



Cryptosporidiosis Surveillance Project

Annual Report

2008



The Bay Area Cryptosporidiosis Surveillance Project (CSP) monitors human cryptosporidiosis in Bay Area Counties served by the San Francisco Public Utilities Commission: Alameda, San Francisco, San Mateo, and Santa Clara, and Tuolumne County, where the Hetch Hetchy Reservoir is located.

Surveillance Summary:

Fourth Quarter 2008: During the fourth quarter of 2008, 21 cases of cryptosporidiosis were reported in the study area. Figure 1 presents case counts by month and county.

2008 Surveillance: In 2008 a total of 56 cases were reported; no system-wide, drinking water associated or other cryptosporidiosis outbreaks were detected. Case counts and cumulative incidence (CI) varied by county ranging from 0 cases in Tuolumne County to 16 cases or 2.16 cryptosporidiosis cases per 100,000 residents in San Mateo County (Table 1). At 1.70 cases per 100,000 residents, 2008 is the first year of surveillance that San Francisco County did not have the highest CI. Figure 2 presents case counts by county, age and gender.

Table 1: Number and Cumulative Incidence by County, 2008

County	N	Cumulative Incidence per 100,000 [‡]
Tuolumne	0	NA
San Mateo	16	2.16
Santa Clara	14	0.76
Alameda	12	0.78
San Francisco	14	1.70
Total	56	1.12

Figure 2: Case Counts by County, Age and Sex, 2008

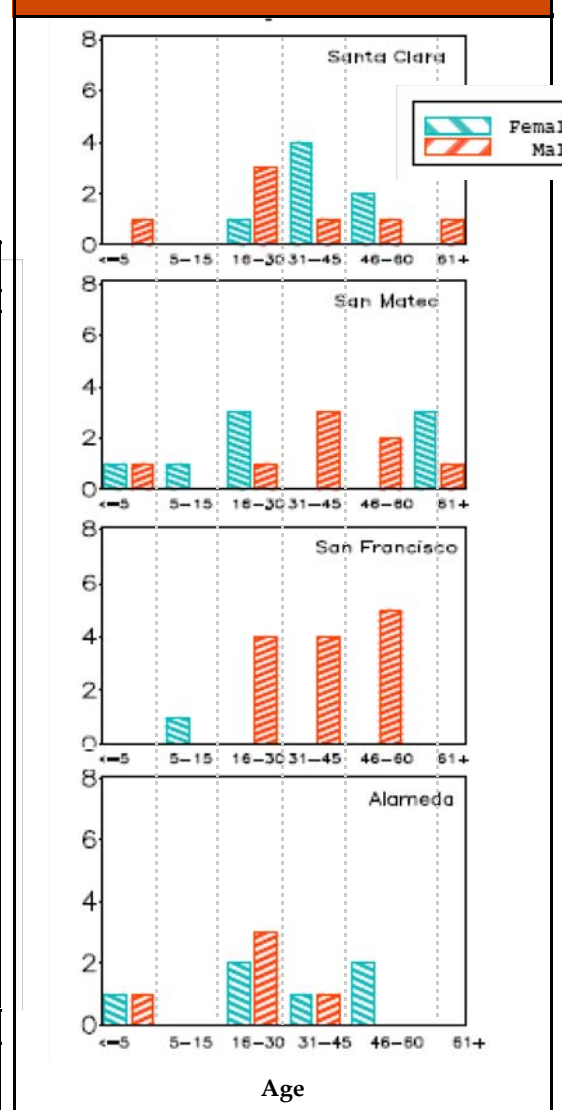
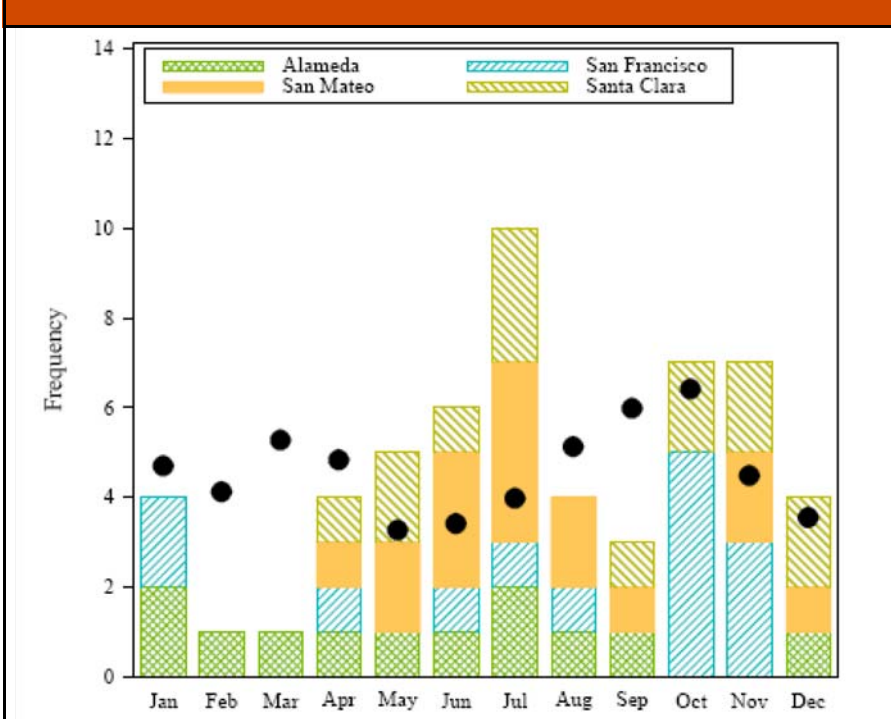


