Annual Report of Communicable Diseases in San Francisco

2009

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San Francisco Department of Public Health

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This annual report summarizes notifiable disease reports received by the Communicable Disease Control Unit (CDCU) of the San Francisco Department of Public Health (SFDPH) during 2009. Seven diseases were selected for demographic profiling on the basis of the annual burden and severity of disease, public health impact, and specific interest to community health programs. Notifiable disease reports managed by other SFDPH sections are not represented here, i.e., tuberculosis, human immunodeficiency virus (HIV), acquired immunodeficiency syndrome (AIDS) and sexually transmitted diseases (STDs) which are managed, respectively, by Tuberculosis Control, AIDS Office and STD Prevention and Control. Readers can access previous reports at http://www.sfcdcp.org for historical context of disease incidence in San Francisco.

Contents

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San Francisco Department of Public Health at 101 Grove Street (1935)

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Methods and Definitions

Data Collection

This report includes disease incidents reported to SFDPH from January 1, 2009 through December 31, 2009. San Francisco health care providers, laboratories and other mandated reporters are required under Title 17, California Code of Regulations (CCR) (§2500, §2505, §2593, §2641-2643, §2800-2812),[1] to notify the local health authority of the diagnosis, detection or suspicion of certain diseases and conditions. Reports are confidentially received by fax, telephone, postal mail, or secure electronic file transfer. Reports by fax and postal mail are generally submitted using the California Confidential Morbidity Report (CMR) form.[2] Limited demographic and clinical information is provided on the CMR. Depending on the disease or condition, disease control staff attempt to contact the health care provider, laboratory and/or patient for follow-up and implementation of disease control measures. Clinical and risk factor data are subsequently collected according to departmental and state protocols. Data were managed with locally designed databases.

Neither the chronic hepatitides nor notifiable diseases managed by other SFDPH sections (AIDS Office, Environmental Health, STD Prevention and Control, and Tuberculosis Control) are presented in this report:

- Acquired Immune Deficiency Syndrome (AIDS)
- Chancroid
- Chlamydial Infections (excluding *Chlamydia pneumoniae*)
- Gonococcal Infections
- Hepatitis B, chronic
- Hepatitis C infection, past or present
- Human Immunodeficiency Virus (HIV)
- Lymphogranuloma Venereum (LGV)
- Pelvic Inflammatory Disease (PID)
- Pesticide-related illness or injury
- Syphilis
- Tuberculosis

Racial and Ethnic Categorization

People were classified as one of the following: American Indian/Alaska Native, Asian/Pacific Islander, African American (Black), Hispanic, or White. A person with Hispanic ethnicity, regardless of race, was classified as Hispanic, while Non-Hispanics were categorized by their race designation. Occasionally, patients were classified as Other race. Because the category Other is not clearly defined and no reliable San Francisco population estimate exists for it, race-specific rates were not calculated for this population group. Only the frequency values for the race Other were included in the incidence tables.

San Francisco population estimates were obtained from the California Department of Finance (DOF) Demographic Research Unit;[3] DOF estimates are based on the U.S. Census counts. This report uses DOF 2007 estimates.

In 2000, the United States Census Bureau began allowing multiple race designations for its decennial population census; therefore, the California DOF population estimates also include an additional race category, Multiple Race. Because CDCU only collects a single race designation, a bridging method established by the California DOF was used to reallocate the population in the Multiple Race category to single race categories.[4] This method provided reproducible denominators for calculating race-stratified incidence rates.

Demographic Data

Depending on the disease, demographic information was usually ascertained through patient interviews, medical chart abstraction or health care provider interviews. Because not all individual cases of disease are mandated to be followed-up by the local health department (e.g., campylobacteriosis), completeness varied by disease.

Age was calculated by subtracting the date of birth from the date of notification to SFDPH, then dividing the difference by 365.25 (the .25 accounts for leap years). Numerical values for age were also routinely collected and entered into the database. If either date used in the age formula was missing but a numerical age was recorded, then this age was used in analyses. This replacement method was required for no cases of reportable conditions in 2009. Only 24 reportable cases were missing age information. The frequency of cases with missing or unknown sex or race/ethnicity information was included in the tables.

Notifiable Disease Definitions

The diseases required to be reported to public health and disease definitions can change over time. Changes in disease definitions can impact the numbers of cases of disease reported to the SFDPH. Important clarifications for 2009 are described below:

