CAMPYLOBACTERIOSIS

CRUDE DATA	
Number of Cases	1564
Annual Incidence[a]	
LA County	16.29
California[b]	21.03
United States[b]	15.91
Age at Diagnosis	
Mean	38.8
Median	36
Range	0–101 years

[a]Cases per 100,000 population
[b]Calculated from: CDC. *Notice to Readers:* Final 2016 Reports of Nationally Notifiable Infectious Diseases and Conditions *Weekly* / January 6, 2018 / 65(52). Available at: https://www.cdc.gov/mmwr/volumes/65/wr/mm6552md.htm?s_cid=mm6552md_w

DESCRIPTION

Campylobacteriosis is a bacterial disease caused by several species of gram-negative bacilli including *Campylobacter jejuni, C. upsaliensis, C. coli,* and *C. fetus*. It is usually transmitted through ingestion of organisms in undercooked poultry or other meat, contaminated food, water, or raw milk or occasionally through contact with infected animals. The incubation period is 2–5 days. Common symptoms include watery or bloody diarrhea, fever, abdominal cramps, myalgia, and nausea. Sequelae include Guillain-Barré syndrome and Reiter syndrome, both of which are rare.

To reduce the likelihood of contracting campylobacteriosis, all food derived from animal sources, particularly poultry, should be thoroughly cooked. Cross contamination may be avoided by making sure utensils, counter tops, cutting boards, and sponges are cleaned or do not come in contact with raw poultry or meat or their juices. Hands should be thoroughly washed before, during, and after food preparation. The fluids from raw poultry or meat should not be allowed to drip on other foods in the refrigerator or in the shopping cart. It is especially important to wash hands and avoid cross contamination of infant foods, bottles, and eating utensils. It is recommended to consume only pasteurized milk, milk products, or juices. In addition, it is important to wash hands after coming in contact with any animal or its environment.

2016 TRENDS AND HIGHLIGHTS

- There was a 4.1% increase in the incidence of campylobacteriosis from the previous year and a 16.5% increase from 2011 (Figure 1).
- The highest rates were among children aged <1 year old (34.7 per 100,000) followed by persons aged 1-4 years old (20.9 per 100,000) (Figure 2).
- SPA 5 had the highest rate (33.3 per 100,000), which is consistent with previous years (Figure 3).
- No outbreaks of campylobacteriosis were detected in 2016.
- Routine interviewing of campylobacteriosis cases was discontinued in 2010; however, surveillance of reported cases has continued in order to monitor for clusters and review foodborne illness reports that have a diagnosis of campylobacteriosis.

Reported Campylobacteriosis Cases and Rates* per 100,000 by Age Group, Race/Ethnicity, and SPA
LAC, 2012-2016

	2012 (N=1,546)			2013 (N=1,703)			2014 (N=1,506)			2015 (N=1,623)			2016 (N=1564)		
	No.	(%)	Rate/ 100,000	No.	(%)	Rate/ 100,000	No.	(%)	Rate/ 100,000	No.	(%)	Rate/ 100,000	No.	(%)	Rate/ 100,000
Age Group															
<1	46	3.0	38.7	45	2.6	37.2	27	1.8	22.8	23	1.4	21.3	36	2.3	34.7
1-4	136	8.8	28.6	159	9.3	32.7	118	7.8	24.2	115	7.1	23.7	98	6.2	20.9
5-14	181	11.7	15.1	173	10.2	14.3	159	10.6	13.2	138	8.5	11.4	123	7.8	10.2
15-34	418	27.0	15.1	495	29.1	17.5	437	29.0	15.5	525	32.4	18.6	481	30.7	17.1
35-44	169	10.9	12.8	182	10.7	13.7	192	12.8	14.5	210	12.9	15.9	188	12.0	14.3
45-54	186	12.0	14.5	185	10.9	14.3	175	11.6	13.5	197	12.1	15.0	198	12.6	15.0
55-64	163	10.5	16.0	177	10.4	17.2	155	10.3	14.6	176	10.8	15.9	178	11.3	15.7
65+	238	15.4	21.5	281	16.5	25.3	239	15.9	14.6	233	14.4	19.5	253	16.1	20.6
Unknown	9	0.6	-	6	0.4	-	4	0.3	-	6	0.4	0.3	9	0.5	-
Race / Ethnicity															
Asian	37	2.4	2.8	46	2.7	3.4	61	4.1	4.4	43	2.7	3.1	70	4.4	5.0
Black	34	2.2	4.4	46	2.7	5.9	39	2.6	5.0	25	1.5	3.2	40	2.5	5.1
Hispanic	161	10.4	3.6	167	9.8	3.6	219	14.5	4.8	210	12.9	4.5	259	16.5	5.5
White	228	14.8	8.6	386	22.7	14.5	272	18.1	10.2	264	16.4	9.8	294	18.7	11.0
Other	11	0.7	-	32	1.9	-	25	1.7	-	39	2.4	-	76	4.8	-
Unknown	107	69.5	-	1026	60.3	-	888	59.0	-	104	64.2	-	825	52.7	-
SPA															
1	36	2.3	9.3	41	2.4	10.5	55	3.7	14.0	66	4.1	16.7	79	5.0	20.1
2	362	23.4	16.9	401	23.6	18.4	388	25.8	17.7	416	25.6	18.7	395	25.2	17.6
3	200	12.9	12.4	220	12.9	13.5	217	14.4	13.2	217	13.4	13.1	209	13.3	12.7
4	234	15.1	20.8	292	17.2	25.6	198	13.2	17.2	230	14.2	19.7	220	14.0	18.6
5	228	14.8	35.7	218	12.8	33.7	189	12.6	29.0	219	13.5	33.2	221	14.1	33.3
6	140	9.1	13.8	175	10.3	17.0	136	9.0	13.2	138	8.5	13.2	122	7.8	11.4
7	179	11.6	13.8	180	10.6	13.7	137	9.1	10.4	165	10.2	12.5	153	9.7	11.7
8	157	10.2	14.7	172	10.1	16.0	185	12.3	17.1	172	10.6	15.7	165	10.5	15.1
Unknown	10	0.7	-	4	0.2	-	1	0.1	-	0	-	-	-	-	-

*Rates calculated based on less than 19 cases or events are considered unreliable. Data provided in section race/ethnicity is incomplete.

**Figure 1. Reported Campylobacteriosis Rates by Year
LAC, 2006-2016**

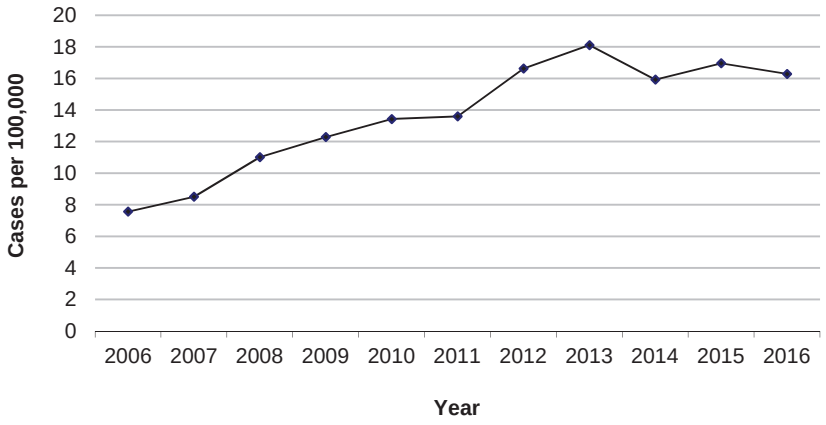


**Figure 3. Reported Campylobacteriosis Rates by SPA
LAC, 2016 (N=1564)**

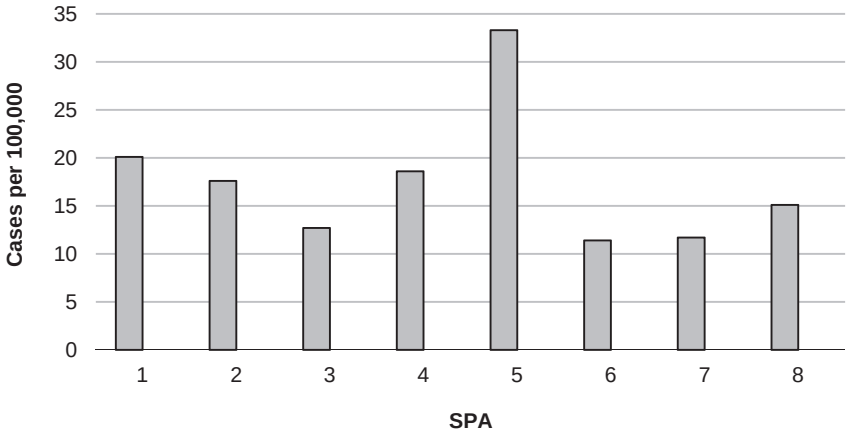
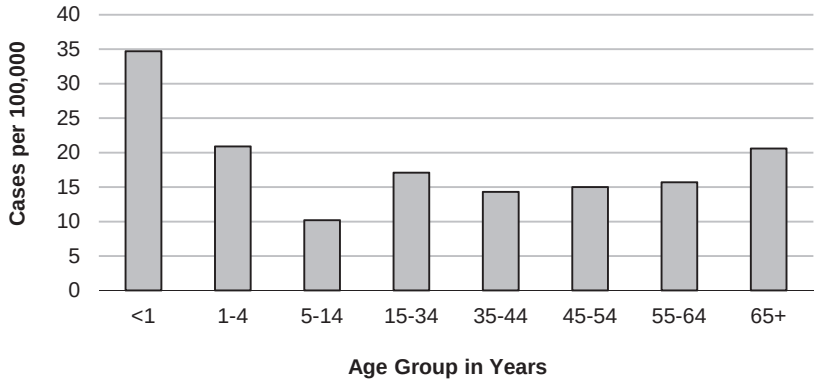
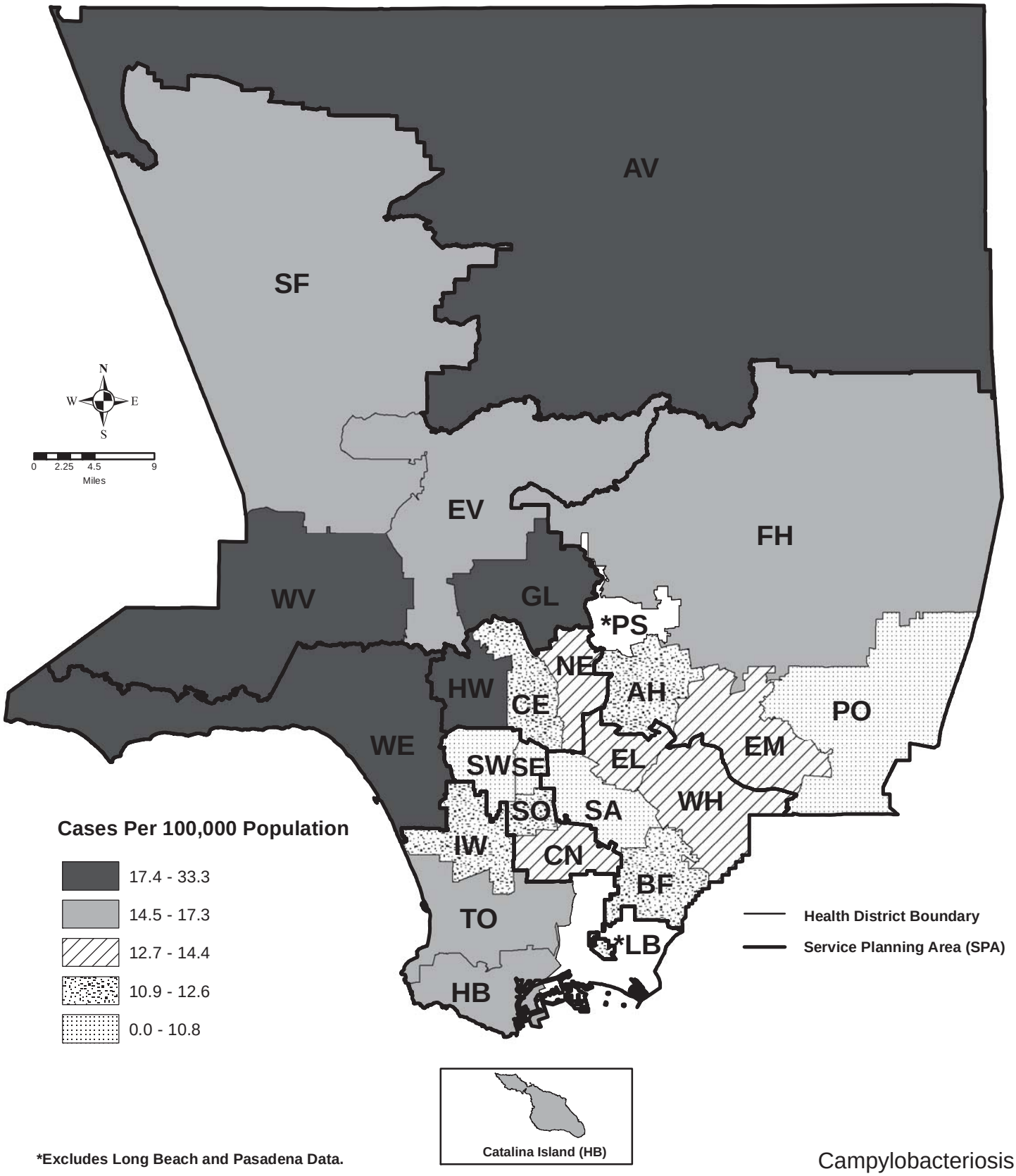


**Figure 2. Reported Campylobacteriosis Rates by Age Group
LAC, 2016 (N=1564)**



Map 2. Campylobacteriosis
Rates by Health District, Los Angeles County, 2016*



*Excludes Long Beach and Pasadena Data.

CAMPYLOBACTERIOSIS

CRUDE DATA	
Number of Cases	1,623
Annual Incidence[a]	
LA County	16.96
California[b]	21.21
United States[b]	16.97
Age at Diagnosis	
Mean	38
Median	35
Range	0–103 years

[a]Cases per 100,000 population
[b]Calculated from: CDC. *Notice to Readers:* Final 2015 Reports of Nationally Notifiable Infectious Diseases and Conditions *Weekly* / November 25, 2016 / 65(46);1306–1321. Available at: www.cdc.gov/mmwr/volumes/65/wr/mm6546a9.htm

DESCRIPTION

Campylobacteriosis is a bacterial disease caused by several species of Gram-negative bacilli including *Campylobacter jejuni, C. upsaliensis, C. coli,* and *C. fetus*. It is usually transmitted through ingestion of organisms in undercooked poultry or other meat, contaminated food, water, or raw milk or occasionally through contact with infected animals. The incubation period is two to five days. Common symptoms include watery or bloody diarrhea, fever, abdominal cramps, myalgia, and nausea. Sequelae include Guillain-Barré syndrome and Reiter syndrome, both of which are rare.

To reduce the likelihood of contracting campylobacteriosis, all food derived from animal sources, particularly poultry, should be thoroughly cooked. Cross contamination may be avoided by making sure utensils, counter tops, cutting boards, and sponges are cleaned or do not come in contact with raw poultry or meat or their juices. Hands should be thoroughly washed before, during, and after food preparation. The fluids from raw poultry or meat should not be allowed to drip on other foods in the refrigerator or in the shopping cart. It is especially important to wash hands and avoid cross contamination of infant foods, bottles, and eating utensils. It is recommended to consume only pasteurized milk, milk products, or juices. In addition, it is important to wash hands after coming in contact with any animal or its environment.

2015 TRENDS AND HIGHLIGHTS

- There was a 6.3% increase in the incidence of campylobacteriosis from the previous year and a 25.9% increase from 2010 (Figure 1).
- The highest rates were among children aged 1 to 4 (23.7 per 100,000) followed by persons aged <1 years (21.3 per 100,000) (Figure 2).
- SPA 5 had the highest rate (33.2 per 100,000), which is consistent with previous years (Figure 3).
- No outbreaks of campylobacteriosis were detected in 2015.
- Routine interviewing of campylobacteriosis cases was discontinued in 2010; however, surveillance of reported cases continues in order to monitor for clusters and review foodborne illness reports that have a diagnosis of campylobacteriosis.

Reported Campylobacteriosis Cases and Rates* per 100,000 by Age Group, Race/Ethnicity, and SPA
LAC, 2011-2015

	2011(N=1,259)			2012 (N=1,546)			2013 (N=1,703)			2014 (N=1,506)			2015 (N=1,623)		
	No.	(%)	Rate/ 100,000	No.	(%)	Rate/ 100,000	No.	(%)	Rate/ 100,000	No.	(%)	Rate/ 100,000	No.	(%)	Rate/ 100,000
Age Group															
<1	16	1.3	11.5	46	3.0	38.7	45	2.6	37.2	27	1.8	22.8	23	1.4	21.3
1-4	158	12.6	27.2	136	8.8	28.6	159	9.3	32.7	118	7.8	24.2	115	7.1	23.7
5-14	146	11.6	11.0	181	11.7	15.1	173	10.2	14.3	159	10.6	13.2	138	8.5	11.4
15-34	366	29.1	12.4	418	27.0	15.1	495	29.1	17.5	437	29.0	15.5	525	32.4	18.6
35-44	133	10.6	9.2	169	10.9	12.8	182	10.7	13.7	192	12.8	14.5	210	12.9	15.9
45-54	142	11.3	10.5	186	12.0	14.5	185	10.9	14.3	175	11.6	13.5	197	12.1	15.0
55-64	114	9.1	11.9	163	10.5	16.0	177	10.4	17.2	155	10.3	14.6	176	10.8	15.9
65+	172	13.7	16.2	238	15.4	21.5	281	16.5	25.3	239	15.9	14.6	233	14.4	19.5
Unknown	12	1.0	-	9	0.6	-	6	0.4	-	4	0.3	-	6	0.4	0.3
Race / Ethnicity															
Asian	28	2.2	2.1	37	2.4	2.8	46	2.7	3.4	61	4.1	4.4	43	2.7	3.1
Black	21	1.7	2.5	34	2.2	4.4	46	2.7	5.9	39	2.6	5.0	25	1.5	3.2
Hispanic	157	12.5	3.3	161	10.4	3.6	167	9.8	3.6	219	14.5	4.8	210	12.9	4.5
White	119	9.5	4.2	228	14.8	8.6	386	22.7	14.5	272	18.1	10.2	264	16.4	9.8
Other	14	1.1	-	11	0.7	-	32	1.9	-	25	1.7	-	39	2.4	-
Unknown	920	73.1	-	1075	69.5	-	1026	60.3	-	888	59.0	-	1042	64.2	-
SPA															
1	46	3.7	12.3	36	2.3	9.3	41	2.4	10.5	55	3.7	14.0	66	4.1	16.7
2	347	27.6	15.7	362	23.4	16.9	401	23.6	18.4	388	25.8	17.7	416	25.6	18.7
3	164	13.0	9.5	200	12.9	12.4	220	12.9	13.5	217	14.4	13.2	217	13.4	13.1
4	156	12.4	12.4	234	15.1	20.8	292	17.2	25.6	198	13.2	17.2	230	14.2	19.7
5	142	11.3	21.5	228	14.8	35.7	218	12.8	33.7	189	12.6	29.0	219	13.5	33.2
6	123	9.8	11.5	140	9.1	13.8	175	10.3	17.0	136	9.0	13.2	138	8.5	13.2
7	136	10.8	9.9	179	11.6	13.8	180	10.6	13.7	137	9.1	10.4	165	10.2	12.5
8	145	11.5	12.9	157	10.2	14.7	172	10.1	16.0	185	12.3	17.1	172	10.6	15.7
Unknown	0	-	-	10	0.7	-	4	0.2	-	1	0.1	-	0	-	-

*Rates calculated based on less than 19 cases or events are considered unreliable. Data provided in section race/ethnicity is incomplete.

**Figure 1. Reported Campylobacteriosis Rates by Year
LAC, 2005-2015**

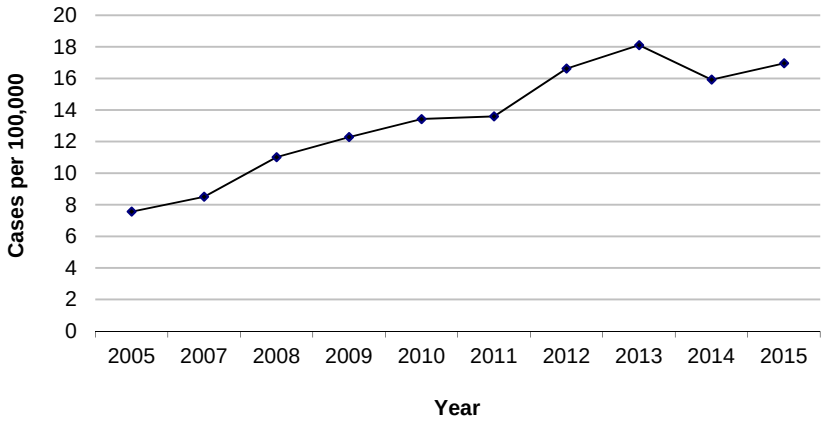


**Figure 2. Reported Campylobacteriosis Rates by Age Group
LAC, 2015 (N=1623)**

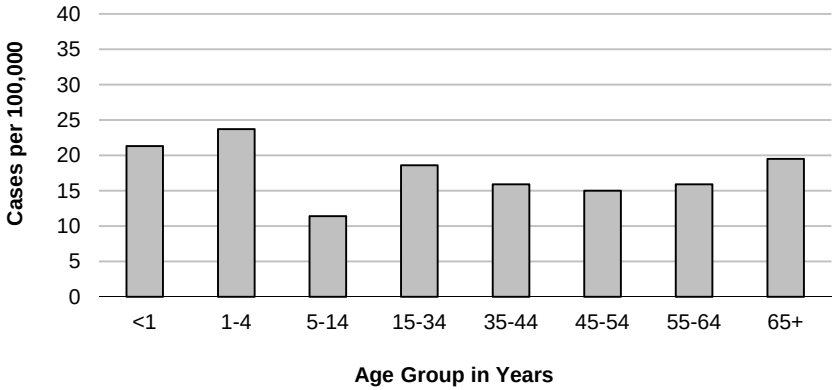
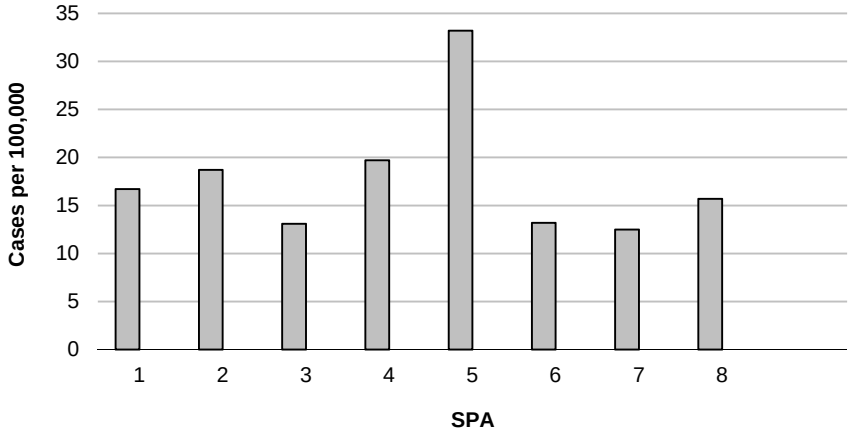
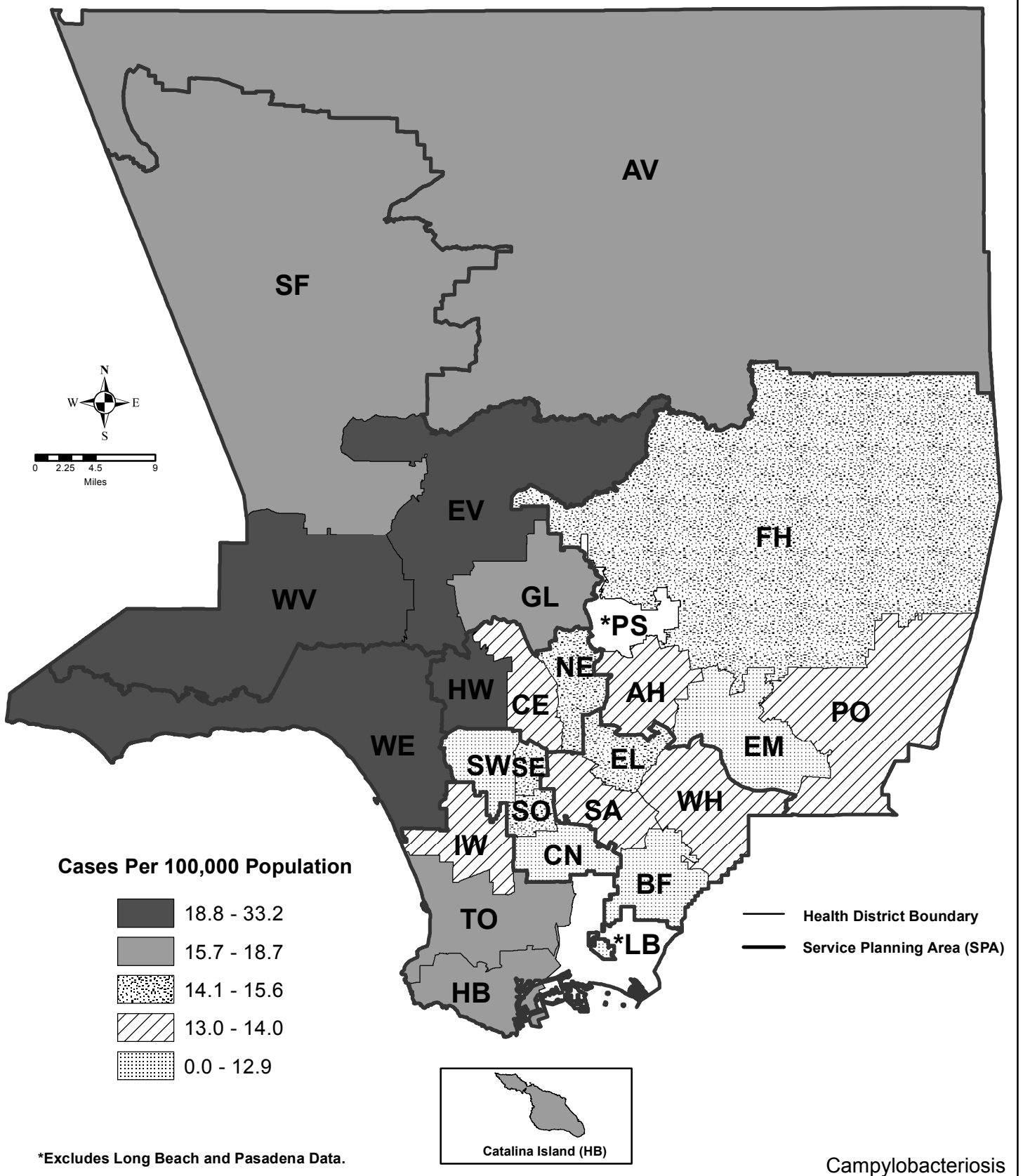


**Figure 3. Reported Campylobacteriosis Rates by SPA
LAC, 2015 (N=1623)**



Map 2. Campylobacteriosis
Rates by Health District, Los Angeles County, 2015*



*Excludes Long Beach and Pasadena Data.

