



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 |

^aCases per 100,000 population.

^bNot 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 campylobacteriosis 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**

| Age Group | 2010 (N=1239) | | 2011 (N=1259) | | 2012 (N=1546) | | 2013 (N=1546) | | 2014 (N=1506) | | |
|-----------------------|---------------|-------------------------|---------------|-------------------------|---------------|-------------------------|---------------|-------------------------|---------------|-------------------------|------|
| | No. | (%) Rate/ 100,000 | |
| <1 | 24 | 1.9 | 16 | 1.2 | 46 | 2.9 | 45 | 2.6 | 27 | 1.7 | 22.8 |
| 1-4 | 150 | 12.1 | 158 | 12.5 | 136 | 8.7 | 159 | 9.3 | 118 | 7.8 | 24.2 |
| 5-14 | 175 | 14.1 | 146 | 11.5 | 181 | 11.7 | 173 | 10.1 | 159 | 10.5 | 13.2 |
| 15-34 | 318 | 25.6 | 366 | 29.0 | 418 | 27.0 | 495 | 29.0 | 437 | 29.0 | 15.5 |
| 35-44 | 157 | 12.6 | 133 | 10.5 | 169 | 10.9 | 182 | 10.6 | 192 | 12.7 | 14.5 |
| 45-54 | 136 | 10.9 | 142 | 11.2 | 186 | 12.3 | 185 | 10.8 | 175 | 11.6 | 13.5 |
| 55-64 | 96 | 7.7 | 114 | 9.0 | 163 | 10.5 | 177 | 10.3 | 155 | 10.2 | 14.6 |
| 65+ | 165 | 13.3 | 172 | 13.6 | 238 | 19.1 | 281 | 16.5 | 239 | 15.8 | 14.6 |
| Unknown | 18 | 0 | 12 | 0.9 | 9 | 0.6 | 6 | 0.3 | 4 | 0.2 | - |
| Race/Ethnicity | | | | | | | | | | | |
| Asian | 35 | 2.8 | 28 | 2.2 | 37 | 2.3 | 46 | 2.6 | 61 | .06 | 4.4 |
| Black | 13 | 1.0 | 21 | 1.6 | 34 | 2.1 | 46 | 2.6 | 39 | 2.5 | 5.0 |
| Hispanic | 182 | 14.6 | 157 | 12.4 | 161 | 10.4 | 167 | 9.8 | 219 | 14.5 | 4.8 |
| White | 118 | 9.5 | 119 | 9.4 | 228 | 14.7 | 386 | 22.6 | 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 | 46 | 3.6 | 36 | 2.3 | 41 | 2.4 | 55 | 3.6 | 14.0 |
| 2 | 346 | 2.7 | 347 | 27.5 | 362 | 23.4 | 401 | 23.5 | 388 | 25.7 | 17.7 |
| 3 | 166 | 13.3 | 164 | 13.0 | 200 | 12.9 | 220 | 12.9 | 217 | 14.4 | 13.2 |
| 4 | 158 | 1.2 | 156 | 12.3 | 234 | 15.1 | 292 | 17.1 | 198 | 13.1 | 17.2 |
| 5 | 130 | 10.4 | 142 | 11.2 | 228 | 14.7 | 218 | 12.7 | 189 | 12.5 | 29.0 |
| 6 | 122 | 9.8 | 123 | 9.7 | 140 | 9.0 | 175 | 10.3 | 136 | 10.3 | 13.2 |
| 7 | 145 | 11.7 | 136 | 10.8 | 179 | 11.5 | 180 | 10.5 | 137 | 9.0 | 10.4 |
| 8 | 127 | 10.2 | 145 | 11.5 | 157 | 10 | 172 | 10.0 | 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

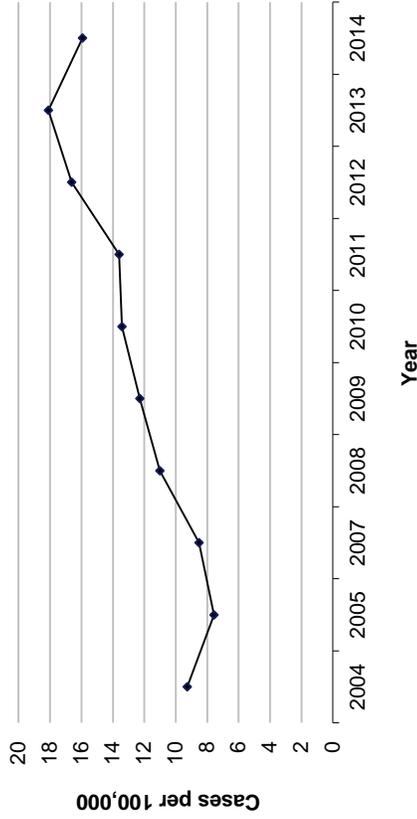


Figure 2. Reported Campylobacteriosis Rates by Age

LAC, 2014 (N=1506)

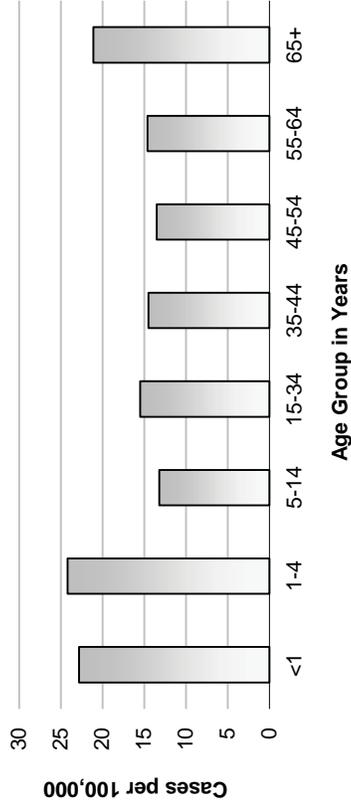
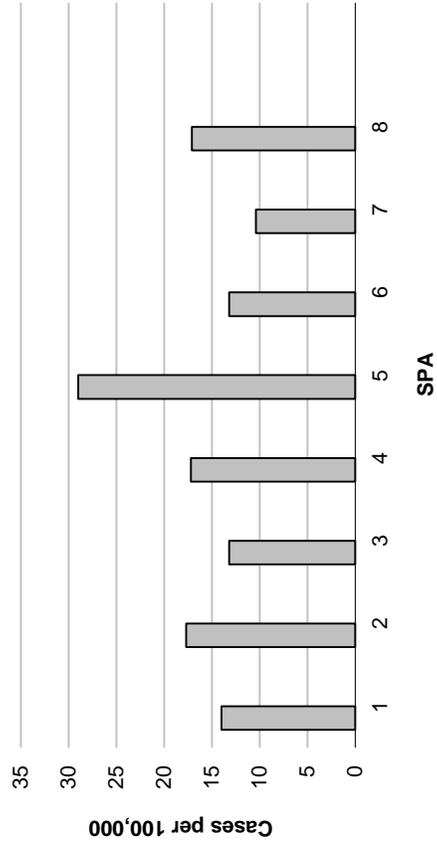
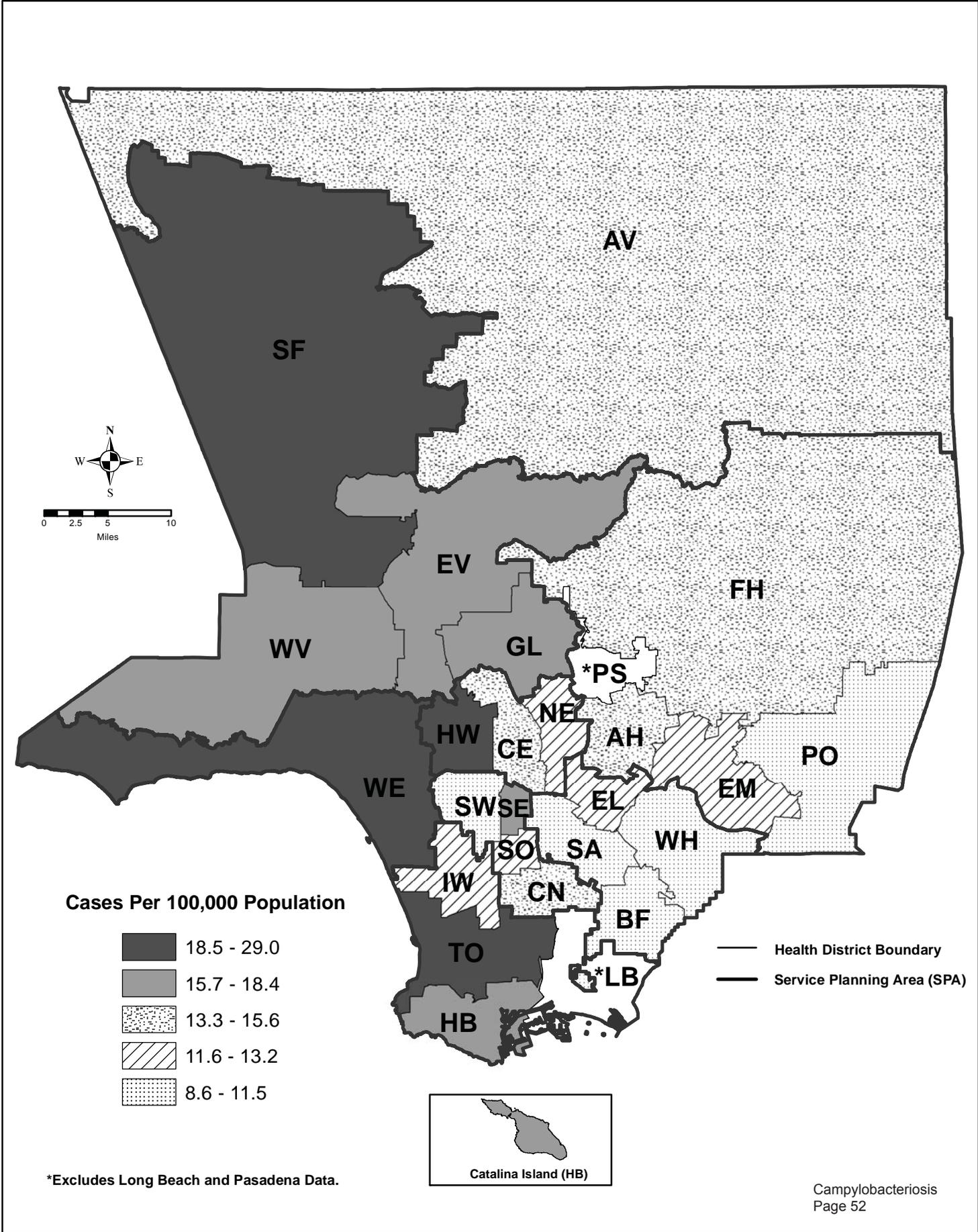


Figure 3. Reported Campylobacteriosis Rates by SPA
LAC, 2014 (N=1506)



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





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 |

^aCases per 100,000 population.