California Notifiable Disease Definitions and Changes for 2009

Bacterial Meningitis	excludes meningitis caused by *Neisseria meningitidis*, which is listed separately as Meningococcal Infections.
Chickenpox	Previously all varicella hospitalizations and deaths (including shingles) were reportable, but as of June 2007, only chickenpox hospitalizations and deaths are reportable.
Cholera	is caused by *Vibrio cholerae* serogroup O1 or O139.
Influenza Deaths Pediatric	Deaths associated with infection with an influenza virus are reportable in patients <18 years of age and were added to the list of notifiable diseases in California in June 2007.
Invasive *Haemophilus influenzae* Disease	is reportable only in patients <15 years of age as of June 2007. Prior to June 2007, it was reportable in patients <30 years of age.
Meningococcal Infection	are *N. meningitidis* infections that result in meningitis, meningococcemia or other infections.
Outbreaks	Foodborne outbreaks are defined by 4 or more illnesses with a common food exposure. Other outbreaks of any disease, including those not reportable per CCR Title 17, are defined by an increase in cases above the expected number for a given time period. Additionally, cases may be subjectively classified as an outbreak based on common exposures or other epidemiologic information.
Salmonellosis	includes the more than 2,500 recognized serotypes of *Salmonella* spp., excluding *S.* Typhi, which causes typhoid fever.
Severe *Staphylococcus aureus*	Severe *Staphylococcus aureus* infection in a "previously healthy person" has been a reportable condition in California since February 13, 2008. For the purposes of surveillance, a severe infection is defined as one resulting in death or admission to an intensive care unit, and a previously healthy person is defined as one who has not been hospitalized or had surgery, dialysis, or residency in a long-term care facility in the past year and did not have an indwelling catheter or percutaneous medical device at the onset of illness. A *S. aureus* infection in a person without these healthcare-associated risk factors would be considered community-associated.
Shiga toxin producing *Escherichia coli* (STEC) Infection	Non-O157:H7 STEC infections became notifiable in California in October 2006. All *E. coli* O157 STEC (regardless of presence of H7 antigen) became notifiable in California in June 2007. *E. coli* O157:H7 infections are categorized separately.
Streptococcal Infection	Individual cases of streptococcal infection are reportable only if diagnosed in foodhandlers or dairy workers.
Typhoid Fever	is caused by infection with *S.* Typhi.
Vibriosis	is caused by other *Vibrio cholerae* serogroups (non-O1, non-O139) and other *Vibrio* spp., including *V. parahaemolyticus* and *V. vulnificus*.
Viral Hemorrhagic Fever	includes hemorrhagic fevers caused by filoviruses (e.g., Ebola, Marburg), arenaviruses (e.g., Lassa fever, Machupo), bunyaviruses (e.g., Crimean-Congo), and flaviruses (e.g., Omsk). Yellow fever and dengue are listed separately and not included in this category.

Statistical Calculations

SAS version 9.2 (SAS Institute Inc., Cary, NC) was used to calculate crude incidence rates, age-specific rates, three-year moving averages and confidence intervals. For this report, the crude incidence rate (IR) is defined as the number of new cases of disease per 100,000 residents at risk during a given year. The denominator for all diseases, except infant botulism, congenital rubella, pediatric influenza deaths, and invasive *H. influenzae*, was the total San Francisco population. The population at risk for infant botulism and congenital rubella was San Francisco residents

less than one year of age, while for the invasive *H. influenzae* rate and pediatric influenza death rate, it was persons less than 15 years of age and persons less than 18 years of age, respectively. Age-adjusted rates were not calculated. Rates and proportions were generally rounded to one decimal place.

Formula 1.

$$IR = \left(n \big/ p \right) \times 100{,}000$$

where n= Number of Cases and p=Population at Risk, and each is identified for a one-year period.

Example: In 2009, there were 129 female cases of campylobacteriosis in San Francisco. The estimated number of female residents in 2009 was 395,974. Accordingly, the incidence among females was:

$$IR_{Campy\,2009\,Females} = \left(129 \big/ 395{,}974 \right) \times 100{,}000 = 32.6 \text{ cases per 100,000 population .}$$

Reliability of Rates

With rare diseases or with diseases where the number of cases for a particular population group is very small, a minor change in the number of incident cases can result in a relatively large shift in the corresponding rate. Rates and percents based on a small number of events may be unreliable and are generally subject to substantial variability over time. Unstable rates should not be statistically compared for differences with the rates for other populations or for San Francisco over time. Rates with a relative standard error (RSE) of 23% or greater were considered unstable and identified by an asterisk in tables of this report.[5] Equivalently, numerators less than 20 result in unreliable rates.

Formula 2.

$$RSE = \left(SE_{rate} \big/ r \right) \times 100 = \left(\frac{r \big/ \sqrt{n}}{r} \right) \times 100 = \left(\sqrt{1 \big/ n} \right) \times 100$$

where r = Rate and SE_{rate} = Standard Error of a Rate and n = Number of Cases

Example: In 2009, there were 331 cases of campylobacteriosis cases reported in San Francisco and 8 cases of non-cholera vibriosis in 2009. Accordingly, the relative standard errors for campylobacteriosis and vibriosis are:

$$RSE_{Campy\,2009} = \left(\sqrt{1 \big/ 331} \right) \times 100 = 5.5\%$$

The rate derived from the frequency of campylobacteriosis is considered stable (RSE < 23%).

$$RSE_{Vibrio\,2009} = \left(\sqrt{1 \big/ 8} \right) \times 100 = 35.4\%$$

The rate derived from the frequency of vibriosis is not stable and is considered unreliable (RSE > 23%).

Exact Confidence Limits

95% Exact Confidence Intervals (95% CI) for incidence rates were approximated from the gamma distribution.[6] Confidence limits were rounded to one decimal place.

Because the rates presented in this report are estimates of the true incidence of reported communicable diseases in San Francisco, confidence limits are used to describe the uncertainty of an estimate and provide a range in which the true rate occurs. In 2009, the rate of giardiasis in residents 25-34 years of age was 22.0 cases per 100,000 people (95% CI=15.0-31.0). This confidence interval indicates that the true giardiasis rate in residents aged 25-34 years is

likely to lie somewhere between 15.0 and 31.0 cases per 100,000. The interval therefore provides a useful means for evaluating the precision of a rate calculation. A rate estimate with a wide confidence interval is less precise than a rate with a narrow confidence interval. Using 2009 giardiasis cases as an example, consider the difference between incidence among residents 1-4 years of age (rate=32.3, 95% CI=16.1-57.7) and those aged 25-34 years as described above. The range of possible values among the older age group is approximately half as wide as the range for children 1-4 years. The rate among residents 25-34 years is therefore considered more precise. Rates with very large confidence intervals should be interpreted cautiously. In this report, confidence intervals were not displayed for individual cell counts of zero.

Aggregate Rates: Three-year moving averages

As stated above, with rare diseases or where the number of cases for a particular population group is very small, a minor change in the number of incident cases can result in a relatively large shift in the rate. One approach to minimizing the effect of large rate shifts and allowing detection of overall trends involves the calculation of moving averages. This approach can be used to compare across populations or to compare across time when the two time periods do not overlap. Calculating three-year moving averages involved summing the numerator and denominator over a three year period and dividing by three.