CAMPYLOBACTERIOSIS

CRUDE DATA	
Number of Cases	1506
Annual Incidence[a]	
LA County	15.93
California[b]	N/A
United States[b]	N/A
Age at Diagnosis	
Mean	37.42
Median	35
Range	0–99 years

[a]Cases per 100,000 population.
[b]Not nationally notifiable.

DESCRIPTION

Campylobacteriosis is a bacterial disease caused by several species of Gram-negative bacilli including *Campylobacter jejuni, C. upsaliensis, C. coli* and *C. fetus*. It is usually transmitted through ingestion of organisms in undercooked poultry or other meat, contaminated food, water or raw milk, or occasionally through contact with infected animals. The incubation period is two to five days. Common symptoms include watery or bloody diarrhea, fever, abdominal cramps, myalgia, and nausea. Sequelae include Guillain-Barré syndrome and Reiter syndrome, both of which are rare.

To reduce the likelihood of contracting campylobacteriosis, all food derived from animal sources, particularly poultry, should be thoroughly cooked. Cross contamination may be avoided by making sure utensils, counter tops, cutting boards and sponges are cleaned or do not come in contact with raw poultry or meat or their juices. Hands should be thoroughly washed before, during and after food preparation. The fluids from raw poultry or meat should not be allowed to drip on other foods in the refrigerator or in the shopping cart. It is especially important to wash hands and avoid cross contamination of infant foods, bottles and eating utensils. It is recommended to consume only pasteurized milk, milk products or juices. In addition, it is important to wash hands after coming in contact with any animal or its environment.

2014 TRENDS AND HIGHLIGHTS

- The 2014 incidence rate of camplyobacteriosis was lower than 2013: 15.9 per 100, 000 versus 18.1 per 100,000, respectively. (Figure 1).
- The highest rates were among children aged 1 to 4 (24.2 per 100,000) followed by persons aged <1 years (22.8 per 100,000) (Figure 2).
- Service Planning Area (SPA) 5 had the highest rate (29.0 per 100,000) which is consistent with previous years (Figure 3).
- No outbreaks of campylobacteriosis were reported in 2014.
- Routine interviewing of campylobacteriosis cases was discontinued in 2010; however we continue to monitor reported cases and FBI.

Reported Campylobacteriosis Cases and Rates* per 100,000 by Age Group, Race/Ethnicity, and SPA
Los Angeles County, 2010-2014

	2010 (N=1239)			2011 (N=1259)			2012 (N=1546)			2013 (N=1546)			2014 (N=1506)		
	No.	(%)	Rate/ 100,000	No.	(%)	Rate/ 100,000	No.	(%)	Rate/ 100,000	No.	(%)	Rate/ 100,000	No.	(%)	Rate/ 100,000
Age Group															
<1	24	1.9	20.0	16	1.2	11.5	46	2.9	38.7	45	2.6	37.2	27	1.7	22.8
1-4	150	12.1	30.9	158	12.5	27.2	136	8.7	28.6	159	9.3	32.7	118	7.8	24.2
5-14	175	14.1	14.1	146	11.5	11.0	181	11.7	15.1	173	10.1	14.3	159	10.5	13.2
15-34	318	25.6	11.4	366	29.0	12.4	418	27.0	15.1	495	29.0	17.5	437	29.0	15.5
35-44	157	12.6	11.7	133	10.5	9.2	169	10.9	12.8	182	10.6	13.7	192	12.7	14.5
45-54	136	10.9	10.6	142	11.2	10.5	186	12.3	14.5	185	10.8	14.3	175	11.6	13.5
55-64	96	7.7	10.1	114	9.0	11.9	163	10.5	16.0	177	10.3	17.2	155	10.2	14.6
65+	165	13.3	16.4	172	13.6	16.2	238	19.1	21.5	281	16.5	25.3	239	15.8	14.6
Unknown	18	0	1.4	12	0.9	-	9	0.6	-	6	0.3	-	4	0.2	-
Race/Ethnicity															
Asian	35	2.8	2.7	28	2.2	2.1	37	2.3	2.8	46	2.6	3.4	61	.06	4.4
Black	13	1.0	1.7	21	1.6	2.5	34	2.1	4.4	46	2.6	5.9	39	2.5	5.0
Hispanic	182	14.6	4.1	157	12.4	3.3	161	10.4	3.6	167	9.8	3.6	219	14.5	4.8
White	118	9.5	4.4	119	9.4	4.2	228	14.7	8.6	386	22.6	14.5	272	18.0	10.2
Other	13	1.0	-	14	1.1	-	11	0.7	-	32	1.8	-	25	0	-
Unknown	878	70.8	-	920	73.0	-	1075	69.5	-	1026	60.2	-	890	59.1	-
SPA															
1	39	3.1	10.1	46	3.6	12.3	36	2.3	9.3	41	2.4	10.5	55	3.6	14.0
2	346	2.7	16.3	347	27.5	15.7	362	23.4	16.9	401	23.5	18.4	388	25.7	17.7
3	166	13.3	10.3	164	13.0	9.5	200	12.9	12.4	220	12.9	13.5	217	14.4	13.2
4	158	1.2	15.5	156	12.3	12.4	234	15.1	20.8	292	17.1	25.6	198	13.1	17.2
5	130	10.4	20.5	142	11.2	21.5	228	14.7	35.7	218	12.7	33.7	189	12.5	29.0
6	122	9.8	12.2	123	9.7	11.5	140	9.0	13.8	175	10.3	17.0	136	10.3	13.2
7	145	11.7	11.2	136	10.8	9.9	179	11.5	13.8	180	10.5	13.7	137	9.0	10.4
8	127	10.2	12.0	145	11.5	12.9	157	10	14.7	172	10.0	16.0	185	12.2	17.1
Unknown	4	0.3	-	0	-	-	10	0.6	-	4	0.2	-	1	-	-

*Rates calculated based on less than 19 cases or events are considered unreliable. Data provided in section race/ethnicity is incomplete.

**Figure 1. Reported Campylobacteriosis Rates by Year
LAC, 2003-2014**

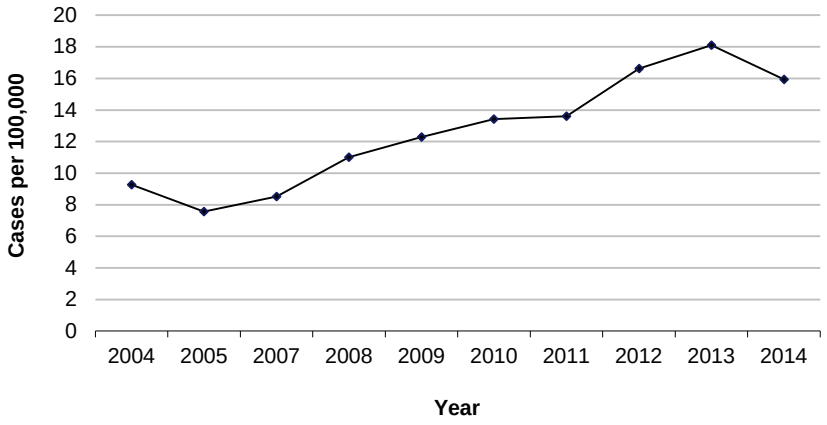


**Figure 2. Reported Campylobacteriosis Rates by Age Group
LAC, 2014 (N=1506)**

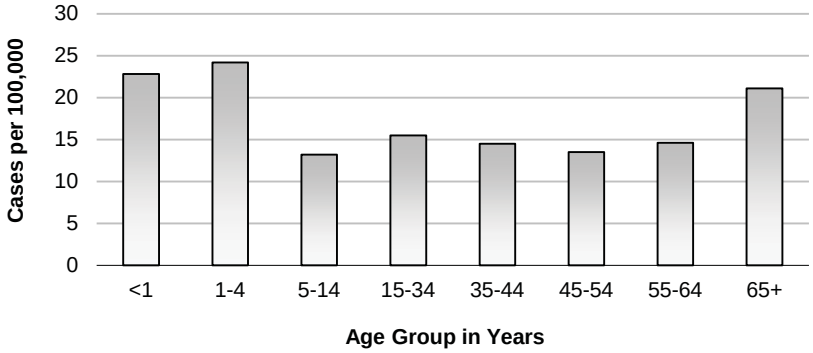
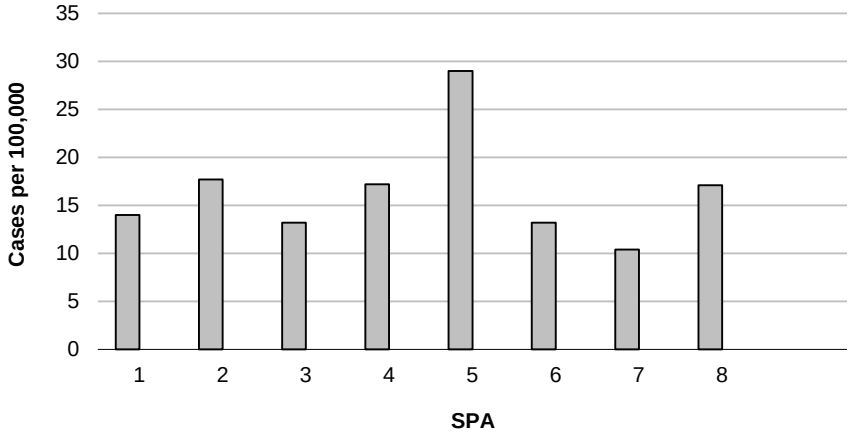
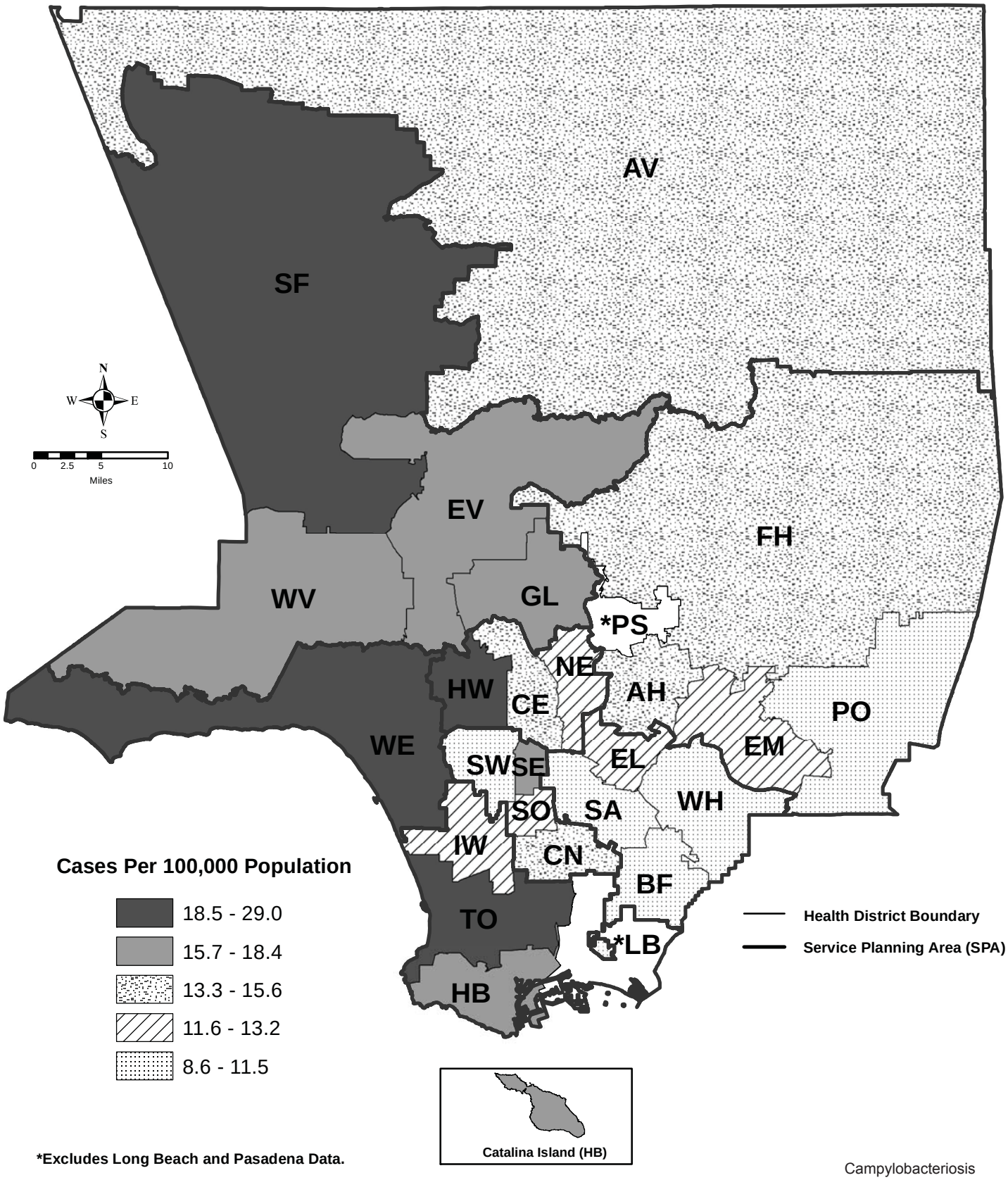


**Figure 3. Reported Campylobacteriosis Rates by SPA
LAC, 2014 (N=1506)**



Map 2. Campylobacteriosis
Rates by Health District, Los Angeles County, 2014*



*Excludes Long Beach and Pasadena Data.

CAMPYLOBACTERIOSIS

CRUDE DATA	
Number of Cases	1703
Annual Incidence[a]	
LA County	18.11
California[b]	N/A
United States[b]	N/A
Age at Diagnosis	
Mean	36.64
Median	34
Range	0-98

[a]Cases per 100,000 population.
[b]Not nationally notifiable.

DESCRIPTION

Campylobacteriosis is a bacterial disease caused by several species of Gram-negative bacilli including *Campylobacter jejuni, C. upsaliensis, C. coli* and *C. fetus*. It is usually transmitted through ingestion of organisms in undercooked poultry or other meat, contaminated food, water or raw milk, or occasionally through contact with infected animals. The incubation period is two to five days. Common symptoms include watery or bloody diarrhea, fever, abdominal cramps, myalgia, and nausea. Sequelae include Guillain-Barré syndrome and Reiter syndrome, both of which are rare.

To reduce the likelihood of contracting campylobacteriosis, all food derived from animal sources, particularly poultry, should be thoroughly cooked. Cross contamination may be avoided by making sure utensils, counter tops, cutting boards and sponges are cleaned or do not come in contact with raw poultry or meat or their juices. Hands should be thoroughly washed before, during and after food preparation. The fluids from raw poultry or meat should not be allowed to drip on other foods in the refrigerator or in the shopping cart. It is especially important to wash hands and avoid cross contamination of infant foods, bottles and eating utensils. It is recommended to consume only pasteurized milk, milk products or juices. In addition, it is important to wash hands after coming in contact with any animal or its environment.

2013 TRENDS AND HIGHLIGHTS

- There was a 10.2% increase in the incidence of campylobacteriosis from the previous year and a 50.1% increase in cases since 2009 (Figure 1).
- The highest rates were among children aged <1 (37.2 per 100,000) followed by persons aged 1 to 4 years (32.7per 100,000) (Figure 2). The largest increase in incidence rates was among persons aged <1 years followed by 65+, since 2009 (Table).
- Service Planning Area (SPA) 5 had the highest rate (33.7 per 100,000) which is consistent with previous years (Figure 3).
- No outbreaks of campylobacteriosis were detected in 2013.
- Routine interviewing of campylobacteriosis cases was discontinued in 2010; however, surveillance continues to monitor for clusters and review of foodborne illness reports that have a diagnosis of campylobacteriosis.
- Most diagnosis is made by use of culture (77%) and 23% is made by antigen-based tests.

Reported Campylobacteriosis Cases and Rates* per 100,000 by Age Group, Race/Ethnicity, and SPA
Los Angeles County, 2009-2013

	2009(N=1135)			2010(N=1239)			2011 (N=1259)			2012 (N=1546)			2013 (N=1703)		
	No.	(%)	Rate/ 100,000	No.	(%)	Rate/ 100,000	No.	(%)	Rate/ 100,000	No.	(%)	Rate/ 100,000	No.	(%)	Rate/ 100,000
Age Group															
<1	30	2.6	24.5	24	1.9	20.0	16	1.2	11.5	46	2.9	38.7	45	2.6	37.2
1-4	138	12.1	27.9	150	12.1	30.9	158	12.5	27.2	136	8.7	28.6	159	9.3	32.7
5-14	146	12.8	11.6	175	14.1	14.1	146	11.5	11.0	181	11.7	15.1	173	10.1	14.3
15-34	316	27.8	11.3	318	25.6	11.4	366	29.0	12.4	418	27.0	15.1	495	29.0	17.5
35-44	119	10.4	8.8	157	12.6	11.7	133	10.5	9.2	169	10.9	12.8	182	10.6	13.7
45-54	137	12.0	10.8	136	10.9	10.6	142	11.2	10.5	186	12.3	14.5	185	10.8	14.3
55-64	100	8.8	10.8	96	7.7	10.1	114	9.0	11.9	163	10.5	16.0	177	10.3	17.2
65+	143	12.6	14.3	165	13.3	16.4	172	13.6	16.2	238	19.1	21.5	281	16.5	25.3
Unknown	6	0.5	0	18	0	1.4	12	0.9	0	9	0.6	0	6	0.3	0
Race/Ethnicity															
Asian	42	3.7	3.3	35	2.8	2.7	28	2.2	2.1	37	2.3	2.8	46	2.6	3.4
Black	15	1.32	1.9	13	1.0	1.7	21	1.6	2.5	34	2.1	4.4	46	2.6	5.9
Hispanic	156	13.7	3.5	182	14.6	4.1	157	12.4	3.3	161	10.4	3.6	167	9.8	3.6
White	81	7.1	3.0	118	9.5	4.4	119	9.4	4.2	228	14.7	8.6	386	22.6	14.5
Other	9	0.7	0	13	1.0	0	14	1.1	0	11	0.7	0	32	1.8	0
Unknown	832	73.0	0	878	70.8	0	920	73.0	0	1075	69.5	0	1026	60.2	0
SPA															
1	32	2.8	8.5	39	3.1	10.1	46	3.6	12.3	36	2.3	9.3	41	2.4	10.5
2	292	25.7	13.7	346	2.7	16.3	347	27.5	15.7	362	23.4	16.9	401	23.5	18.4
3	157	13.8	9.7	166	13.3	10.3	164	13.0	9.5	200	12.9	12.4	220	12.9	13.5
4	158	13.9	14.1	158	1.2	15.5	156	12.3	12.4	234	15.1	20.8	292	17.1	25.6
5	151	13.3	24.0	130	10.4	20.5	142	11.2	21.5	228	14.7	35.7	218	12.7	33.7
6	114	10.0	11.5	122	9.8	12.2	123	9.7	11.5	140	9.0	13.8	175	10.3	17.0
7	104	8.8	8.0	145	11.7	11.2	136	10.8	9.9	179	11.5	13.8	180	10.5	13.7
8	120	10.0	11.3	127	10.2	12.0	145	11.5	12.9	157	10	14.7	172	10.0	16.0
Unknown	7	0.6	0	4	0.3	0	0	0	0	10	0.6	0	4	0.2	0

*Rates calculated based on less than 19 cases or events are considered unreliable. Data provided in section race/ethnicity is incomplete.

