



# Cryptosporidiosis Surveillance Project Annual Report 2009



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 2009.

During the fourth quarter of 2009, 38 cases of cryptosporidiosis were reported in the study area. Significantly more cases were reported in the fourth quarter than in the same period in previous years. Figure 1 presents case counts by month and county.

### 2009 Surveillance.

In 2009 a total of 165 cases were reported. An unusual increase in case reports were received in April through December. Potential reasons for an artificial increase in cases are being investigated. The majority of positive cryptosporidiosis case reports originated from two non-independent laboratories (Figure 2). No common risk factors have been identified and at this time we do not believe this increase to represent a true outbreak.

Compared to 2008, the incidence of cryptosporidiosis increased for all counties. The largest increase was seen in Santa Clara and San Mateo Counties. Table 1 lists case counts and cumulative incidence by county.

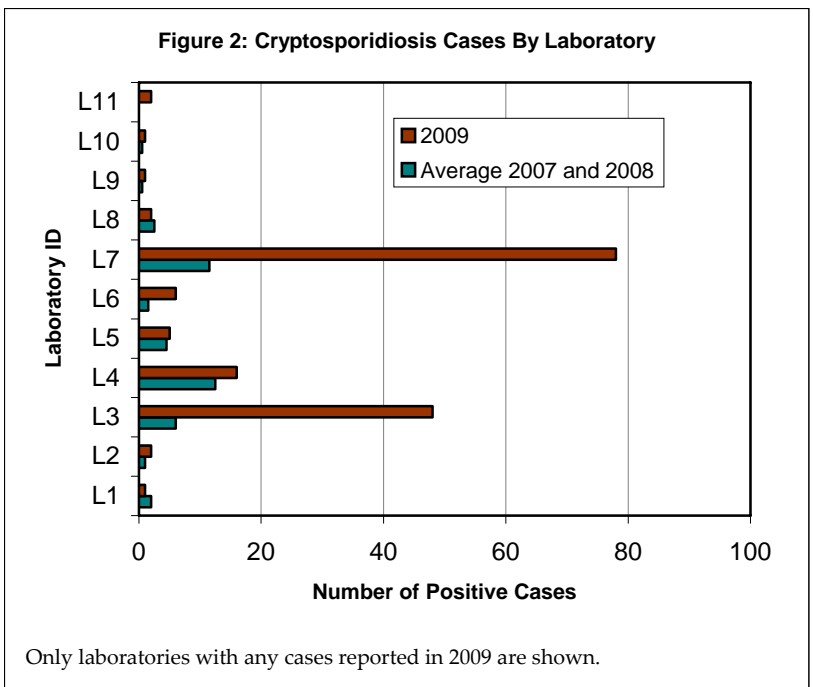
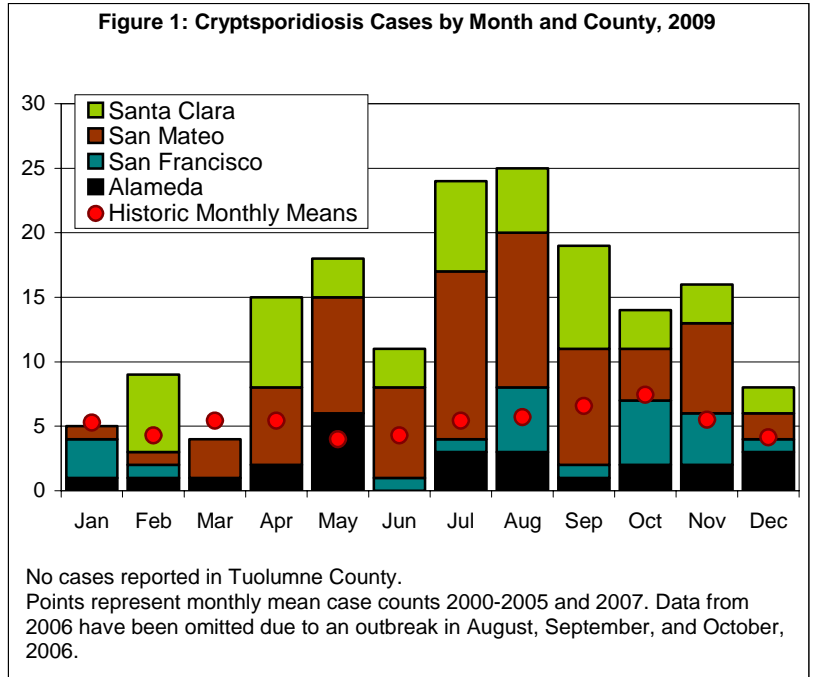


