

# ANNUAL COMMUNICABLE DISEASE MORBIDITY REPORT 2019



**LONG BEACH**  
HEALTH & HUMAN SERVICES

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## ADDITIONAL REPORT INFORMATION

For in-depth information on STD or HIV related morbidities, visit STD/HIV Monitoring Reports.

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# Communicable Disease Control Program (CDCP) Annual Morbidity Report 2019

## TABLE OF CONTENTS

OVERVIEW.....	4
BACKGROUND .....	4
METHODS .....	4
Data Sources .....	4
Onset Dates.....	5
Population.....	5
Case Definitions.....	5
Data Limitations .....	6
TABLE OF NOTIFIABLE DISEASES.....	7
2019 YEAR IN REVIEW .....	8
Introduction.....	8
Measles .....	8
Candida auris.....	8
Shigella (Shigellosis) .....	9
Pertussis .....	10
Conclusion .....	11
REFERENCES .....	12

## OVERVIEW

The purpose of this report is to:

- i. Summarize communicable disease trends over time
- ii. Describe the burden of communicable diseases in Long Beach, California
- iii. Highlight key activities and response efforts during 2019

## BACKGROUND

Diseases and conditions on the Reportable Disease and Conditions List are required to be reported to the Health Department by healthcare providers, healthcare facilities, and laboratories based on California Code of Regulations, Title 17, Section 2500. This allows the Health Department to monitor, investigate, and control diseases of public health concern and prevent further spread. The collection and distribution of disease data are core functions of public health and provide important information on the burden of communicable diseases in Long Beach.

## METHODS

### Data Sources

All communicable disease morbidity data in Long Beach is entered into the California Reportable Disease Information Exchange (CalREDIE), which is a web-based system maintained by the California Department of Public Health (CDPH) for local health departments to conduct disease investigations and surveillance. The data entered in CalREDIE is processed daily and made available to local health departments for analysis through the web-based Data Distribution Portal (DDP). All morbidity data used in this report was extracted by estimated illness onset date (Episode Date) from the DDP from January 1, 2015 through December 31, 2019.

In addition to CalREDIE, the carbapenem-resistant Enterobacteriaceae (CRE) data is extracted from the National Healthcare Safety Network (NHSN) and faxed report forms. Acute care hospitals (ACHs) in California report CRE data into NHSN monthly. CRE was added to the reportable disease list in January 2017, thus morbidity data on CRE was extracted from NHSN by specimen collection date from January 1, 2017 through December 31, 2019.

## Onset Dates

An estimated illness onset date (Episode Date) is the date closest to the date when symptoms first began. For some cases, an illness onset date was not reported, and therefore an estimated date was selected based on the earliest available date which may have been either laboratory specimen collection date, laboratory result date, diagnosis date, date reported to the health department, or date of death.

## Population

The U.S. Census American Community Survey (ACS) 5-year estimates (2015-2019) were used for population data to calculate incidence rates to allow for comparisons across different jurisdictions. Cases attributed to Long Beach in this report are based on the individual's city of residence. This does not necessarily mean that the exposure occurred in Long Beach. This report only includes cases who were residents of Long Beach, CA at the time of diagnosis. If an individual was experiencing homelessness and sought care in Long Beach without any additional housing information, they were counted as Long Beach residents in this report.

## Case Definitions

A case definition is used to define a disease for public health surveillance purposes. It allows health departments to classify and count cases consistently across jurisdictions. These definitions are set by the Centers for Disease Control and Prevention (CDC), the California Department of Public Health (CDPH), and the Council for State and Territorial Epidemiologists (CSTE) [1]. Case definitions may change over time based on new findings and with improvements in testing. Reported disease are classified as either "Confirmed," "Probable," "Suspect," or "Not a Case."

Cases that met criteria for only Confirmed were included in this report for the following diseases: amebiasis, botulism (all types), carbapenem-resistant Enterobacteriaceae (CRE), coccidioidomycosis, hepatitis A-C (acute), invasive haemophilus influenza (all serotypes), legionellosis, listeriosis, measles, meningococcal disease, tuberculosis, and typhoid fever.

Cases that met criteria for Confirmed and Probable were included in this report for the following diseases: brucellosis, campylobacter, chikungunya cryptosporidiosis, dengue, giardiasis, lyme, malaria, mumps, salmonellosis, shiga-toxin producing E. coli (STEC) including E. coli O157, shigellosis, vibrio (non-cholera), West Nile virus, and Zika virus.