**Figure 1. Reported Campylobacteriosis Rates by Year
LAC, 2002-2013**

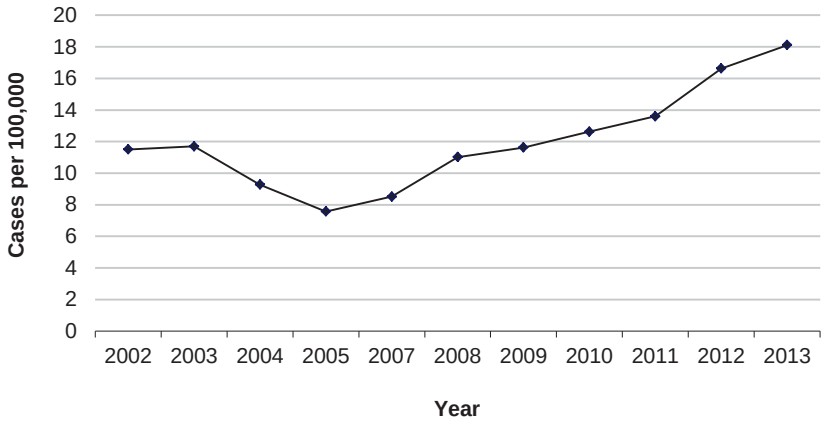


**Figure 2. Reported Campylobacteriosis Rates by Age Group
LAC, 2013 (N=1703)**

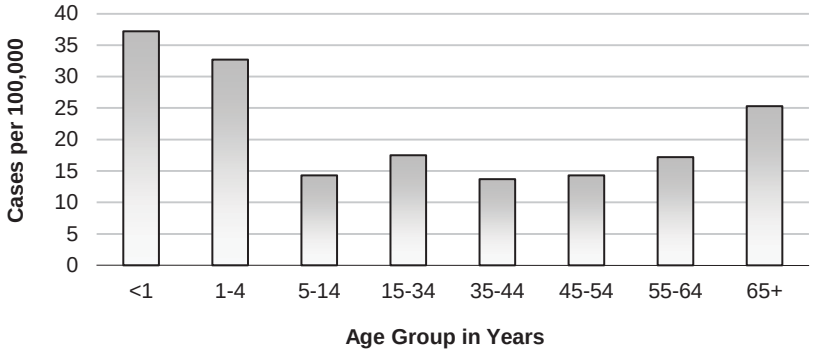
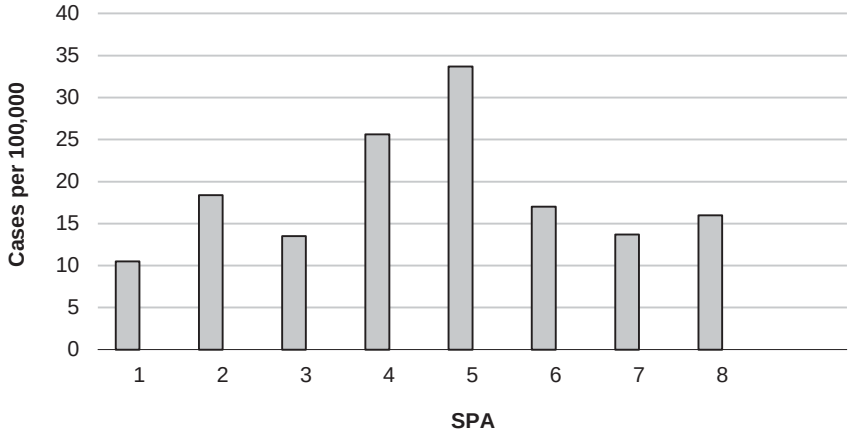
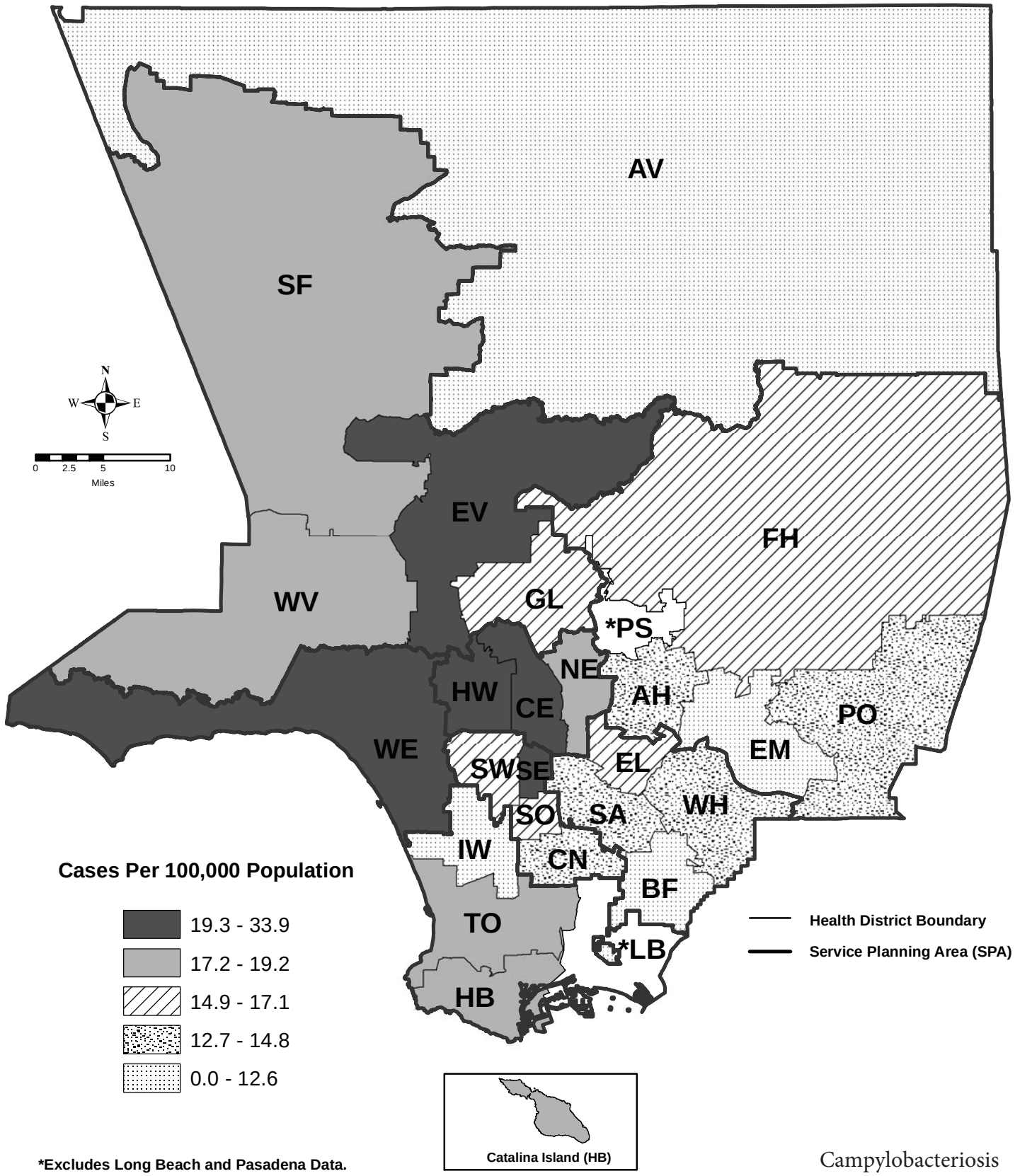


**Figure 3. Reported Campylobacteriosis Rates by SPA
LAC, 2013 (N=1703)**



Map 2. Campylobacteriosis
Rates by Health District, Los Angeles County, 2013*



*Excludes Long Beach and Pasadena Data.

CAMPYLOBACTERIOSIS

CRUDE DATA	
Number of Cases	1546
Annual Incidence[a]	
LA County	16.6
California[b]	N/A
United States[b]	N/A
Age at Diagnosis	
Mean	36.44
Median	34
Range	0-98

[a]Cases per 100,000 population.
[b]Not nationally notifiable.

DESCRIPTION

Campylobacteriosis is a bacterial disease caused by several species of Gram-negative bacilli including *Campylobacter jejuni, C. upsaliensis, C. coli* and *C. fetus*. It is transmitted through ingestion of organisms in undercooked poultry or other meat, contaminated food, water or raw milk, or contact with infected animals. The incubation period is two to five days. Common symptoms include watery or bloody diarrhea, fever, abdominal cramps, myalgia, and nausea. Sequelae include Guillain-Barré syndrome and Reiter syndrome, both of which are rare.

To reduce the likelihood of contracting campylobacteriosis, all food derived from animal sources should be thoroughly cooked, particularly poultry. Cross contamination may be avoided by making sure utensils, counter tops, cutting boards and sponges are cleaned or do not come in contact with raw poultry or meat or their juices. Hands should be thoroughly washed before, during and after food preparation. The fluids from raw poultry or meat should not be allowed to drip on other foods in the refrigerator or in the shopping cart. It is especially important to wash hands and avoid cross contamination of infant foods, bottles and eating utensils. It is recommended to consume only pasteurized milk, milk products or juices. In addition, it is important to wash hands after coming in contact with any animal or its environment.

2012 TRENDS AND HIGHLIGHTS

- There was a 22.7% increase in the incidence of campylobacteriosis from the previous year and a 44.2% increase in cases since 2008 (Figure 1).
- The highest rates were among children aged <1 (38.7 per 100,000) followed by persons aged 1 to 4 years (28.6 per 100,000) (Figure 2). The largest increase in incidence rates was among persons aged ›65 years since 2008 (Table).
- Service Planning Area (SPA) 5 had the highest rate (35.7 per 100,000) which is consistent with previous years (Figure 3).
- No outbreaks of campylobacteriosis were detected in 2012.
- Routine interviewing of campylobacteriosis cases was discontinued in 2010; however, surveillance continues to assess for clusters and foodborne illness reports.
- Most diagnosis is now made by antigen-based tests that may not be reliable compared with culture.

Reported Campylobacteriosis Cases and Rates* per 100,000 by Age Group, Race/Ethnicity, and SPA
Los Angeles County, 2008-2012

	2008 (N=1072)			2009 (N=1135)			2010 (N=1139)			2011 (N=1259)			2012 (N=1546)		
	No.	(%)	Rate/ 100,000	No.	(%)	Rate/ 100,000	No.	(%)	Rate/ 100,000	No.	(%)	Rate/ 100,000	No.	(%)	Rate/ 100,000
Age Group															
<1	42	3.9	30.1	30	2.6	21.9	24	1.9	17.2	16	1.2	11.5	46	2.9	38.7
1-4	137	12.8	24.2	138	12.1	24.6	150	12.1	25.8	158	12.5	27.2	136	8.7	28.6
5-14	152	14.2	10.8	146	12.8	10.7	175	14.1	13.2	146	11.5	11.0	181	11.7	15.1
15-34	285	26.6	9.9	316	27.8	11.2	318	25.6	10.8	366	29.0	12.4	418	27.0	15.1
35-44	129	12.0	8.5	119	10.4	8.0	157	12.6	10.9	133	10.5	9.2	169	10.9	12.8
45-54	127	11.8	9.4	137	12.0	10.0	136	10.9	10.1	142	11.2	10.5	186	12.3	14.5
55-64	90	8.4	9.9	100	8.8	10.5	96	7.7	10.0	114	9.0	11.9	163	10.5	16.0
65+	110	10.3	10.8	143	12.6	13.5	165	13.3	15.6	172	13.6	16.2	238	19.1	21.5
Unknown	0	0.0		6	0.5	0	0	0	0	12	0.9	0	9	0.6	0
Race/Ethnicity															
Asian	100	9.3	7.7	42	3.7	3.2	35	2.8	2.6	28	2.2	2.1	37	2.3	2.8
Black	31	2.9	3.6	15	1.32	1.8	13	1.0	1.5	21	1.6	2.5	34	2.1	4.4
Hispanic	542	50.6	11.6	156	13.7	3.3	182	14.6	3.8	157	12.4	3.3	161	10.4	3.6
White	373	34.8	12.8	81	7.1	2.8	118	9.5	4.1	119	9.4	4.2	228	14.7	8.6
Other	0	0.0	0	9	0.7	0	13	1.0	0	14	1.1	0	11	0.7	0
Unknown	26	2.4	0	832	73.0	0	878	70.8	0	920	73.0	0	1075	69.5	0
SPA															
1	27	2.5	7.4	32	2.8	8.7	39	3.1	10.5	46	3.6	12.3	36	2.3	9.3
2	271	25.3	12.4	292	25.7	13.2	346	2.7	15.6	347	27.5	15.7	362	23.4	16.9
3	154	14.4	8.9	157	13.8	9.1	166	13.3	9.6	164	13.0	9.5	200	12.9	12.4
4	99	9.2	7.8	158	13.9	12.7	158	1.2	12.6	156	12.3	12.4	234	15.1	20.8
5	155	14.5	24.0	151	13.3	23.2	130	10.4	19.7	142	11.2	21.5	228	14.7	35.7
6	122	11.4	11.6	114	10.0	10.8	122	9.8	11.4	123	9.7	11.5	140	9.0	13.8
7	127	11.8	9.2	104	8.8	9.1	145	11.7	10.5	136	10.8	9.9	179	11.5	13.8
8	117	10.9	10.4	114	10.0	10.8	127	10.2	11.3	145	11.5	12.9	157	10	14.7
Unknown	0	0.0		13	1.1	0	0	0	0	0	0	0	10		0

*Rates calculated based on less than 19 cases or events are considered unreliable. Data provided in section race/ethnicity is incomplete.

**Figure 1. Reported Campylobacteriosis Rates by Year
LAC, 2001-2012**

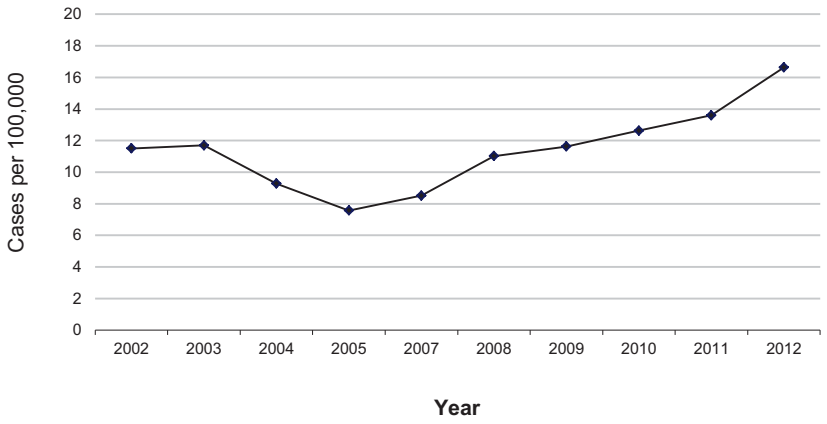


**Figure 2. Reported Campylobacteriosis Rates by Age Group
LAC, 2012 (N=1546)**

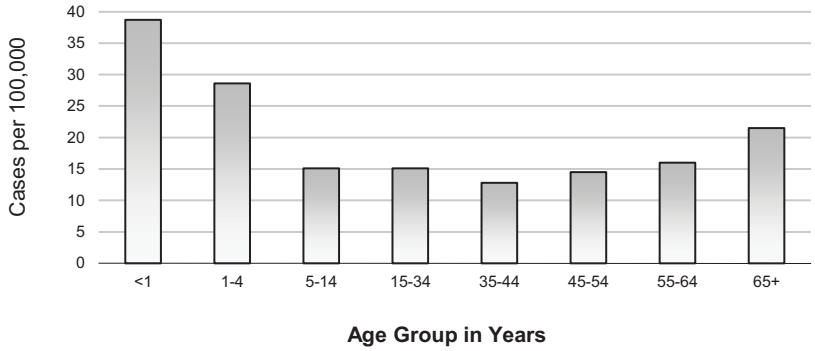
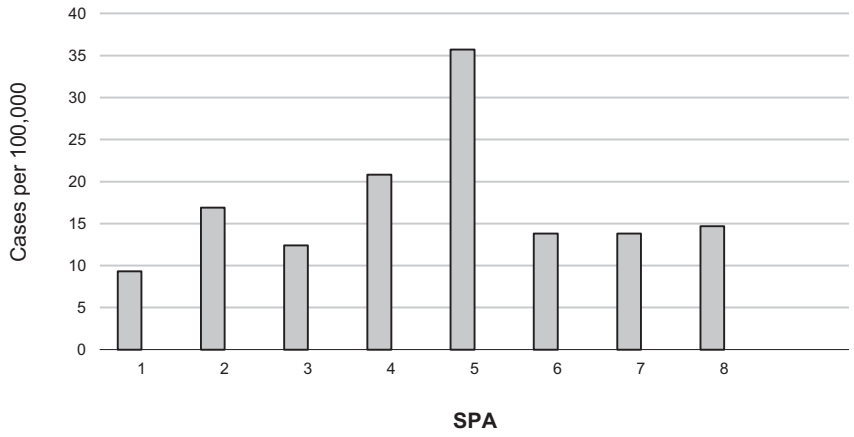
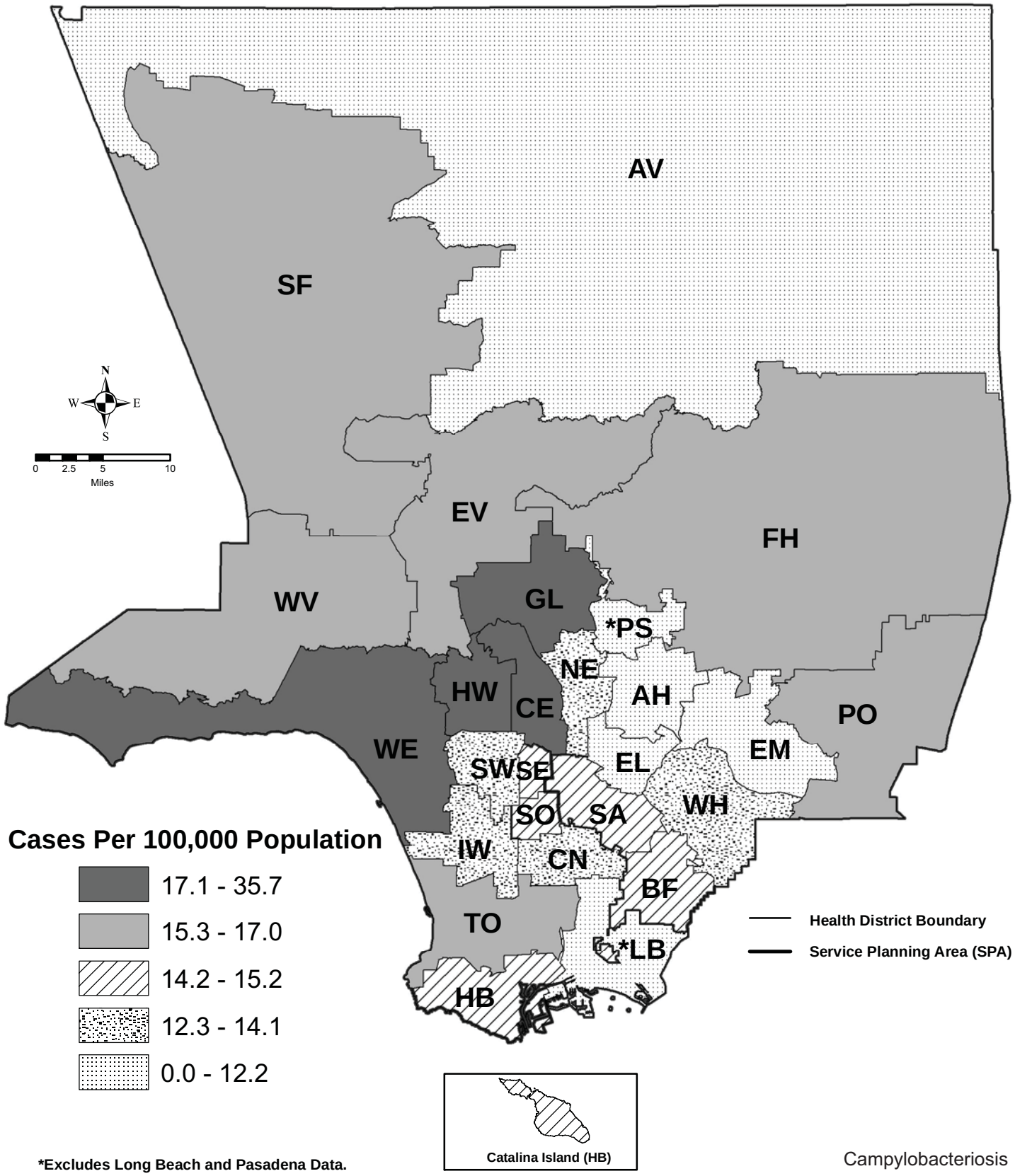


**Figure 3. Reported Campylobacteriosis Rates by SPA
LAC, 2012 (N=1546)**



Map 2. Campylobacteriosis
Rates by Health District, Los Angeles County, 2012*



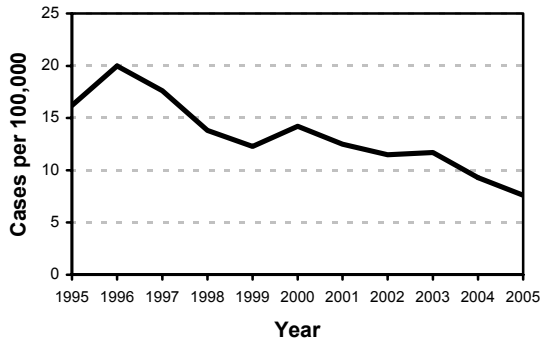
*Excludes Long Beach and Pasadena Data.

CAMPYLOBACTERIOSIS

CRUDE DATA	
Number of Cases	725
Annual Incidence[a]	
LA County	7.6
United States	N/A
Age at Diagnosis	
Mean	32.1
Median	31
Range	0–95
Case Fatality	
LA County	<1%
United States	N/A

[a] Cases per 100,000 population.

Figure 1
Campylobacteriosis
Incidence Rates by Year of Onset
LAC, 1995–2005



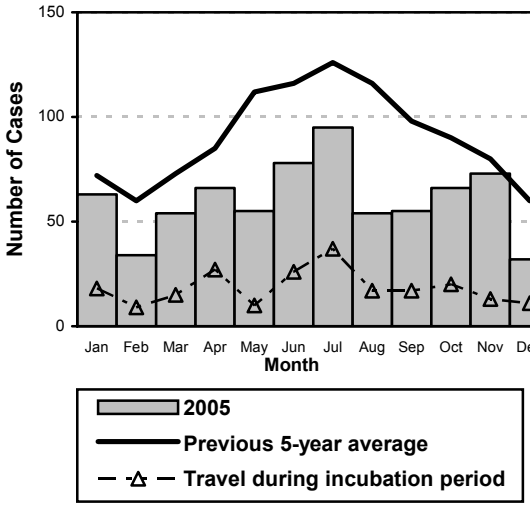
DESCRIPTION

Campylobacteriosis is a bacterial disease caused by Gram-negative bacilli transmitted through ingestion of organisms via consumption of undercooked poultry or other meat, contaminated food, water or raw milk, or contact with infected animals. The incubation period is 2–5 days. Common symptoms include watery or bloody diarrhea, fever, abdominal cramps, myalgia, and nausea. Species include *C. jejuni, C. upsaliensis, C. coli* and *C. fetus*. Sequelae include Guillain-Barré syndrome and Reiter syndrome, which occur in a limited number of cases.

DISEASE ABSTRACT

- There was an 18% decrease in the incidence of campylobacteriosis in 2005.
- In 2005, overall age-adjusted rates were highest for Latinos.
- No outbreaks of campylobacteriosis were reported in 2005.

Figure 2
Campylobacteriosis
Cases and Travel History by
Month of Onset
LAC, 2005



STRATIFIED DATA

Trends: The incidence of campylobacteriosis decreased by 18% in 2005. After two years of relative stability in 2002 and 2003, the rate of campylobacteriosis decreased significantly from 11.7 cases per 100,000 to 9.3 in 2004 and 7.6 in 2005 ($p < 0.05$). There has been an overall downward trend since 1996.

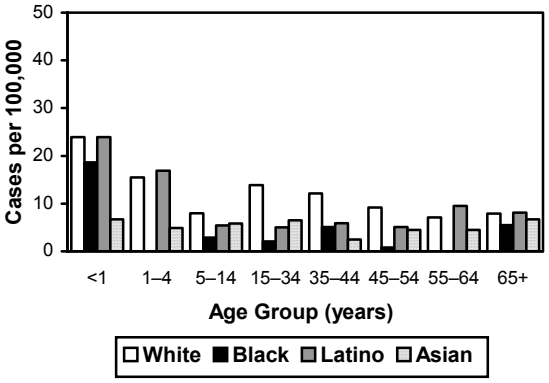
Seasonality: Overall incidence decreased as compared to the previous five-year average starting in February 2005. The number of cases increased in the spring and summer as in other years. Peaks during these seasons may be associated with the increase in travel. Travel is a risk factor for infection since it is most likely associated with an increase in eating at restaurants—which is a risk factor for this disease. Risk also increases when traveling to countries where food safety is questionable. In 2005, 220 cases (30%) reported travel during the incubation period. Of these, 20% traveled within the US. Mexico was the most commonly named (42%) travel destination outside the US. In 2005, overall incidence as well as travel related incidence peaked in July (Figure 2).

Age: The highest rates continued to be among infants aged <1 year and children, aged 1–4 years (Figure 3). These age groups had significantly higher rates than any other age group but the rates were lower than the previous five-year average. In developed countries, children younger than five years and young adults have the highest incidence of this disease. The rates for persons older than 55 years were lower than the previous five-year average.

Sex: The male-to-female rate ratio was 1.2:1. The preponderance of males is typical and the reason for this is not known [1]. Among men above the age of fifteen, 3% reported sexual contact with other men (MSM).

Race/Ethnicity: The highest overall age-adjusted rate was in Whites (11.0 cases per 100,000 population). In 2005 age-adjusted rates decreased for Latinos (7.0) although Latinos had similar incidence to Whites. Age-adjusted rates for Asians (5.2) and Blacks (2.8) decreased. Latino, White, and Black infants (aged <1) have higher age-adjusted rates compared to Asians (Figure 3).

Figure 3
Campylobacteriosis Incidence Rates by Age Group and Race/Ethnicity
LAC, 2005 (N=725)



Location: SPA 2 again had the highest number of cases at 201 (9.4 per 100,000), and SPA 5 had the highest rate with 16.5 per 100,000 (N= 108). The higher rate in SPA 5 is consistent with previous years and is significantly higher than the county average.

Severity of Illness: Seventeen percent of campylobacteriosis cases (N=124) were hospitalized for at least two days. Two campylobacteriosis-associated deaths occurred in a 71 year-old male and a 95 year-old male. Both deaths were associated with multiple medical problems including a history of stomach and prostate cancer. There was one report of Guillain-Barré syndrome (GBS) subsequent to a campylobacteriosis diagnosis. Six percent of campylobacteriosis cases were immunocompromised (N=47). Reasons for immunosuppression included HIV, AIDS, diabetes, leukemia, kidney transplant, lupus, sickle cell disease, cancer, and recent diagnosis of cancer with treatment.

PREVENTION

To reduce the likelihood of contracting campylobacteriosis, all food derived from animal sources should be thoroughly cooked, particularly poultry. Cross contamination may be avoided by making sure utensils, counter tops, cutting boards and sponges are cleaned or do not come in contact with raw poultry or meat or their juices. Hands should be thoroughly washed before, during and after food preparation. The fluids from raw poultry or meat should not be allowed to drip on other foods in the refrigerator or in the shopping cart. It is especially important to wash hands and avoid cross contamination of infant foods, bottles and eating utensils. It is recommended to consume only pasteurized milk, milk products or juices. In addition, it is important to wash hands after coming in contact with any animal or its environment.

COMMENTS

Visiting countries where food safety is questionable may increase risk of campylobacteriosis. Travel is associated with eating in restaurants more often, which can be a risk factor for this disease. Consuming raw milk or raw milk products was a risk factor for fourteen sporadic cases; seven of these cases consumed the milk or product while traveling outside the US and six consumed unpasteurized cheese brought back from Mexico.

No campylobacteriosis outbreaks were reported in 2005.