Rules for Data Suppression

If the number of cases for a given time period is small and enough demographic information is given, it may be possible to identify an individual case-patient from tabulated data. Therefore, the total annual incidence was required to be at least 19 cases for information about age, sex, and race/ethnicity data to be included. Of those diseases with an annual incidence of 19 or more cases, seven diseases were selected for inclusion in this report.

Data Limitations

The surveillance data was reported by laboratorians, clinicians and other mandated reporters to the local health authority in compliance with public health laws.[1] Reports may be incomplete and/or important demographic, clinical or risk information may not be available upon active follow-up. Because not all cases of disease were detected by the health care system and not all detected cases were reported to the public health department, the information presented in this report may underestimate the true incidence of disease.

Note to Users of this Report

Occasionally, users of this report would like to see incidence rates for specific population parameters (e.g., rate of salmonellosis in children <5 years of age in 2009). Simple calculations can be accomplished by inserting the desired incidence data provided in the tables of this report and the San Francisco population estimates from TABLE 5 into *Formula 1* above. When such calculations are used for grants or technical papers, the citation of this report must explicitly indicate that SFDPH did not perform the calculation.

Example: A grant writer wishes to know the rate of salmonellosis in San Francisco residents younger than 5 years of age in 2009. From TABLE 2, it is known that 11 cases were <1 year of age and 22 cases were 1-4 years of age. Similarly, the number of San Francisco residents in 2009 can be found in TABLE 5:

	Female	*Male*
<1 yr	4,346	4,516
1-4 yrs	16,730	17,369

Thus, the total number of cases <5 years of age $= (11 + 22) = 33$ and

the total population <5 years of age $= (4{,}346 + 16{,}730 + 4{,}516 + 17{,}369) = 42{,}961$ and

the rate of salmonellosis $= \left({}^{33}\!/_{42{,}961} \right) \times 100{,}000 = 76.8$ cases per 100,000 population .

Notes on 2009 Surveillance Data

The following notes are intended to aid in the interpretation of reported cases of selected diseases.

- *Campylobacteriosis: Campylobacter* infections remain the most frequently reported enteric disease in San Francisco (n=331, rate=40.7 cases per 100,000 residents), and the highest rates of campylobacteriosis in San Francisco occur in children under five years of age. Since 1990, rates of campylobacteriosis have generally been decreasing, most precipitously among children under five years of age (310.0 cases per 100,000 residents under five years of age in the 1990-1992 period; 102.2 cases per 100,000 residents under five years of age in the 2007-2009 period). The overall incidence rate of campylobacteriosis in 2009 was lower than the rate in 2008 (2009: n=331, rate = 40.7 cases per 100,000 residents, 95%CI: 36.4-45.3; 2008: n=375, rate=46.3 cases per 100,000 residents, 95%CI: 41.7-51.2), but this decrease was not statistically significant.

- *Influenza, H1N1 Swine:* H1N1 swine influenza is an influenza virus of swine origin that first caused illness in Mexico and the United States in March and April, 2009. The first H1N1 swine influenza patient in the United States was confirmed by laboratory testing at Centers for Disease Control on April 15, 2009. On April 29, the first case of H1N1 swine influenza was reported in a San Francisco resident. By June 19, 2009, all 50 states in the United States, the District of Columbia, Puerto Rico, and the U.S. Virgin Islands had reported H1N1 swine influenza infection. On June 11, 2009, the World Health Organization signaled that a global pandemic of H1N1 swine influenza was underway by raising the worldwide pandemic alert level to Phase 6 - a reflection of the spread of the new H1N1 swine influenza virus, not the severity of illness caused by the virus.

  Because H1N1 swine influenza was a new disease with unknown severity or infectiousness, surveillance methods, including case definitions, specimen testing criteria, and reporting requirements, changed over time. Early in the pandemic, public health agencies attempted to identify, test and report individual cases regardless of disease severity. Later, only severely ill persons with influenza-like illness who were hospitalized were tested for H1N1 swine influenza and were reported. Because the criteria for testing and for case counting changed many times during 2009 as the situation evolved, case counts do not reflect a consistent or complete picture of the impact of the pandemic on San Francisco residents. From April-December 2009, 111 cases were reported and include early cases of mild disease identified in an outpatient setting as well as those hospitalized with more severe outcomes. Many more cases occurred that were not tested or counted.

- *Lyme Disease (LD):* Since 1989, LD has been a clinician-reported disease, and in June 2005, laboratories became legally required to report cases of LD to SFDPH. Laboratory testing for LD is and continues to be problematic, because some commercial labs use assays whose accuracy and usefulness has not been adequately established.[7] With the implementation of laboratory reporting in 2005, the number of LD cases increased and continued increasing in 2006 (n=14, rate = 1.7 cases per 100,000 residents) and 2007 (n=18, rate=2.2 cases per 100,000 residents). In 2008, SFDPH applied the 2008 Council of State and Territorial Epidemiologists/Centers for Disease Control and Prevention (CDC) LD case definition; subsequently, the number of LD cases decreased (2008: n=7, rate=0.9 cases per 100,000 residents; 2009: n=4, rate=0.5 cases per 100,000 residents). All four cases in 2009 had unknown travel histories and unknown tick exposure.

