported chronic cases of HBV by Race/Ethnicity\* in Fresno County, 2020**

\*Other race categories (<10 cases each) and unknown race/ethnicity for 39 cases



**Figure 12. Reported cases of Chronic HBV by Gender in Fresno County, 2020**

**Females represented 2 out of every 5 newly reported Chronic HBV**

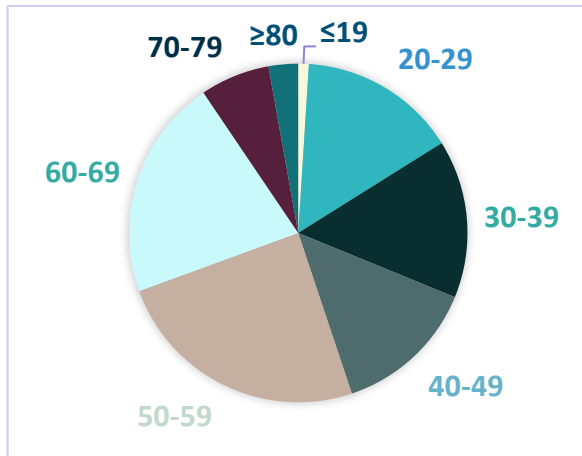
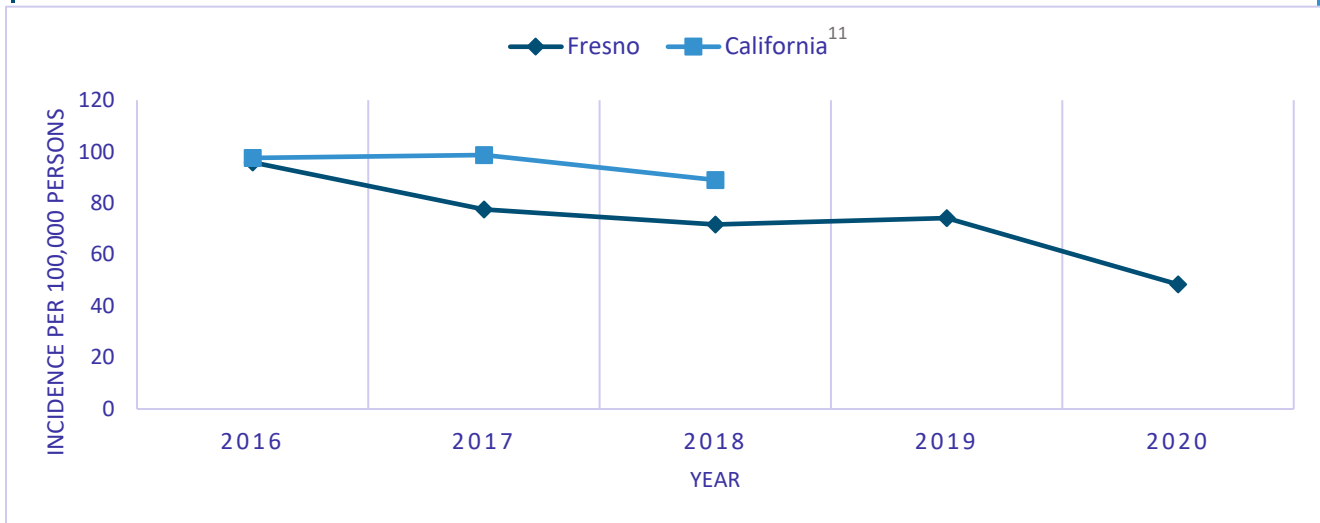