Cases that met criteria for Confirmed, Probable, and Suspect were included in this report for the following diseases: chlamydia, syphilis, gonorrhea, pertussis, and typhus.

## Data Limitations

Numbers for each disease are based on the number of reported cases. This number does not necessarily represent the exact morbidity, but the number of people who sought care, were tested, and were reported to the Health Department. This may result in an underestimation of the true number of cases, however the reports received allow for an estimation of what is occurring and help identify trends and detect outbreaks.

Morbidity rates are subject to random variation. Diseases with a small number of cases reported per year may have unstable rates. The National Center for Health Statistics uses the relative standard error greater than 25% as the cut-off for rate reliability. Therefore, rates for case numbers less than 20 do not meet the minimum requirement to generalize and should be interpreted with caution.

Race and ethnicity are self-reported in this dataset and often the information is incomplete for a significant number of cases. Therefore, incident rates by race and ethnicity were not included in this report.

# TABLE OF NOTIFIABLE DISEASES

Table 1. Reported cases and incidence rates (per 100,000 population) of selected notifiable diseases by year.

DISEASE	2015		2016		2017		2018		2019	
	Cases	Rate*								
Amebiasis	6	1.3	8	1.7	3	0.6	3	0.6	1	0.2
Botulism	1	0.2	0	0.0	1	0.2	0	0.0	0	0.0
Brucellosis	0	0.0	0	0.0	0	0.0	1	0.2	1	0.2
Candida Auris	**	**	**	**	**	**	**	**	2	0.4
Campylobacteriosis	70	14.9	83	17.7	59	12.5	91	19.3	87	18.8
Carbapenem-resistant Enterobacteriaceae	**	**	**	**	35	8.2	56	9.8	31	6.7
Chikungunya	2	0.4	1	0.2	0	0.0	0	0.0	0	0.0
Chlamydia	3346	711.6	3863	822.3	4321	918.4	3974	844.7	3696	798.9
Coccidioidomycosis	41	8.7	20	4.3	21	4.5	13	2.8	68	14.7
Cryptosporidiosis	5	1.1	9	1.9	17	3.6	8	1.7	15	3.2
Dengue	5	1.1	0	0.0	1	0.2	3	0.6	2	0.4
Giardiasis	17	3.6	33	7.0	34	7.2	32	6.8	26	5.6
Gonorrhea	980	208.4	1489	316.9	1690	359.2	1762	374.5	1550	335.0
Invasive <i>Haemophilus influenzae</i>	0	0.0	2	0.4	1	0.2	2	0.4	1	0.2
Hepatitis A	3	0.6	4	0.9	0	0.0	0	0.0	2	0.4
Hepatitis B, acute	4	0.9	3	0.6	3	0.6	4	0.9	5	1.1
Hepatitis C, acute	5	1.1	2	0.4	1	0.2	1	0.2	1	0.2
Legionellosis	10	2.1	7	1.5	15	3.2	7	1.5	6	1.3
Listeriosis	0	0.0	0	0.0	2	0.4	1	0.2	1	0.2
Lyme Disease	1	0.2	1	0.2	2	0.4	0	0.0	0	0.0
Malaria	2	0.4	0	0.0	1	0.2	2	0.4	0	0.0
Measles	2	0.4	0	0.0	0	0.0	0	0.0	1	0.2
Meningococcal Disease	0	0.0	8	1.7	2	0.4	0	0.0	0	0.0
Mumps	2	0.4	1	0.2	2	0.4	4	0.9	4	0.9
Pertussis	36	7.7	13	2.8	19	4.0	29	6.2	85	18.4
Salmonellosis	46	9.8	50	10.6	46	9.8	71	15.1	51	11.0
Shiga Toxin-producing <i>E. coli</i>	10	2.1	6	1.3	11	2.3	31	6.6	28	6.1
Shigellosis (all groups), Total	25	5.3	43	9.2	36	7.7	72	15.3	79	17.1
<i>Shigella flexneri</i>	14	3.0	22	4.7	16	3.4	40	8.5	29	6.3
<i>Shigella sonnei</i>	11	2.3	21	4.5	9	1.9	15	3.2	20	4.3
<i>Shigella Unspecified</i>	0	0.0	0	0.0	11	2.3	17	3.6	30	6.5
Syphilis (Total Early)	273	58.1	307	65.3	343	72.9	343	72.9	359	77.6
Congenital Syphilis	1	16.6	5	84.6	4	72.5	10	180.3	6	71.7
Tuberculosis	41	8.7	30	6.4	23	4.9	26	5.5	20	4.3
Typhoid Fever	0	0.0	0	0.0	0	0.0	0	0.0	1	0.2
Typhus	11	2.3	20	4.3	11	2.3	20	4.3	16	3.5
Vibrio (Non-Cholera)	2	0.4	2	0.4	1	0.2	4	0.9	2	0.4
West Nile Virus Infections, Total	14	3.0	4	0.9	15	3.1	0	0.0	2	0.4
West Nile Fever	4	0.9	1	0.2	2	0.4	0	0.0	0	0.0
West Nile, Neuroinvasive	8	1.7	2	0.4	13	2.8	0	0.0	2	0.4
West Nile, Asymptomatic	2	0.4	1	0.2	0	0.0	0	0.0	0	0.0
Zika Virus	**	**	6	1.3	1	0.2	4	0.9	0	0.0