REFERENCES

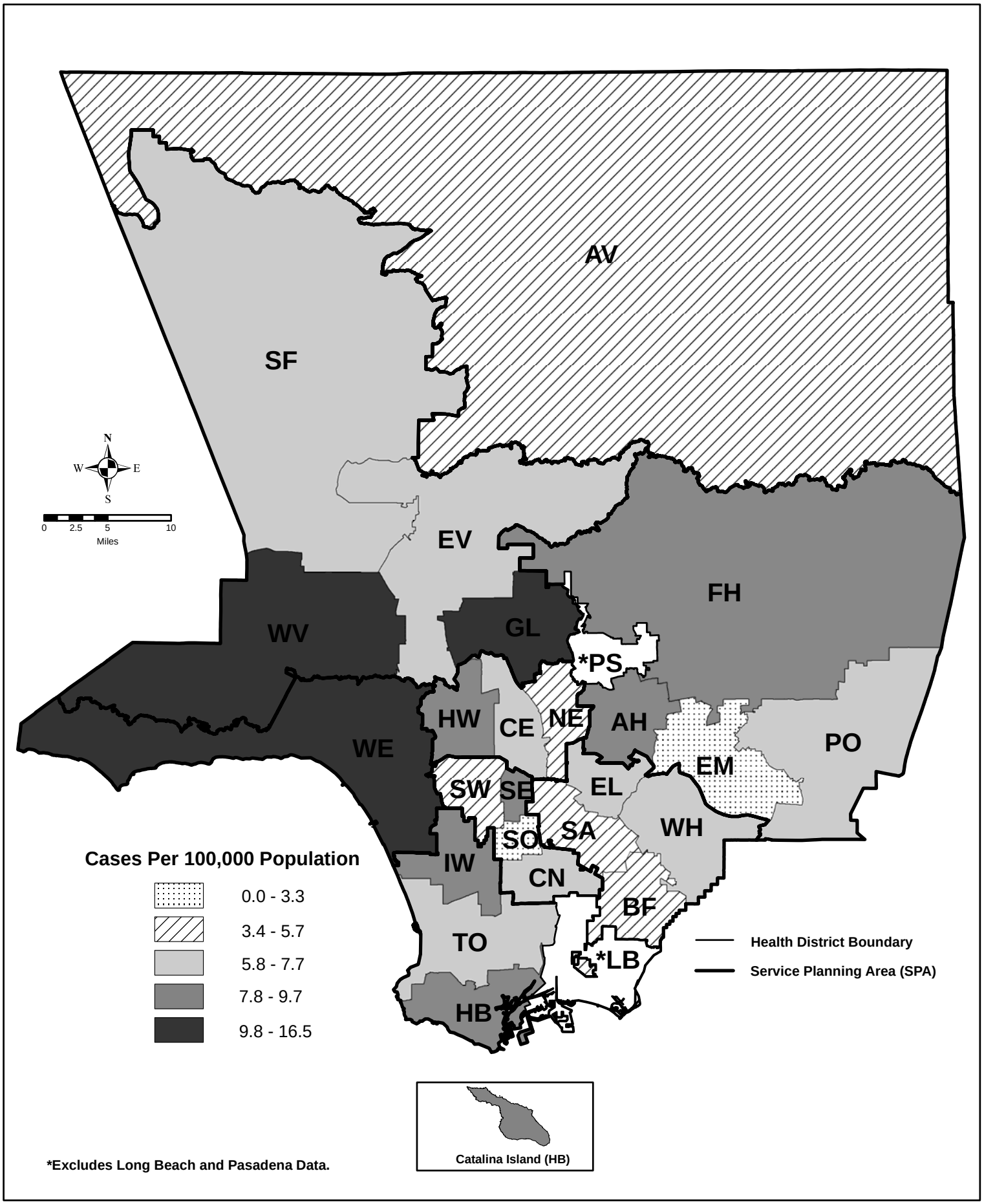
1. Allos, B.M. Campylobacter jejuni infections: update on emerging issues and trends. Clinical Infectious Diseases 2001;32:1201–6.

ADDITIONAL RESOURCES

Disease information is available from the CDC at:
www.cdc.gov/ncidod/dbmd/diseaseinfo/campylobacter_g.htm

General information and reporting information about this and other foodborne diseases in LAC is available at: www.lapublichealth.org/acd/food.htm

Map 2. Campylobacteriosis
Rates by Health District, Los Angeles County, 2005*



*Excludes Long Beach and Pasadena Data.

CAMPYLOBACTERIOSIS

CRUDE DATA	
Number of Cases	1259
Annual Incidence[a]	
LA County	12.8
California[b]	N/A
United States[b]	N/A
Age at Diagnosis	
Mean	34.4
Median	30
Range	0-95

[a]Cases per 100,000 population.
[b]Not nationally notifiable.

DESCRIPTION

Campylobacteriosis is a bacterial disease caused by several species of Gram-negative bacilli including *Campylobacter jejuni, C. upsaliensis, C. coli* and *C. fetus*. It is transmitted through ingestion of organisms in undercooked poultry or other meat, contaminated food, water or raw milk, or contact with infected animals. The incubation period is two to five days. Common symptoms include watery or bloody diarrhea, fever, abdominal cramps, myalgia, and nausea. Sequelae include Guillain-Barré syndrome and Reiter syndrome, both of which are rare.

To reduce the likelihood of contracting campylobacteriosis, all food derived from animal sources should be thoroughly cooked, particularly poultry. Cross contamination may be avoided by making sure utensils, counter tops, cutting boards and sponges are cleaned or do not come in contact with raw poultry or meat or their juices. Hands should be thoroughly washed before, during and after food preparation. The fluids from raw poultry or meat should not be allowed to drip on other foods in the refrigerator or in the shopping cart. It is especially important to wash hands and avoid cross contamination of infant foods, bottles and eating utensils. It is recommended to consume only pasteurized milk, milk products or juices. In addition, it is important to wash hands after coming in contact with any animal or its environment.

2011 TRENDS AND HIGHLIGHTS

- There was a 1.6% increase in the incidence of campylobacteriosis from the previous year and a 66% increase in cases since 2007 (Figure 1).
- The highest rates continued to be among children aged 1 to 4 years (27.2 per 100,000) followed by persons aged ≥65 years (16.2 per 100,000) (Figure 2).
- Service Planning Area (SPA) 5 had the highest rate (21.5 per 100,000) which is consistent with previous years (Figure 3).
- No outbreaks of campylobacteriosis were detected in 2011.
- Routine interviewing of campylobacteriosis cases was discontinued in 2010, however, surveillance continues to assess for clusters and foodborne illness reports.

Reported Campylobacteriosis Cases and Rates* per 100,000 by Age Group, Race/Ethnicity, and SPA
Los Angeles County, 2007-2011

	2007 (N=827)			2008 (N=1072)			2009 (N=1135)			2010 (N=1239)			2011 (N=1259)		
	No.	(%)	Rate/ 100,000	No.	(%)	Rate/ 100,000	No.	(%)	Rate/ 100,000	No.	(%)	Rate/ 100,000	No.	(%)	Rate/ 100,000
Age Group															
<1	25	3.0	16.9	42	3.9	30.1	30	2.6	21.9	24	1.9	17.2	16	1.2	11.5
1-4	108	13.1	18.7	137	12.8	24.2	138	12.1	24.6	150	12.1	25.8	158	12.5	27.2
5-14	109	13.2	7.6	152	14.2	10.8	146	12.8	10.7	175	14.1	13.2	146	11.5	11.0
15-34	237	28.7	8.4	285	26.6	9.9	316	27.8	11.2	318	25.6	10.8	366	29.0	12.4
35-44	78	9.4	5.2	129	12.0	8.5	119	10.4	8.0	157	12.6	10.9	133	10.5	9.2
45-54	100	12.1	7.6	127	11.8	9.4	137	12.0	10.0	136	10.9	10.1	142	11.2	10.5
55-64	69	8.3	7.8	90	8.4	9.9	100	8.8	10.5	96	7.7	10.0	114	9.0	11.9
65+	101	12.2	10.0	110	10.3	10.8	143	12.6	13.5	165	13.3	15.6	172	13.6	16.2
Unknown	0	0.0		0	0.0		6	0.5	0	0	0	0	12	0.9	0
Race/Ethnicity															
Asian	86	10.4	6.7	100	9.3	7.7	42	3.7	3.2	35	2.8	2.6	28	2.2	2.1
Black	39	4.7	4.6	31	2.9	3.6	15	1.32	1.8	13	1.0	1.5	21	1.6	2.5
Hispanic	364	44.0	7.9	542	50.6	11.6	156	13.7	3.3	182	14.6	3.8	157	12.4	3.3
White	314	38.0	10.8	373	34.8	12.8	81	7.1	2.8	118	9.5	4.1	119	9.4	4.2
Other	3	0.4	14.4	0	0.0	0.0	9	0.7	0	13	1.0	0	14	1.1	0
Unknown	21	2.5		26	2.4		832	73.0	0	878	70.8	0	920	73.0	0
SPA															
1	22	2.7	6.1	27	2.5	7.4	32	2.8	8.7	39	3.1	10.5	46	3.6	12.3
2	209	25.3	9.7	271	25.3	12.4	292	25.7	13.2	346	2.7	15.6	347	27.5	15.7
3	122	14.8	7.1	154	14.4	8.9	157	13.8	9.1	166	13.3	9.6	164	13.0	9.5
4	68	8.2	5.4	99	9.2	7.8	158	13.9	12.7	158	1.2	12.6	156	12.3	12.4
5	115	13.9	17.9	155	14.5	24.0	151	13.3	23.2	130	10.4	19.7	142	11.2	21.5
6	68	8.2	6.5	122	11.4	11.6	114	10.0	10.8	122	9.8	11.4	123	9.7	11.5
7	108	13.1	7.8	127	11.8	9.2	104	8.8	9.1	145	11.7	10.5	136	10.8	9.9
8	95	11.5	8.5	117	10.9	10.4	114	10.0	10.8	127	10.2	11.3	145	11.5	12.9
Unknown	20	2.4		0	0.0		13	1.1	0	0	0	0	0	0	0

*Rates calculated based on less than 19 cases or events are considered unreliable. Data provided in section race/ethnicity is incomplete.

**Figure 1. Reported Campylobacteriosis Rates by Year
LAC, 2001-2011**

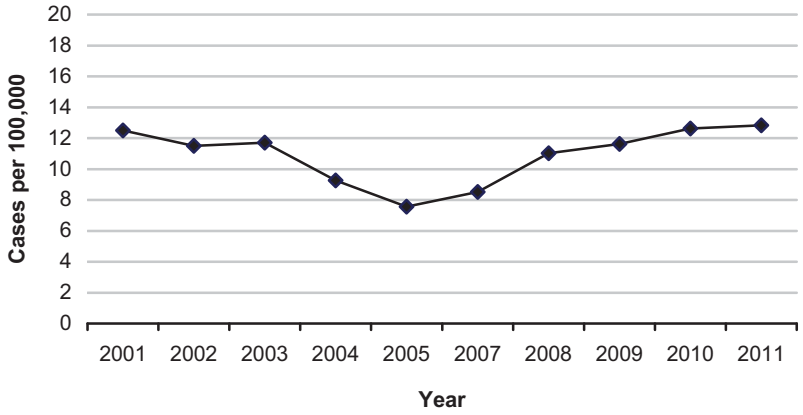


**Figure 2. Reported Campylobacteriosis Rates by Age Group
LAC, 2011 (N=1259)**

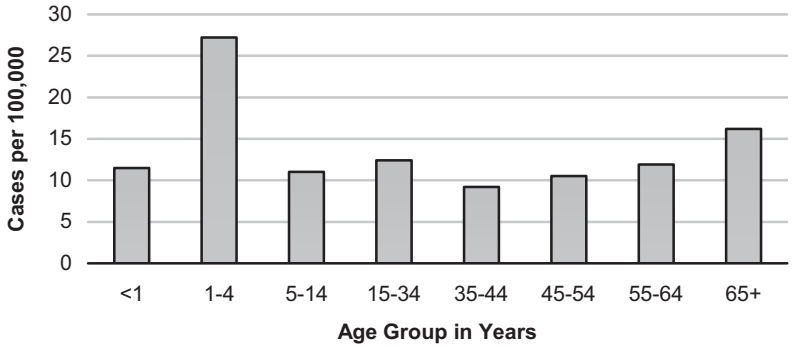
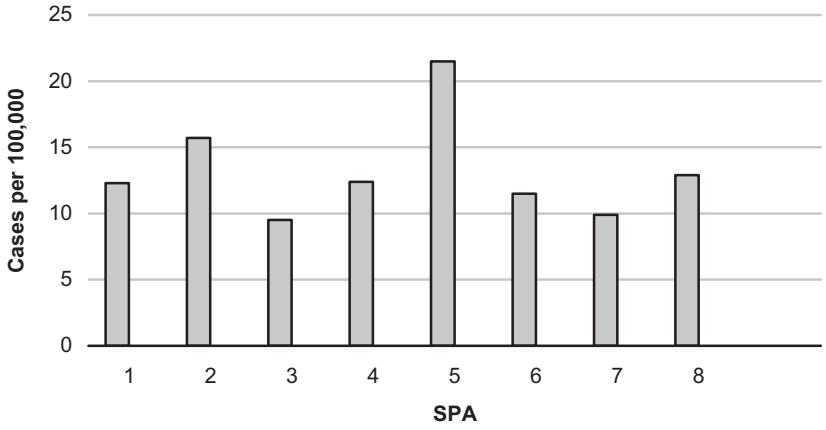
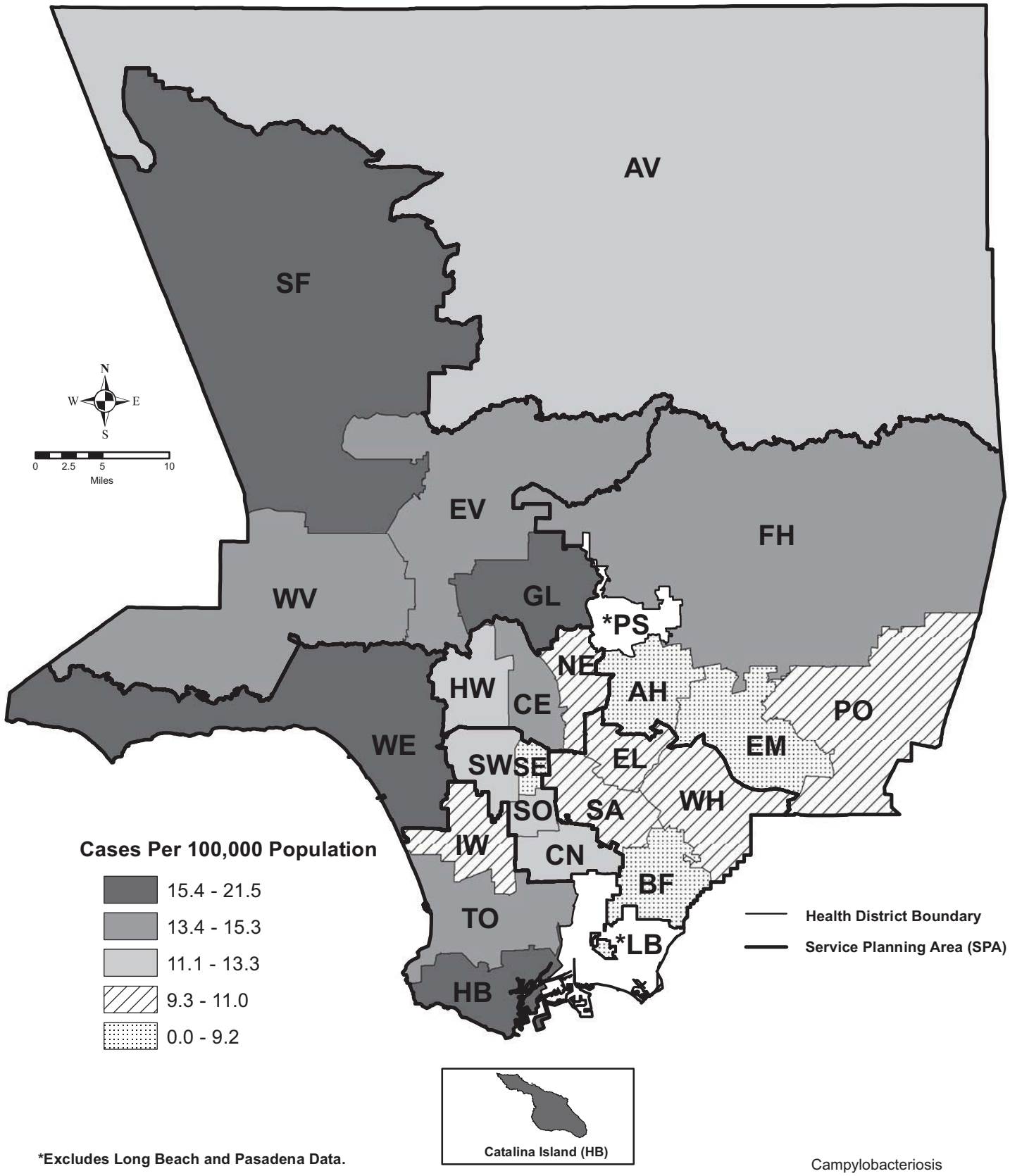


**Figure 3. Reported Campylobacteriosis Rates by SPA
LAC, 2011 (N=1259)**



Map 2. Campylobacteriosis
Rates by Health District, Los Angeles County, 2011*



*Excludes Long Beach and Pasadena Data.

CAMPYLOBACTERIOSIS

CRUDE DATA	
Number of Cases	1239
Annual Incidence[a]	
LA County	12.6
California[b]	N/A
United States[b]	N/A
Age at Diagnosis	
Mean	33.4
Median	31
Range	0-92

[a]Cases per 100,000 population.
[b]Not nationally notifiable.

DESCRIPTION

Campylobacteriosis is a bacterial disease caused by several species of Gram-negative bacilli including *Campylobacter jejuni, C. upsaliensis, C. coli* and *C. fetus*. It is transmitted through ingestion of organisms in undercooked poultry or other meat, contaminated food, water or raw milk, or contact with infected animals. The incubation period is two to five days. Common symptoms include watery or bloody diarrhea, fever, abdominal cramps, myalgia, and nausea. Sequelae include Guillain-Barré syndrome and Reiter syndrome, both of which are rare.

To reduce the likelihood of contracting campylobacteriosis, all food derived from animal sources should be thoroughly cooked, particularly poultry. Cross contamination may be avoided by making sure utensils, counter tops, cutting boards and sponges are cleaned or do not come in contact with raw poultry or meat or their juices. Hands should be thoroughly washed before, during and after food preparation. The fluids from raw poultry or meat should not be allowed to drip on other foods in the refrigerator or in the shopping cart. It is especially important to wash hands and avoid cross contamination of infant foods, bottles and eating utensils. It is recommended to consume only pasteurized milk, milk products or juices. In addition, it is important to wash hands after coming in contact with any animal or its environment.

2010 TRENDS AND HIGHLIGHTS

- There was a 9.1% increase in the incidence of campylobacteriosis from the previous year and a 60% increase in cases since 2006 (Figure 1).
- The highest rates continued to be among children aged 1 to 4 years (25.8 per 100,000) followed by infants aged <1 year (17.2 per 100,000) (Figure 2).
- Service Planning Area (SPA) 5 had the highest rate (19.7 per 100,000) which is consistent with previous years (Figure 3).
- No outbreaks of campylobacteriosis were reported in 2010.
- In 2010, routine interviews of campylobacter were discontinued, however, surveillance continues to assess for clusters and foodborne illness reports.

Reported Campylobacteriosis Cases and Rates* per 100,000 by Age Group, Race/Ethnicity, and SPA
Los Angeles County, 2006-2010

	2006 (N=775)			2007 (N=827)			2008 (N=1072)			2009 (N=1135)			2010 (N=1239)		
	No.	(%)	Rate/ 100,000	No.	(%)	Rate/ 100,000	No.	(%)	Rate/ 100,000	No.	(%)	Rate/ 100,000	No.	(%)	Rate/ 100,000
Age Group															
<1	21	2.7	14.5	25	3.0	16.9	42	3.9	30.1	30	2.6	21.9	24	1.9	17.2
1-4	91	11.7	15.7	108	13.1	18.7	137	12.8	24.2	138	12.1	24.6	150	12.1	25.8
5-14	97	12.5	6.6	109	13.2	7.6	152	14.2	10.8	146	12.8	10.7	175	14.1	13.2
15-34	207	26.7	7.4	237	28.7	8.4	285	26.6	9.9	316	27.8	11.2	318	25.6	10.8
35-44	105	13.5	7.0	78	9.4	5.2	129	12.0	8.5	119	10.4	8.0	157	12.6	10.9
45-54	81	10.5	6.2	100	12.1	7.6	127	11.8	9.4	137	12.0	10.0	136	10.9	10.1
55-64	68	8.8	7.8	69	8.3	7.8	90	8.4	9.9	100	8.8	10.5	96	7.7	10.0
65+	105	13.5	10.7	101	12.2	10.0	110	10.3	10.8	143	12.6	13.5	165	13.3	15.6
Unknown	0	0.0		0	0.0		0	0.0		6	0.5	0	0	0	0
Race/Ethnicity															
Asian	92	11.9	7.2	86	10.4	6.7	100	9.3	7.7	42	3.7	3.2	35	2.8	2.6
Black	34	4.4	4.0	39	4.7	4.6	31	2.9	3.6	15	1.32	1.8	13	1.0	1.5
Hispanic	336	43.4	7.3	364	44.0	7.9	542	50.6	11.6	156	13.7	3.3	182	14.6	3.8
White	302	39.0	10.5	314	38.0	10.8	373	34.8	12.8	81	7.1	2.8	118	9.5	4.1
Other	4	0.5	14.0	3	0.4	14.4	0	0.0	0.0	9	0.7	0	13	1.0	0
Unknown	7	0.9		21	2.5		26	2.4		832	73.0	0	878	70.8	0
SPA															
1	25	3.2	7.2	22	2.7	6.1	27	2.5	7.4	32	2.8	8.7	39	3.1	10.5
2	217	28.0	10.1	209	25.3	9.7	271	25.3	12.4	292	25.7	13.2	346	2.7	15.6
3	92	11.9	5.3	122	14.8	7.1	154	14.4	8.9	157	13.8	9.1	166	13.3	9.6
4	98	12.6	7.8	68	8.2	5.4	99	9.2	7.8	158	13.9	12.7	158	1.2	12.6
5	119	15.4	18.7	115	13.9	17.9	155	14.5	24.0	151	13.3	23.2	130	10.4	19.7
6	63	8.1	6.0	68	8.2	6.5	122	11.4	11.6	114	10.0	10.8	122	9.8	11.4
7	94	12.1	6.8	108	13.1	7.8	127	11.8	9.2	104	8.8	9.1	145	11.7	10.5
8	65	8.4	5.8	95	11.5	8.5	117	10.9	10.4	114	10.0	10.8	127	10.2	11.3
Unknown	2	0.3		20	2.4		0	0.0		13	1.1	0	0	0	0

*Rates calculated based on less than 19 cases or events are considered unreliable. Data provided in section race/ethnicity is incompleted.

Figure 1. Reported Campylobacteriosis Rates by Year
LAC, 2001-2010

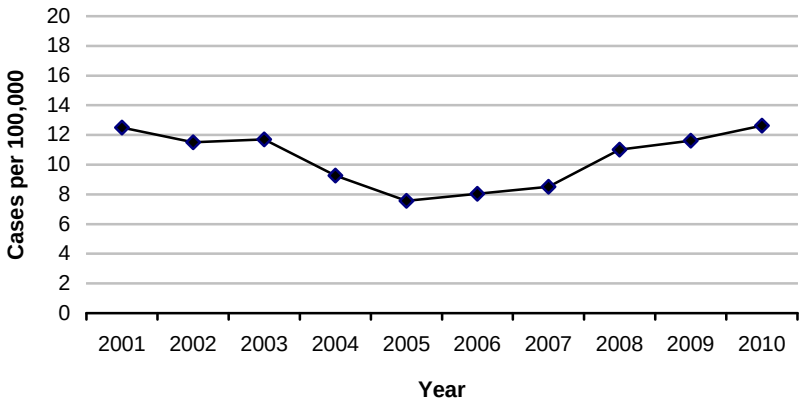


Figure 2. Reported Campylobacteriosis Rates by Age Group
LAC, 2010 (N=1239)

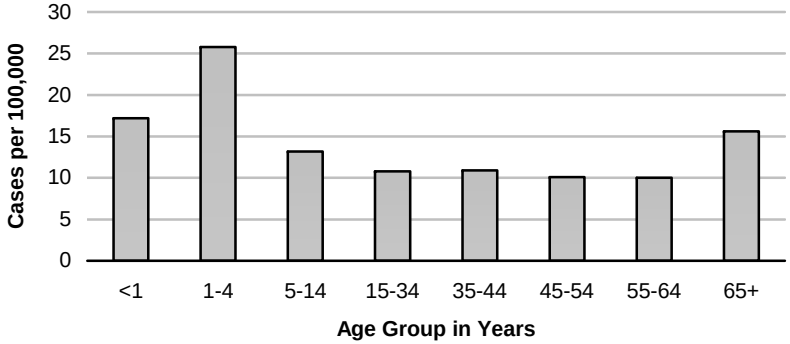
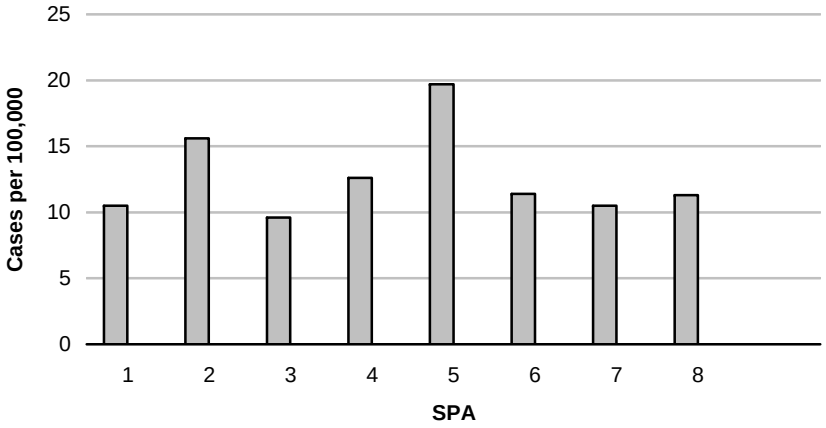


Figure 3. Reported Campylobacteriosis Rates by SPA
LAC, 2010 (N=1239)



CAMPYLOBACTERIOSIS

CRUDE DATA	
Number of Cases	1135
Annual Incidence[a]	
LA County	11.62
California	N/A
United States	N/A
Age at Diagnosis	
Mean	33.2
Median	30
Range	0-94

[a]Cases per 100,000 population.