## Hepatitis C Virus (HCV), Chronic

**Figure 13. Annual incidence for newly reported cases of chronic HCV by Geographic Area\***

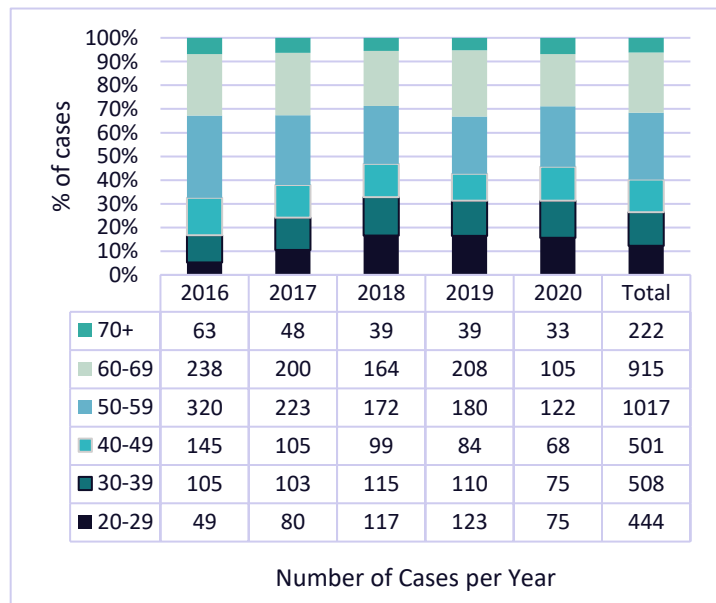
\* CA data only available until 2018



**Figure 14. Newly reported chronic HCV in Fresno County by Age (in years), 2020**

**Figure 15. Annual number of cases and percentage of newly reported HCV cases in Fresno County by Age**

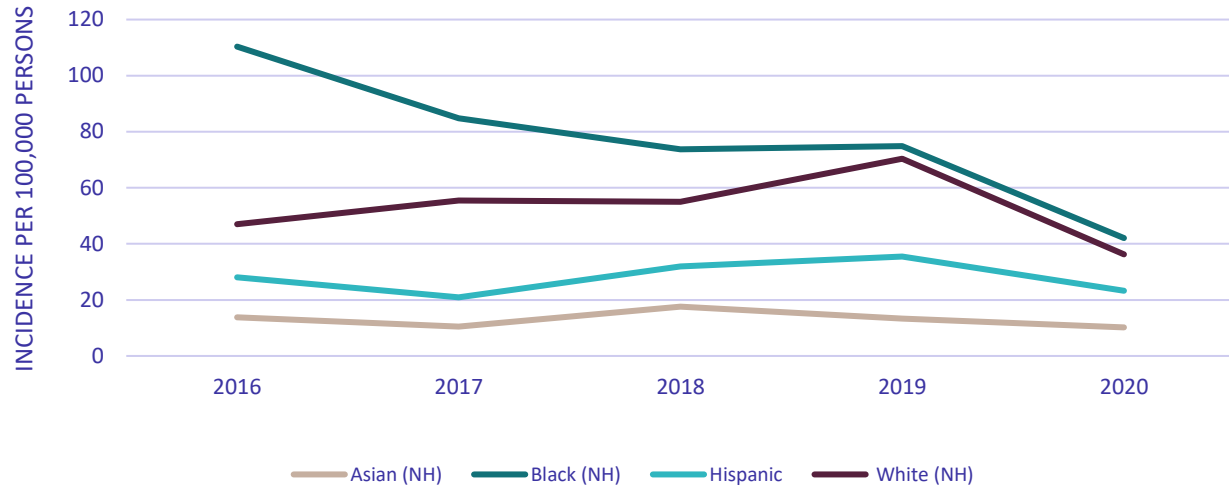
\*Cases in under 20-year-olds excluded due low case counts (<10 per year)





## Hepatitis C Virus (HCV), Chronic Continued

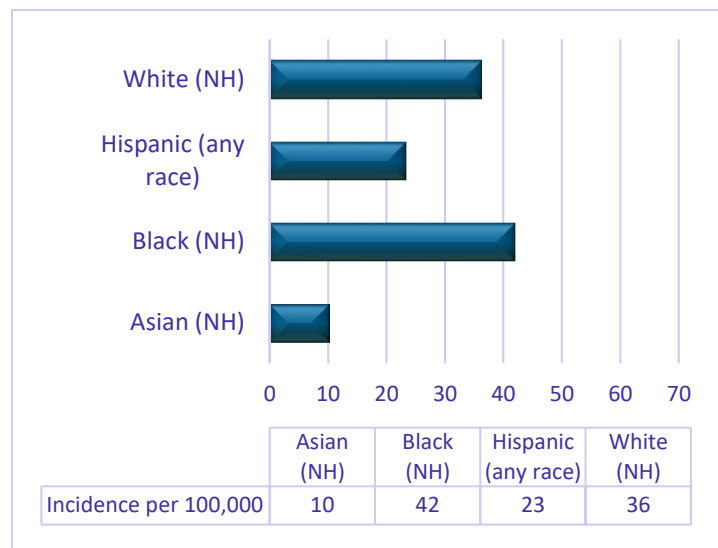
**Figure 16. Annual Incidence for newly reported chronic cases of HCV by Race/Ethnicity in Fresno County, 2016-2020**



NH=Non-Hispanic

**Figure 17. Incidence for newly reported chronic cases of HCV by Race/Ethnicity\* in Fresno County, 2020**

\*Other race categories (<10 cases each) and unknown race/ethnicity for 38 cases



**Figure 18. Reported cases of Chronic HCV by Gender in Fresno County, 2020**

**Females represented 1.5 out of every 5 newly reported Chronic HCV**





## Foodborne and Diarrheal Diseases

This section will focus on two of the most common investigated illnesses by the CDI Program: Campylobacteriosis and Salmonellosis.