\*U.S. Census Bureau, American Community Survey (ACS) 5-Year Estimates 2019.

\*\*Zika Virus was made reportable in 2016, carbapenem-resistant Enterobacteriaceae was made reportable in 2017, and *C.auris* was made reportable in 2019.

Note: Any indicators with <20 cases do not meet the requirement for a minimum degree of accuracy outlined by the National Center for Health Statistics. Rates are included for reporting purposes only.

Chlamydia, Gonorrhea, Syphilis, and Congenital Syphilis cases and rates were obtained from the STD/HIV 2018 Report [2].

## 2019 YEAR IN REVIEW

### INTRODUCTION

The following reports on measles, *Candida auris*, *Shigella*, and pertussis highlight some key investigations, outbreaks, and infectious disease responses led by the Communicable Disease Control Program (CDCP) in 2019. The diseases presented here do not necessarily represent those with the highest burden in Long Beach but were chosen because of noted changes in trends or due to significant public interest.

### MEASLES

In 2019, Long Beach reported its first case of measles since 2015. Just one case can result in identifying hundreds of contacts, and requires extensive investigation, including locating proof of immunity to measles, providing prophylaxis vaccine to children too young to have been vaccinated, issuing isolation and quarantine notices, responding to media inquiries, and working closely with neighboring jurisdictions regarding exposures occurring outside of Long Beach. An increase in measles cases was reported statewide in 2019, with 73 reported total [3], including one Long Beach case, 20 Los Angeles County cases [4], and five Orange County cases [5]. Measles reached unprecedented levels nationwide in 2019, with 1,282 cases reported in 31 states [6], which is the highest number of reported cases since 1994. Everyone over 12 months old is recommended to receive the measles, mumps, rubella (MMR) vaccine, which is 97% effective when the recommended two doses are given.

### CANDIDA AURIS

*Candida auris*, a multidrug-resistant fungal pathogen [7] was found for the first time in both Long Beach and the greater Southern California area in 2019. *C. auris* presents a serious global health threat because of its resistance to multiple antifungal drugs, the lack of laboratories available to identify the pathogen, and the outbreaks it has caused in healthcare settings. *C. auris* is primarily found in skilled nursing facilities (SNFs) among patients with multiple comorbidities.

In 2019, CDCP screened 410 residents from four sub-acute care SNFs to test for *C. auris*, after CDCP investigators determined that transmission may have occurred among residents. This included 15 point-prevalence surveys, in which every resident in a facility or specific unit was screened at the same time to determine if they were colonized with *C. auris*. Patients colonized with *C. auris* may not have symptoms but can transmit to others within a healthcare facility. Swabs were sent to a specialized CDC satellite laboratory in Washington state for testing. While the effort was very resource-intensive, it was reassuring that very little evidence of the emerging fungus was detected, as it is known to cause serious outbreaks in an already susceptible population.

In 2019, three cases of *C. auris* were found in Long Beach SNF residents. Two of the cases likely contracted the emerging multidrug-resistant fungus at a SNF with known transmission in Orange County. The third was identified in a Long Beach SNF and did not have known exposures.