DESCRIPTION

Campylobacteriosis is a bacterial disease caused by Gram-negative bacilli transmitted through ingestion of organisms in undercooked poultry or other meat, contaminated food, water or raw milk, or contact with infected animals. The incubation period is two to five days. Common symptoms include watery or bloody diarrhea, fever, abdominal cramps, myalgia, and nausea. Species include *C. jejuni, C. upsaliensis, C. coli* and *C. fetus*. Sequelae include Guillain-Barré syndrome and Reiter syndrome, both of which are rare.

To reduce the likelihood of contracting campylobacteriosis, all food derived from animal sources should be thoroughly cooked, particularly poultry. Cross contamination may be avoided by making sure utensils, counter tops, cutting boards and sponges are cleaned or do not come in contact with raw poultry or meat or their juices. Hands should be thoroughly washed before, during and after food preparation. The fluids from raw poultry or meat should not be allowed to drip on other foods in the refrigerator or in the shopping cart. It is especially important to wash hands and avoid cross contamination of infant foods, bottles and eating utensils. It is recommended to consume only pasteurized milk, milk products or juices. In addition, it is important to wash hands after coming in contact with any animal or its environment.

2009 TRENDS AND HIGHLIGHTS

- There was a 5.8% increase in the incidence of campylobacteriosis from the previous year (Figure 1).
- The highest rates continued to be among children aged 1 to 4 years (24.6 per 100,000) followed by infants aged <1 year (21.9 per 100,000) (Figure 2).
- Service Planning Area (SPA) 5 had the highest rate (22.9 per 100,000) which is consistent with previous years (Figure 3).
- No outbreaks of campylobacteriosis were reported in 2009.
- In 2009, routine interviews of campylobacter were discontinued, however, surveillance continues to assess for clusters and foodborne illness reports (FBI).

Reported Campylobacteriosis Cases and Rates* per 100,000 by Age Group, Race/Ethnicity, and SPA
Los Angeles County, 2005-2009

	2005 (N=725)			2006 (N=775)			2007 (N=827)			2008 (N=1072)			2009 (N=1135)		
	No.	(%)	Rate/ 100,000	No.	(%)	Rate/ 100,000	No.	(%)	Rate/ 100,000	No.	(%)	Rate/ 100,000	No.	(%)	Rate/ 100,000
Age Group															
<1	31	4.3	22.0	21	2.7	14.5	25	3.0	16.9	42	3.9	30.1	30	2.6	21.9
1-4	81	11.2	14.0	91	11.7	15.7	108	13.1	18.7	137	12.8	24.2	138	12.1	24.6
65-14	87	12.0	5.9	97	12.5	6.6	109	13.2	7.6	152	14.2	10.8	146	12.8	10.7
15-34	203	28.0	7.2	207	26.7	7.4	237	28.7	8.4	285	26.6	9.9	316	27.8	11.2
35-44	111	15.3	7.4	105	13.5	7.0	78	9.4	5.2	129	12.0	8.5	119	10.4	8.0
45-54	82	11.3	6.4	81	10.5	6.2	100	12.1	7.6	127	11.8	9.4	137	12.0	10.0
55-64	56	7.7	6.7	68	8.8	7.8	69	8.3	7.8	90	8.4	9.9	100	8.8	10.5
65+	74	10.2	7.7	105	13.5	10.7	101	12.2	10.0	110	10.3	10.8	143	12.6	13.5
Unknown	0	0.0		0	0.0		0	0.0		0	0.0		6	0.5	0
Race / Ethnicity															
Asian	65	9.0	5.2	92	11.9	7.2	86	10.4	6.7	100	9.3	7.7	42	3.7	3.2
Black	24	3.3	2.8	34	4.4	4.0	39	4.7	4.6	31	2.9	3.6	15	1.32	1.8
Hispanic	318	43.9	7.0	336	43.4	7.3	364	44.0	7.9	542	50.6	11.6	156	13.7	3.3
White	302	41.7	10.4	302	39.0	10.5	314	38.0	10.8	373	34.8	12.8	81	7.1	2.8
Other	4	0.6	14.2	4	0.5	14.0	3	0.4	14.4	0	0.0	0.0	9	0.7	0
Unknown	12	1.7		7	0.9		21	2.5		26	2.4		832	73.0	0
SPA															
1	19	2.6	5.6	25	3.2	7.2	22	2.7	6.1	27	2.5	7.4	32	2.8	8.7
2	201	27.7	9.4	217	28.0	10.1	209	25.3	9.7	271	25.3	12.4	292	25.7	13.2
3	105	14.5	6.1	92	11.9	5.3	122	14.8	7.1	154	14.4	8.9	157	13.8	9.1
4	77	10.6	6.2	98	12.6	7.8	68	8.2	5.4	99	9.2	7.8	158	13.9	12.7
5	107	14.8	16.8	119	15.4	18.7	115	13.9	17.9	155	14.5	24.0	151	13.3	23.2
6	54	7.4	5.2	63	8.1	6.0	68	8.2	6.5	122	11.4	11.6	114	10.0	10.8
7	81	11.2	5.9	94	12.1	6.8	108	13.1	7.8	127	11.8	9.2	104	8.8	9.1
8	81	11.2	7.3	65	8.4	5.8	95	11.5	8.5	117	10.9	10.4	114	10.0	10.8
Unknown	0	0.0		2	0.3		20	2.4		0	0.0		13	1.1	0

*Rates calculated based on less than 19 cases or events are considered unreliable. Data provided in section race/ethnicity is incompleted.

Figure 1. Reported Campylobacteriosis Rates by Year
LAC, 2000-2009 (N=1135)

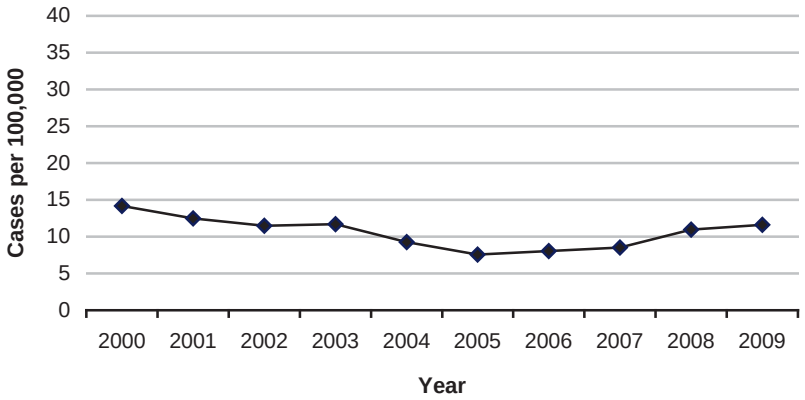


Figure 2. Reported Campylobacteriosis Rates by Age Group
LAC, 2009 (N=1135)

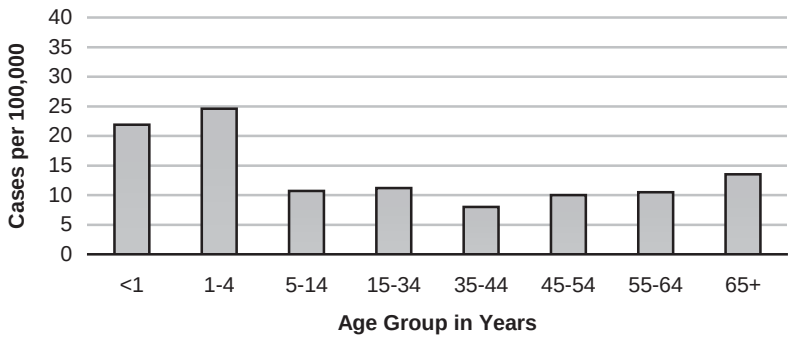
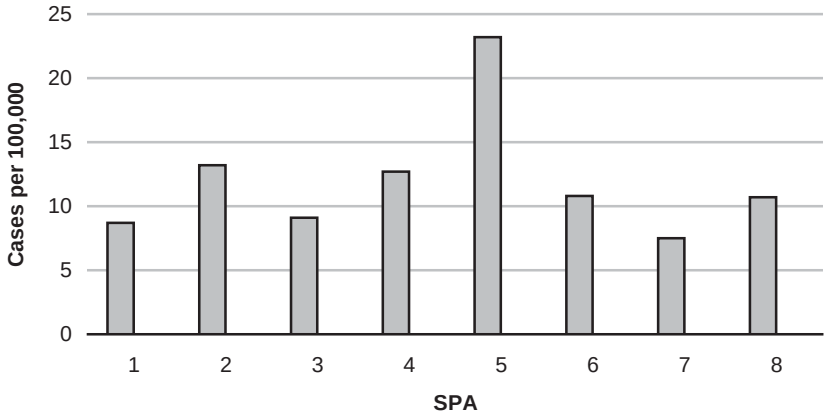
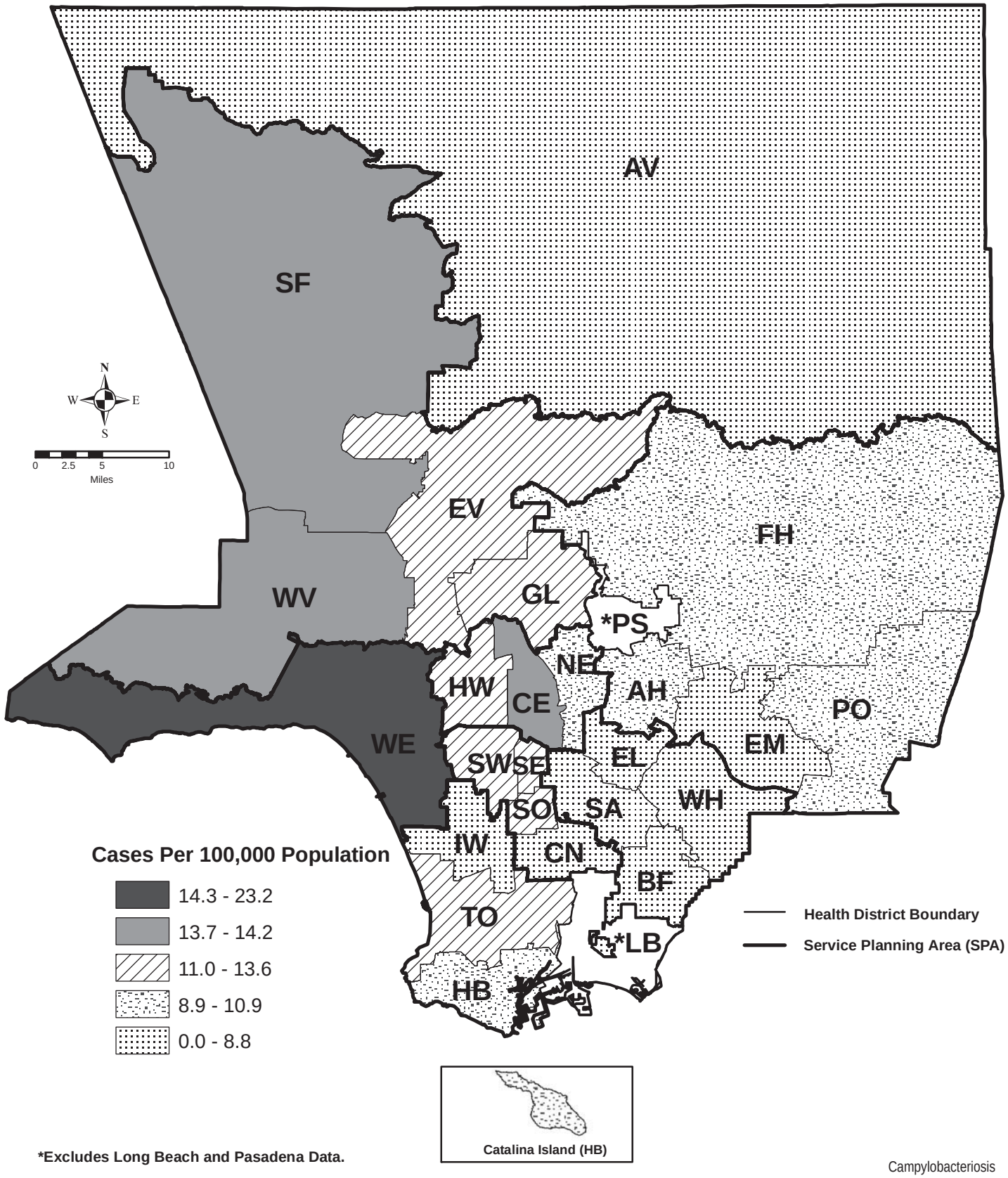


Figure 3. Reported Campylobacteriosis Rates by SPA
LAC, 2009 (N=1135)



Map 2. Campylobacteriosis
Rates by Health District, Los Angeles County, 2009*



*Excludes Long Beach and Pasadena Data.

CAMPYLOBACTERIOSIS

CRUDE DATA	
Number of Cases	1072
Annual Incidence[a]	
LA County	11.0
California	N/A
United States	N/A
Age at Diagnosis	
Mean	31.6
Median	29
Range	0-92

[a]Cases per 100,000 population.

DESCRIPTION

Campylobacteriosis is a bacterial disease caused by Gram-negative bacilli transmitted through ingestion of organisms in undercooked poultry or other meat, contaminated food, water or raw milk, or contact with infected animals. The incubation period is 2 to 5 days. Common symptoms include watery or bloody diarrhea, fever, abdominal cramps, myalgia, and nausea. Species include *C. jejuni, C. upsaliensis, C. coli* and *C. fetus*. Sequelae include Guillain-Barré syndrome and Reiter syndrome, which occur in a limited number of cases.

To reduce the likelihood of contracting campylobacteriosis, all food derived from animal sources should be thoroughly cooked, particularly poultry. Cross contamination may be avoided by making sure utensils, counter tops, cutting boards and sponges are cleaned or do not come in contact with raw poultry or meat or their juices. Hands should be thoroughly washed before, during and after food preparation. The fluids from raw poultry or meat should not be allowed to drip on other foods in the refrigerator or in the shopping cart. It is especially important to wash hands and avoid cross contamination of infant foods, bottles and eating utensils. It is recommended to consume only pasteurized milk, milk products or juices. In addition, it is important to wash hands after coming in contact with any animal or its environment.

2008 TRENDS AND HIGHLIGHTS

- There was a 30.0% increase in the incidence of campylobacteriosis in 2008 (Figure 1).
- The highest rates continued to be among infants aged <1 year (30.1 per 100,000) and children aged 1 to 4 years (24.2 per 100,000) (Figure 2).
- Cases are predominantly observed in the Hispanic population; however, whites had the highest rate. (Figure 3 and 6).
- Service Planning Area (SPA) 5 had the highest rate (24.0 per 100,000) which is consistent with previous years (Figure 4).
- The incidence from March to August was higher than the previous five-year average. Increase in the spring and summer is typical which may be associated with the increase in travel seen at this time (Figure 5).
- The percentage of Hispanic cases has increased by at least 7.0 percentage points when compared to previous years (Figure 6).
- No outbreaks of campylobacteriosis were reported in 2008.
- Twelve percent (n=126) of campylobacteriosis cases were hospitalized for at least two days. There was one reported death in a person with a history of cancer.

Reported Campylobacteriosis Cases and Rates* per 100,000 by Age Group, Race/Ethnicity, and SPA
Los Angeles County, 2004-2008

	2004 (N=884)			2005 (N=725)			2006 (N=775)			2007 (N=827)			2008 (N=1072)		
	No.	(%)	Rate/ 100,000	No.	(%)	Rate/ 100,000	No.	(%)	Rate/ 100,000	No.	(%)	Rate/ 100,000	No.	(%)	Rate/ 100,000
Age Group															
<1	35	4.0	24.6	31	4.3	22.0	21	2.7	14.5	25	3.0	16.9	42	3.9	30.1
1-4	102	11.5	17.7	81	11.2	14.0	91	11.7	15.7	108	13.1	18.7	137	12.8	24.2
5-14	121	13.7	8.1	87	12.0	5.9	97	12.5	6.6	109	13.2	7.6	152	14.2	10.8
15-34	227	25.7	8.1	203	28.0	7.2	207	26.7	7.4	237	28.7	8.4	285	26.6	9.9
35-44	116	13.1	7.7	111	15.3	7.4	105	13.5	7.0	78	9.4	5.2	129	12.0	8.5
45-54	82	9.3	6.6	82	11.3	6.4	81	10.5	6.2	100	12.1	7.6	127	11.8	9.4
55-64	84	9.5	10.5	56	7.7	6.7	68	8.8	7.8	69	8.3	7.8	90	8.4	9.9
65+	117	13.2	12.4	74	10.2	7.7	105	13.5	10.7	101	12.2	10.0	110	10.3	10.8
Unknown	0	0.0		0	0.0		0	0.0		0	0.0		0	0.0	
Race / Ethnicity															
Asian	98	11.1	7.9	65	9.0	5.2	92	11.9	7.2	86	10.4	6.7	100	9.3	7.7
Black	30	3.4	3.5	24	3.3	2.8	34	4.4	4.0	39	4.7	4.6	31	2.9	3.6
Hispanic	370	41.9	8.3	318	43.9	7.0	336	43.4	7.3	364	44.0	7.9	542	50.6	11.6
White	374	42.3	12.8	302	41.7	10.4	302	39.0	10.5	314	38.0	10.8	373	34.8	12.8
Other	3	0.3	10.8	4	0.6	14.2	4	0.5	14.0	3	0.4	14.4	0	0.0	0.0
Unknown	9	1.0		12	1.7		7	0.9		21	2.5		26	2.4	
SPA															
1	16	1.8	4.8	19	2.6	5.6	25	3.2	7.2	22	2.7	6.1	27	2.5	7.4
2	205	23.2	9.7	201	27.7	9.4	217	28.0	10.1	209	25.3	9.7	271	25.3	12.4
3	124	14.0	7.3	105	14.5	6.1	92	11.9	5.3	122	14.8	7.1	154	14.4	8.9
4	110	12.4	8.9	77	10.6	6.2	98	12.6	7.8	68	8.2	5.4	99	9.2	7.8
5	123	13.9	19.4	107	14.8	16.8	119	15.4	18.7	115	13.9	17.9	155	14.5	24.0
6	62	7.0	6.1	54	7.4	5.2	63	8.1	6.0	68	8.2	6.5	122	11.4	11.6
7	127	14.4	9.3	81	11.2	5.9	94	12.1	6.8	108	13.1	7.8	127	11.8	9.2
8	117	13.2	10.6	81	11.2	7.3	65	8.4	5.8	95	11.5	8.5	117	10.9	10.4
Unknown	0	0.0		0	0.0		2	0.3		20	2.4		0	0.0	

*Rates calculated based on less than 19 cases or events are considered unreliable.