^bNot 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 (32.7 per 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**

| Age Group | 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 |
| <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

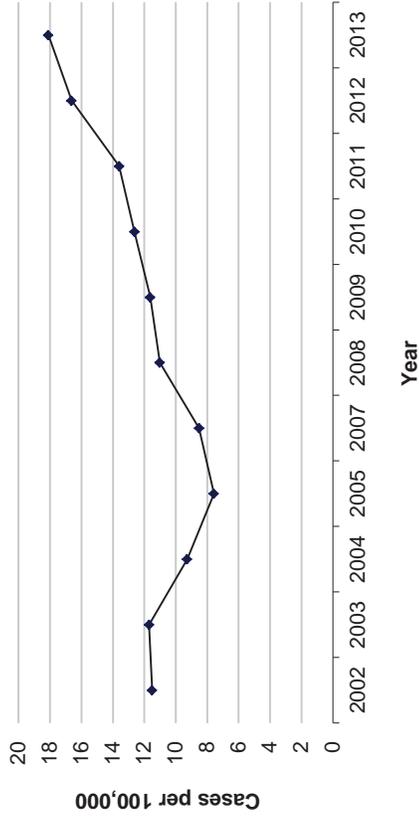


Figure 2. Reported Campylobacteriosis Rates by Age
Group

LAC, 2013 (N=1703)

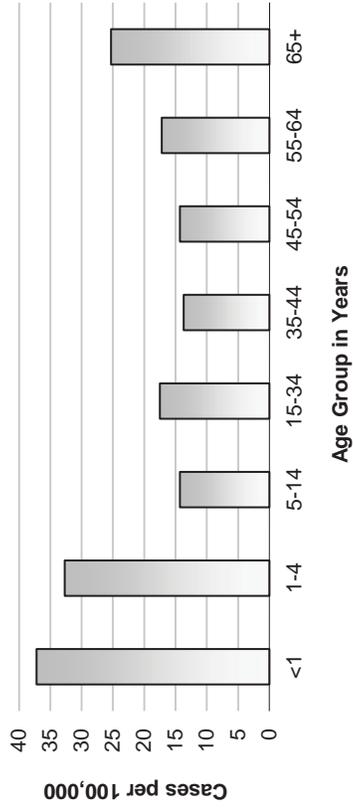
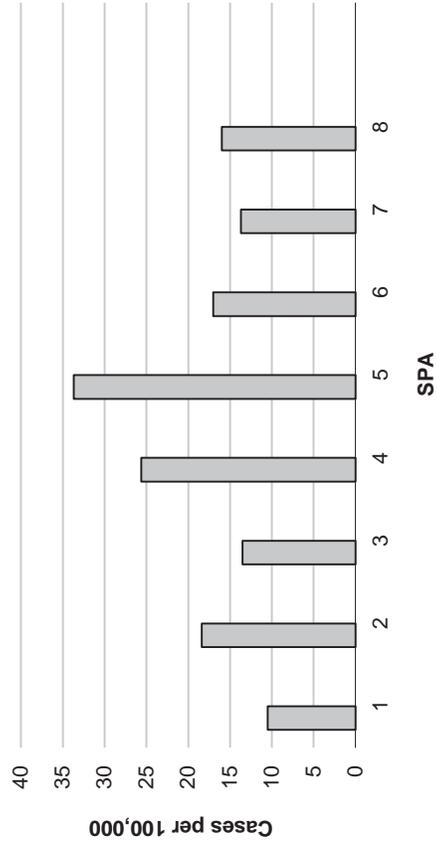
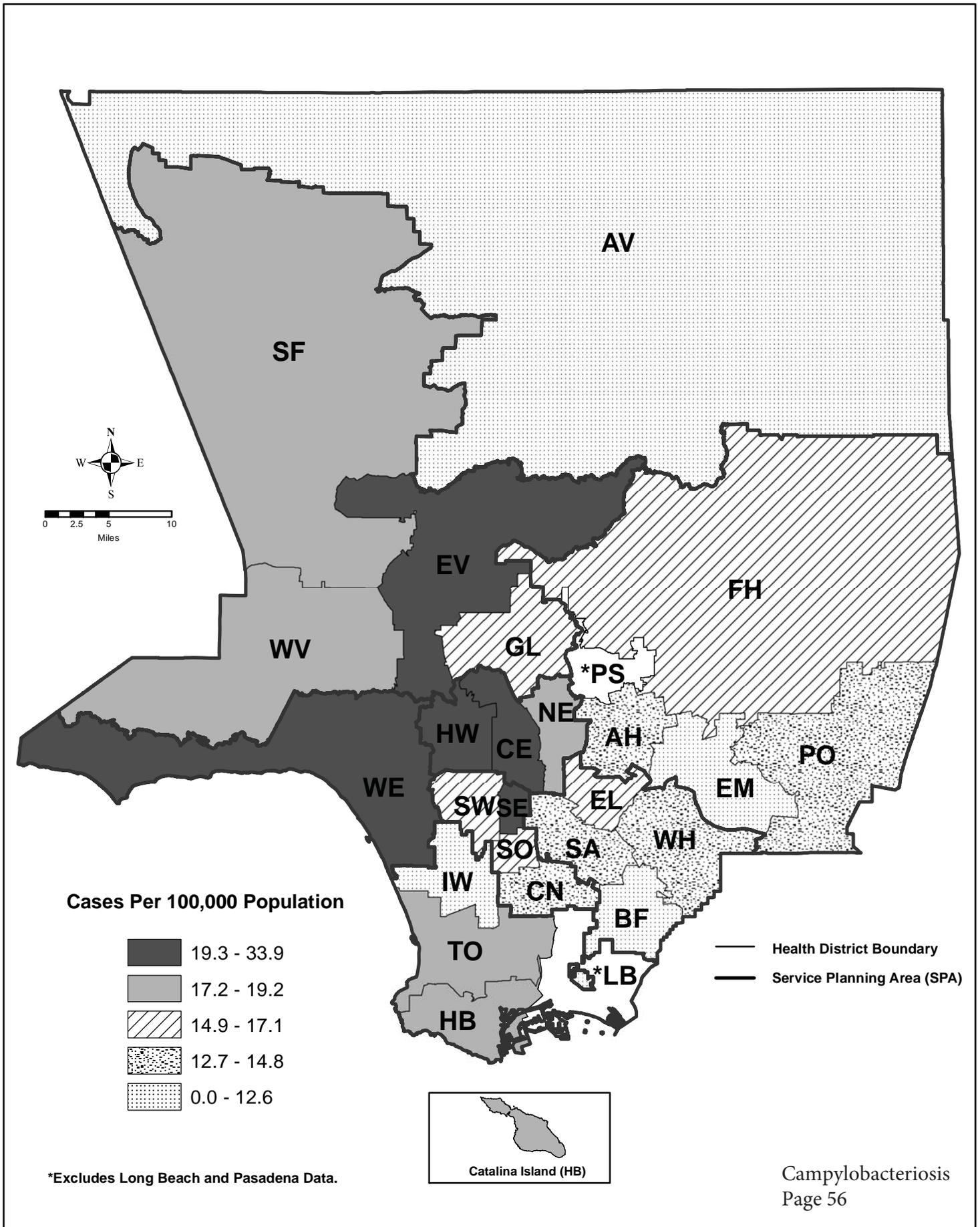


Figure 3. Reported Campylobacteriosis Rates by SPA
LAC, 2013 (N=1703)



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





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 |

^aCases per 100,000 population.

^bNot 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**

| Age Group | 2008 (N=1072) | | | 2009 (N=1135) | | | 2010 (N=1139) | | | 2011 (N=1259) | | | 2012 (N=1546) | | |
|-----------------------|---------------|------|------------------|---------------|------|------------------|---------------|------|------------------|---------------|------|------------------|---------------|------|------------------|
| | No. | (%) | Rate/ 100,000 |
| <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 | 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

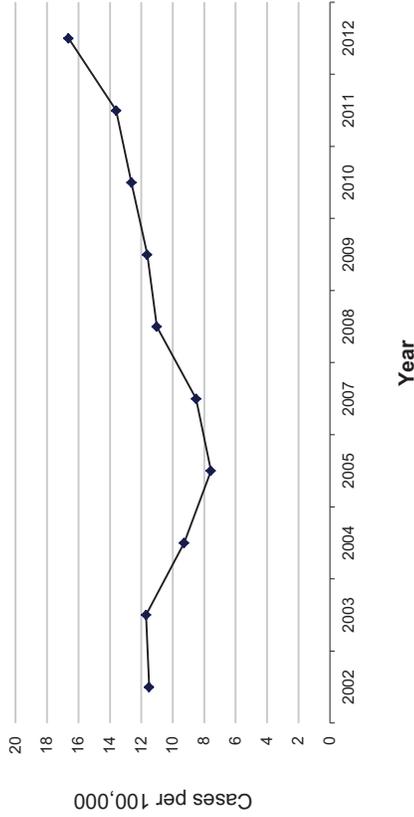


Figure 2. Reported Campylobacteriosis Rates by Age
Group

LAC, 2012 (N=1546)