Table 1: Number of Cases and Cumulative Incidence of Cryptosporidiosis by County, 2009		
County	N	Cumulative Incidence per 100,000 <sup>‡</sup>
Tuolumne	0	NA
San Mateo	74	9.92
Santa Clara	47	2.53
Alameda	22	1.41
San Francisco	22	2.60
<b>Total</b>	<b>165</b>	<b>3.26</b>

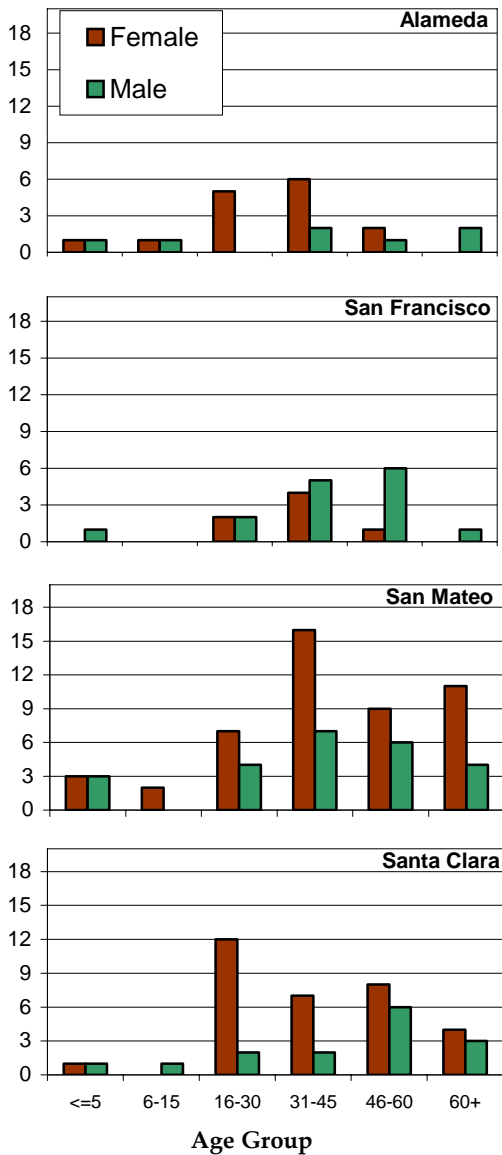
<sup>†</sup> Historical data obtained through the cooperation of the California Emerging Infections Program.  
<sup>‡</sup> Cumulative incidences were calculated using the following population estimates: State of California, Department of Finance, E-1 population Estimates for Cities, Counties and the State with Annual Percent Change — January 1, 2008 and 2009. Sacramento, California, May 2009.

## Cryptosporidiosis Case Demographics and Risk Factors

In 2009, 62 (38%) of cryptosporidiosis cases were male. Figure 2 presents case counts by county, age and gender. 2009 is the first year since surveillance began in which more cases were reported among women than men.

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 2009, 10 (6%) reported contact with a suspected case during the incubation period. Twenty-six (16%) cases over age 15 reported sexual contact during the incubation period; one adult male case reported MSM activity. 12 (7%) cases reported compromised immune status. Fifty-six (34%) cases reported contact with animals during the incubation period; 13 (8%) had contact with farm or non-domesticated animals. 27 (17%) cases reported foreign travel. Forty-seven (28%) cases reported any recreational water exposure. In San Francisco, 10 (46%) cases reported recreational water exposure, however; four of these did not swim at a location in California. Table 3 presents selected risk factors for cryptosporidiosis infection by county.

**Figure 2: Case Counts by County, Age and Sex, 2009**



No cases reported in Tuolumne County.  
Missing data for two San Mateo County cases.