Figure 1. Reported Campylobacteriosis Rates by Year LAC, 1999-2008

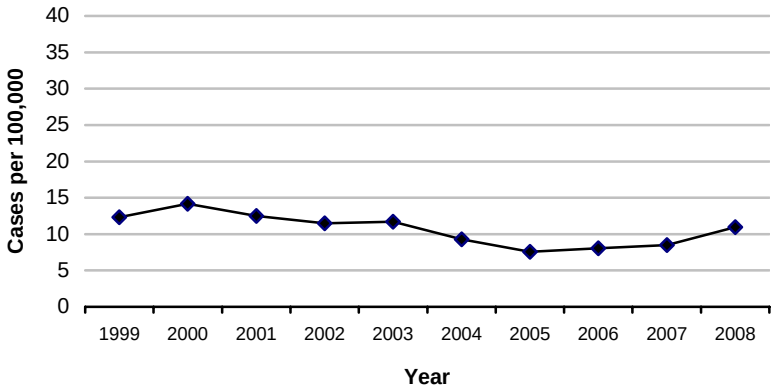


Figure 2. Reported Campylobacteriosis Rates by Age Group LAC, 2008

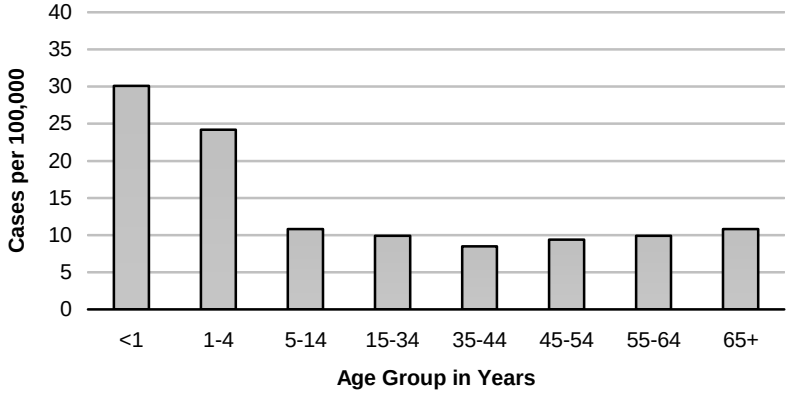


Figure 3. Reported Cases of Campylobacteriosis by Race/Ethnicity LAC, 2008

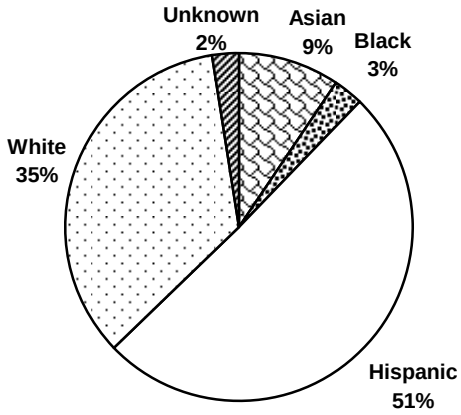


Figure 4. Reported Campylobacteriosis Rates by SPA LAC, 2008

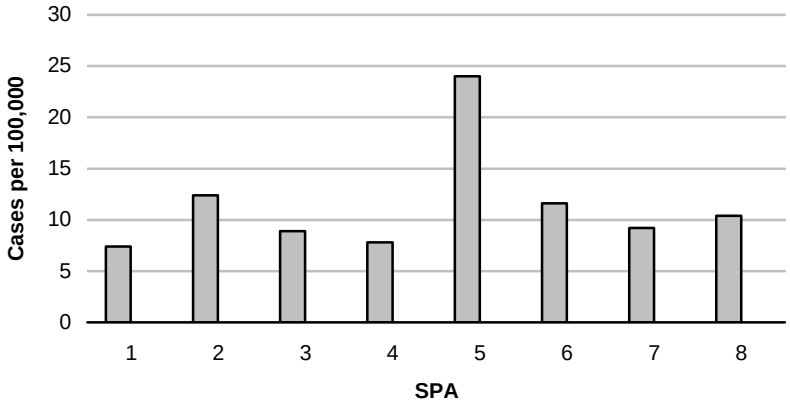


Figure 5. Reported Campylobacteriosis Cases by Month of Onset, LAC, 2008

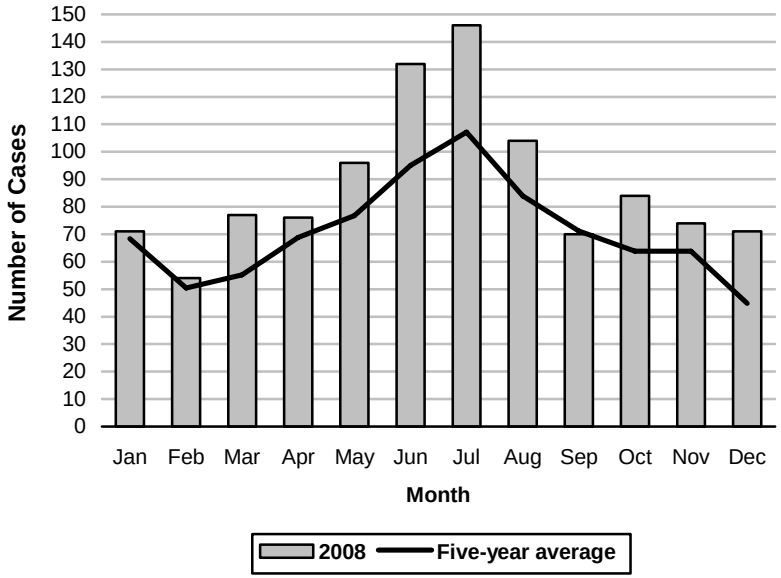
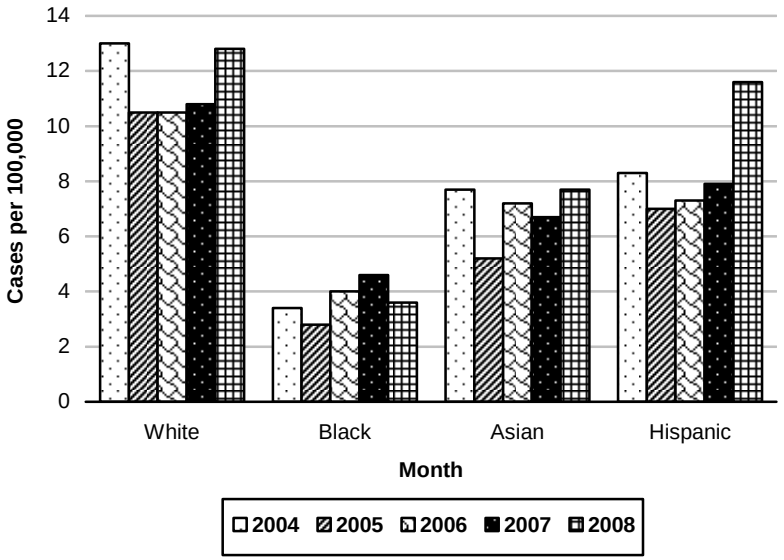
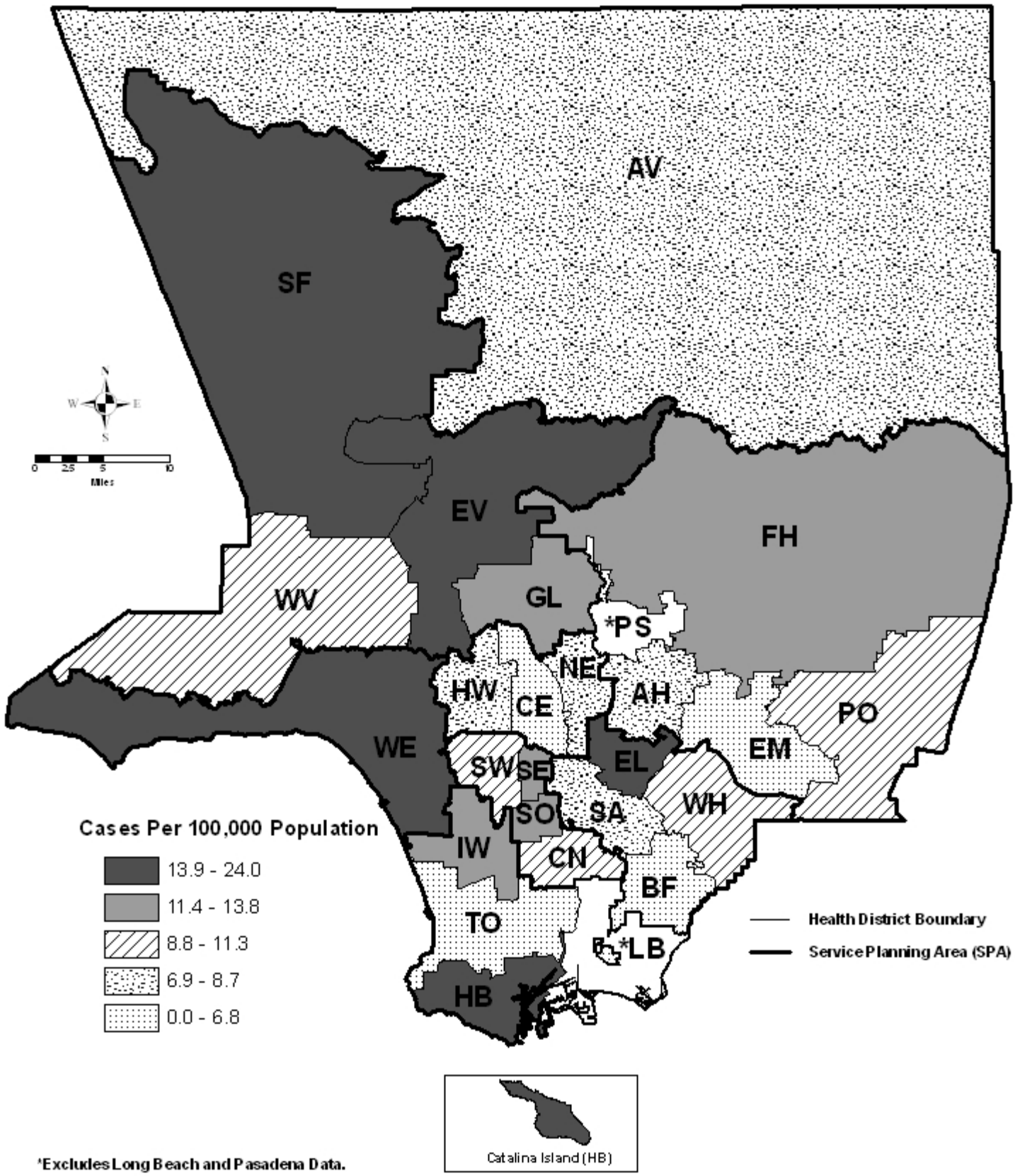


Figure 6. Campylobacteriosis Incidence by Race/Ethnicity LAC, 2004-2008



Map 2. Campylobacteriosis
Rates by Health District, Los Angeles County, 2008*



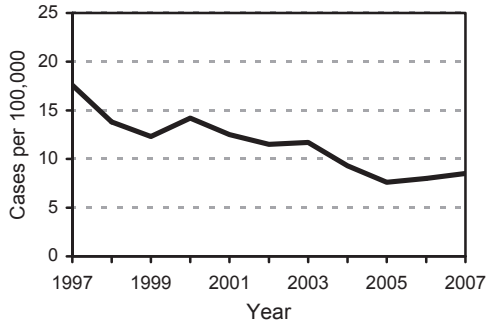
*Excludes Long Beach and Pasadena Data.

CAMPYLOBACTERIOSIS

CRUDE DATA	
Number of Cases	825
Annual Incidence[a]	
LA County	8.5
United States	N/A
Age at Diagnosis	
Mean	32.6
Median	30
Range	0–100

[a] Cases per 100,000 population.

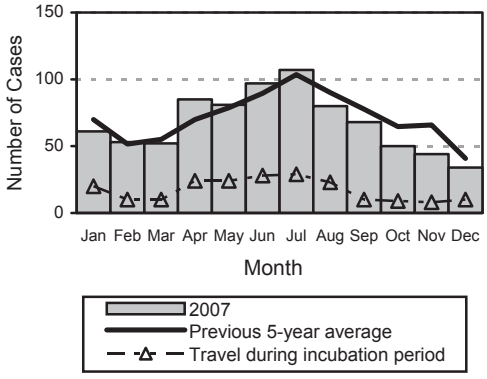
Figure 1
Campylobacteriosis
Incidence Rates by Year of Onset
LAC, 1997–2007



DESCRIPTION

Campylobacteriosis is a bacterial disease caused by Gram-negative bacilli transmitted through ingestion of organisms in undercooked poultry or other meat, contaminated food, water or raw milk, or contact with infected animals. The incubation period is 2–5 days. Common symptoms include watery or bloody diarrhea, fever, abdominal cramps, myalgia, and nausea. Species include *C. jejuni, C. upsaliensis, C. coli* and *C. fetus*. Sequelae include Guillain-Barré syndrome and Reiter syndrome, which occur in a limited number of cases.

Figure 2
Campylobacteriosis
Cases and Travel History by
Month of Onset
LAC, 2007



DISEASE ABSTRACT

- There was a 6.5% increase in the incidence of campylobacteriosis in 2007.
- Overall age-adjusted rates again were highest for whites.
- One outbreak of campylobacteriosis was investigated in 2007.

STRATIFIED DATA

Trends: The incidence of campylobacteriosis increased by 6.5% in 2007. In 2007, the rated increased to 8.51 cases per 100,000 population from 8.04 cases per 100,000 population in 2006 (Figure 1).

Seasonality: The incidence from April to July was slightly higher than the previous five-year. Increase in the spring and summer is typical. Peaks during these months may be associated with the increase in travel seen at this time (Figure 2). Travel is a risk factor for infection since it is most likely associated with an increase in eating at restaurants—which is a risk factor for this disease. Risk also increases when traveling to countries where food safety is uncertain. In 2007, 205 cases (24.8%) reported travel during the incubation period. Of these, 20% traveled within the US. Mexico was the most commonly named (37.6%) travel destination outside the US, although other locations in Central and South America and Europe were named frequently. In 2007, overall incidence as well as travel related incidence was elevated between April and July (Figure 2).

Age: The highest rates continued to be among infants aged <1 year and children aged 1–4 years (Figure 3). These age groups had significantly higher rates than any other age group but the rates were lower than the previous five-year average. In developed countries, children younger than five years and young adults have the highest incidence of this disease (Allos, 2001).

Sex: The male-to-female rate ratio was 1.3:1. The preponderance of male cases is typical and the reason for this is not known (Allos, 2001).

Race/Ethnicity: The highest overall age-adjusted rate was in whites (11.07 cases per 100,000 population); this was an increase from 2006 (9.96 per 100,000 population). In 2007, the age-adjusted rate for Hispanics was stable (7.6) although Hispanics had similar incidence to whites. Hispanic infants and children have the highest age adjusted rates when compared to other races by age group. Age-adjusted rates for Asians (7.5) and for blacks (4.5) remained stable (Figure 4).

Location: SPA 2 again had the highest number of cases at 208 (10.1 per 100,000 population), and SPA 5 had the highest rate with 17.9 per 100,000 population (n= 115). The higher rate in SPA 5 is consistent with previous years and is significantly higher than any other SPA.

Severity of Illness: Fifteen percent (n=126) of campylobacteriosis cases were hospitalized for at least two days. There were no reported deaths in 2007. Thirteen percent (n=109) of campylobacteriosis cases were immunocompromised. Reasons for immunosuppression included asthma, HIV, AIDS, diabetes, leukemia, kidney transplant, and recent diagnosis of cancer with treatment.

Figure 3
Campylobacteriosis
Incidence Rates by Age Group
LAC, 2007

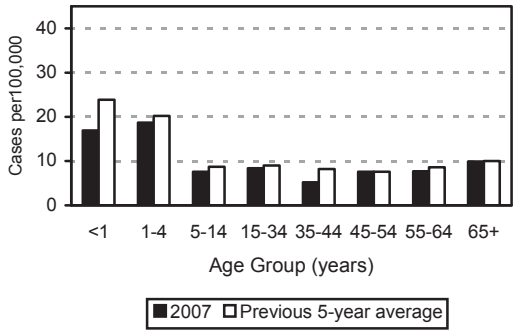
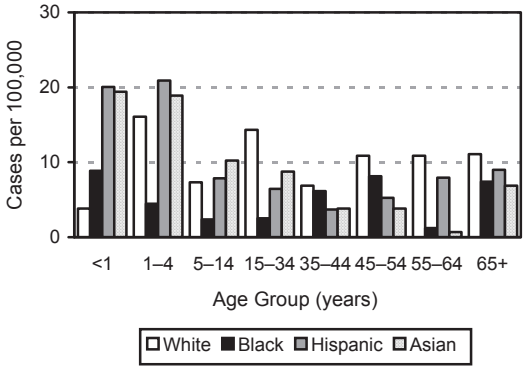


Figure 4
Campylobacteriosis Incidence Rates
by Age Group and Race/Ethnicity
LAC, 2007 (N=825)



COMMENTS

Consuming raw milk or raw milk products was a risk factor for sixteen sporadic cases; eleven of these cases consumed the milk or product while traveling outside the US, one case consumed the raw milk while traveling within the US, one consumed unpasteurized cheese brought back from Mexico, and three sporadic cases consumed milk purchased at their local market.

There was one campylobacteriosis outbreak investigated in 2007 involving a festival. There were four confirm cases in this outbreak. All Cases were interviewed however no source were identified.

PREVENTION

To reduce the likelihood of contracting campylobacteriosis, all food derived from animal sources should be thoroughly cooked, particularly poultry. Cross contamination may be avoided by making sure utensils, counter tops, cutting boards and sponges are cleaned or do not come in contact with raw poultry or meat or their juices. Hands should be thoroughly washed before, during and after food preparation. The fluids

from raw poultry or meat should not be allowed to drip on other foods in the refrigerator or in the shopping cart. It is especially important to wash hands and avoid cross contamination of infant foods, bottles and eating utensils. It is recommended to consume only pasteurized milk, milk products or juices. In addition, it is important to wash hands after coming in contact with any animal or its environment

REFERENCE

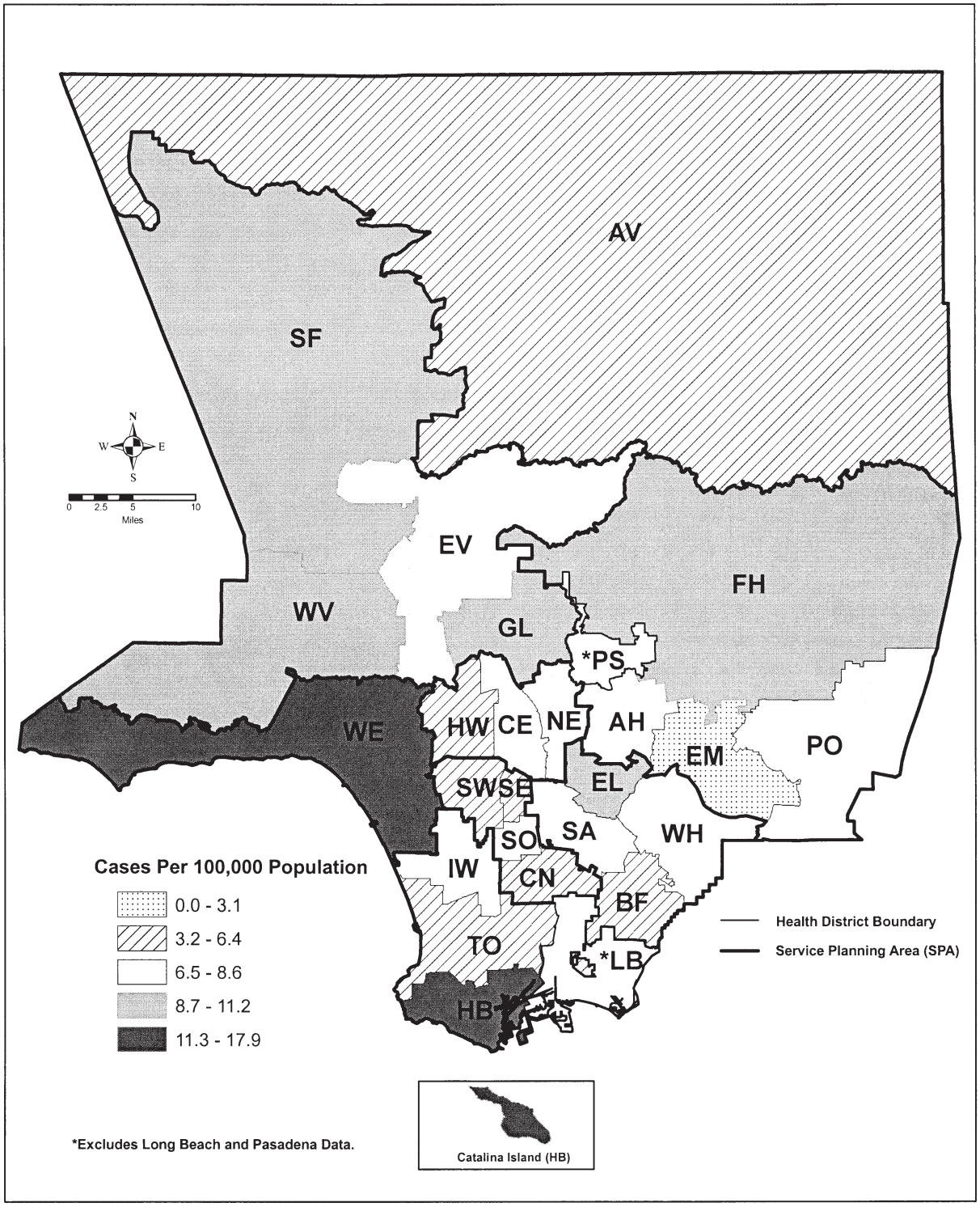
Allos, B.M. Campylobacter jejuni infections: update on emerging issues and trends. (2001) *Clinical Infectious Diseases*, 32(8), 1201–1206.

ADDITIONAL RESOURCES

CDC General Information – http://www.cdc.gov/nczved/dfbmd/disease_listing/campylobacter_gi.html

LAC General Information – http://publichealth.lacounty.gov/acd/Diseases/Campy.htm

Map 2. Campylobacteriosis
Rates by Health District, Los Angeles County, 2007*

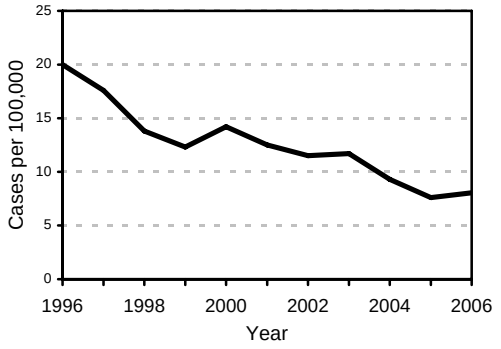


CAMPYLOBACTERIOSIS

CRUDE DATA	
Number of Cases	775
Annual Incidence[a]	
LA County	8.0
United States	N/A
Age at Diagnosis	
Mean	34.16
Median	32
Range	0–98

[a] Cases per 100,000 population.

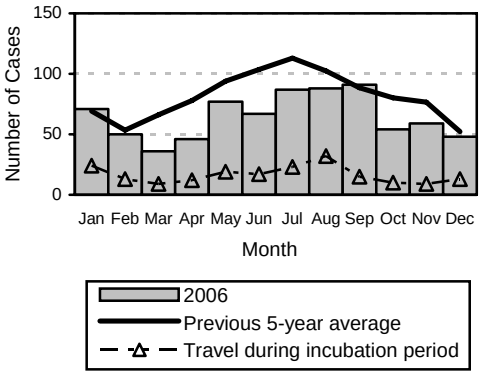
Figure 1
Campylobacteriosis
Incidence Rates by Year of Onset
LAC, 1996–2006



DESCRIPTION

Campylobacteriosis is a bacterial disease caused by Gram-negative bacilli transmitted through ingestion of organisms in undercooked poultry or other meat, contaminated food, water or raw milk, or contact with infected animals. The incubation period is 2–5 days. Common symptoms include watery or bloody diarrhea, fever, abdominal cramps, myalgia, and nausea. Species include *C. jejuni, C. upsaliensis, C. coli* and *C. fetus*. Sequelae include Guillain-Barré syndrome and Reiter syndrome, which occur in a limited number of cases.

Figure 2
Campylobacteriosis
Cases and Travel History by
Month of Onset
LAC, 2006



DISEASE ABSTRACT

- There was a 6.9% increase in the incidence of campylobacteriosis in 2006.
- In 2006, overall age-adjusted rates were highest for whites.
- One outbreak of campylobacteriosis was investigated in 2006.

STRATIFIED DATA

Trends: The incidence of campylobacteriosis increased by 6.9% in 2006. After two years of relative stability in 2002 and 2003, the rate of campylobacteriosis decreased significantly from 11.7 cases per 100,000 to 9.3 in 2004 and 7.6 in 2005 ($p < 0.05$). In 2006, the rated increased slightly to 8.0 cases per 100,000. Continued surveillance is needed to identify any new trend.

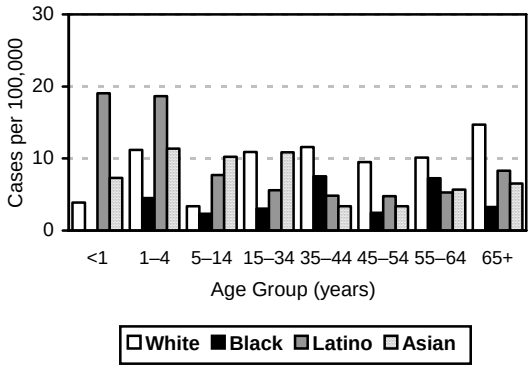
Seasonality: With the exception of January and September, monthly incidence decreased when compared to the previous five-year average. Incidence increased in the spring and summer as seen in other years. Peaks during these seasons may be associated with the increase in travel. Travel is a risk factor for infection since it is most likely associated with an increase in eating at restaurants—which is a risk factor for this disease. Risk also increases when traveling to countries where food safety is questionable. In 2006, 197 cases (25.4%) reported travel during the incubation period. Of these, 30% traveled within the US. Mexico was the most commonly named (33.5%) travel destination outside the US, although other locations in Central and South America and Europe were named frequently. In 2006, overall incidence peaked in September and travel related incidence peaked in August (Figure 2).

Age: The highest rates continued to be among infants aged <1 year and children, aged 1–4 years (Figure 3). These age groups had significantly higher rates than any other age group but the rates were lower than the previous five-year average. In developed countries, children younger than five years and young adults have the highest incidence of this disease.

Sex: The male-to-female rate ratio was 1.3:1. The preponderance of male cases is typical and the reason for this is not known [1]. Among men above the age of fifteen, only 1.3% reported sexual contact with other men (MSM).

Race/Ethnicity: The highest overall age-adjusted rate was in whites (9.96 cases per 100,000 population); this was a decrease from 2005 (11 per 100,000). In 2006 the age-adjusted rate for Latinos was stable (7.0) although Latinos had similar incidence to whites. Age-adjusted rates for Asians (7.7) and blacks (4.0) increased. Latino infants and children have the highest age adjusted rates when compared to other races by age group. Asians showed a higher rate for several age groups (Figure 3).

Figure 3
Campylobacteriosis Incidence Rates
by Age Group and Race/Ethnicity
LAC, 2006 (N=775)



Location: SPA 2 again had the highest number of cases at 217 (10.1 per 100,000), and SPA 5 had the highest rate with 18.7 per 100,000 (N= 119). The higher rate in SPA 5 is consistent with previous years and is significantly higher than any other SPA.

Severity of Illness: Thirteen percent of campylobacteriosis cases (N=101) were hospitalized for at least two days. Two campylobacteriosis-associated deaths occurred in a 78 year-old male and a 52 year-old male. Both deaths were associated with multiple medical problems including a history of liver and lung cancer. Although, there is no active surveillance of disease sequelae, there was one report of Guillain-Barré syndrome (GBS) subsequent to a campylobacteriosis diagnosis. Fifteen percent of campylobacteriosis cases were immunocompromised (N=120). Reasons for immunosuppression included HIV, AIDS, diabetes, leukemia, kidney and liver transplant, lupus, cancer, and recent diagnosis of cancer with treatment.

PREVENTION

To reduce the likelihood of contracting campylobacteriosis, all food derived from animal sources should be thoroughly cooked, particularly poultry. Cross contamination may be avoided by making sure utensils, counter tops, cutting boards and sponges are cleaned or do not come in contact with raw poultry or meat or their juices. Hands should be thoroughly washed before, during and after food preparation. The fluids from raw poultry or meat should not be allowed to drip on other foods in the refrigerator or in the shopping cart. It is especially important to wash hands and avoid cross contamination of infant foods, bottles and

eating utensils. It is recommended to consume only pasteurized milk, milk products or juices. In addition, it is important to wash hands after coming in contact with any animal or its environment.

COMMENTS

Consuming raw milk or raw milk products was a risk factor for twelve sporadic cases; four of these cases consumed the milk or product while traveling outside the US and two consumed unpasteurized cheese brought back from Mexico.

There was one campylobacteriosis outbreaks investigated in 2006. This outbreak was travel related, involving a missionary group. There were two confirm cases in this outbreak.