### Campylobacteriosis (Campylobacter)

Campylobacteriosis is an infection caused by the Campylobacter bacterium and is one of the most common causes of diarrheal diseases in the US. The number of cases reported is thought to only represent a fraction of the total cases as many go undiagnosed or unreported.<sup>15</sup>

*Transmission:* It only takes a few Campylobacter bacterium to make someone ill. Many of the cases are associated with the consumption of raw or undercooked poultry. The animal carrying the bacterium may appear healthy. Other foods and items can become contaminated if they come into contact with the raw meat or feces from an infected animal. Campylobacter can also be transmitted through drinking contaminated water, contact with animals, or drinking unpasteurized/raw milk.<sup>15</sup>

**Non-Hispanic whites and Hispanics had similar incidence for Campylobacteriosis**

### Salmonellosis (Salmonella)

Salmonellosis is an infection caused by Salmonella that can result in mild to severe diarrheal illness.

*Transmission:* Salmonellosis is contracted by consuming something with trace amounts of animal feces. These foods are often of an animal origin but other foods such as fruits and vegetables can become contaminated as well. This contamination can occur in several different ways, such as raw meat drippings on a counter top, using utensils on cooked foods that touched raw foods without thoroughly washing between uses, food handlers touching several foods without washing their hands between steps, and food handlers not washing their hands properly using the bathroom. Transmission can also occur with contact of an infected animal. These animal may appear healthy but can have Salmonella living in their intestinal tracts, leading to contaminated fecal matter and even bodies.<sup>16</sup>

**Youth under 20 years of age made up the greatest percentage of cases for both Campylobacteriosis and Salmonellosis**

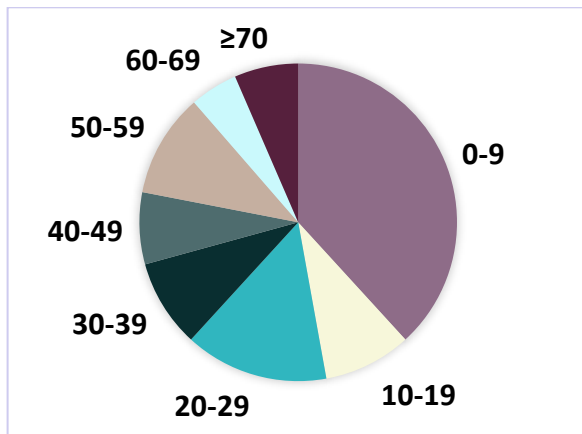
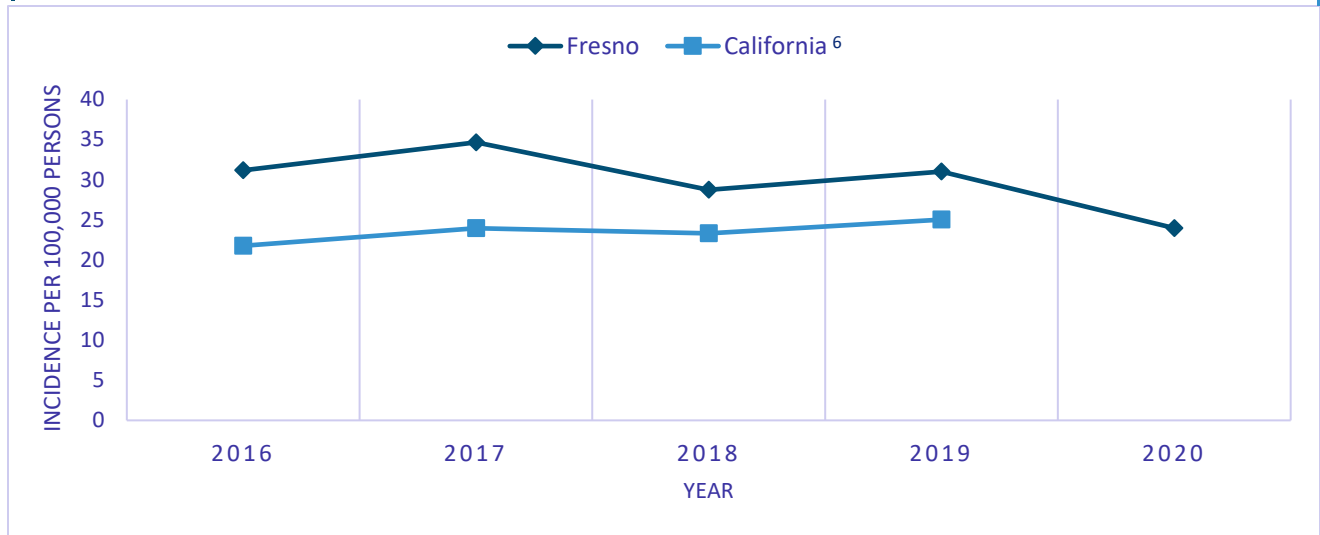