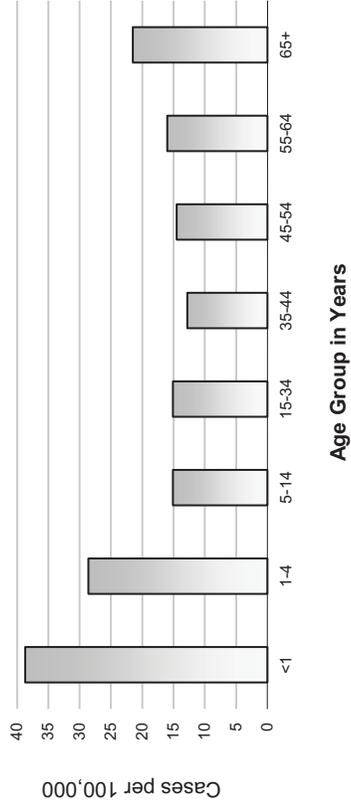
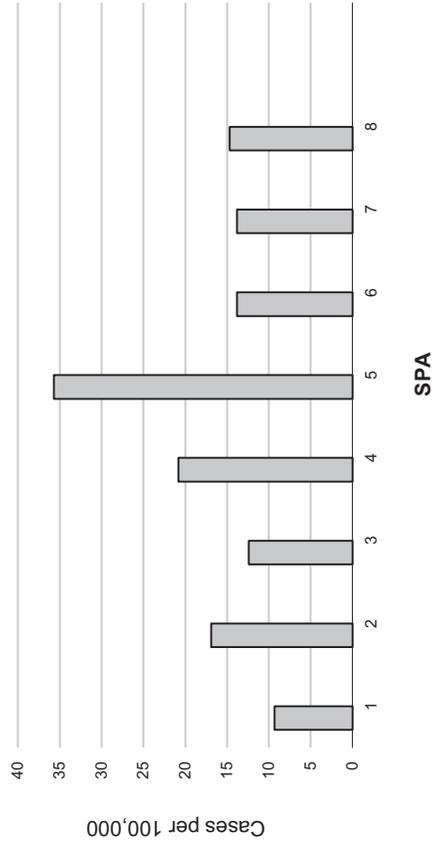
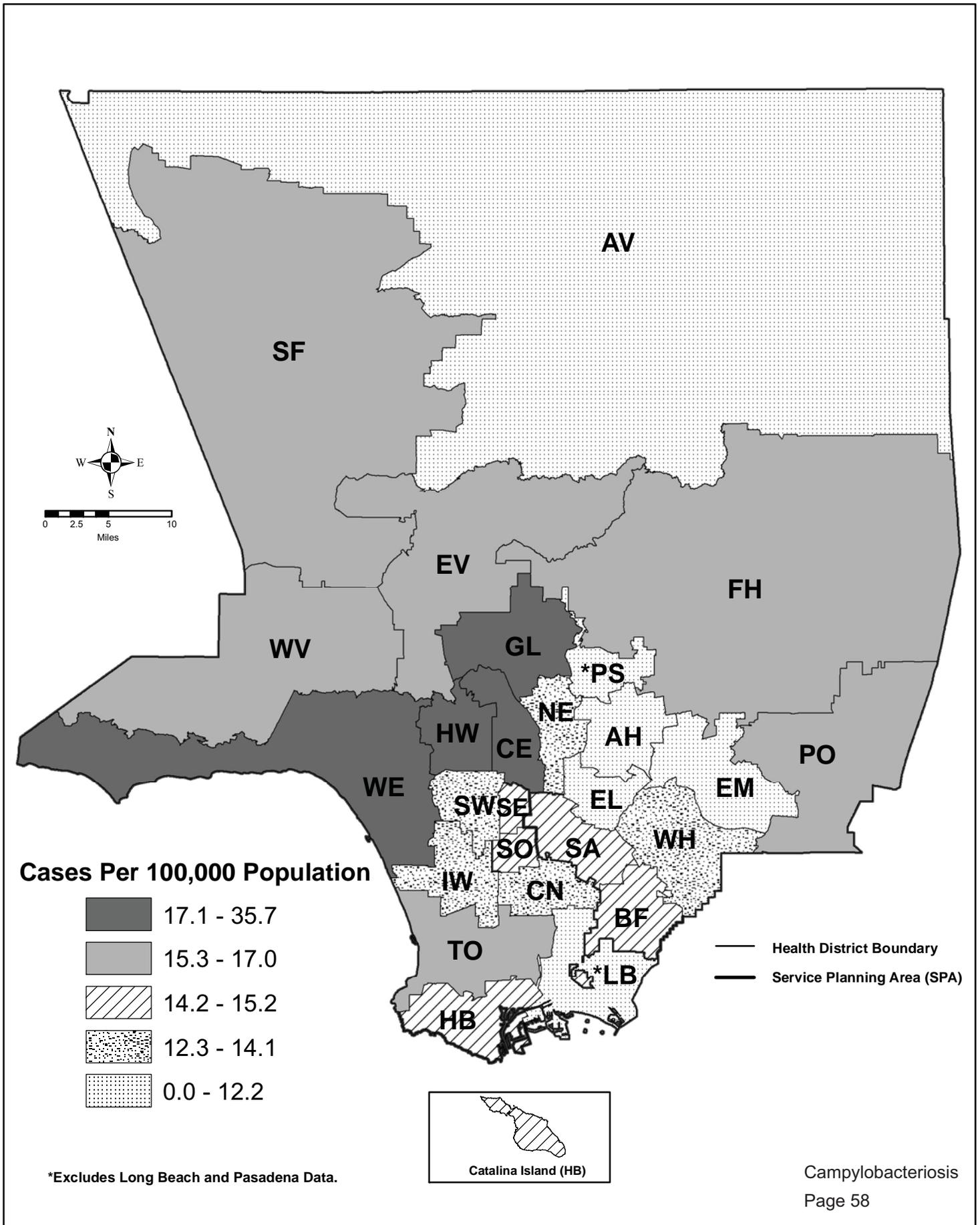


Figure 3. Reported Campylobacteriosis Rates by SPA
LAC, 2012 (N=1546)



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

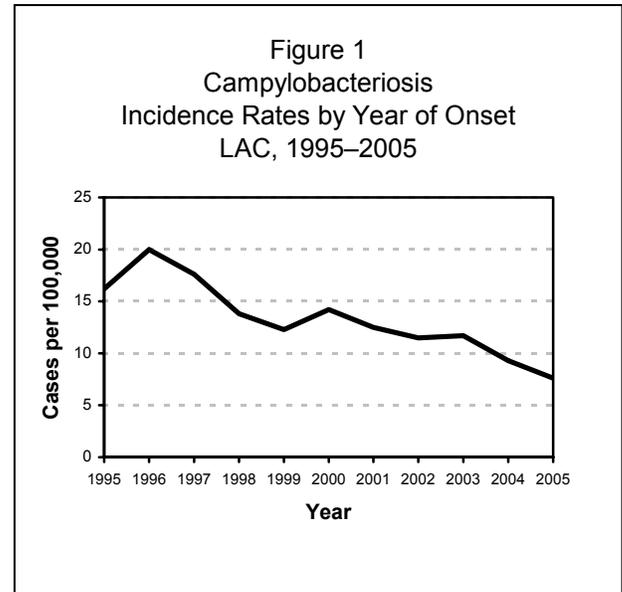




CAMPYLOBACTERIOSIS

| 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.



DESCRIPTION

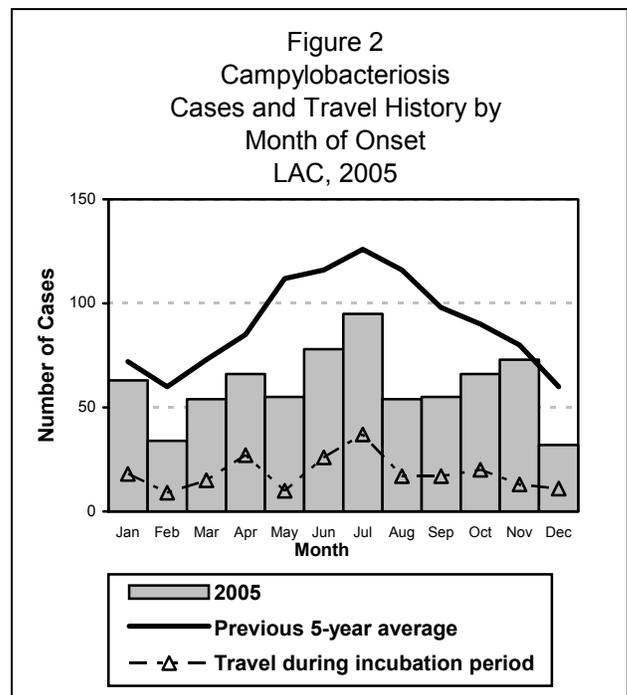
Campylobacteriosis is a bacterial disease caused by Gram-negative bacilli transmitted through ingestion of organisms via consumption of undercooked poultry or other meat, contaminated food, water or raw milk, or contact with infected animals. The incubation period is 2–5 days. Common symptoms include 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.

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).