REFERENCES

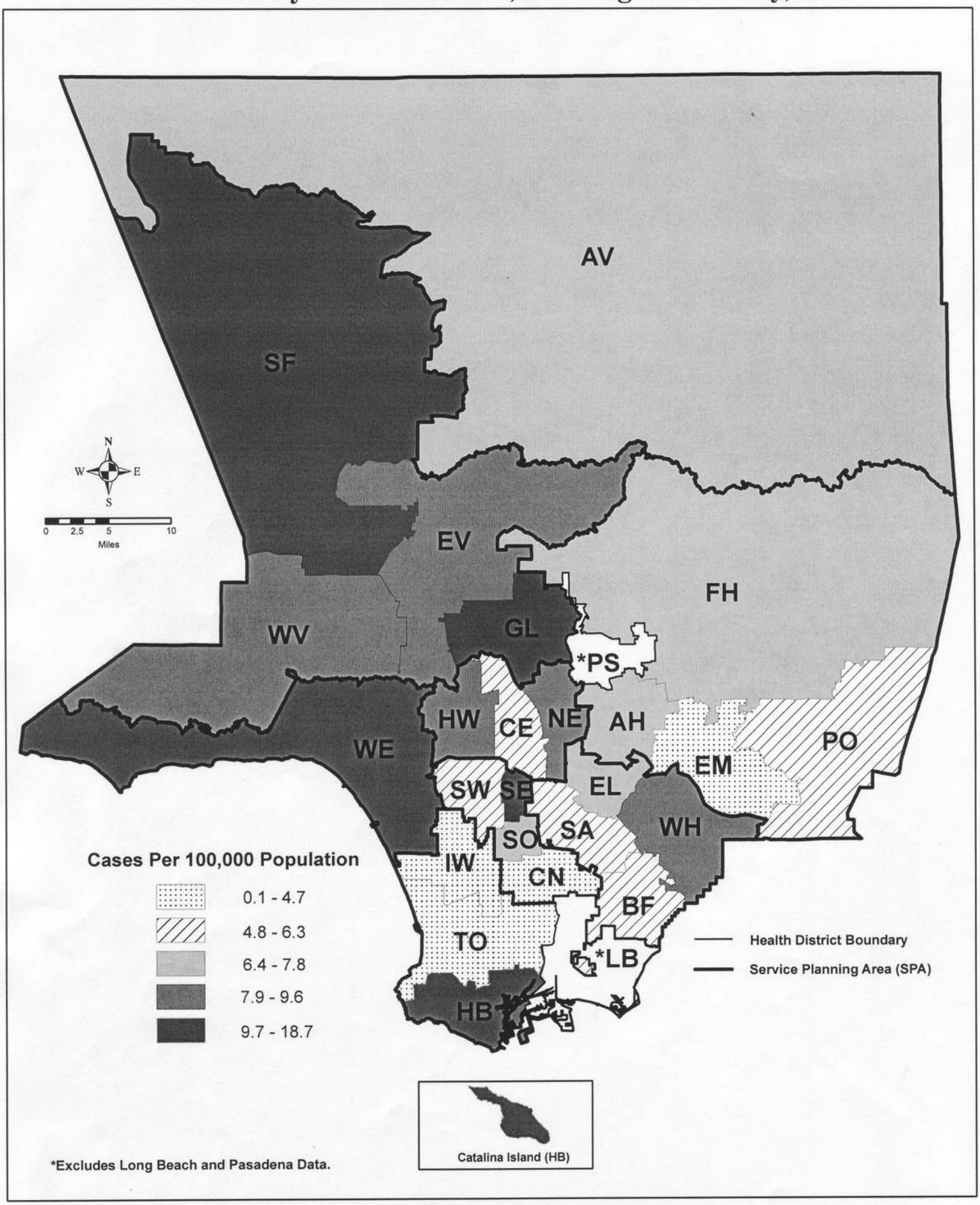
1. Allos BM. Campylobacter jejuni infections: update on emerging issues and trends. Clin Infect Dis 2001; 32(8):1201–1206.

ADDITIONAL RESOURCES

Disease information is available from the CDC at:
www.cdc.gov/ncidod/dbmd/diseaseinfo/campylobacter_g.htm

General information and reporting information about this and other foodborne diseases in LAC is available at: www.lapublichealth.org/acd/food.htm

Map 2. Campylobacteriosis
Rates by Health District, Los Angeles County, 2006*



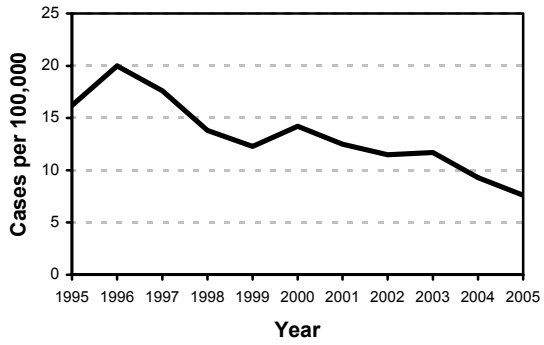
*Excludes Long Beach and Pasadena Data.

CAMPYLOBACTERIOSIS

CRUDE DATA	
Number of Cases	725
Annual Incidence[a]	
LA County	7.6
United States	N/A
Age at Diagnosis	
Mean	32.1
Median	31
Range	0–95
Case Fatality	
LA County	<1%
United States	N/A

[a] Cases per 100,000 population.

Figure 1
Campylobacteriosis
Incidence Rates by Year of Onset
LAC, 1995–2005



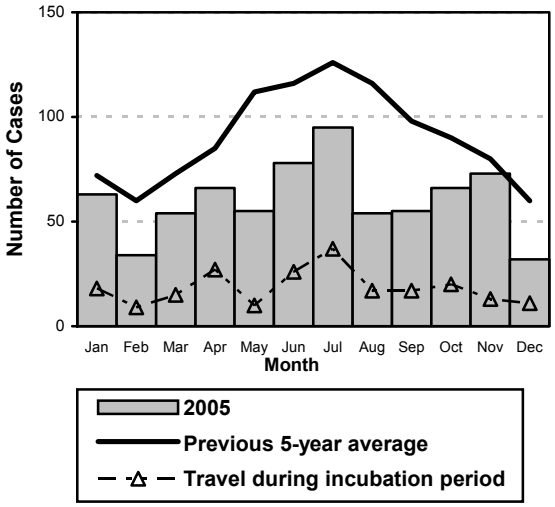
DESCRIPTION

Campylobacteriosis is a bacterial disease caused by Gram-negative bacilli transmitted through ingestion of organisms via consumption of undercooked poultry or other meat, contaminated food, water or raw milk, or contact with infected animals. The incubation period is 2–5 days. Common symptoms include watery or bloody diarrhea, fever, abdominal cramps, myalgia, and nausea. Species include *C. jejuni, C. upsaliensis, C. coli* and *C. fetus*. Sequelae include Guillain-Barré syndrome and Reiter syndrome, which occur in a limited number of cases.

DISEASE ABSTRACT

- There was an 18% decrease in the incidence of campylobacteriosis in 2005.
- In 2005, overall age-adjusted rates were highest for Latinos.
- No outbreaks of campylobacteriosis were reported in 2005.

Figure 2
Campylobacteriosis
Cases and Travel History by
Month of Onset
LAC, 2005



STRATIFIED DATA

Trends: The incidence of campylobacteriosis decreased by 18% in 2005. After two years of relative stability in 2002 and 2003, the rate of campylobacteriosis decreased significantly from 11.7 cases per 100,000 to 9.3 in 2004 and 7.6 in 2005 ($p < 0.05$). There has been an overall downward trend since 1996.

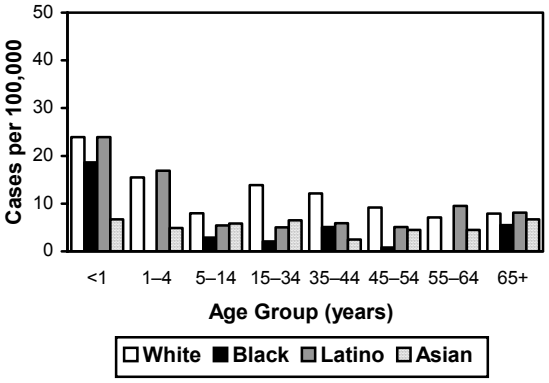
Seasonality: Overall incidence decreased as compared to the previous five-year average starting in February 2005. The number of cases increased in the spring and summer as in other years. Peaks during these seasons may be associated with the increase in travel. Travel is a risk factor for infection since it is most likely associated with an increase in eating at restaurants—which is a risk factor for this disease. Risk also increases when traveling to countries where food safety is questionable. In 2005, 220 cases (30%) reported travel during the incubation period. Of these, 20% traveled within the US. Mexico was the most commonly named (42%) travel destination outside the US. In 2005, overall incidence as well as travel related incidence peaked in July (Figure 2).

Age: The highest rates continued to be among infants aged <1 year and children, aged 1–4 years (Figure 3). These age groups had significantly higher rates than any other age group but the rates were lower than the previous five-year average. In developed countries, children younger than five years and young adults have the highest incidence of this disease. The rates for persons older than 55 years were lower than the previous five-year average.

Sex: The male-to-female rate ratio was 1.2:1. The preponderance of males is typical and the reason for this is not known [1]. Among men above the age of fifteen, 3% reported sexual contact with other men (MSM).

Race/Ethnicity: The highest overall age-adjusted rate was in Whites (11.0 cases per 100,000 population). In 2005 age-adjusted rates decreased for Latinos (7.0) although Latinos had similar incidence to Whites. Age-adjusted rates for Asians (5.2) and Blacks (2.8) decreased. Latino, White, and Black infants (aged <1) have higher age-adjusted rates compared to Asians (Figure 3).

Figure 3
Campylobacteriosis Incidence Rates by Age Group and Race/Ethnicity
LAC, 2005 (N=725)



Location: SPA 2 again had the highest number of cases at 201 (9.4 per 100,000), and SPA 5 had the highest rate with 16.5 per 100,000 (N= 108). The higher rate in SPA 5 is consistent with previous years and is significantly higher than the county average.

Severity of Illness: Seventeen percent of campylobacteriosis cases (N=124) were hospitalized for at least two days. Two campylobacteriosis-associated deaths occurred in a 71 year-old male and a 95 year-old male. Both deaths were associated with multiple medical problems including a history of stomach and prostate cancer. There was one report of Guillain-Barré syndrome (GBS) subsequent to a campylobacteriosis diagnosis. Six percent of campylobacteriosis cases were immunocompromised (N=47). Reasons for immunosuppression included HIV, AIDS, diabetes, leukemia, kidney transplant, lupus, sickle cell disease, cancer, and recent diagnosis of cancer with treatment.

PREVENTION

To reduce the likelihood of contracting campylobacteriosis, all food derived from animal sources should be thoroughly cooked, particularly poultry. Cross contamination may be avoided by making sure utensils, counter tops, cutting boards and sponges are cleaned or do not come in contact with raw poultry or meat or their juices. Hands should be thoroughly washed before, during and after food preparation. The fluids from raw poultry or meat should not be allowed to drip on other foods in the refrigerator or in the shopping cart. It is especially important to wash hands and avoid cross contamination of infant foods, bottles and eating utensils. It is recommended to consume only pasteurized milk, milk products or juices. In addition, it is important to wash hands after coming in contact with any animal or its environment.

COMMENTS

Visiting countries where food safety is questionable may increase risk of campylobacteriosis. Travel is associated with eating in restaurants more often, which can be a risk factor for this disease. Consuming raw milk or raw milk products was a risk factor for fourteen sporadic cases; seven of these cases consumed the milk or product while traveling outside the US and six consumed unpasteurized cheese brought back from Mexico.

No campylobacteriosis outbreaks were reported in 2005.

REFERENCES

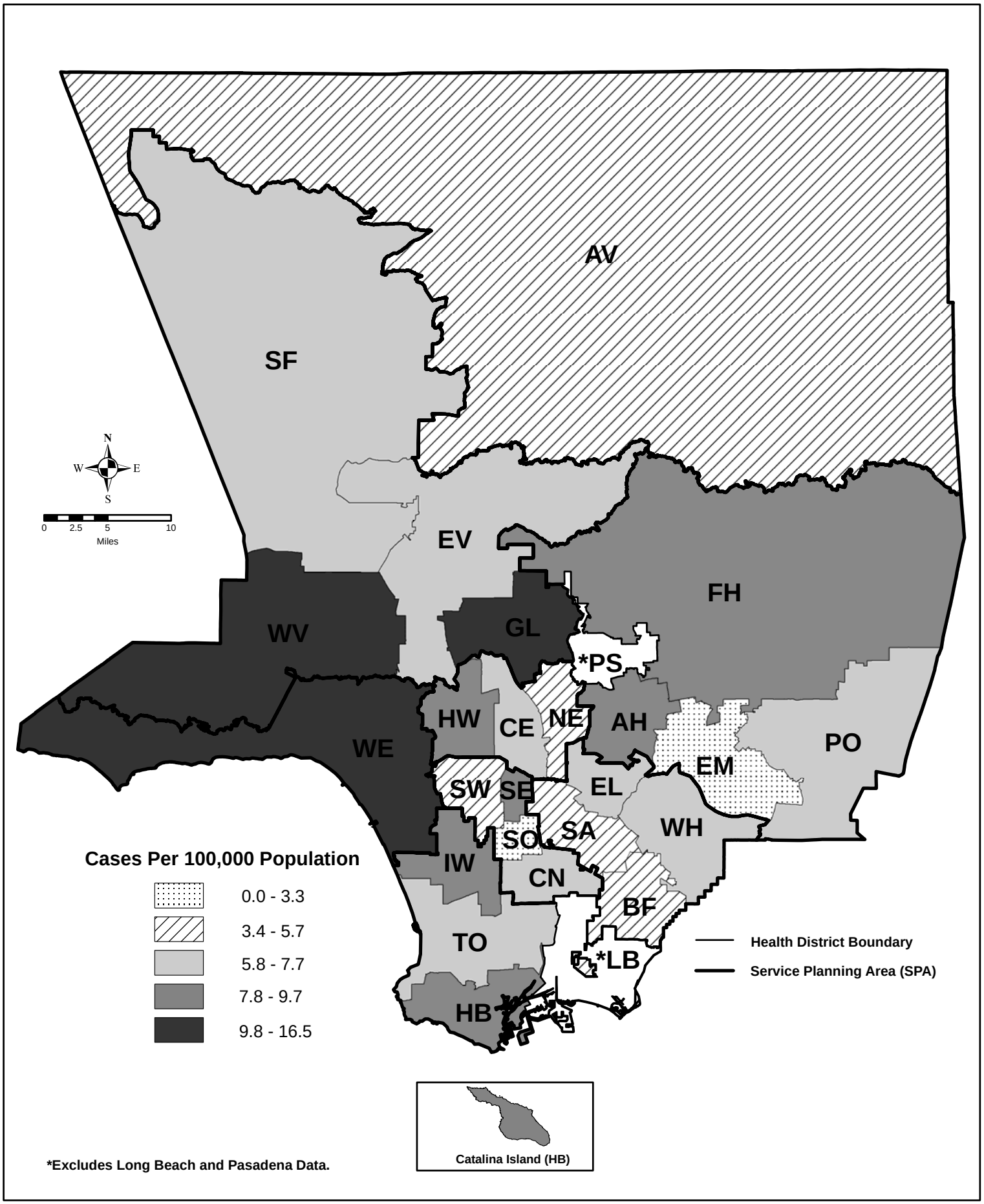
1. Allos, B.M. Campylobacter jejuni infections: update on emerging issues and trends. Clinical Infectious Diseases 2001;32:1201–6.

ADDITIONAL RESOURCES

Disease information is available from the CDC at:
www.cdc.gov/ncidod/dbmd/diseaseinfo/campylobacter_g.htm

General information and reporting information about this and other foodborne diseases in LAC is available at: www.lapublichealth.org/acd/food.htm

Map 2. Campylobacteriosis
Rates by Health District, Los Angeles County, 2005*



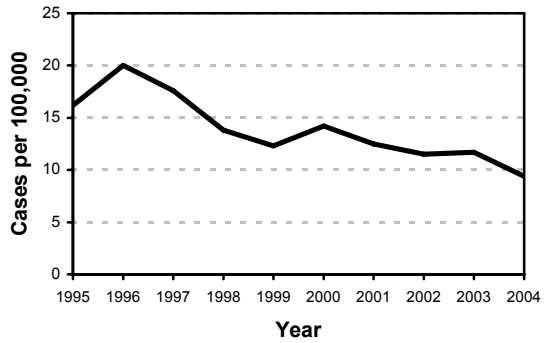
*Excludes Long Beach and Pasadena Data.

CAMPYLOBACTERIOSIS

CRUDE DATA	
Number of Cases	884
Annual Incidence[a]	
LA County	9.3
United States	N/A
Age at Diagnosis	
Mean	33.5
Median	31
Range	0–89
Case Fatality	
LA County	<1%
United States	N/A

[a] Cases per 100,000 population.

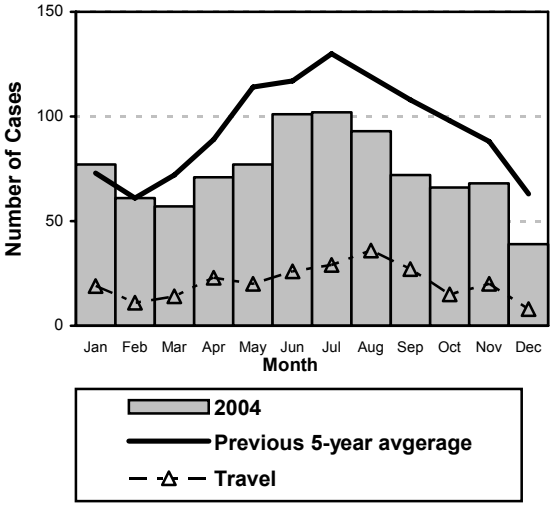
Figure 1
Campylobacteriosis
Incidence Rates by Year of Onset
LAC, 1995–2004



DESCRIPTION

Campylobacteriosis is a bacterial disease caused by gram-negative bacilli transmitted through ingestion of organisms via consumption of undercooked poultry or other meat, contaminated food, water or raw milk, or contact with infected animals. The incubation period is 2-5 days. Common symptoms include watery or bloody diarrhea, fever, abdominal cramps, myalgia, and nausea. Species include *C. jejuni, C. upsaliensis, C. coli* and *C. fetus*. Sequelae include Guillain-Barré syndrome and Reiter syndrome, which occur in a limited number of cases.

Figure 2
Campylobacteriosis
Cases and Travel History by
Month of Onset
LAC, 2004



DISEASE ABSTRACT

- There was a 19.6% decrease in the incidence of campylobacteriosis in 2004.
- In 2004, overall age-adjusted rates were highest for Whites.
- There was one outbreak of probable campylobacteriosis investigated in 2004.

STRATIFIED DATA

Trends: The incidence of campylobacteriosis decreased by 19.6 % in 2004. After two years of relative stability, the rate of campylobacteriosis decreased significantly from 11.7 cases per 100,000 to 9.3 ($p < 0.05$).

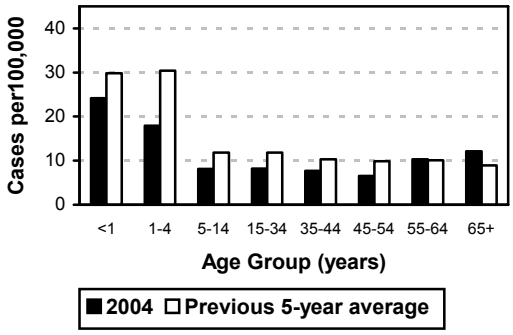
Seasonality: Overall incidence decreased as compared to the previous five-year average starting in March 2004. The number of cases still increased in the spring and summer. Peaks in the number of cases may be associated with the increase in travel during those months. In 2004, incidence peaked in July. Travel related incidence peaked in August (Figure 2).

Age: The highest rates continued to be among infants aged <1 year and children, aged 1-4 years (Figure 3). These age groups had significantly higher rates than any other age group but the rates were lower than the previous five-year average. In developed countries, children younger than five years and young adults have the highest incidence of this disease. The rates for persons older than 55 years were higher than the previous five-year average.

Sex: The male-to-female rate ratio was 1.3:1. The preponderance of males is typical and the reason for this is not known [1].

Race/Ethnicity: The highest overall age-adjusted rate was in Whites (13.0 cases per 100,000 population). In 2004 age-adjusted rates decreased for Latinos (8.2) although Latinos had similar incidence to Whites. Age-adjusted rates for Asians (8.3) and Blacks (3.5) decreased. Latino infants continued to have higher age-adjusted rates compared to other race/ethnicities (Figure 4).

Figure 3
Campylobacteriosis
Incidence Rates by Age Group
LAC, 2004



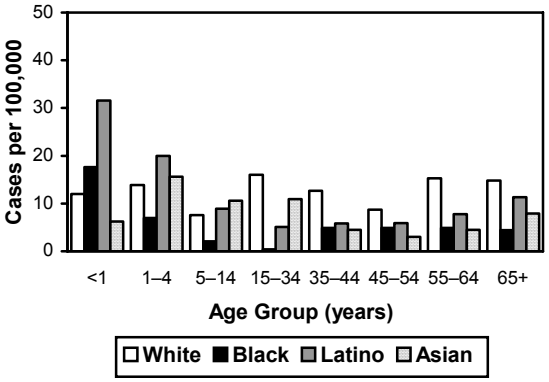
Location: SPA 2 again had the highest number of cases at 205 (9.7 per 100,000), and SPA 5 had the highest rate with 19 per 100,000 (N= 123). The higher rate in SPA 5 is consistent with previous years and is significantly higher than the county average.

Severity of Illness: Thirteen percent of campylobacteriosis cases (N=112) were hospitalized for at least two days. One campylobacteriosis-associated death occurred in a 48 year-old woman with multiple medical problems. There were two reports of Guillain-Barré syndrome (GBS) subsequent to a campylobacteriosis diagnosis. Six percent of campylobacteriosis cases were immunocompromised (N=54). Reasons for being immunocompromised included HIV, diabetes and recent diagnosis of cancer.

PREVENTION

To reduce the likelihood of contracting campylobacteriosis, all food derived from animal sources should be thoroughly cooked, particularly poultry. Cross contamination may be avoided by making sure utensils, counter tops, cutting boards and sponges are cleaned or do not come in contact with raw poultry or meat or their juices. Hands should be thoroughly washed before, during and after food preparation. The fluids from raw poultry or meat should not be allowed to drip on other foods in the refrigerator or in the shopping cart. It is especially important to wash hands and avoid cross contamination of infant foods, bottles and eating utensils. It is recommended to consume only pasteurized milk, milk products or juices. In addition, it is important to wash hands after coming in contact with any animal or its environment.

Figure 4
Campylobacteriosis Incidence Rates by
Age Group and Race/Ethnicity
LAC, 2004 (N=872)



COMMENTS

In 2004, 250 cases (28%) reported travel during the incubation period. Of these, 30% traveled within the US. Mexico was the most commonly named (32%) travel destination outside the US. Visiting countries where food safety is questionable may increase risk of campylobacteriosis. Travel may also be associated with eating in restaurants more often which can be a risk factor for this disease. Consuming raw milk or raw milk products was a risk factor for thirteen sporadic cases; ten of these cases consumed the milk or product while traveling outside the USA.

One cluster of campylobacteriosis was investigated in 2004. All five cases consumed raw beef liver. This outbreak could not be confirmed as a campylobacteriosis outbreak as there was only one laboratory confirmed case.