## Campylobacteriosis

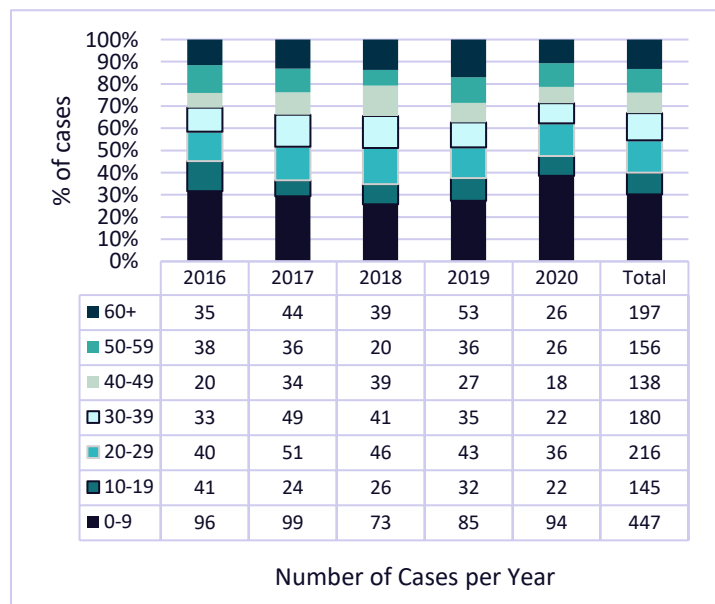
**Figure 19. Annual incidence for reported cases of Campylobacteriosis by Geographic Area\***

\* CA data only available until 2019



**Figure 20. Reported Campylobacteriosis in Fresno County by Age (in years), 2020**

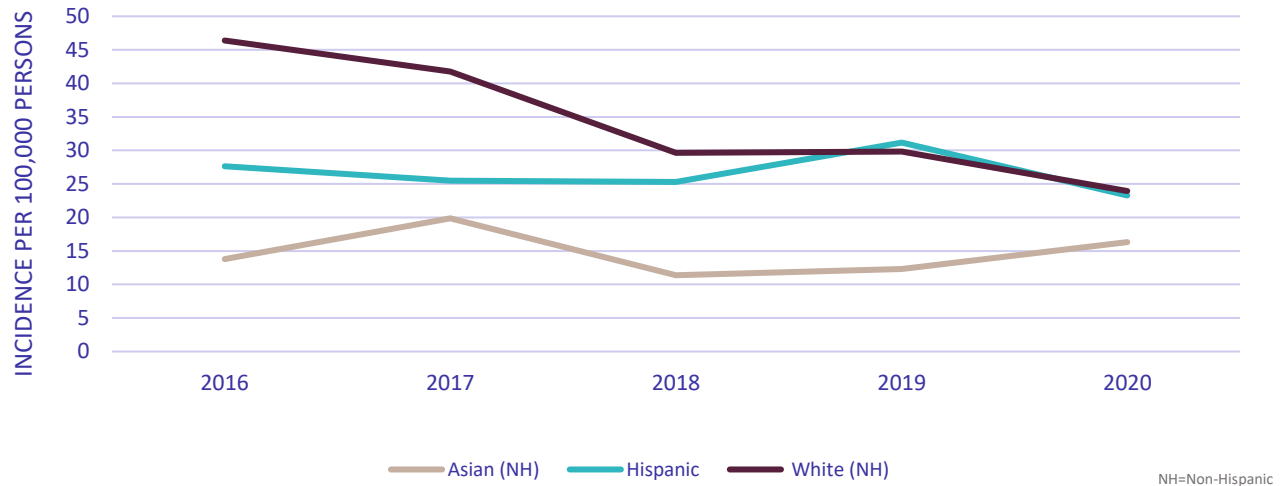
**Figure 21. Annual number of cases and percentage of reported Campylobacteriosis in Fresno County by Age**