More information on *C. auris* can be found at [www.longbeach.gov/cauris](http://www.longbeach.gov/cauris).

## SHIGELLA (SHIGELLOSIS)

Shigellosis is an illness caused by the bacteria, *Shigella*. Shigellosis is a gastrointestinal disease that primarily causes diarrhea (which is often bloody), fever, and vomiting. Although typically treated with antibiotics, in recent years there has been an increase in antibiotic resistant *Shigella* [8].

Although shigellosis has commonly been referred to as “traveler’s diarrhea” and has been associated with contaminated food and water, it has in recent years become more prevalent locally and has also become associated with sexual transmission, in particular among men who have sex with men (MSM) [9]. There are two main serogroups that are most commonly identified in Long Beach: *S. flexneri* (Group B) and *S. sonnei* (Group D).

Shigellosis has continued to increase in Long Beach over the past five years. The rate of new infections increased from 7.7 per 100,000 population in 2017 to 17.1 per 100,000 population in 2019, a 122% increase (Figure 1). In 2019, 68% of cases occurred in persons 18 to 64 years, 70% were male, and 29% were White. Differences in case characteristics were also observed between the different serogroups. There were 29 *S. flexneri* cases in 2019, 72% were male and 38% of cases occurred among 18 to 39 years old (Figure 2).

In 2019, the increase in the number of unspecified serogroup cases continued due to the change in laboratory diagnostics and the case definition in 2017 to include culture independent diagnostic tests (CIDT; Figure 3).

Figure 1: Shigellosis (all groups) by Year in Long Beach, 2015-2019

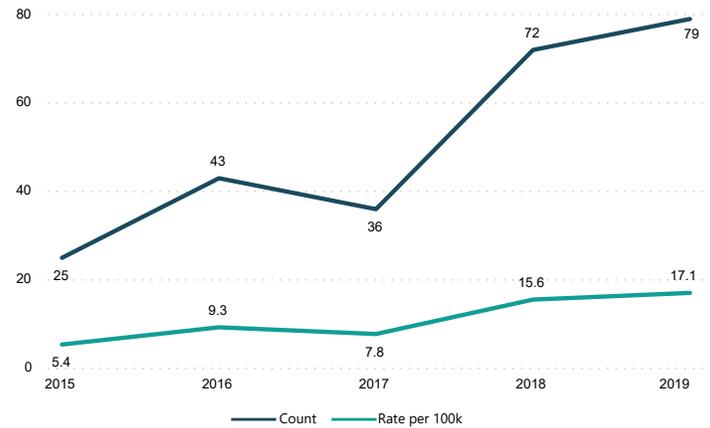


Figure 2: Shigellosis serogroup by Age Categories in Long Beach, 2019

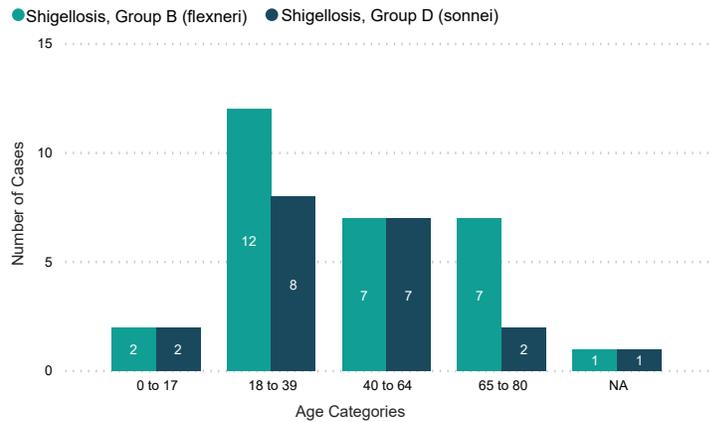
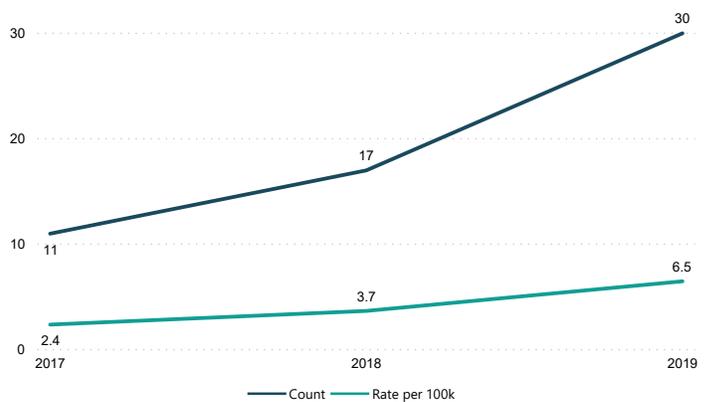
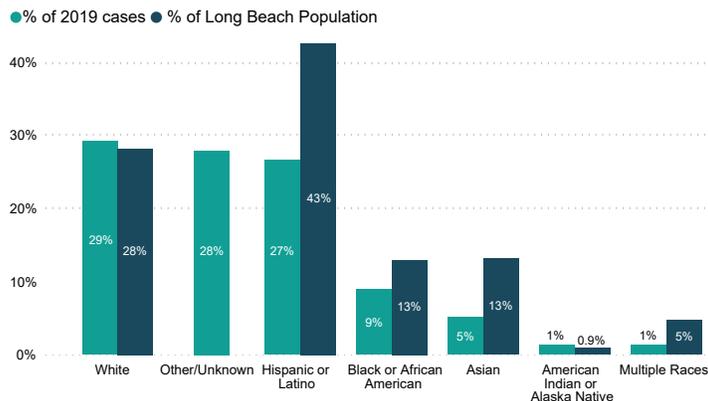