Figure 1: Cryptosporidiosis Case Counts by Month and County, 2008



No Cases Reported in Tuolumne County.
 Points represent monthly mean case counts 2000-2005 and 2007. Data from 2006 have been omitted due to an outbreak in August, September, and October, 2006.

[†] Alameda and San Francisco county data and historical data obtained through the cooperation of the California Emerging Infections Program.
[‡] Cumulative incidences were calculated using the following population estimates: State of California, Department of Finance, E-1 Population Estimates for Cities, Counties and the State with Annual Percent Change – January 1, 2006 and 2007. Sacramento, California, May 2007.

Cryptosporidiosis Case Demographics and Risk Factors

In 2008, 15(29%) of cryptosporidiosis cases were white and 34(61%) were male. Data on race/ethnicity were not collected for a 23(45%) of cases. Table 2 presents case demographic data by county.

Known risk factors for acquiring cryptosporidiosis infection include contact with animals, day care attendance or work, health care work, travel to developing countries, consumption of untreated water, sexual contact with another case, and having a compromised immune system. Among cases with a specimen collected in 2008, none reported contact with a confirmed cryptosporidiosis case during the incubation period. Five reported contact with a suspected case. Thirteen (27%) cases over age 15 reported sexual contact during the incubation period. Of these, 11 were male; five (17%) adult male cases reported MSM activity. Fifteen (27%) cases reported a compromised immune status. While 18 (30%) cases reported contact with animals during the incubation period, only 2 had contact with farm or non-domesticated animals. Fifteen (28%) cases reported foreign travel; all of these were to a developing nation. Eighteen cases reported any recreational water exposure during the incubation period. Table 3 presents risk factors for cryptosporidiosis infection by county.

Table 2: Cryptosporidiosis Case Demographics by County		
	N	(%)by County
Alameda		
Male	6	(50%)
White	3	(27%)
Black	2	(18%)
Hispanic	1	(9%)
Other/Unknown	5	(45%)
San Francisco		
Male	13	(93%)
White	4	(29%)
Black	2	(14%)
Hispanic	3	(21%)
Other/Unknown	5	(36%)
San Mateo		
Male	8	(50%)
White	6	(40%)
Hispanic	3	(20%)
Other/Unknown	6	(40%)
Santa Clara		
Male	7	(50%)
White	2	(18%)
Hispanic	2	(18%)
Unknown Race/Ethnicity	7	(64%)

Table 3: Percentage of Cases by County with Know Risk Factors During the Incubation Period.				
Risk Factor	County	N	(%)	
Contact with Suspect Case	Alameda	1	(10%)	
	San Francisco	3	(30%)	
	San Mateo	1	(7%)	
Daycare	Alameda	2	(20%)	
	Santa Clara	3	(25%)	
Workcare	Alameda	2	(20%)	
	San Mateo	3	(23%)	
	Santa Clara	1	(8%)	
Sexual Activity*	Alameda	3	(25%)	
	San Francisco	7	(54%)	
	San Mateo	1	(11%)	
	Santa Clara	2	(15%)	
MSM**	Alameda	1	(25%)	
	San Francisco	4	(31%)	
Contact with Farm or Non-Domesticated Animals	Santa Clara	2	(14%)	
Immune Suppression	Alameda	3	(30%)	
	San Mateo	3	(23%)	
	San Francisco	7	(64%)	
	Santa Clara	2	(17%)	
Foreign Travel	Alameda	3	(25%)	
	San Francisco	1	(7%)	
	San Mateo	5	(31%)	
	Santa Clara	6	(43%)	
Recreational Water Contact ***	Alameda	2	(17%)	
	San Francisco	4	(29%)	
	San Mateo	6	(38%)	
	Santa Clara	6	(43%)	