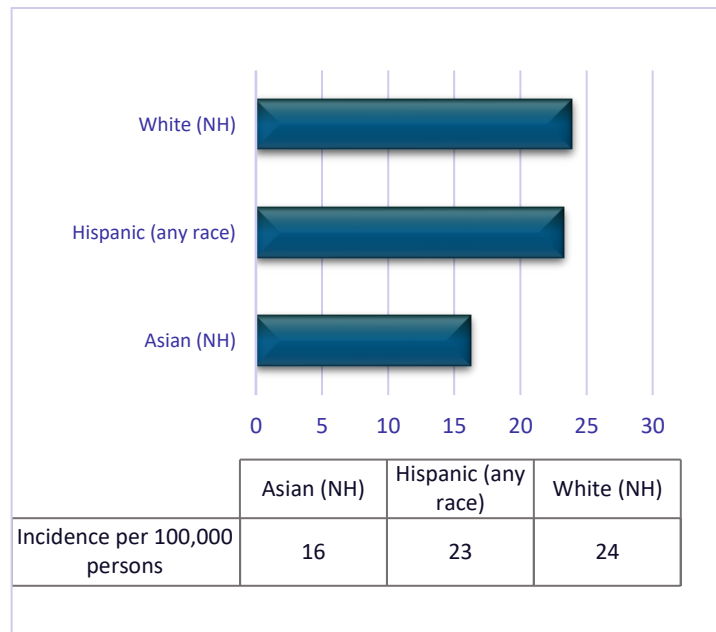
## Campylobacteriosis Continued

**Figure 22. Annual Incidence for reported cases of Campylobacteriosis by Race/Ethnicity in Fresno County, 2016-2020**



**Figure 23. Incidence for reported cases of Campylobacteriosis by Race/Ethnicity\* in Fresno County, 2020**

\*Other race categories (<10 cases each) and unknown race/ethnicity for 30 cases



**Figure 24. Reported cases of Campylobacteriosis by Gender in Fresno County, 2020**

**Females represented 2 out of every 5 new Campylobacteriosis cases**

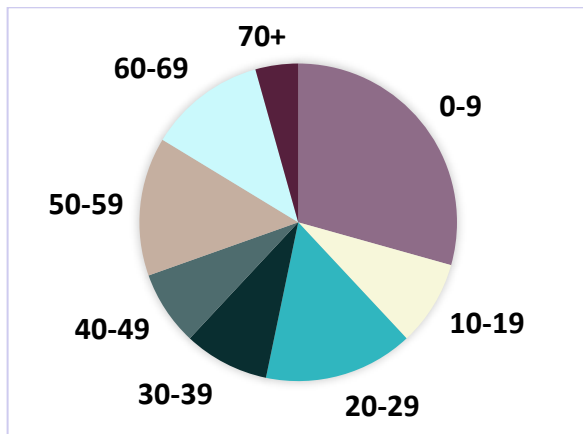
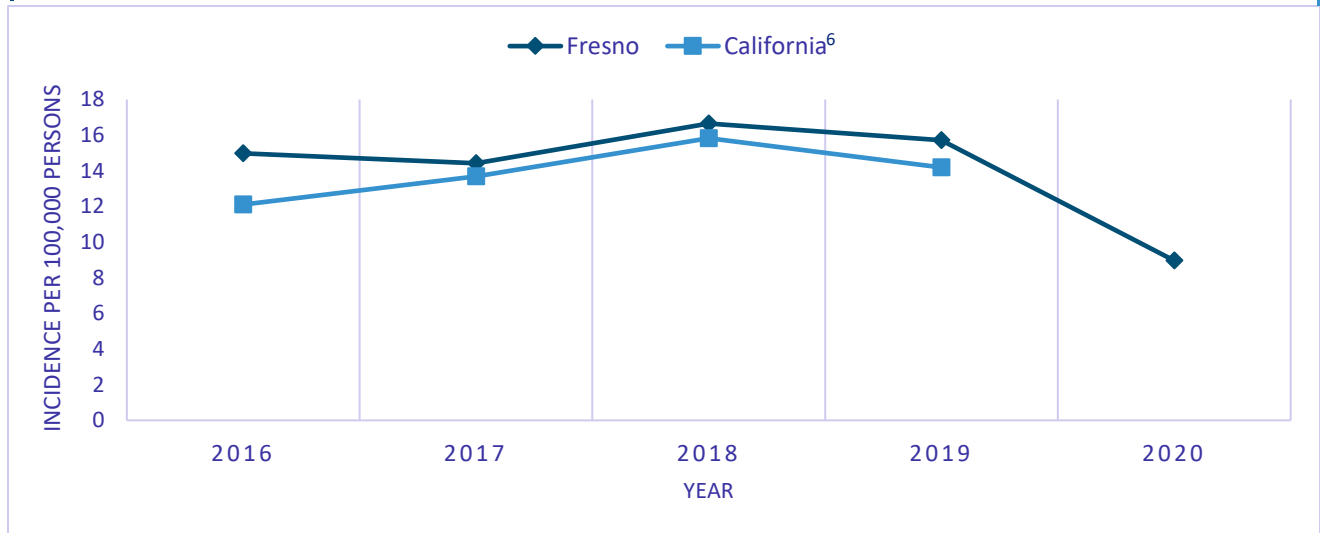