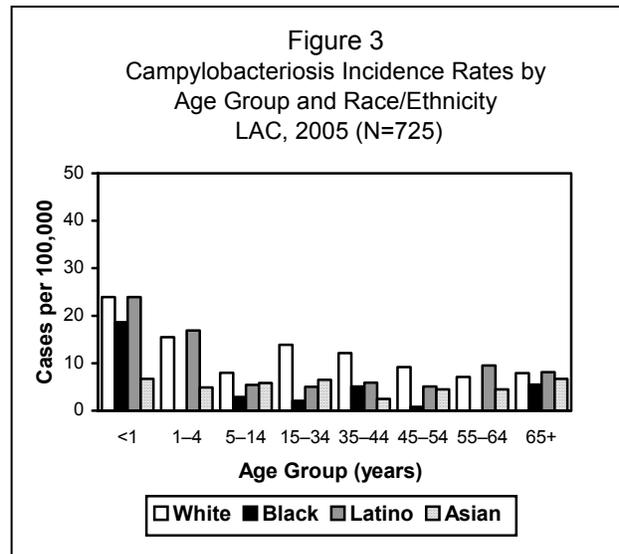
Race/Ethnicity: The highest overall age-adjusted rate was in Whites (11.0 cases per 100,000 population). In 2005 age-adjusted rates decreased for Latinos (7.0) although Latinos had similar incidence to Whites. Age-adjusted rates for Asians (5.2) and Blacks (2.8) decreased. Latino, White, and Black infants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

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

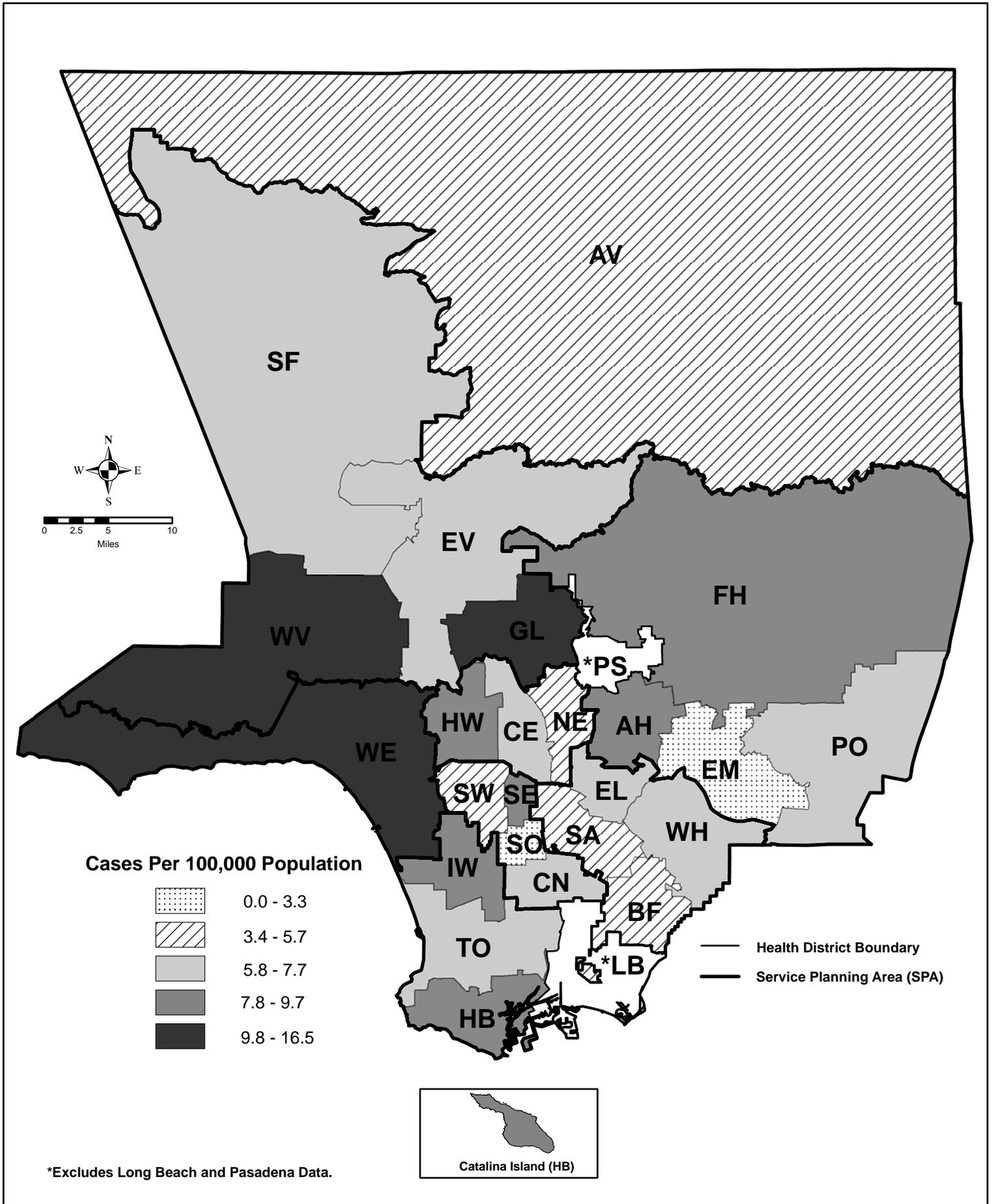
1. Allos, B.M. Campylobacter jejuni infections: update on emerging issues and trends. *Clinical Infectious Diseases* 2001;32:1201–6.

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*





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 |

^aCases per 100,000 population.

^bNot 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**

| Age Group | 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 |
| <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

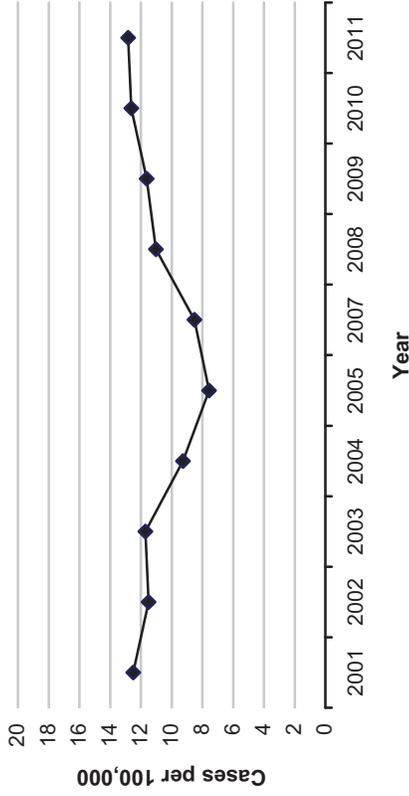


Figure 2. Reported Campylobacteriosis Rates by Age Group
LAC, 2011 (N=1259)

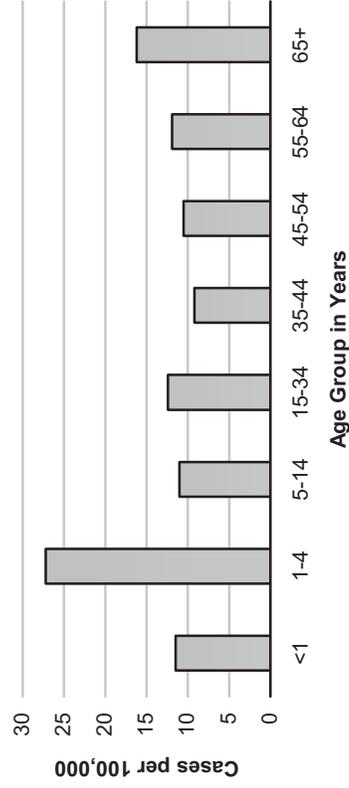
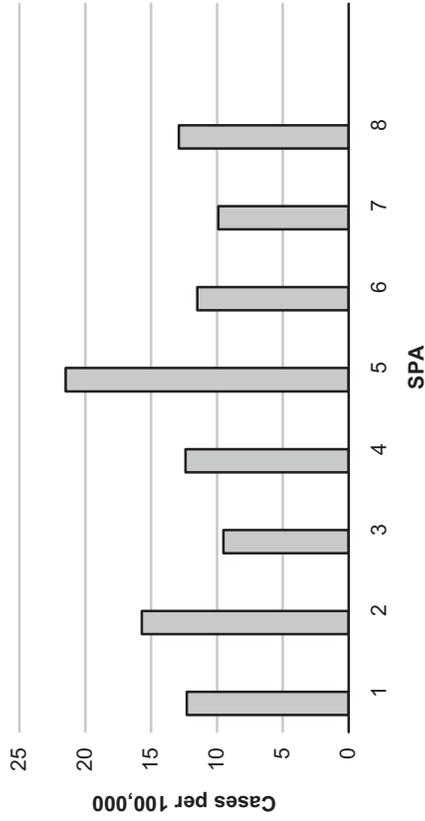
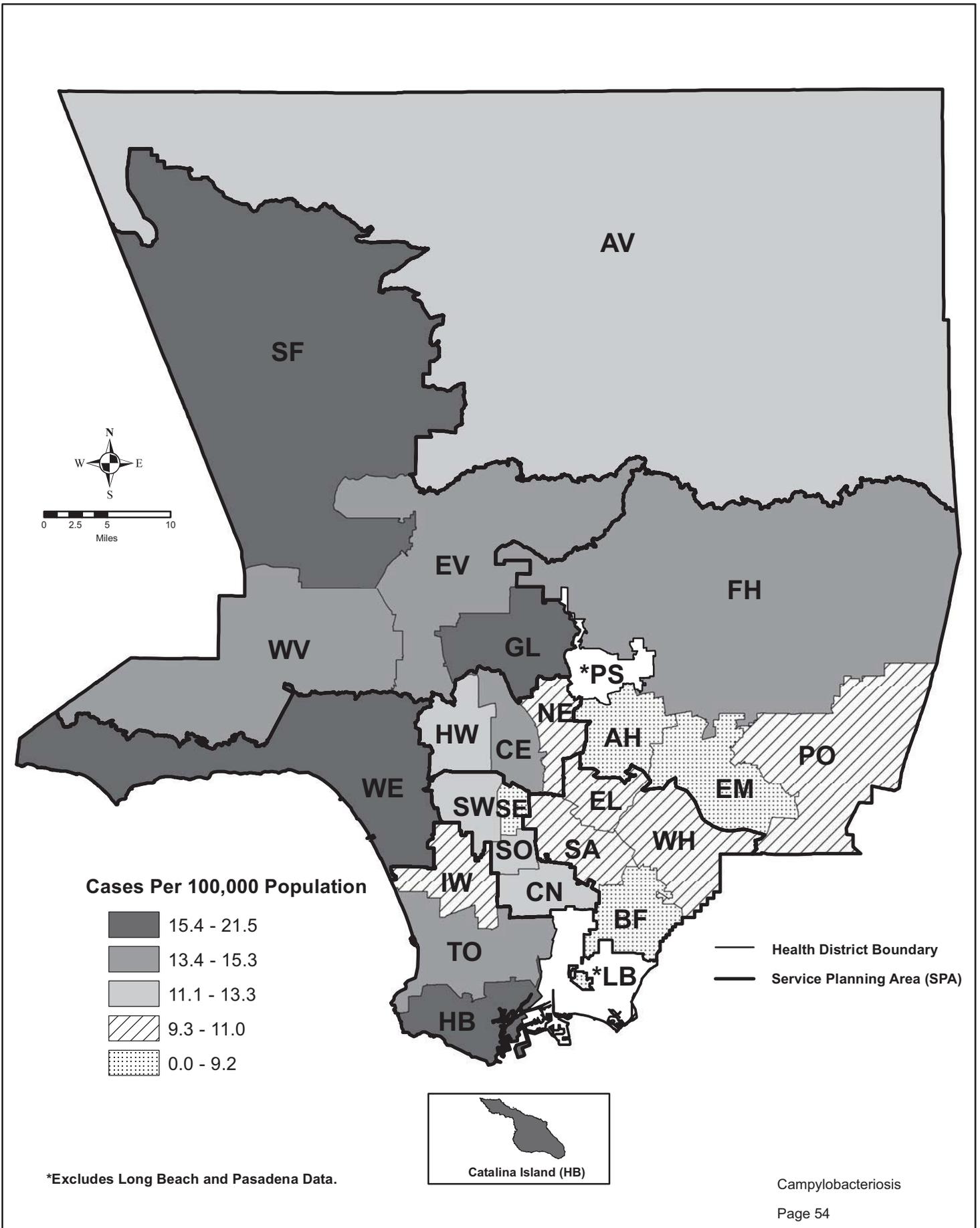


Figure 3. Reported Campylobacteriosis Rates by SPA
LAC, 2011 (N=1259)



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





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 |

^aCases per 100,000 population.