**Table 3: Percentage of Cases by County with Known Risk Factors During the Incubation Period, 2009**

Risk Factor	County	N	(%)
Contact with Suspect Case	Alameda	1	(6%)
	San Francisco	1	(6%)
	San Mateo	7	(13%)
	Santa Clara	1	(3%)
Daycare	Alameda	3	(18%)
	San Francisco	1	(6%)
	San Mateo	10	(18%)
	Santa Clara	7	(23%)
Workcare	Alameda	2	(12%)
	San Mateo	5	(9%)
	Santa Clara	2	(7%)
Sexual Activity*	Alameda	3	(17)
	San Francisco	5	(24%)
	San Mateo	12	(19%)
	Santa Clara	6	(14%)
MSM**	San Francisco	1	(7%)
Contact with Farm or Non-Domesticated Animals	Alameda	1	(5%)
	San Francisco	3	(14%)
	San Mateo	5	(7%)
	Santa Clara	4	(9%)
Immune Suppression	Alameda	2	(12%)
	San Francisco	4	(22%)
	San Mateo	4	(7%)
	Santa Clara	2	(7%)
Foreign Travel	Alameda	3	(14%)
	San Francisco	6	(27%)
	San Mateo	9	(12%)
	Santa Clara	9	(19%)
Recreational Water Contact ***	Alameda	4	(18%)
	San Francisco	10	(46%)
	San Mateo	21	(28%)
	Santa Clara	12	(26%)

\* Denominator includes cases over 15 years

\*\* Denominator includes male cases over 15 years

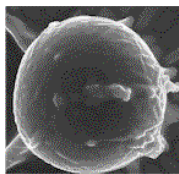
\*\*\* Includes treated and untreated recreational water exposure

## 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 Notification" online at [http://www.sfpbes.org/water/crypto/Crypto\\_Timeliness\\_07.pdf](http://www.sfpbes.org/water/crypto/Crypto_Timeliness_07.pdf)

In 2009, CSP received case notification of positive cryptosporidium laboratory results for 50% of the 165 cases within 7 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. Table 5 presents county-specific cryptosporidiosis case reporting characteristics.

CSP completed case interviews for 78% of cases in 2009. Interviews were completed within one day of notification for 50% of all interviewed cases.



**Table 4: Median Days between Specimen Collection and Report to CSP, 2009**

	N	Median	Min	Max
2009	165	7	1	132
<b>Quarter</b>				
Quarter 1	18	16	1	132
Quarter 2	44	11	1	43
Quarter 3	68	6	1	43
Quarter 4	35	5	1	40
<b>Informant</b>				
California Emerging Infections program	6	10	6	132
Clinical Diagnostic Laboratory	94	7	1	43
County Health Department	65	6	1	54
<b>County</b>				
Alameda	22	22	6	104
San Francisco	22	4	1	43
San Mateo	74	5	1	42
Santa Clara	47	10	1	132

**Table 5: Median Days Between Specimen Collection and Report to CSP by County, Informant and Quarter, 2009**

County	Informant/Quarter	N	Median	Min	Max
Alameda	California Emerging Infections Program	5	9	6	104
	Clinical Diagnostic Laboratory	17	27	7	43
	Quarter 1	3	19	7	104
	Quarter 2	8	28	6	43
	Quarter 3	7	10	7	39
San Francisco	Quarter 4	4	11	7	24
	Clinical Diagnostic Laboratory	8	8	1	43
	San Francisco Communicable Disease Control	14	4	1	40
	Quarter 1	4	8	1	14
	Quarter 2	1	2	2	2
San Mateo	Quarter 3	7	7	2	43
	Quarter 4	10	4	1	40
	Clinical Diagnostic Laboratory	53	5	1	42
	San Mateo County Health Services Agency	17	6	1	22
	Other Health Department	4	6	2	17
Santa Clara	Quarter 1	5	6	3	18
	Quarter 2	22	5	1	42
	Quarter 3	34	5	1	32
	Quarter 4	13	5	2	9
	California Emerging Infections Program	1	132	132	132
Santa Clara	Clinical Diagnostic Laboratory	16	18	1	39
	Santa Clara County Public Health Department	30	6	2	54
	Quarter 1	6	26	17	132
	Quarter 2	13	17	1	39
	Quarter 3	20	6	2	39
Quarter 4	8	6	5	12	

This report was created in January 2010 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](mailto: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](http://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.