REFERENCES

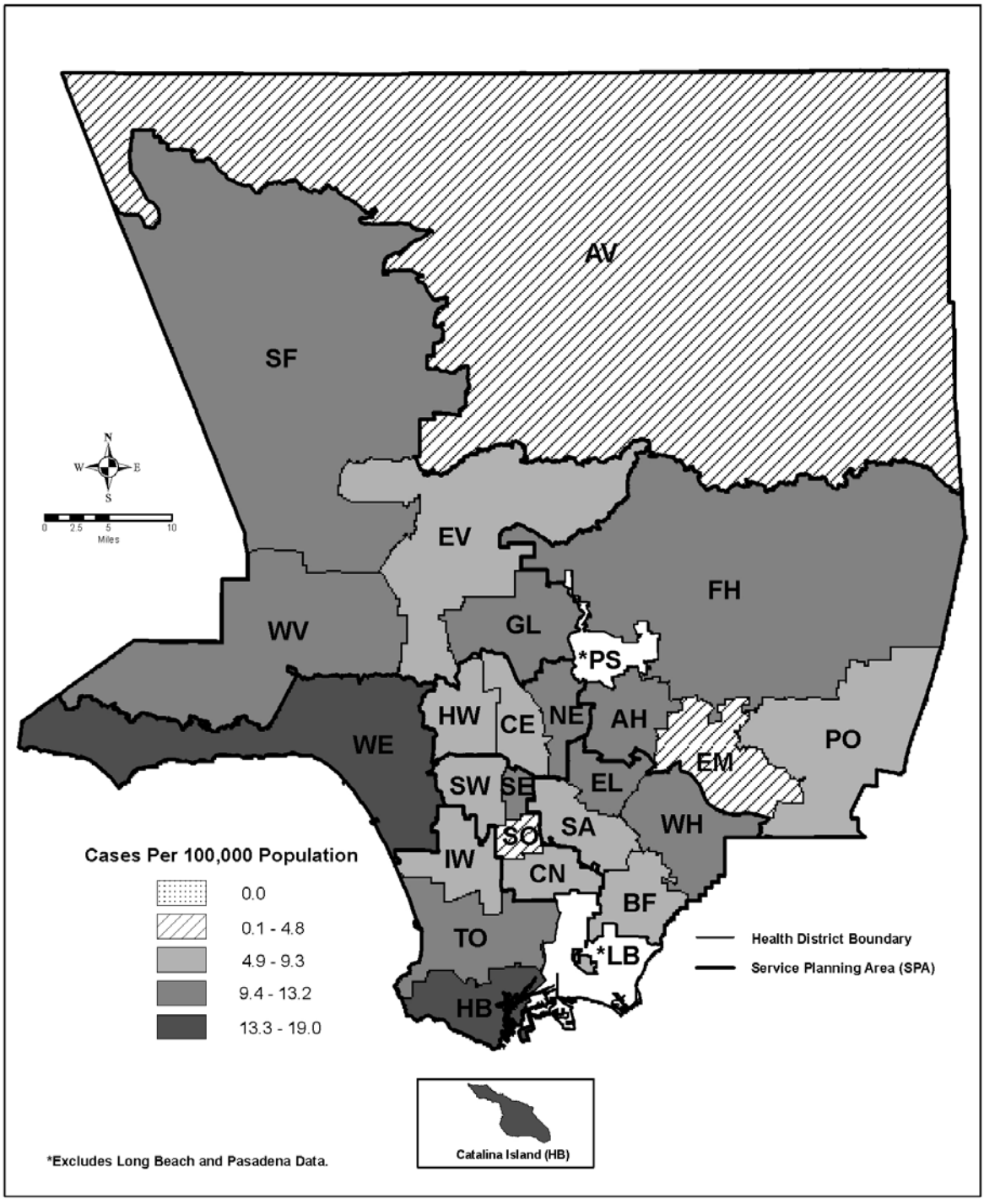
1. Allos, B.M. Campylobacter jejuni infections: update on emerging issues and trends. Clinical Infectious Diseases 2001;32:1201-6.

ADDITIONAL RESOURCES

Disease information is available from the CDC at:
www.cdc.gov/ncidod/dbmd/diseaseinfo/campylobacter_g.htm

General information and reporting information about this and other foodborne diseases in LAC is available at: www.lapublichealth.org/acd/food.htm

Map 2. Campylobacteriosis
Rates by Health District, Los Angeles County, 2004*

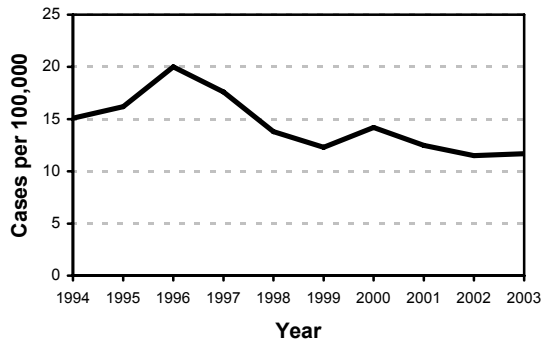


CAMPYLOBACTERIOSIS

CRUDE DATA	
Number of Cases	1,100
Annual Incidence[a]	
LA County	11.70
United States	N/A
Age at Diagnosis	
Mean	29
Median	27
Range	0–94
Case Fatality	
LA County	<1%
United States	

[a] Cases per 100,000 population.

Figure 1
Campylobacteriosis
Incidence Rates by Year of Onset
LAC, 1994–2003



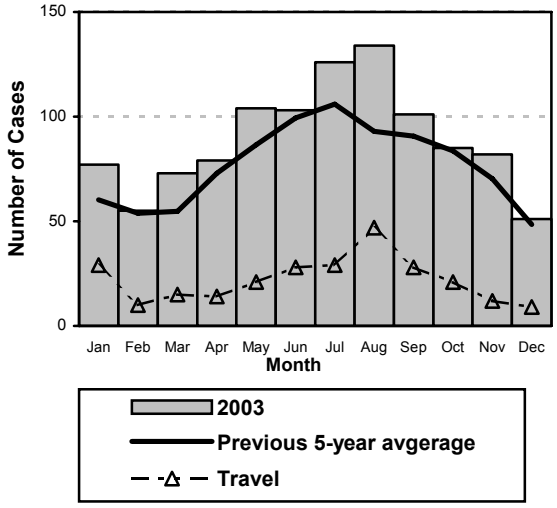
DESCRIPTION

Campylobacteriosis is a bacterial disease caused by gram-negative bacilli transmitted through ingestion of organisms via consumption of undercooked poultry or other meat, contaminated food, water or raw milk, or contact with infected animals. The incubation period is 2-5 days. Common symptoms include watery or bloody diarrhea, fever, abdominal cramps, myalgia, and nausea. Species include *C. jejuni, C. upsaliensis, C. coli* and *C. fetus*. Sequelae include Guillain-Barré syndrome and Reiter syndrome, which occur in a limited number of cases.

DISEASE ABSTRACT

- The campylobacteriosis rate in LAC remained stable after a downward trend.
- In 2003, overall age-adjusted rates were highest for Whites.

Figure 2
Campylobacteriosis
Cases and Travel History by
Month of Onset
LAC, 2003



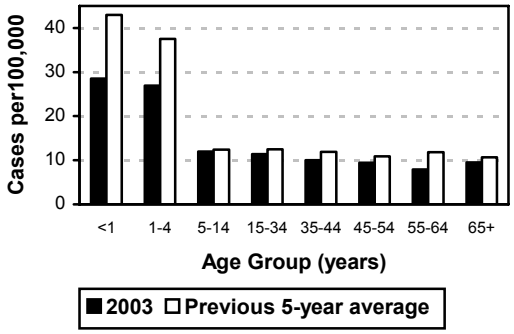
STRATIFIED DATA

Trends: After a downward trend in rates since 1996 (Figure 1), the rate remained relatively stable from 2002 to 2003.

Seasonality: As in previous years, the number of cases increased in the spring and summer. Peaks in the number of cases may be associated with the increase in travel during those months. In 2003, incidence peaked in August (Figure 2).

Age: The highest rates continued to be among infants aged <1 year and children, aged 1-4 years (Figure 3). These age groups had significantly higher rates than any other age group but the rates were lower than the previous five-year average. In developed countries, children younger than five years and young adults have the highest incidence of this disease.

Figure 3
Campylobacteriosis
Incidence Rates by Age Group
LAC, 2003



Sex: The male-to-female ratio was 1.1:1. The preponderance of males is typical and the reason for this is not known [1].

Race/Ethnicity: In 2003, Latinos and Whites again had similar crude rates in spite of there being 58% more reported cases in Latinos. Latino infants continued to have higher age-adjusted rates compared to other race/ethnicities (Figure 4), however, in 2003, rates in Asian infants increased. The highest age-adjusted rate was in Whites (13.4 cases per 100,000 population) followed by Latinos (12.2), Asians (8.9) and Blacks (4.4).

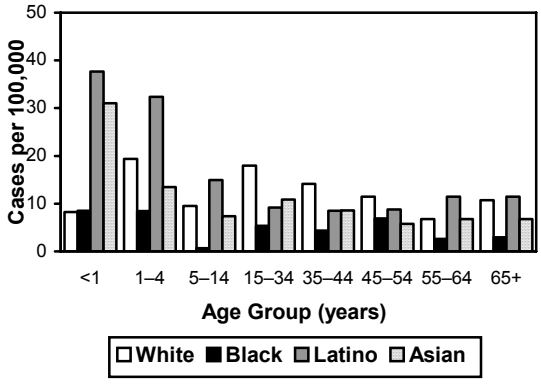
Location: SPA 2 again had the highest number of cases at 255 (12 per 100,000), and SPA 5 had the highest rate with 17 per 100,000 (N= 110). The higher rate in SPA 5 is consistent with previous years and is significantly higher than the county average.

Severity of Illness: Thirteen percent of campylobacteriosis cases (N=143) were hospitalized for at least two days. One campylobacteriosis-associated death occurred in a 78 year-old patient with multiple medical problems. There were two reports of Guillain-Barré syndrome (GBS) subsequent to a campylobacteriosis diagnosis. One case of GBS was in a woman visiting from Mexico. Based on her onset and history, she was most likely infected in Mexico.

PREVENTION

To reduce the likelihood of contracting campylobacteriosis, all food derived from animal sources should be thoroughly cooked, particularly poultry. Cross contamination may be avoided by making sure utensils, counter tops, cutting boards and sponges are cleaned or do not come in contact with raw poultry or meat or their juices. Hands should be thoroughly washed before, during and after food preparation. The fluids from raw poultry or meat should not be allowed to drip on other foods in the refrigerator or in the shopping cart. It is especially important to wash hands and avoid cross contamination of infant foods, bottles and eating utensils. It is recommended to consume only pasteurized milk, milk products or juices. In addition, it is important to wash hands after coming in contact with any animal or its environment.

Figure 4
Campylobacteriosis Incidence Rates by
Age Group and Race/Ethnicity
LAC, 2003 (N=1077)



COMMENTS

In 2003, 266 cases (24%) reported travel during the incubation period. Of these, 36% traveled within the US. Mexico was the most commonly named (52%) travel destination outside the US. Visiting countries where food safety is questionable may increase risk of campylobacteriosis. Travel may also be associated with eating in restaurants more often which can be a risk factor for this disease.

There were no identified campylobacteriosis outbreaks in 2003. Eating at restaurants serving ethnic dishes consisting of intentionally undercooked or raw meat was a risk factor for three sporadic cases. Eating fresh cheese or cheese brought from Mexico was a risk factor for thirteen sporadic cases.

REFERENCES

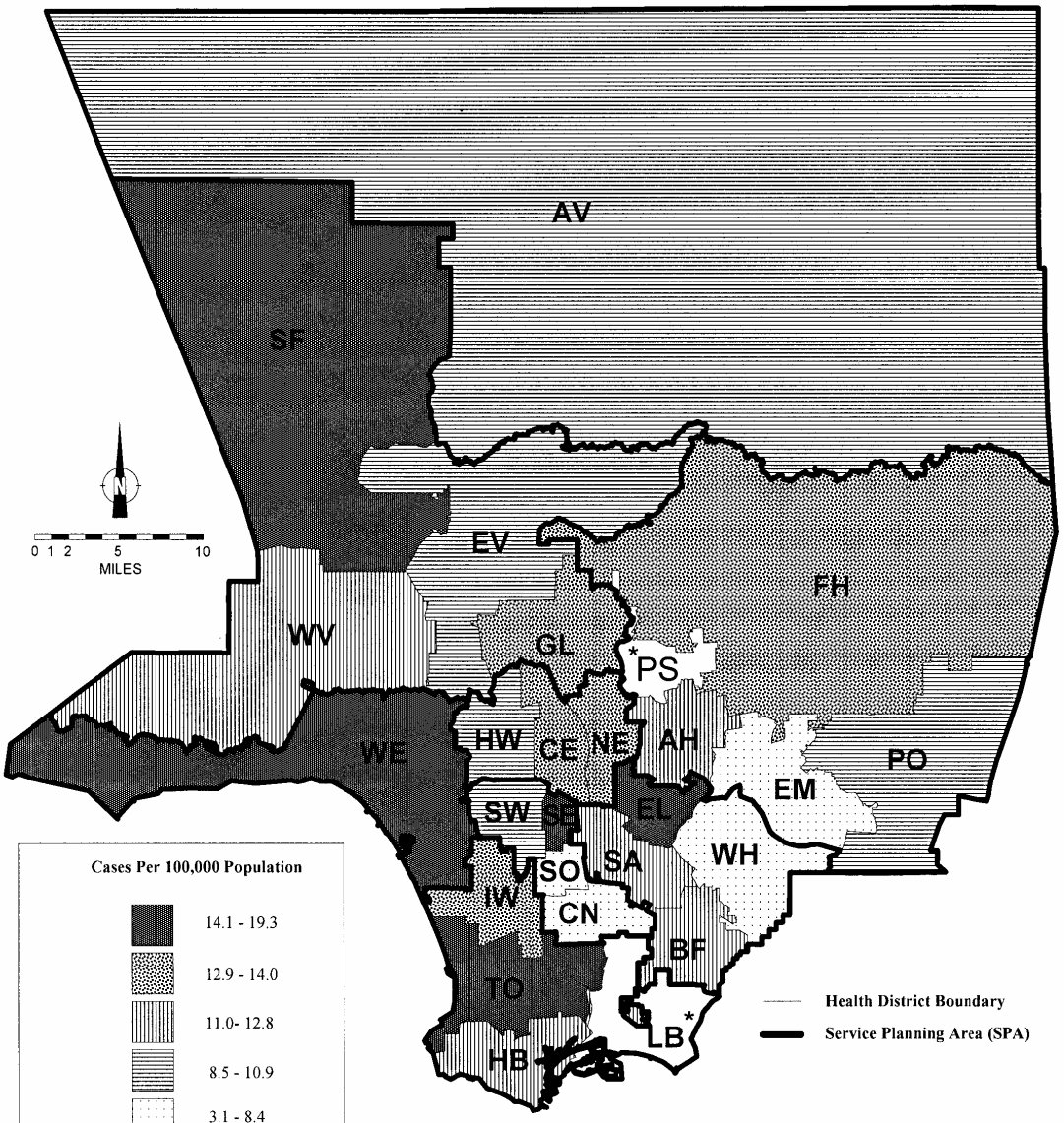
1. Allos, B.M. Campylobacter jejuni infections: update on emerging issues and trends. Clinical Infectious Diseases 2001;32:1201-6.

ADDITIONAL RESOURCES

Disease information is available from the CDC at:
www.cdc.gov/ncidod/dbmd/diseaseinfo/campylobacter_g.htm

General information and reporting information about this and other foodborne diseases in LAC is available at: www.lapublichealth.org/acd/food.htm

MAP 2. Campylobacteriosis
Rates by Health District, Los Angeles County, 2003*



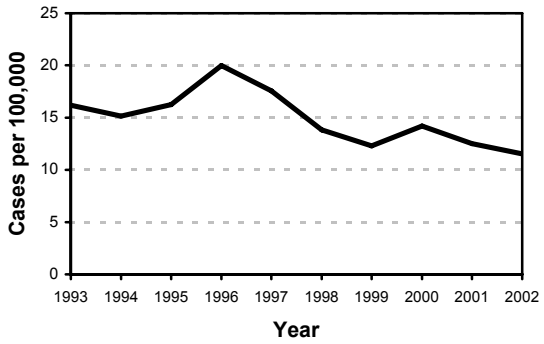
*Excludes Long Beach and Pasadena Data.

CAMPYLOBACTERIOSIS

CRUDE DATA	
Number of Cases	1,068
Annual Incidence[a]	
LA County	11.5
United States	N/A
Age at Diagnosis	
Mean	29
Median	27
Range	0–90
Case Fatality	
LA County	<1%
United States	11%

[a] Cases per 100,000 population.

Figure 1
Campylobacteriosis
Incidence Rates by Year of Onset
LAC, 1993–2002



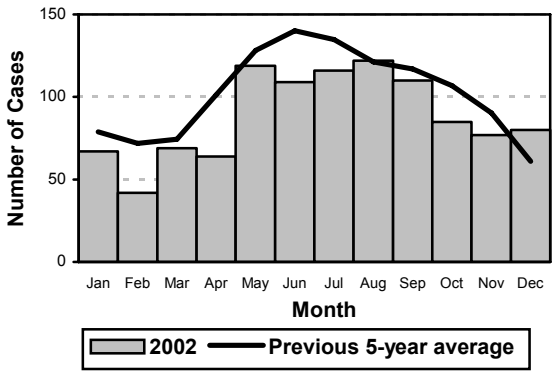
DESCRIPTION

Campylobacteriosis is a bacterial disease transmitted through ingestion of contaminated foods of animal origin, especially raw or undercooked poultry, or contaminated water. Common symptoms include watery or bloody diarrhea, fever, abdominal cramps, myalgia, and nausea. Species include *C. jejuni, C. upsaliensis, C. coli* and *C. fetus*. Sequelae include Guillain-Barré syndrome and Reiter syndrome, which occur in a limited number of cases.

DISEASE ABSTRACT

- The campylobacteriosis rate has continued to decrease following a peak during 1996.
- In 2002, the majority of cases were reported among Latinos, however, Latino rates were similar to White rates.
- Incidence is highest among infants and children. Age/race adjusted incidence rates continue to be highest among Latino infants.

Figure 2
Campylobacteriosis
Cases by Month of Onset
LAC, 2002



STRATIFIED DATA

Trends: Figure 1 shows the highest incidence rate occurred in 1996, followed by a decline in rates from 1997 to 1999. In 2000, there was a slight increase and since then the downward trend resumed.

Seasonality: As in previous years, the number of cases increased in the spring and summer. In 2002, incidence peaked May through September (Figure 2).

Age: The highest rates continued to be among infants aged <1 year and children, aged 1–4 years. All age groups are similar to the 5-year average (Figure 3).

Sex: The male-to-female ratio was 1.2:1. The preponderance of males is typical and the reason for this is not known [1].

Race/Ethnicity: In 2002, Latinos and Whites had similar crude rates. Latino infants continued to have higher age-adjusted rates compared to other race/ethnicities (Figure 4).

Location: Although SPA 2 had the highest number of cases (n=261, 24%), SPA 5 had the highest rate with 19 per 100,000. SPAs 2, 7 and 8 had a rate of 13 per 100,000. The higher rate in SPA 5 is consistent with previous years.

Severity of Illness: Many campylobacteriosis cases (13%, n=135) were hospitalized. There was one campylobacteriosis-associated death in a patient with multiple medical problems and one report of Guillain-Barré syndrome subsequent to a campylobacteriosis diagnosis.

Figure 3
Campylobacteriosis
Incidence Rates by Age Group
LAC, 2002

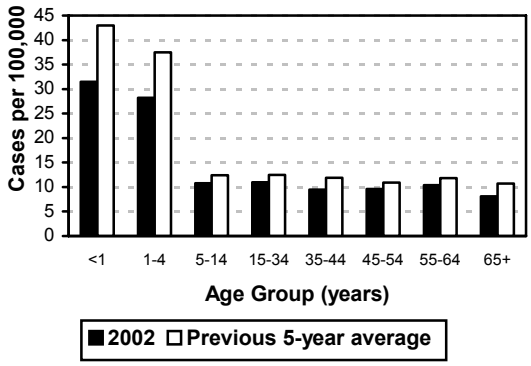
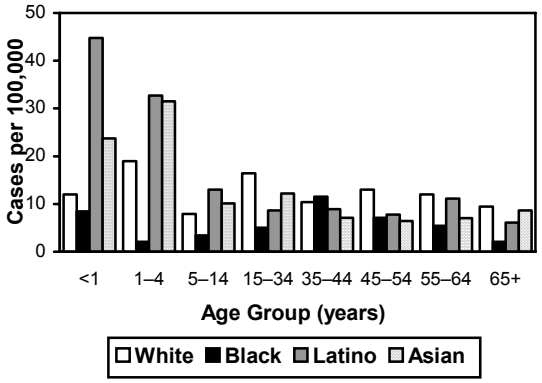


Figure 4
Campylobacteriosis Incidence Rates by
Age Group and Race/Ethnicity
LAC, 2002 (N=1068)



PREVENTION

To reduce the likelihood of contracting campylobacteriosis, all food derived from animal sources should be thoroughly cooked, particularly poultry. Cross contamination may be avoided by making sure utensils, counter tops, cutting boards and sponges are cleaned or do not come in contact with raw poultry or meat. Hands should be thoroughly washed before, during and after food preparation. The juices from raw poultry or meat should not be allowed to drip on other foods in the refrigerator or in the shopping cart. In addition, it is recommended to drink only pasteurized milk or juices.

COMMENTS

Although *Campylobacter* remains one of the most commonly identified bacterial causes of gastroenteritis, rates of this disease have been steadily decreasing in LAC. The reasons for this are not known.

In 2002, 233 cases (22%) reported travel during the incubation period. Of these, 34% traveled within the US. Travel may be associated with visiting countries where food safety is questionable. Travel may also be a marker for eating in restaurants more often.

There were two campylobacteriosis outbreaks in 2002; both were community outbreaks. One outbreak involved consumption of raw milk at a dairy farm and the other involved eating raw meats as part of a

party game. Eating at a specific restaurant serving an ethnic dish consisting of intentionally undercooked chicken was a risk for three sporadic cases.

The majority of all confirmed cases (65%) were speciated. Of these, 99% were identified as *C. jejuni*; 0.3% *C. coli,* 0.3% *C.fetus, and* 0.7% *C. laridis* .

REFERENCES

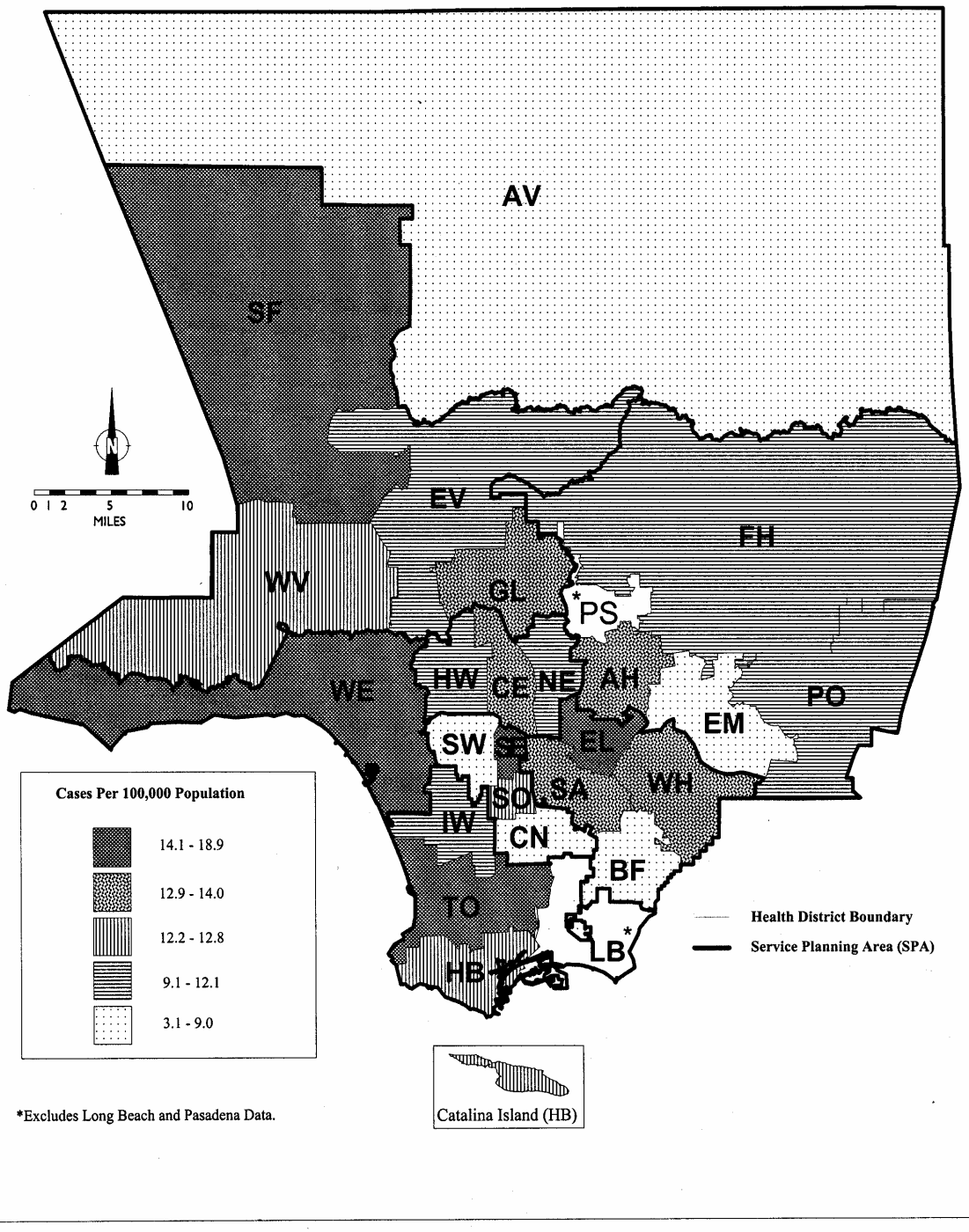
1. Allos, B.M. Campylobacter jejuni infections: update on emerging issues and trends. Clinical Infectious Diseases 2001; 32:1201–6.

ADDITIONAL RESOURCES

Disease information is available from the CDC at:
www.cdc.gov/ncidod/abmd/diseaseinfo/campylobacter_g.htm

General information and reporting information about this and other foodborne diseases in LAC is available at: www.lapublichealth.org/acd/food.htm

MAP 2. Campylobacteriosis
Rates by Health District, Los Angeles County, 2002*



*Excludes Long Beach and Pasadena Data.