Figure 3: Shigellosis (Unspecified) by Year in Long Beach, 2015-2019



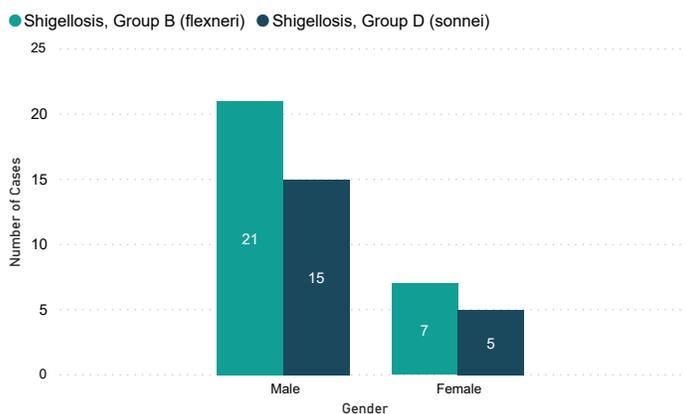
## 2019 YEAR IN REVIEW

Figure 4: Shigellosis (all groups) Cases by Race/Ethnicity in Long Beach, 2019 (N = 79)



In Long Beach, *Shigella flexneri* has been associated more with sexual activity compared to *Shigella sonnei*. In 2019, 21 cases reported having sexual activity during their incubation period, which begins seven days prior to symptom onset and 67% were men who had sex with men (MSM). Half of all MSM cases in 2019 were *S. flexneri*, 36% were *S. sonnei*, and 14% were unknown.

Figure 5: Shigellosis serogroup Cases by Gender in Long Beach, 2019



The Long Beach CDCP works to prevent the spread of *Shigella* in the community by conducting case investigations on each positive case. This investigation includes identifying others that may have been exposed or infected, removing infectious persons from work until the infection has cleared, providing education, and working with Environmental Health when possible food exposures are identified.

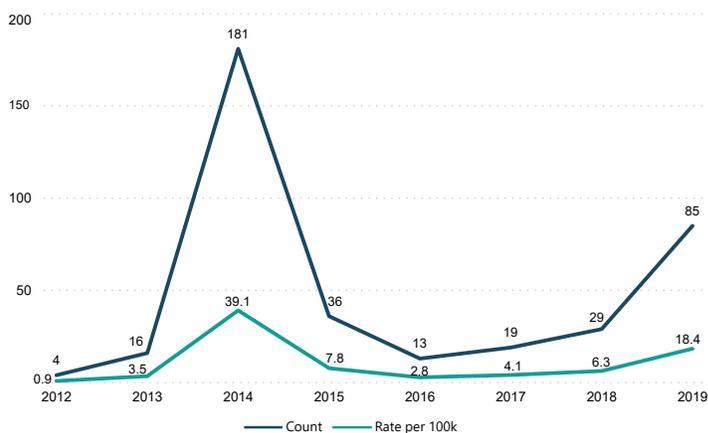
## PERTUSSIS

Pertussis (whooping cough) is a bacterial disease that is spread person to person by coughing. It is very contagious and causes coughing attacks that can last for months. Although anyone can get pertussis, infants are at greatest risk for serious illness. There are vaccines to help prevent against pertussis, called Tdap and DTaP.