* Denominator includes cases over 15 years
 ** Denominator includes male cases over 15 years
 *** Includes treated and untreated recreational water exposure

Cryptosporidiosis Surveillance

Timeliness

The Cryptosporidiosis Surveillance Project receives case reports through cooperation with clinical diagnostic laboratories, county health departments, and the California Emerging Infections Program. For more information on CSP data collection and methods used to calculate timeliness please see "Timeliness of Cryptosporidiosis Reporting" online at http://dphwww.sfdph.org/phes/water/water_publications.htm.

In 2008, CSP received case notification of positive cryptosporidium laboratory results for 50% of the 56 cases within 12 days of specimen collection. This figure does not adjust for weekends, holidays or time required for specimen processing. According to Title 17 of the California Code of Regulations, *Cryptosporidium* infections are required to be reported to county health departments within 1 day of identification. Time-to-reporting was significantly longer in 2008 than in 2007. The two main causes of case reporting delays were identified as changes in personnel at clinical laboratories and health departments and changes in procedures at clinical laboratories. To correct for these, CSP initiated a new working relationship with a laboratory serving South Bay communities, and streamlined reporting with affected county health departments. Table 5 presents county-specific cryptosporidiosis case reporting characteristics.

CSP completed case interviews for 57% of cases in 2008. Interviews were completed within 4 days of notification for 50% of all interviewed cases.

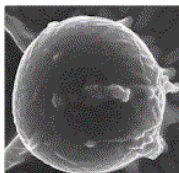


Table 4: Median Days between Specimen Collection and Report to CSP, 2008

	N	Median	Min	Max
2008	56	12	1	147
Quarter				
Quarter 1	6	39	8	51
Quarter 2	15	13	3	104
Quarter 3	18	20	1	147
Quarter 4	18	7.5	2	53
Informant				
California Emerging Infections program	6	38	6	77
Clinical Diagnostic Laboratory	18	6.5	1	29
County Health Department	22	11	1	53
California Department of Public Health	11	78	34	147
County				
Alameda	12	48	3	111
San Francisco	14	8.5	2	77
San Mateo	16	7.5	1	22
Santa Clara	14	12	2	147

Table 5: Median Days Between Specimen Collection and Report to CSP by County, Informant and Quarter, 2008

County	Informant/Quarter	N	Median	Min	Max
Alameda	California Emerging Infections Program	4	38	6	46
	Clinical Diagnostic Laboratory	1	3	NA	NA
	California Department of Public Health	7	78	34	111
	Quarter 1	4	45	34	51
	Quarter 2	3	31	6	104
San Francisco	Quarter 3	4	82	60	111
	Quarter 4	1	3	3	3
	California Emerging Infections Program	1	77	NA	NA
	Clinical Diagnostic Laboratory	13	8	2	20
	Quarter 1	2	11	8	14
San Mateo	Quarter 2	2	10	7	13
	Quarter 3	2	40	4	77
	Quarter 4	8	7	2	20
	Clinical Diagnostic Laboratory	3	2	1	6
	San Mateo County Health Services Agency	13	12	1	22
Santa Clara	Quarter 1	0	NA	NA	NA
	Quarter 2	6	14	3	22
	Quarter 3	7	2	1	21
	Quarter 4	3	6	6	22
	California Emerging Infections Program	1	7	NA	NA
Santa Clara	Clinical Diagnostic Laboratory	1	29	NA	NA
	Santa Clara County Public Health Department	9	11	2	53
	California Department of Public Health	3	81	38	147
	Quarter 1	0	NA	NA	NA
	Quarter 2	4	18	4	36
Santa Clara	Quarter 3	4	46	7	147
	Quarter 4	6	12.5	2	53

This report was created in January 2009 by the San Francisco Department of Public Health Environmental Health Section in partnership with the San Francisco Public Utilities Commission. For more information, contact michelle.kirian@sfdph.org, visit the San Francisco Department of Public Health Water Epidemiology website <http://www.sfpbes.org/water>, or the Public Utilities Commission website www.sfwater.org.

These data are preliminary and not yet confirmed. They do not suggest a source of infection nor reflect any association with the presence or absence of any potential contaminants in the water supply. This information should be considered privileged. It should not be reproduced or distributed.