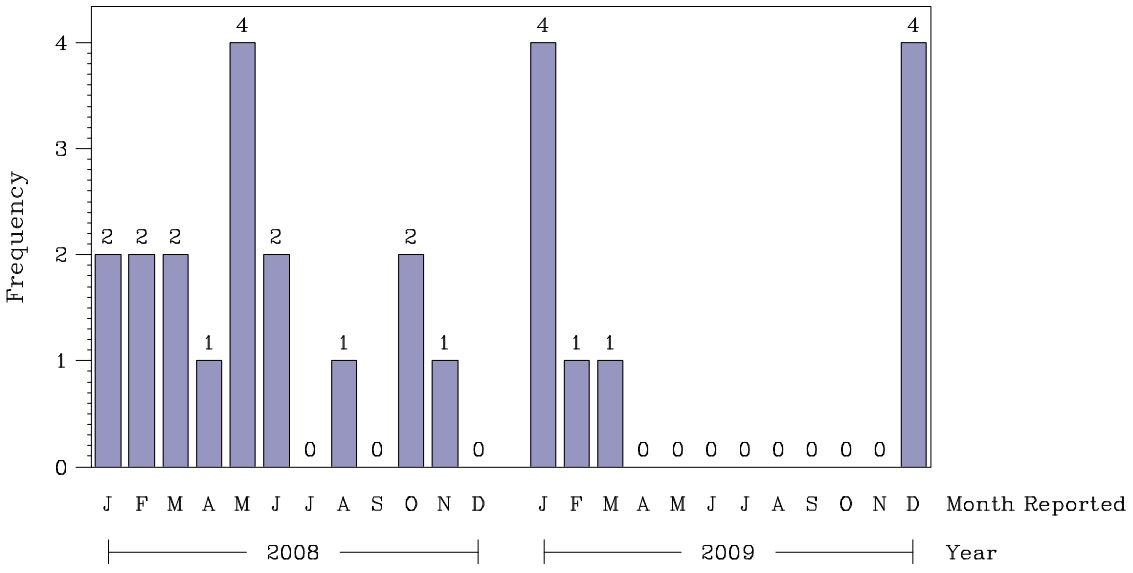
- *Measles*: Measles (also known as rubeola) is a highly contagious vaccine-preventable disease caused by the measles virus. Worldwide, the number of reported cases was 222,408 in 2009[8], but the actual number of cases is estimated to be much greater; in 2000, the estimated number of measles cases worldwide approached 40 million[9]. Due to a successful vaccination program, measles is rare in the US. However, since 2008, there has been a significant rise in cases due to importation of disease and subsequent outbreaks in several states, particularly among unvaccinated populations[10]; approximately 95% of cases in the US are internationally imported or U.S-acquired, import-linked cases[11].

  In San Francisco in 2007, no measles cases were reported; in 2008, one case was reported. In San Francisco in 2009, five cases of measles were reported: two cases were internationally imported, two were US-acquired, import-linked cases, and one case did not have a known source. Three cases were not vaccinated, while two cases had an unclear vaccination history. One of the imported cases caused an outbreak, and the SFDPH initiated its Infectious Disease Emergency Response (IDER) plan to investigate and control this outbreak by

identifying contacts who were not immune to measles and placing them in home quarantine and/or monitoring them for development of symptoms to avoid infecting others. Because of the quick identification and reporting of measles by a community provider, the rapid response to this outbreak, and the limited number of susceptible contacts, only two additional cases occurred.

- *Outbreaks:* In 2009, CDCU identified and investigated a total of 32 communicable disease outbreaks. This is fewer than the number of outbreaks identified and investigated in previous years (2008: n=42; 2007: n=41; 2006: n=65). It is unclear whether this decrease is a result of changes in reporting practices, outbreak definition changes, or a true decrease in the number of outbreaks.
    - Etiology: Of all 32 reported outbreaks, 18 (56%) had a suspected or confirmed etiology: 10/18 (56%) were caused by norovirus, 5/18 (28%) by influenza, and 1 each by measles, suspected *Bacillus cereus*, and parainfluenza type 1. Fourteen of all 32 reported outbreaks (44%) were caused by an unknown etiology, 13 of which caused gastrointestinal illness.
    - Influenza outbreaks: The H1N1 swine influenza pandemic is not included in the total count of communicable disease outbreaks, but smaller H1N1 swine influenza outbreaks in congregate living facilities were reported. Four of the 5 influenza outbreaks were caused by H1N1 swine influenza, and all occurred in congregate living facilities; the other influenza outbreak, which also occurred in a congregate living facility, occurred in the winter of 2008/2009 before the start of the H1N1 swine influenza pandemic.
    - Gastrointestinal Illness Outbreaks: Twenty-four of the 32 (75%) outbreaks caused gastrointestinal illness.
        - Five of the 24 gastrointestinal outbreaks (21%) were believed to be foodborne; of the five foodborne outbreaks, one was of suspected *Bacillus cereus*.
        - Nineteen of the 24 outbreaks (79%) were believed to be non-foodborne related acute gastroenteritis outbreaks; of these, 10 were outbreaks of confirmed or suspected norovirus. Non-foodborne outbreaks of norovirus occurred mainly in the winter (Figure 1) and resulted in an average of 38 illnesses per incident; most (90%) were reported in providers of housing services for the elderly.

Figure 1. Monthly Incidence of Non−Foodborne Norovirus Outbreaks in San Francisco, 2008−2009



Note: Includes both suspected and confirmed norovirus outbreaks.

- *Pertussis:* In San Francisco, as in California[12] and the United States[13], pertussis is endemic with epidemic cycles every three to four years. Of the 20 cases reported in 2009, 10 (50%) occurred in people over the age of nine years, which is similar to the percentage California reported for this same age group in 2005, 53%.[12] Six cases (30%) were under one year of age. Pertussis has been increasing in California, the United States and San Francisco since the mid-1970s, and the percentage of adolescents and adults that have been diagnosed with pertussis has also increased. It is unknown why rates of pertussis have increased, but theories include increased recognition and diagnosis, increased access to laboratory tests, introduction of new laboratory tests such as nucleic acid amplification tests, increased surveillance and reporting, as well as waning immunity following vaccination. [12,13,14]

- *Rabies, Bat:* Five rabid bats were detected in San Francisco in 2009. Bats present a risk of rabies exposure to humans and pets, especially when they are handled or enter homes where they can have contact with people or their pets.[15] Rabies was not detected in any other animals.