^bNot 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.



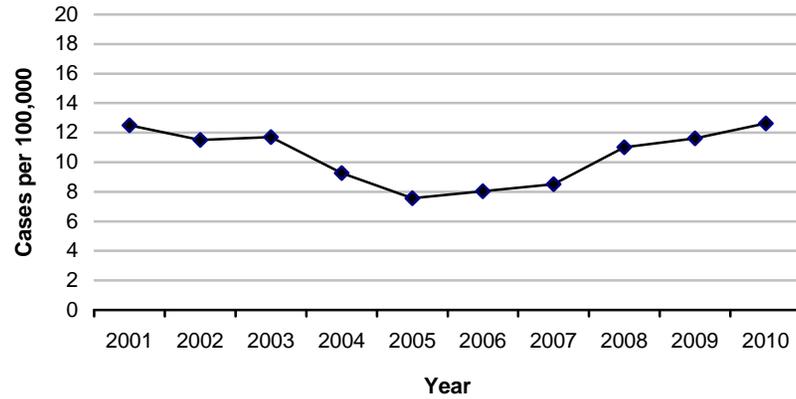
**Reported Campylobacteriosis Cases and Rates* per 100,000 by Age Group, Race/Ethnicity, and SPA
Los Angeles County, 2006-2010**

| | 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 |

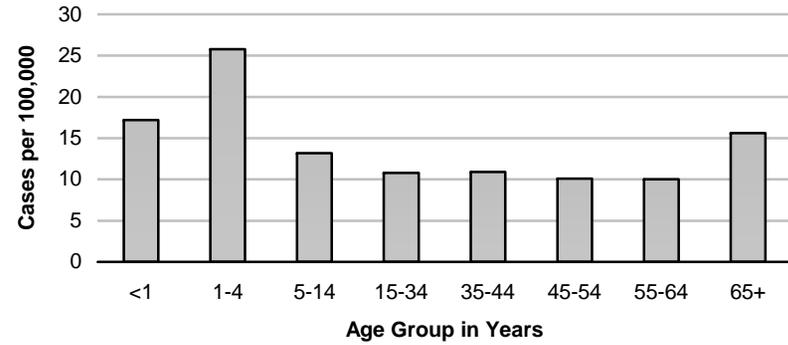
*Rates calculated based on less than 19 cases or events are considered unreliable. Data provided in section race/ethnicity is incomplected.



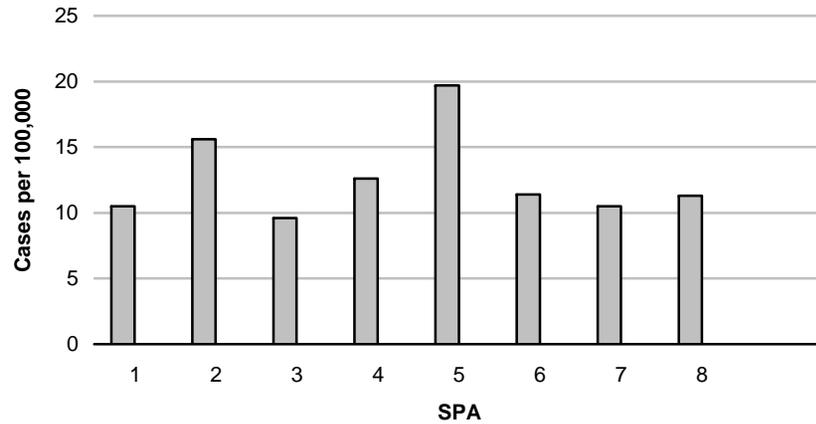
**Figure 1. Reported Campylobacteriosis Rates by Year
 LAC, 2001-2010**



**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 |

^aCases 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**

| Age Group | 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 | |
| <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 incomplete.



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

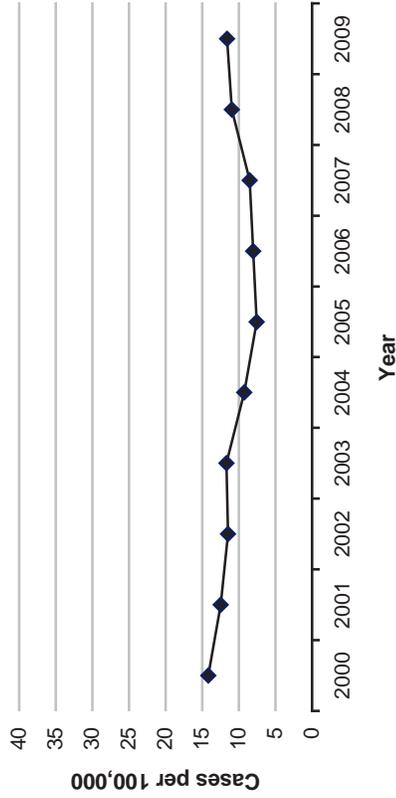


Figure 2. Reported Campylobacteriosis Rates by Age Group
LAC, 2009 (N=1135)

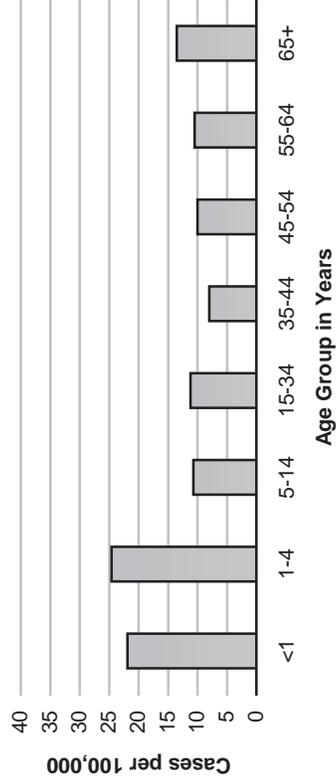
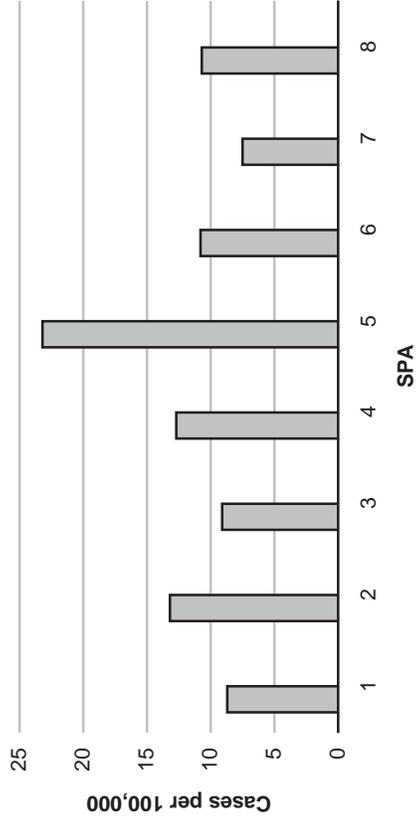
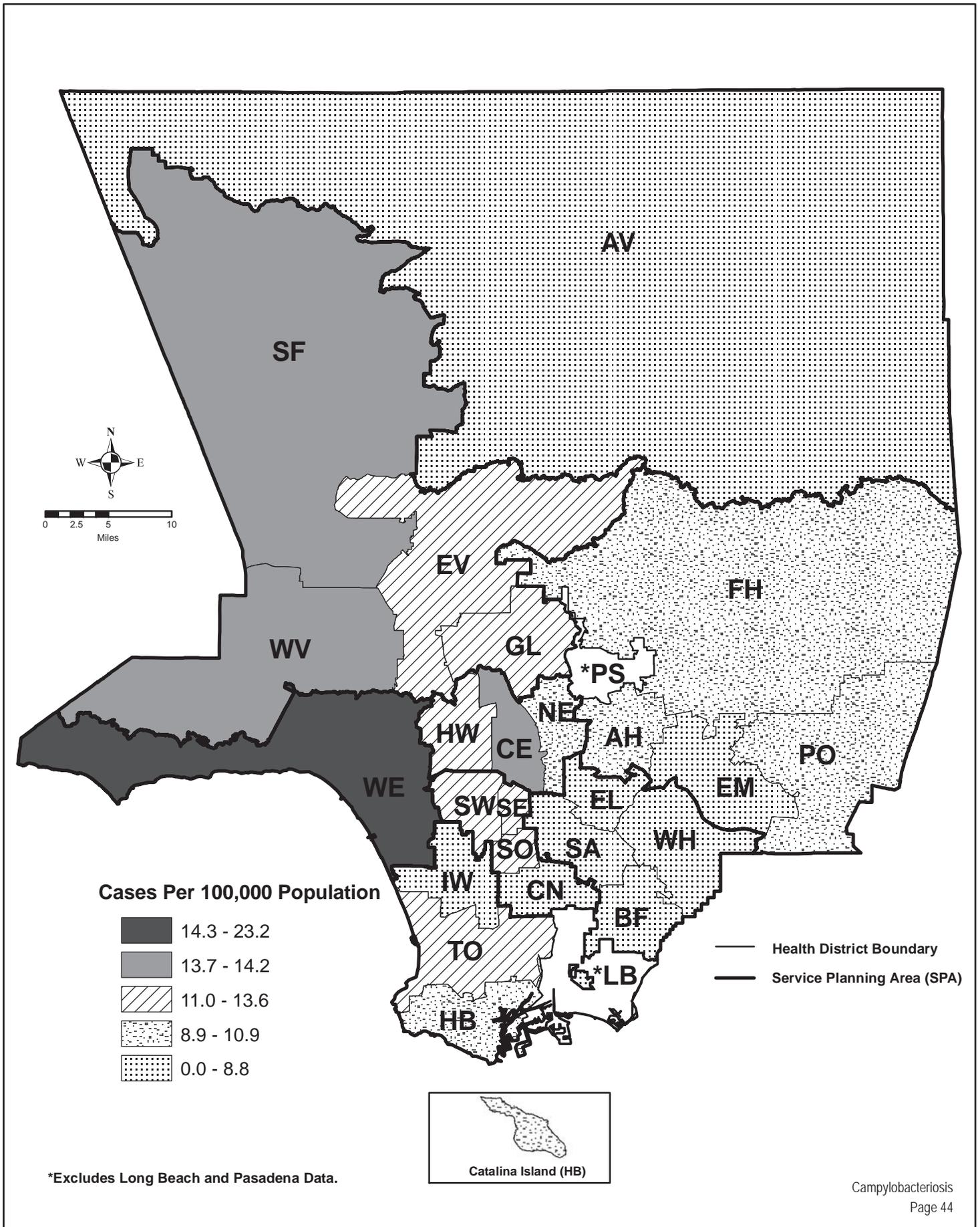