## Salmonellosis (other than Typhoid Fever)

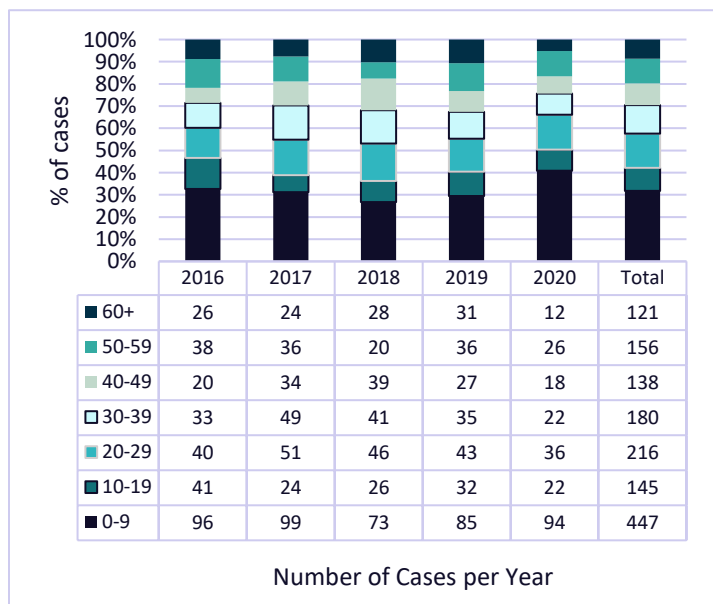
**Figure 25. Annual incidence for reported cases of Salmonellosis by Geographic Area\***

\* CA data only available until 2019



**Figure 26. Reported Salmonellosis in Fresno County by Age (in years), 2020**

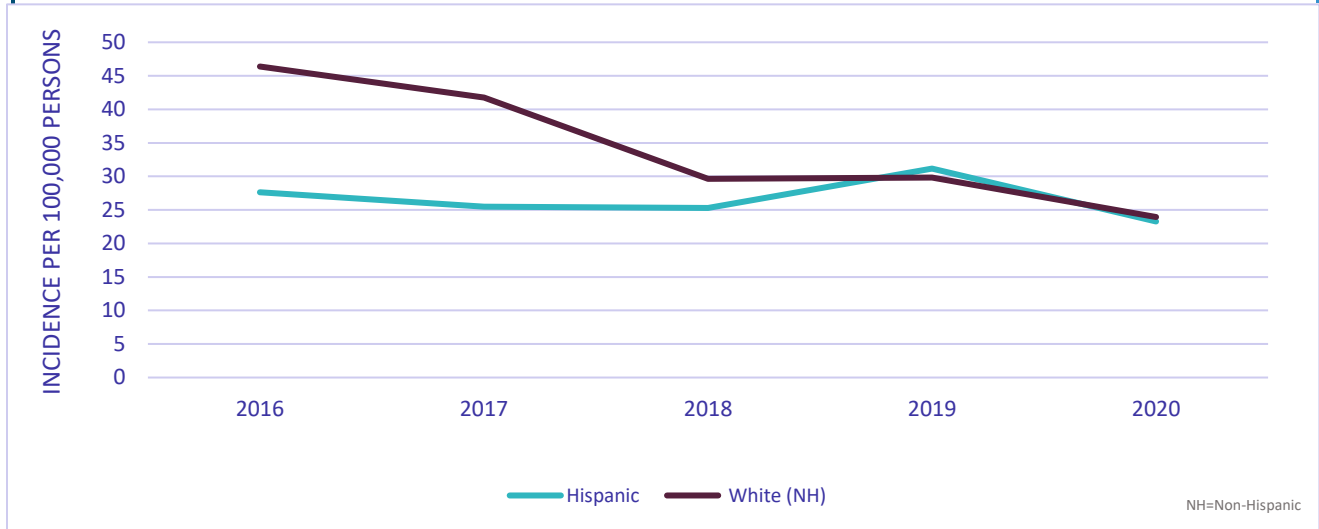
**Figure 27. Annual number of cases and percentage of reported Salmonellosis in Fresno County by Age**