- *Salmonellosis*: Rates of salmonellosis have decreased from 30.2 per 100,000 residents (95% CI: 26.4-34.5) in 1992 to a low of 13.2 per 100,000 residents (95% CI: 10.6-16.0) in 2005. Since 2005, rates of salmonellosis have increased, but this increase has not been statistically significant. Between 2008 and 2009, the rate of salmonellosis increased from 14.6 per 100,000 residents (95% CI: 12.1-17.4) to 18.4 per 100,000 residents (95% CI: 15.6-21.6), not a statistically significant difference. The most frequently reported *Salmonella* serotypes in 2009, which together accounted for 65.5% of the 145 cases with complete serotype information were as follows: *S. enteriditis* (20.7%), *S. typhimurium* (9.7%), *S. heidelberg* (9.0%), *S. infantis* (6.9%), *S. I 4,5,12:i:-* (4.8%), *S. potsdam* (4.1%), *S. rissen* (4.1%), *S. Newport* (3.4%), *S. montevideo* (2.8%). While most cases of salmonellosis were sporadic, some cases were associated with multistate outbreaks, including the multistate outbreak of *Salmonella typhimurium* associated with peanut butter and peanut butter-containing products and the multistate outbreak of *Salmonella rissen* associated with pepper.

- *Shigellosis:* Rates of shigellosis decreased from 55.3 per 100,000 residents (95% CI: 50.1-61.0) in 1986 to 14.7 per 100,000 residents (95% CI: 12.1-17.7) in 1999; this decrease was accompanied by some increases in the intervening years, e.g., the shigellosis rate of 38.4 per 100,000 population (95% CI: 34.0-43.2) in 1991 increased to 45.7 per 100,000 population (95% CI: 40.9-50.7) in 1992. In 2000-2001, rates of shigellosis increased due to an outbreak of shigellosis which occurred in San Francisco, primarily among men who have sex with men (2000: rate=45.6 per 100,000 population, 95% CI: 41.0-50.6; 2001: rate=36.2 per 100,000 population, 95% CI: 32.1-40.7). Rates decreased from this high in 2000 to the lowest rate yet reported of 8.9 per 100,000 residents (95% CI: 7.0- 11.2) in 2008. Between 2008 and 2009, the rate of shigellosis among San Francisco residents significantly increased from 8.9 per 100,000 residents (95% CI: 7.0- 11.2) in 2008 to 15.0 per 100,000 residents (95% CI: 12.4-17.9) in 2009. The rate in 2009 is not significantly higher than the 2007 rate (rate=13.5 per 100,000, 95% CI: 11.1-16.3); continued monitoring is needed to understand the importance of the increase between 2008 and 2009.

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TABLE 1: Frequency of Reportable Diseases in San Francisco, 2009

Disease	n	Rate
Amebiasis	94	11.5
Anthrax	0	0.0
Babesiosis	0	0.0
Botulism, Foodborne	0	0.0
Botulism, Infant (1)	0	0.0
Botulism, Unspecified	0	0.0
Botulism, Wound	0	0.0
Brucellosis	0	0.0
Campylobacteriosis	331	40.7
Chickenpox, Severe (Death or Hosp) (2)	1	0.1 *
Cholera (3)	0	0.0
Ciguatera Fish Poisoning	0	0.0
Coccidioidomycosis	0	0.0
Colorado Tick Fever	0	0.0
Creutzfeldt-Jakob Dis. or Other TSE (4,5)	0	0.0
Cryptosporidiosis	22	2.7
Cysticercosis or Taeniasis (6)	2	0.2 *
Dengue	1	0.1 *
Diphtheria	0	0.0
Domoic Acid Poisoning	0	0.0
Ehrlichiosis	0	0.0
Encephalitis, Arboviral	0	0.0
Encephalitis, Bacterial	1	0.1 *
Encephalitis, Fungal	0	0.0
Encephalitis, Other Viral	1	0.1 *
Encephalitis, Parasitic	0	0.0
Encephalitis, Unspecified	13	1.6 *
Encephalitis, Total	15	1.8 *
Escherichia coli O157:H7 Infection	14	1.7 *
Escherichia coli STEC Infection (7)	1	0.1 *
Giardiasis	167	20.5
Haemophilus influenzae, Invasive (8)	0	0.0
Hantavirus Infection	0	0.0
Hemolytic Uremic Syndrome	0	0.0
Hepatitis A	4	0.5 *
Hepatitis B, Acute (9)	16	2.0 *
Hepatitis C, Acute	1	0.1 *
Hepatitis Delta	0	0.0
Influenza A, Avian (H5N1) (Human) (4)	0	0.0
Influenza, Pediatric Deaths (4,10)	0	0.0
Kawasaki Syndrome	0	0.0
Legionellosis	2	0.2 *
Leprosy	0	0.0
Leptospirosis	0	0.0
Listeriosis	6	0.7 *
Lyme Disease (11)	4	0.5 *
Malaria	4	0.5 *