Figure 3. Reported Campylobacteriosis Rates by SPA
LAC, 2009 (N=1135)



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 |

^aCases 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.



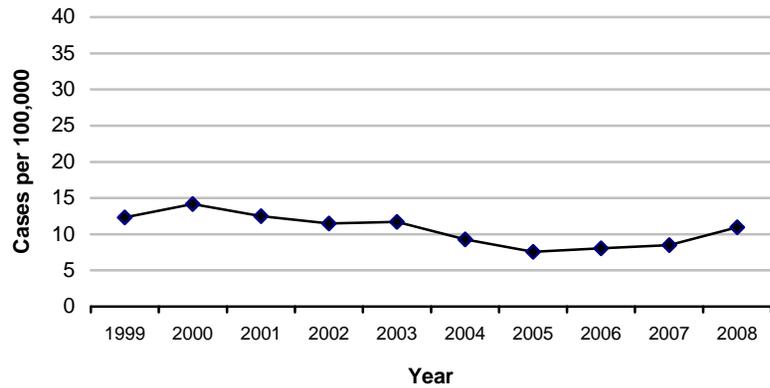
**Reported Campylobacteriosis Cases and Rates* per 100,000 by Age Group, Race/Ethnicity, and SPA
Los Angeles County, 2004-2008**

| | 2004 (N=884) | | | 2005 (N=725) | | | 2006 (N=775) | | | 2007 (N=827) | | | 2008 (N=1072) | | |
|-----------------------|--------------|------|------------------|--------------|------|------------------|--------------|------|------------------|--------------|------|------------------|---------------|------|------------------|
| | No. | (%) | Rate/ 100,000 | No. | (%) | Rate/ 100,000 |
| 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 | |

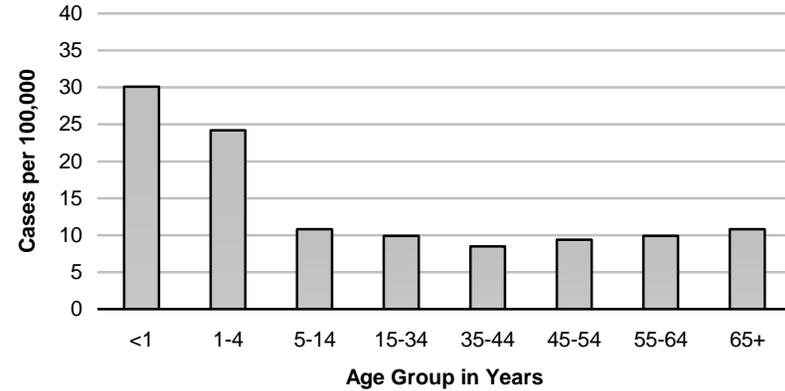
*Rates calculated based on less than 19 cases or events are considered unreliable.



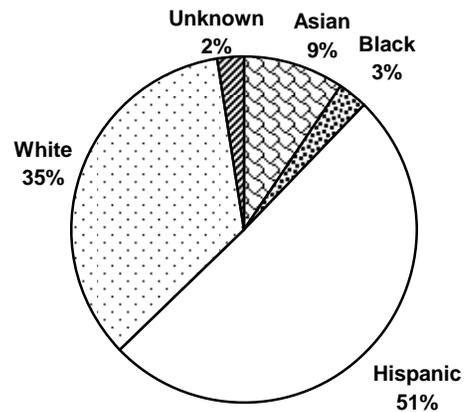
**Figure 1. Reported Campylobacteriosis Rates by Year
LAC, 1999-2008**



**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**

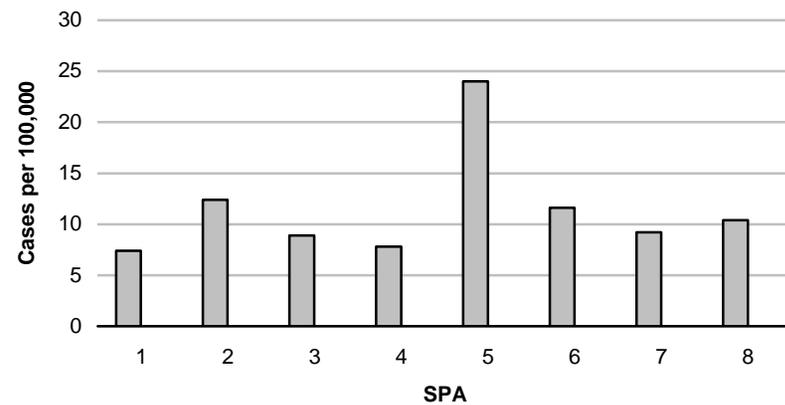




Figure 5. Reported Campylobacteriosis Cases by Month of Onset, LAC, 2008

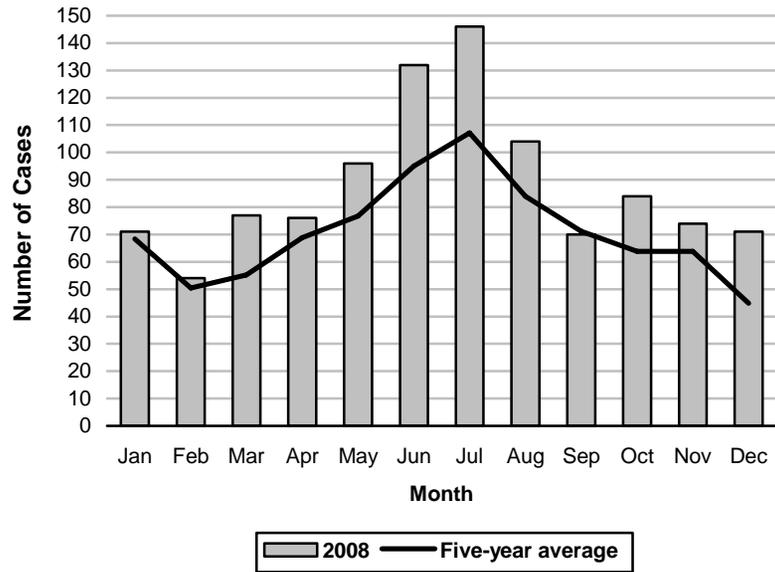
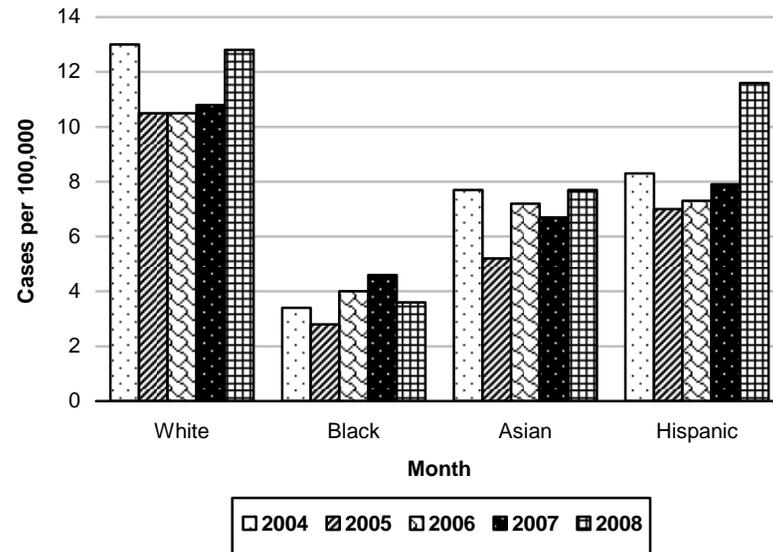
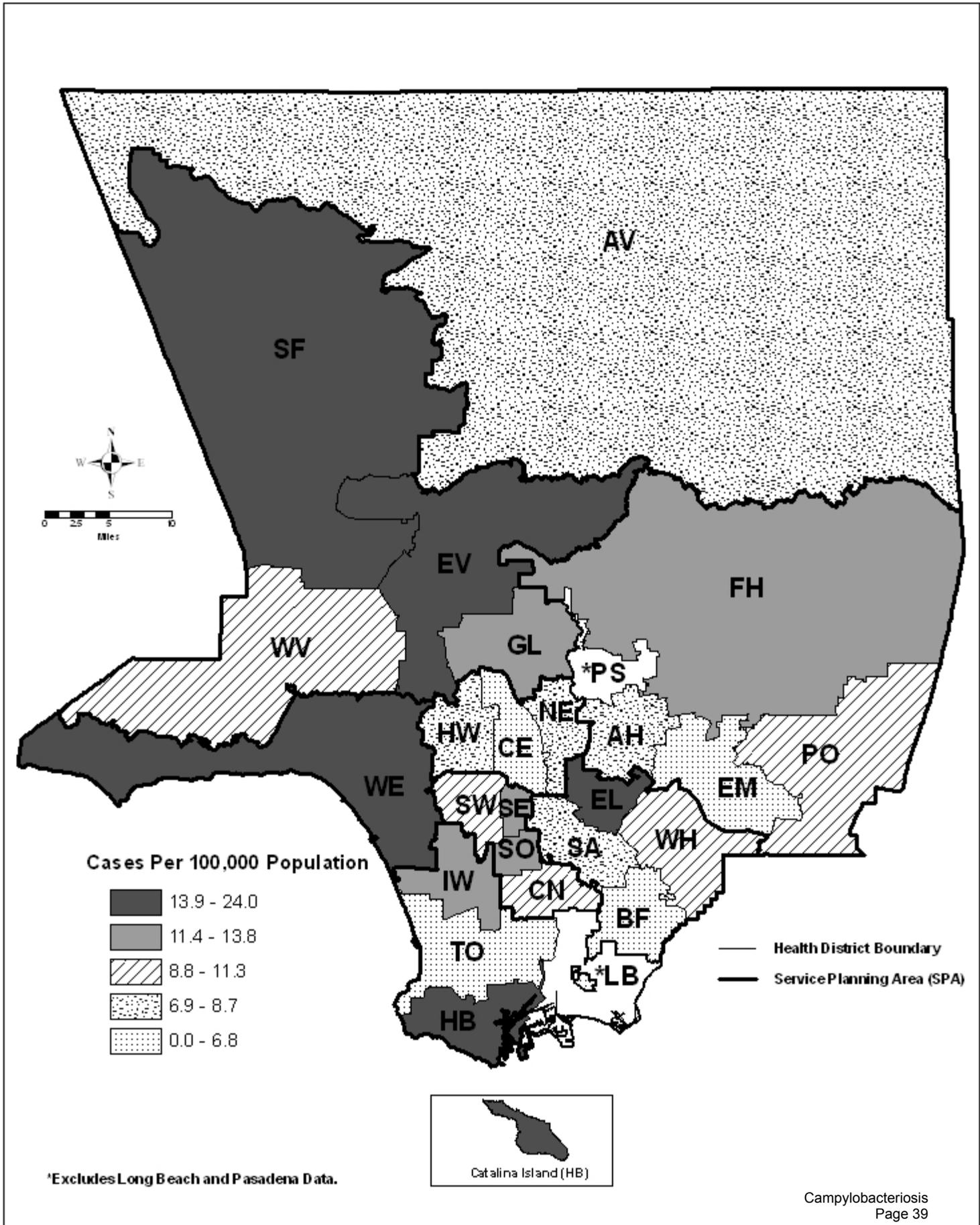