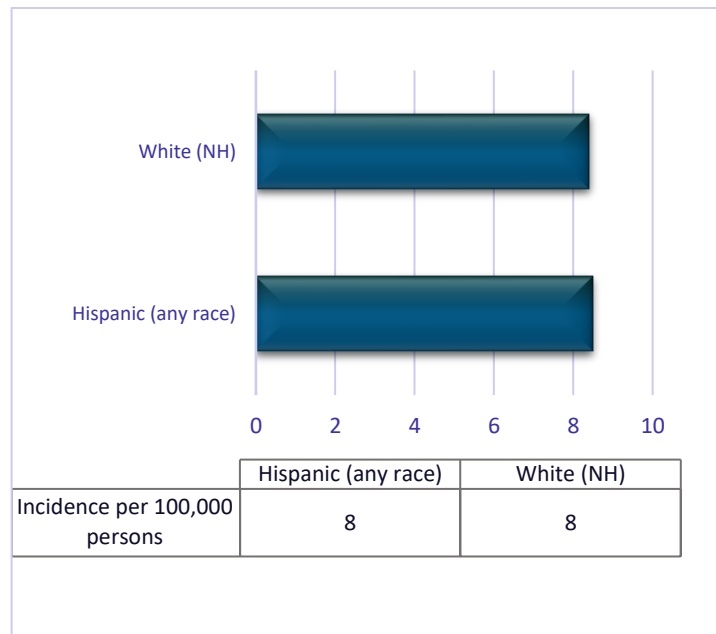
## Salmonellosis (other than Typhoid Fever) Continued

**Figure 28. Annual Incidence for reported cases of Salmonellosis by Race/Ethnicity in Fresno County, 2016-2020**



**Figure 29. Incidence for reported cases of Salmonellosis by Race/Ethnicity\* in Fresno County, 2020**

\*Other race categories (<10 cases each) and unknown race/ethnicity for 20 cases



**Figure 30. Reported cases of Salmonellosis by Gender in Fresno County, 2020**

**Females represented 2 out of every 5 new Salmonellosis cases**





## Sexually Transmitted Diseases/ Sexually Transmitted Infections (STD/STI)

STIs are a major issue for Fresno County and contribute a large number of cases to the overall disease burden. Due to this, a full report dedicated to an in-depth analysis of STIs has been developed and is available at:

[2020 STI/HIV Annual Report.](#)

## Vaccine Preventable

Vaccines play an important part in disease control and prevention for several communicable diseases. In the US, the most commonly used vaccines are for Diphtheria, Influenza, Hepatitis A and B, Haemophilus influenzae type b (Hib), Human Papillomavirus, Measles, Meningococcal, Mumps, Pertussis, Pneumococcal, Polio, Rotavirus, Rubella, Shingles, Tetanus, and Varicella. Not all vaccine preventable diseases are reportable without an outbreak situation. Among those that are reportable, currently most vaccine preventable diseases were completely absent or had less than 10 cases reported in 2020 for Fresno County: Diphtheria, acute Hepatitis A and B, Hib (only cases under 5 years of age are reportable), Measles, Meningococcal, Pertussis, Polio, Rubella, and Tetanus. However, it is still important to be vaccinated as these diseases are serious and can reemerge, especially when vaccination rates drop.

### *Influenza*

Influenza (flu), which is only reportable by laboratories, is seasonally endemic in our County. The 2020-2021 flu season saw lower than average flu activity. Influenza lab and emergency department visit trends per season are tracked on our Flu Report and available on the FCDPH [Statistics website](#).