Disease	n	Rate
Measles	5	0.6 *
Meningitis, Bacterial (12)	4	0.5 *
Meningitis, Fungal	5	0.6 *
Meningitis, Parasitic	0	0.0
Meningitis, Unspecified	0	0.0
Meningitis, Viral	4	0.5 *
Meningitis, Total	13	1.6 *
Meningococcal Infection (13)	4	0.5 *
Mumps	0	0.0
Outbreaks, Foodborne (14)	5	N/A
Outbreaks, Non-Foodborne (14)	27	N/A
Paralytic Shellfish Poisoning	0	0.0
Pertussis	20	2.5
Plague	0	0.0
Poliomyelitis	0	0.0
Psittacosis	0	0.0
Q Fever	1	0.1 *
Rabies, Animal (15)	5	N/A
Rabies, Human	0	0.0
Relapsing Fever	0	0.0
Rheumatic Fever, Acute	0	0.0
Rocky Mountain Spotted Fever	0	0.0
Rubella	0	0.0
Rubella, Congenital (1)	0	0.0
Salmonellosis (16)	150	18.4
Scombroid Fish Poisoning	2	0.2 *
Severe Acute Respiratory Syndrome	0	0.0
Severe Staphy Aureus infection (17)	13	1.6 *
Shiga toxin feces (7)	0	0.0
Shigellosis, Group B: S. flexneri	40	4.9
Shigellosis, Group D: S. sonnei	78	9.6
Shigellosis, Other Group	4	0.5 *
Shigellosis, Total	122	15.0
Smallpox (18)	0	0.0
Streptococcal Infection (19)	0	0.0
Tetanus	0	0.0
Toxic Shock Syndrome	2	0.2 *
Toxoplasmosis	0	0.0
Trichinosis	0	0.0
Tularemia	0	0.0
Typhoid Carrier (20)	0	0.0
Typhoid Fever, Acute (20)	1	0.1 *
Typhus Fever	0	0.0
Vibriosis, Non-Cholera (3)	8	1.0 *
Viral Hemorrhagic Fever (21)	0	0.0
West Nile Disease	0	0.0
Yellow Fever	0	0.0
Yersiniosis	4	0.5 *

Source: SFDPH Communicable Disease Control Unit. Data shown by year cases reported to SFDPH. Rates are cases per 100,000 population. *=Unstable Rates (where n<20) should not be compared statistically. Population estimates obtained from the California Department of Finance. This report uses 2007 estimates; previous reports, including the 2007 Annual Report of Communicable Diseases in San Francisco, used 2004 estimates. (1) Rate among residents age <1 yr. (2) Since June 2007, only chickenpox (not varicella) deaths reportable; chickenpox hospitalizations became reportable in June 2007. (3) Cholera caused by Vibrio cholerae serogroup O1/O139. Vibriosis caused by other V. cholerae serogroups (non-O1/O139) and other Vibrio spp. (4) Reportable since June 2007. (5) TSE = transmissible spongiform encephalopathies (e.g., vCJD, kuru).(6)Taeniasis reportable since June 2007. (7) Non-O157:H7 STEC infections and Shiga toxin feces reportable since Oct 2006. (8) Reportable in <15 yrs; rate for residents aged <15 yrs. (9) Includes perinatal cases. (10) Reportable among <18 yrs; rate for residents <18 yrs. (11) Lyme Disease has been clinician-reportable since 1989 and lab-reportable since June 2005; SFDPH applied CSTE/CDC case definition in January 2008. (12) Excludes meningitis caused by Neisseria meningitidis, which is listed separately as Meningococcal Infections. (13) Caused by Neisseria meningitidis and includes meningitis and meningococcemia. (14) Foodborne OB is >=4 illnesses with common exposure; other OBs defined by increase in cases above expected number. (15) Rabid bat only; no documented rabid terrestrial animal in SF for >60 yrs. (16) Excludes S. Typhi, which causes typhoid fever. (17) Reportable since February 2008. (18) Eradicated in 1979; reportable again since 2001 for bioterror surveillance. (19) Individual foodhandlers and dairy workers only. (20) Caused by S. Typhi. (21) Includesfiloviruses (e.g., Ebola, Marburg), arenaviruses (e.g., Lassa fever), bunyaviruses (e.g., Crimean-Congo), and flaviruses (e.g., Omsk).

TABLE 2: Frequency and Unadjusted Rates for 7 Selected Diseases by Age, San Francisco, 2009

		Amebiasis				Campylobacteriosis				Cryptosporidiosis			
Year	Age	n	Rate	95%LCL	95%UCL	n	Rate	95%LCL	95%UCL	n	Rate	95%LCL	95%UCL
2009	<1 yr	0	0.0*			5	56.4*	18.3	132	0	0.0*		
	1-4 yrs	1	2.9*	0.1	16.3	28	82.1	54.6	119	1	2.9*	0.1	16.3
	5-14 yrs	3	4.9*	1.0	14.4	16	26.3*	15.0	42.7	0	0.0*		
	15-24 yrs	4	6.9*	1.9	17.6	24	41.3	26.4	61.4	1	1.7*	0.0	9.6
	25-34 yrs	12	8.2*	4.3	14.4	77	52.9	41.7	66.1	6	4.1*	1.5	9.0
	35-44 yrs	32	16.7	11.4	23.6	67	35.0	27.1	44.4	6	3.1*	1.1	6.8
	45-54 yrs	27	24.7	16.2	35.9	39	35.6	25.3	48.7	6	5.5*	2.0	11.9
	55-64 yrs	12	13.1*	6.8	22.9	34	37.2	25.7	51.9	2	2.2*	0.3	7.9
	65+ yrs	3	2.6*	0.5	7.7	39	34.2	24.3	46.8	0	0.0*		
	Total	94	11.5	9.3	14.1	331	40.7	36.4	45.3	22	2.7	1.7	4.1