Pregnant women are recommended to receive the vaccine in their third trimester to protect newborns who are too young to receive the vaccine [10].

There is typically an increase in pertussis cases every three to five years (Figure 6). Although pertussis cases are diagnosed throughout the year, most of the cases are seen from January to June in Long Beach.

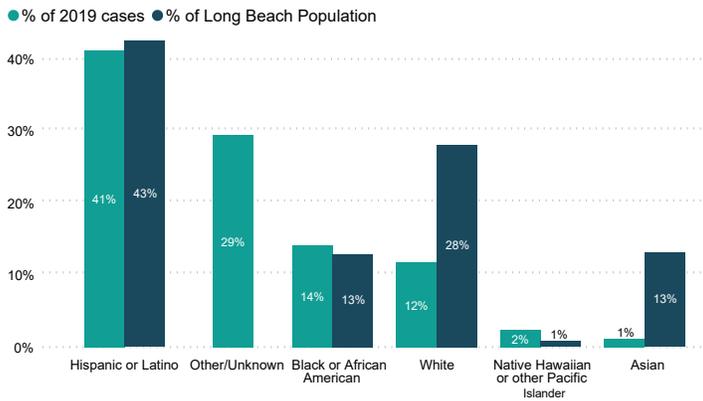
Figure 6: Pertussis by Year in Long Beach, 2012 - 2019



The majority of cases were Hispanic or Latino. In 2019, 41% reported being Hispanic or Latino, compared to only 14% African American and 12% White. Race and ethnicity data was either Unknown or other for 29% of cases (Figure 7).

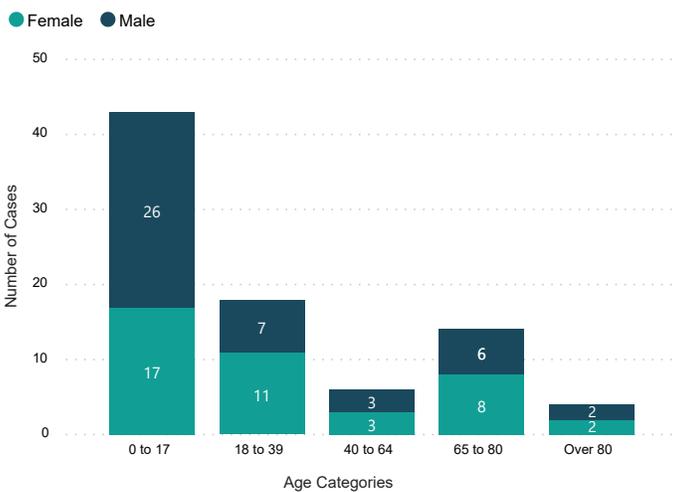
# 2019 YEAR IN REVIEW

Figure 7: Pertussis Cases by Race/Ethnicity in Long Beach, 2019 (N = 85)



In 2019, 51% (43) of all pertussis cases were among those 0 to 17 years, and 48% were female (Figures 8). In Long Beach, a more in-depth investigation is done for cases less than four months of age. The mother’s prenatal care history is reviewed and investigators follow up to see if the mother’s prenatal care provider offered Tdap, a vaccine used to protect children from tetanus, diphtheria, and pertussis, during the third trimester of pregnancy. There were six cases among children less than 12 months old in 2019, and of those, half were under four months.

Figure 8: Pertussis Cases by Age and Gender in Long Beach, 2019



CDCP investigates all cases of pertussis to identify others who may have been exposed or ill and provide them treatment, ensure that infectious individuals are not at work or school until treated adequately, and provide education. CDCP also works with childcare centers and schools to prevent outbreaks of pertussis.

## CONCLUSION

The Communicable Disease Control Program continuously works to reduce the transmission of disease in Long Beach, working alongside other health, department programs, healthcare centers, and community partners. The disease trends and data presented in this report should be used to address health equity gaps and community outreach efforts throughout the city. This report is published annually.

For additional information on the Health Department, please visit [www.longbeach.gov/health](http://www.longbeach.gov/health).

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