### *Mumps*

Mumps is a contagious infection spread through direct contact with saliva or respiratory droplets. Fresno County saw a small increase in mumps due to a now controlled outbreak.

### *Pertussis*

Pertussis, also known as whooping cough, is a highly contagious respiratory illness that spreads from person to person.<sup>12</sup> Pertussis cases in Fresno County dropped from over 80 cases in 2018 and 2019 to less than 10 cases in 2020.

In the last 20 years, 2020 was the first year to have less than 10 cases of Pertussis reported



## Vector/Zoonotic Diseases

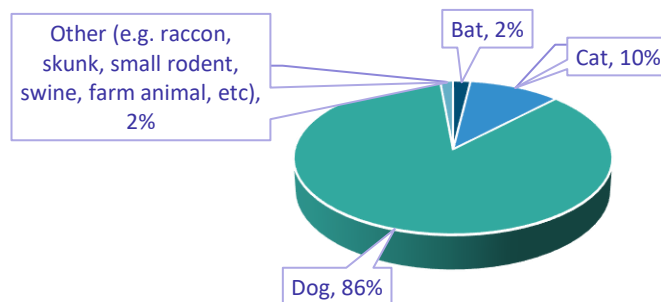
### Animal Bites

Rabies is a fatal viral disease transmitted through the saliva of an infected animal. Rabies is endemic in California in animal populations. In 2020, California had 248 animals that tested positive for Rabies: 221 bats, 24 skunks, 1 cat, 1 dog, and 1 fox.<sup>13</sup> Fresno County contributed 4 positive bats to those counts. These numbers only represented positive cases among animals tested, thus they will under-represent the true incidence among animals.

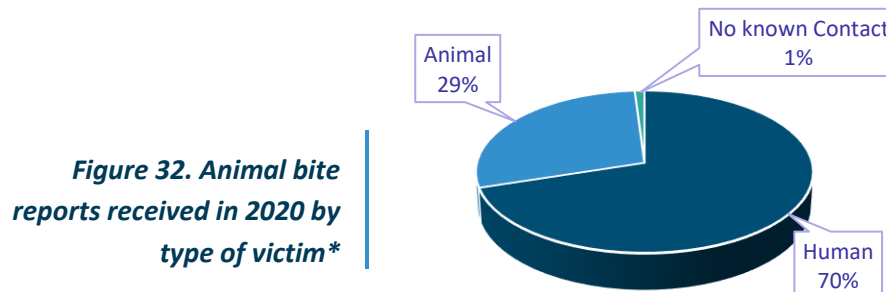
Although rabies is primarily found in wild animals, it is possible for domesticated animals to become infected. In 2020 a positive cat was tested in Amador county and a positive dog in San Joaquin county. Fresno county had a positive pet cat in 2019.<sup>13</sup>

The virus can also spread to humans and is fatal. The best prevention methods are preventing exposure to rapid animals, vaccinating domestic animals, offering pre-exposure vaccinations to high-risk human populations who are potentially in contact with rabid animals, and appropriate use of post-exposure prophylaxis.

The use of post-exposure prophylaxis of human rabies immune globulin and rabies vaccine have resulted in human rabies cases becoming rare in the United States. In order to try to identify potential rabid animals and high-risk bite victims in need of postexposure prophylaxis, all bites or high-risk exposures are required to be reported to the Health Department using the electronic Fresno County [Bite Report Form](#).



**Figure 31. Animal bite reports received in 2020 by type of 'biting animal'\***



**Figure 32. Animal bite reports received in 2020 by type of victim\***

\*Bite reports can include different types of injuries (e.g., scratches) as well as non-contact (e.g., dead bat with potential contact). The same event may end up on more than one bite report if the animal bit more than one person or there was more than one attacking animal.



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### ***West Nile Virus (WNV)***

Illnesses can be spread to people from the bite of an infected mosquito. Prevention relates to both mosquito control and protection from mosquitos. Mosquitos lay their eggs in or near water. To help reduce the mosquito population, remove all standing water and scrub items that hold water to remove any present eggs. Personal protection includes the use of insect repellent, wearing long clothing, and use of hole free screens on windows and doors.<sup>14</sup>

The Fresno County Department of Public Health works in collaboration with the local Mosquito Abatement Districts to protect the community from mosquitoes and mosquito-borne illnesses. Fresno County saw a reduction in West Nile Virus (asymptomatic, neuroinvasive, and non-neuroinvasive) human cases from approximately 51 cases in 2019 to less than 15 in 2020.



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