		Giardiasis				Pertussis				Salmonellosis			
Year	Age	n	Rate	95%LCL	95%UCL	n	Rate	95%LCL	95%UCL	n	Rate	95%LCL	95%UCL
2009	<1 yr	1	11.3*	0.3	62.9	6	67.7*	24.9	147	11	124*	62.0	222
	1-4 yrs	11	32.3*	16.1	57.7	3	8.8*	1.8	25.7	22	64.5	40.4	97.7
	5-14 yrs	11	18.1*	9.0	32.4	1	1.6*	0.0	9.2	17	28.0*	16.3	44.8
	15-24 yrs	12	20.6*	10.7	36.0	3	5.2*	1.1	15.1	14	24.1*	13.2	40.4
	25-34 yrs	32	22.0	15.0	31.0	4	2.7*	0.7	7.0	20	13.7	8.4	21.2
	35-44 yrs	43	22.4	16.2	30.2	1	0.5*	0.0	2.9	16	8.3*	4.8	13.6
	45-54 yrs	26	23.7	15.5	34.8	0	0.0*			17	15.5*	9.0	24.9
	55-64 yrs	20	21.9	13.4	33.8	2	2.2*	0.3	7.9	11	12.0*	6.0	21.5
	65+ yrs	10	8.8*	4.2	16.1	0	0.0*			22	19.3	12.1	29.2
	Total	167	20.5	17.5	23.9	20	2.5	1.5	3.8	150	18.4	15.6	21.6

		Shigellosis (Total)				Shigellosis (flexneri)				Shigellosis (sonnei)			
Year	Age	n	Rate	95%LCL	95%UCL	n	Rate	95%LCL	95%UCL	n	Rate	95%LCL	95%UCL
2009	<1 yr	0	0.0*			0	0.0*			0	0.0*		
	1-4 yrs	2	5.9*	0.7	21.2	0	0.0*			2	5.9*	0.7	21.2
	5-14 yrs	4	6.6*	1.8	16.8	2	3.3*	0.4	11.9	2	3.3*	0.4	11.9
	15-24 yrs	4	6.9*	1.9	17.6	2	3.4*	0.4	12.4	2	3.4*	0.4	12.4
	25-34 yrs	23	15.8	10.0	23.7	7	4.8*	1.9	9.9	16	11.0*	6.3	17.8
	35-44 yrs	41	21.4	15.4	29.0	18	9.4*	5.6	14.8	22	11.5	7.2	17.4
	45-54 yrs	26	23.7	15.5	34.8	6	5.5*	2.0	11.9	18	16.4*	9.7	26.0
	55-64 yrs	14	15.3*	8.4	25.7	3	3.3*	0.7	9.6	11	12.0*	6.0	21.5
	65+ yrs	8	7.0*	3.0	13.8	2	1.8*	0.2	6.3	5	4.4*	1.4	10.2
	Total	122	15.0	12.4	17.9	40	4.9	3.5	6.7	78	9.6	7.6	12.0

Source: SFDPH Communicable Disease Control Unit. Data shown by year cases reported to SFDPH. Rates are cases per 100,000 population. *=Unstable Rate (n<20). Unstable rates should not be compared statistically. 95%LCL=Exact Lower Confidence Limit, 95%UCL=Exact Upper Confidence Limit; 95% Exact Confidence Limits not displayed for counts of zero. Cases with missing age are represented in total column counts only. Thus, the sum of individual age groups for these diseases does not match the total column count shown. Population estimates obtained from the California Department of Finance. This report uses 2007 estimates; previous reports, including the 2007 Annual Report of Communicable Diseases in San Francisco, used 2004 estimates.

TABLE 3: Frequency and Unadjusted Rates for 7 Selected Diseases by Sex, San Francisco, 2009

		Amebiasis				Campylobacteriosis				Cryptosporidiosis			
Year	Sex	n	Rate	95% LCL	95% UCL	n	Rate	95% LCL	95% UCL	n	Rate	95% LCL	95% UCL
2009	Male	85	20.3	16.2	25.1	191	45.7	39.4	52.6	15	3.6*	2.0	5.9
	Female	9	2.3*	1.0	4.3	129	32.6	27.2	38.7	7	1.8*	0.7	3.6
	Unk	0				11				0			
	Total	94	11.5	9.3	14.1	331	40.7	36.4	45.3	22	2.7	1.7	4.1

		Giardiasis				Pertussis				Salmonellosis			
Year	Sex	n	Rate	95% LCL	95% UCL	n	Rate	95% LCL	95% UCL	n	Rate	95% LCL	95% UCL
2009	Male	123	29.4	24.4	35.1	8	1.9*	0.8	3.8	72	17.2	13.5	21.7
	Female	42	10.6	7.6	14.3	12	3.0*	1.6	5.3	78	19.7	15.6	24.6
	Unk	2				0				0			
	Total	167	20.5	17.5	23.9	20	2.5	1.5	3.8	150	18.4	15.6	21.6

		Shigellosis (Total)				Shigellosis (flexneri)				Shigellosis (sonnei)			
Year	Sex	n	Rate	95% LCL	95% UCL	n	Rate	95% LCL	95% UCL	n	Rate	95% LCL	95% UCL
2009	Male	108	25.8	21.2	31.2	36	8.6	6.0	11.9	68	16.3	12.6	20.6
	Female	14	3.5*	1.9	5.9	4	1.0*	0.3	2.6	10	2.5*	1.2	4.6
	Unk	0				0				0			
	Total	122	15.0	12.4	17.9	40	4.9	3.5	6.7	78	9.6	7.6	12.0

Source: SFDPH Communicable Disease Control Unit. Data shown by year cases reported to SFDPH.

Rates are cases per 100,000 population; Rates not calculated for the sex category Unknown; *=Unstable Rate (n<20); Unstable rates should not be compared statistically.

95%LCL=Exact Lower Confidence Limit, 95%UCL=Exact Upper Confidence Limit; 95% Exact Confidence Limits not displayed for counts of zero.

Population estimates obtained from the California Department of Finance. This report uses 2007 estimates; previous reports, including the 2007 Annual Report of Communicable Diseases in San Francisco, used 2004 estimates.