Figure 6. Campylobacteriosis Incidence by Race/Ethnicity LAC, 2004-2008



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





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.

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.

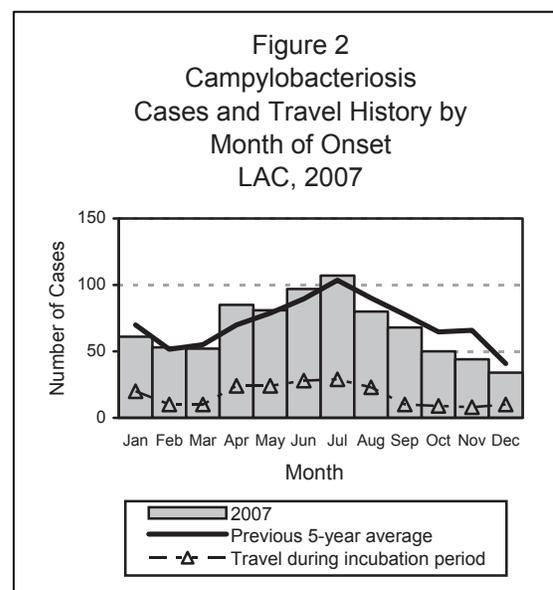
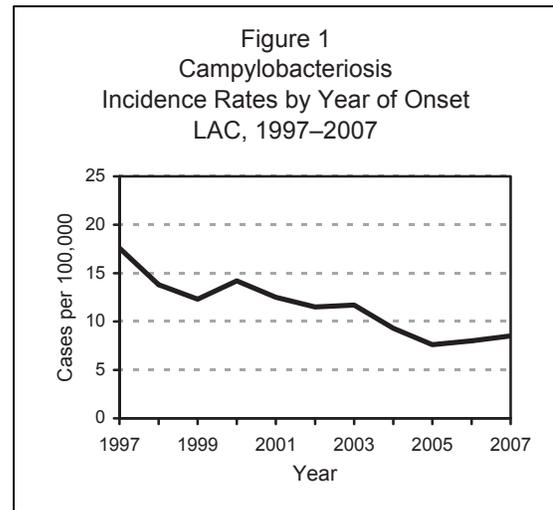
DISEASE ABSTRACT

- 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 rate 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).





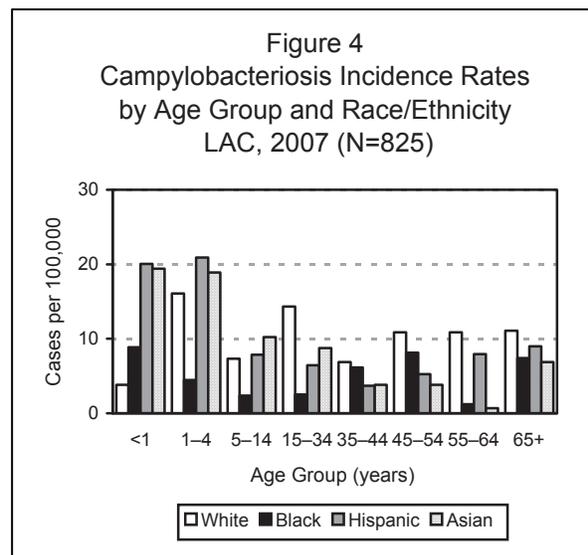
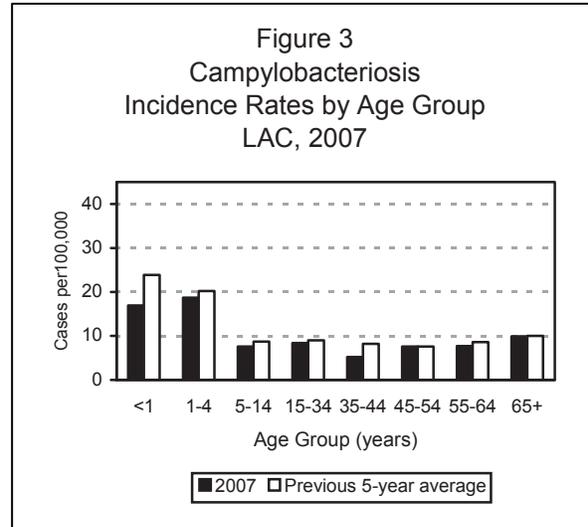
Age: The highest rates continued to be among infants aged <1 year and children aged 1–4 years (Figure 3). These age groups had significantly higher rates than any other age group but the rates were lower than the previous five-year average. In developed countries, children younger than five years and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



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.

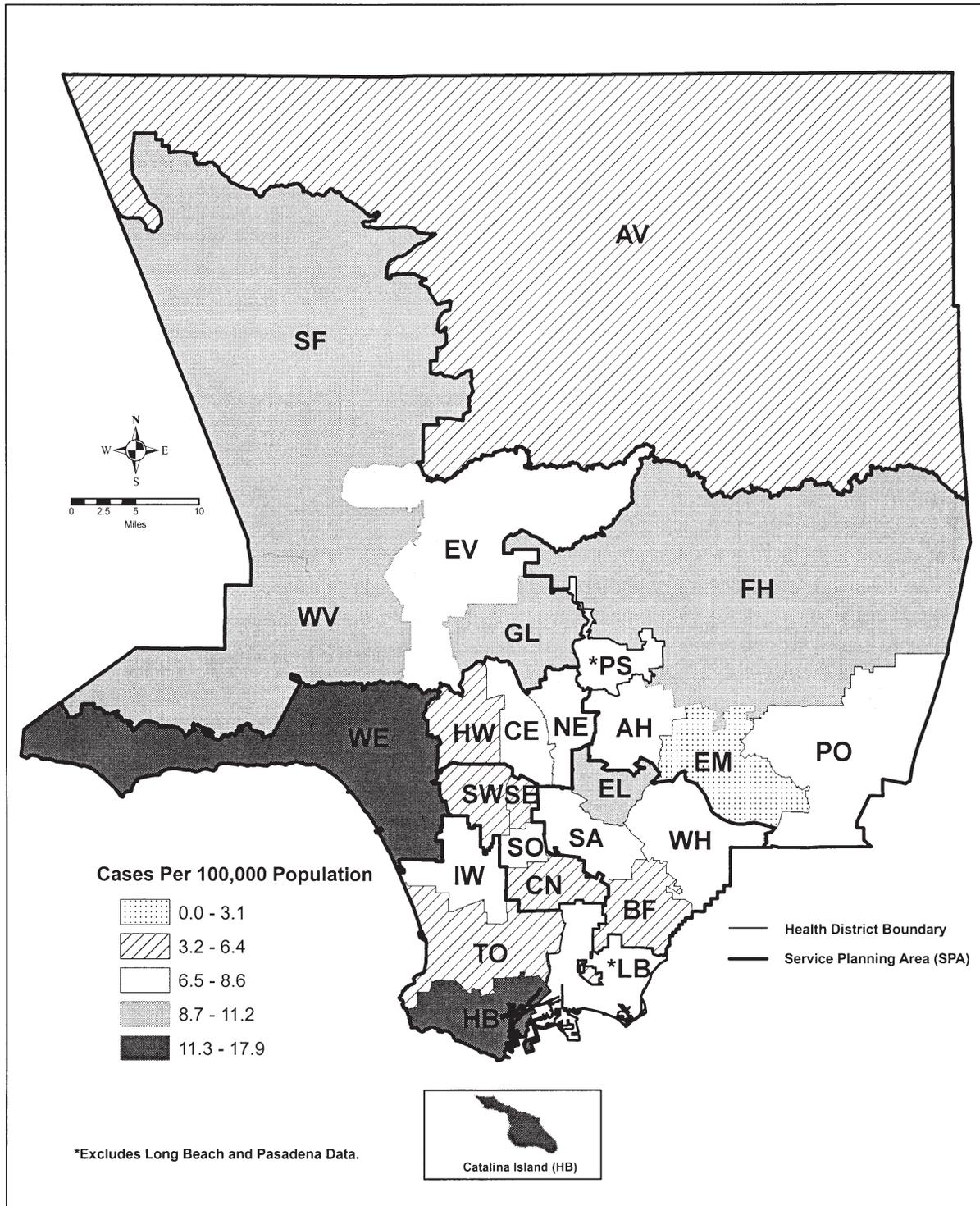
ADDITIONAL RESOURCES

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.