TABLE 4: Frequency and Unadjusted Rates for 7 Selected Diseases by Race/Ethnicity, San Francisco, 2009

		Amebiasis				Campylobacteriosis**				Cryptosporidiosis			
Year	Race/ Ethnicity	n	Rate	95% LCL	95% UCL	n	Rate	95% LCL	95% UCL	n	Rate	95% LCL	95% UCL
2009	White	63	17.1	13.1	21.9	29				5	1.4*	0.4	3.2
	Black	3	5.1*	1.1	15.0	3				0	0.0*		
	Asian/PI	5	1.9*	0.6	4.3	14				0	0.0*		
	Hispanic	14	12.7*	7.0	21.4	5				1	0.9*	0.0	5.1
	Am Indian	0	0.0*			0				0	0.0*		
	Other	1				0				0			
	Unknown	8				280				16			
	Total	94	11.5	9.3	14.1	331				22	2.7	1.7	4.1

		Giardiasis				Pertussis				Salmonellosis			
Year	Race/ Ethnicity	n	Rate	95% LCL	95% UCL	n	Rate	95% LCL	95% UCL	n	Rate	95% LCL	95% UCL
2009	White	59	16.0	12.2	20.7	10	2.7*	1.3	5.0	51	13.8	10.3	18.2
	Black	7	11.9*	4.8	24.6	0	0.0*			8	13.6*	5.9	26.9
	Asian/PI	5	1.9*	0.6	4.3	1	0.4*	0.0	2.1	51	18.9	14.1	24.8
	Hispanic	18	16.4*	9.7	25.9	9	8.2*	3.7	15.5	14	12.7*	7.0	21.4
	Am Indian	0	0.0*			0	0.0*			0	0.0*		
	Other	1				0				1			
	Unknown	77				0				25			
	Total	167	20.5	17.5	23.9	20	2.5	1.5	3.8	150	18.4	15.6	21.6

		Shigellosis (Total)				Shigellosis (flexneri)				Shigellosis (sonnei)			
Year	Race/ Ethnicity	n	Rate	95% LCL	95% UCL	n	Rate	95% LCL	95% UCL	n	Rate	95% LCL	95% UCL
2009	White	78	21.2	16.7	26.4	25	6.8	4.4	10.0	51	13.8	10.3	18.2
	Black	4	6.8*	1.9	17.5	1	1.7*	0.0	9.5	3	5.1*	1.1	15.0
	Asian/PI	2	0.7*	0.1	2.7	1	0.4*	0.0	2.1	1	0.4*	0.0	2.1
	Hispanic	17	15.5*	9.0	24.8	6	5.5*	2.0	11.9	10	9.1*	4.4	16.7
	Am Indian	1	13.6*	0.3	75.8	0	0.0*			1	13.6*	0.3	75.8
	Other	0				0				0			
	Unknown	20				7				12			
	Total	122	15.0	12.4	17.9	40	4.9	3.5	6.7	78	9.6	7.6	12.0

Source: SFDPH Communicable Disease Control Unit. Data shown by year cases reported to SFDPH. Am Indian = American Indian or Alaska Native; Asian/PI = Asian or Pacific Islander
Rates are cases per 100,000 population; Rates not calculated for the race/ethnicity categories Other & Unknown. *=Unstable Rate (n<20). Unstable rates should not be compared statistically.
95%LCL=Exact Lower Confidence Limit, 95%UCL=Exact Upper Confidence Limit; 95% Exact Confidence Limits not displayed for counts of zero.
****Rates were not calculated for Campylobacteriosis, because of the high percentage of missing race and ethnicity information.***
Population estimates obtained from the California Department of Finance. This report uses 2007 estimates; previous reports, including the 2007 Annual Report of Communicable Diseases in San Francisco, used 2004 estimates.

TABLE 5: San Francisco Population Estimates by Sex, Age and Race/Ethnicity, 2009

Year	Sex	Age	White	Hispanic	Black	Asian/PI	Am Indian	Total
2009	F	<1 yr	1,995	696	312	1,312	31	4,346
		1-4 yrs	6,809	3,060	1,263	5,400	198	16,730
		5-14 yrs	6,460	7,269	3,247	12,089	671	29,736
		15-24 yrs	6,208	5,294	3,861	13,224	372	28,959
		25-34 yrs	41,544	7,350	3,784	19,009	462	72,149
		35-44 yrs	47,369	9,433	4,017	23,901	605	85,325
		45-54 yrs	16,208	6,957	4,342	20,629	473	48,609
		55-64 yrs	18,153	4,835	3,597	18,435	338	45,358
		65+ yrs	24,398	6,822	5,009	28,178	355	64,762
			169,144	***51,716***	***29,432***	***142,177***	***3,505***	***395,974***
	M	<1 yr	2,072	723	325	1,364	32	4,516
		1-4 yrs	7,075	3,181	1,327	5,581	205	17,369
		5-14 yrs	6,875	7,653	3,398	12,444	689	31,059
		15-24 yrs	5,925	5,352	3,740	13,845	351	29,213
		25-34 yrs	42,204	9,441	3,390	17,973	447	73,455
		35-44 yrs	65,681	13,534	4,421	21,934	750	106,320
		45-54 yrs	27,386	8,887	5,062	18,929	640	60,904
		55-64 yrs	21,153	5,000	3,985	15,608	399	46,145
		65+ yrs	20,720	4,398	3,562	20,260	338	49,278
			199,091	***58,169***	***29,210***	***127,938***	***3,851***	***418,259***
2009			***368,235***	***109,885***	***58,642***	***270,115***	***7,356***	***814,233***

Source: California Department of Finance, Demographic Research Unit. This report uses 2007 estimates; previous reports, including the 2007 Annual Report of Communicable Diseases in San Francisco, used 2004 estimates.

Note: Am Indian=American Indian/Alaska Native; Asian/PI=Asian/Pacific Islander.