DESCRIPTION

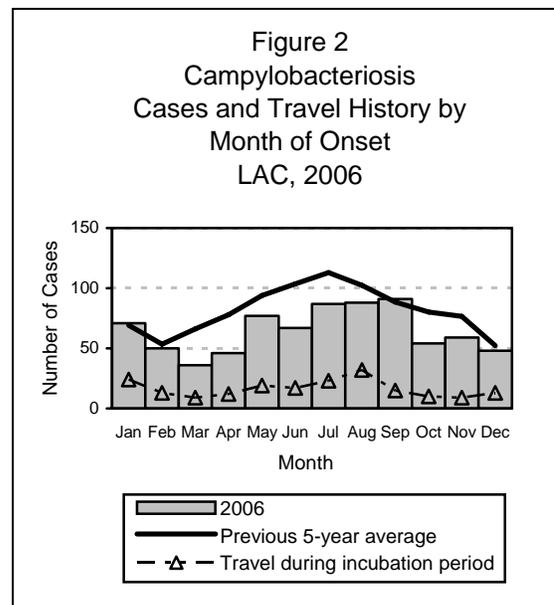
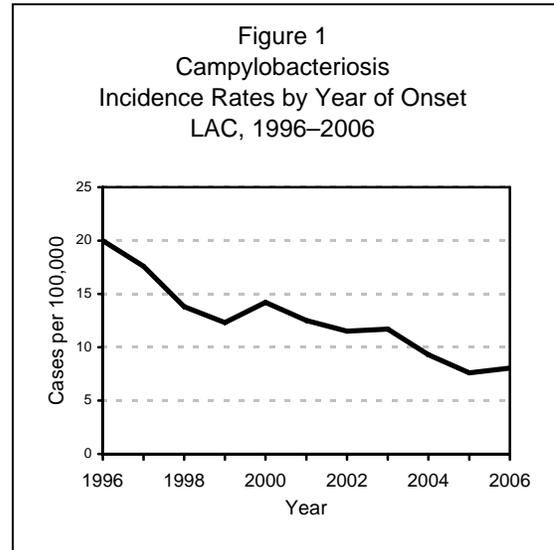
Campylobacteriosis is a bacterial disease caused by Gram-negative bacilli transmitted through ingestion of organisms in undercooked poultry or other meat, contaminated food, water or raw milk, or contact with infected animals. The incubation period is 2–5 days. Common symptoms include watery or bloody 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.

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 rate 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).

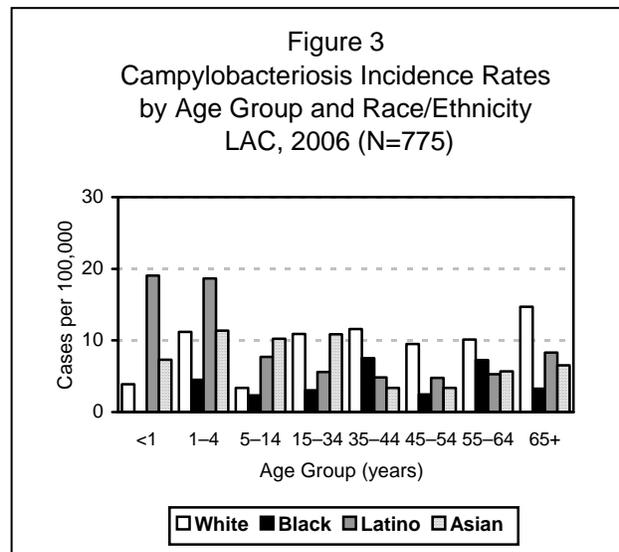
Race/Ethnicity: The highest overall age-adjusted rate was in whites (9.96 cases per 100,000 population); this was a decrease from 2005 (11 per 100,000). In 2006 the age-adjusted rate for Latinos was stable (7.0) although Latinos had similar incidence to whites. Age-adjusted rates for Asians (7.7) and 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).

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

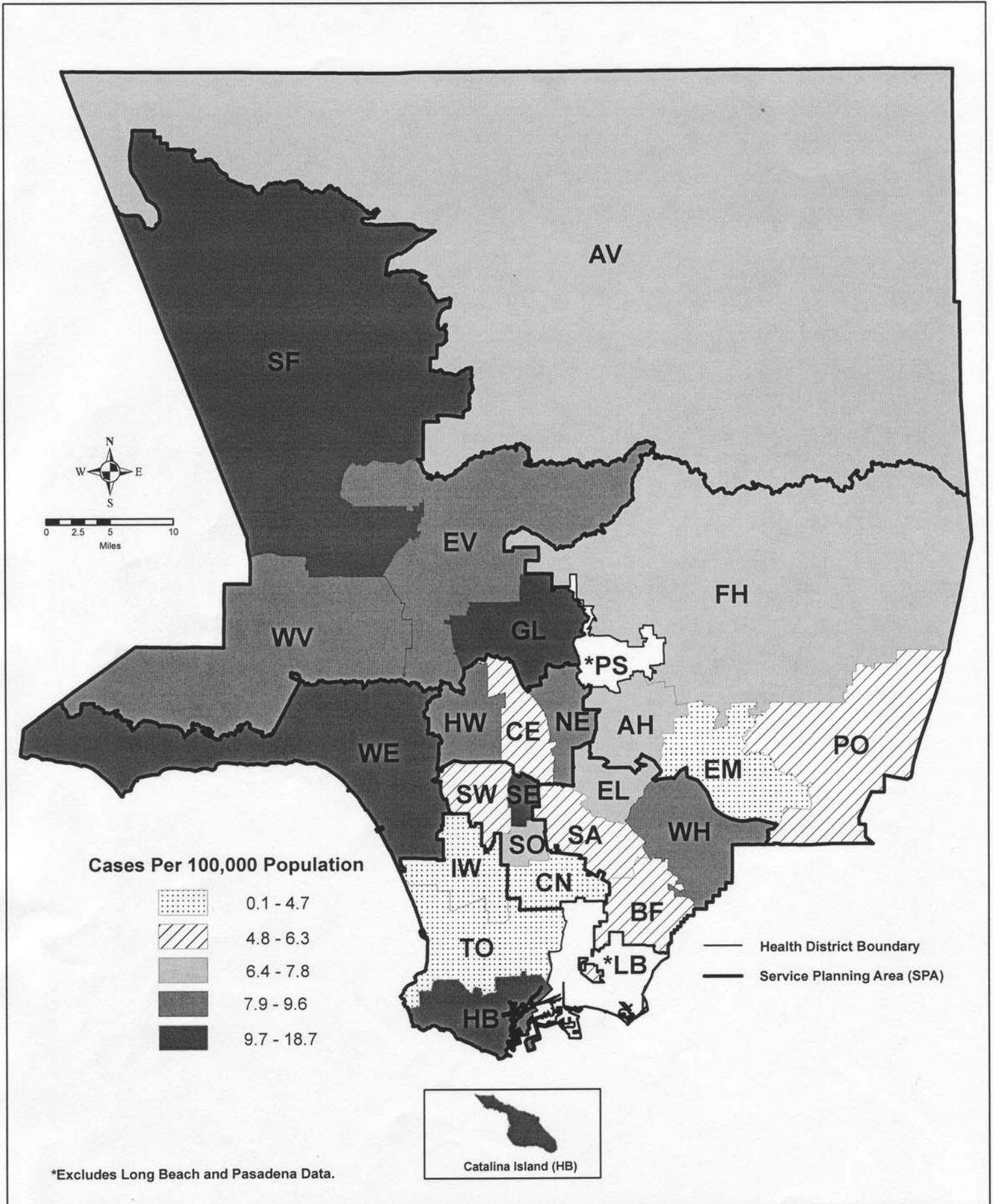
1. Allos BM. Campylobacter jejuni infections: update on emerging issues and trends. Clin Infect Dis 2001; 32(8):1201–1206.

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*





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.

DESCRIPTION

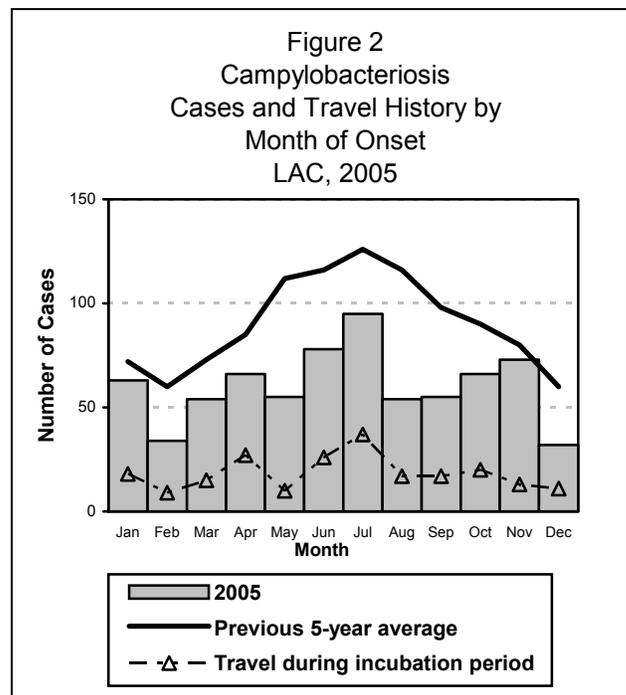
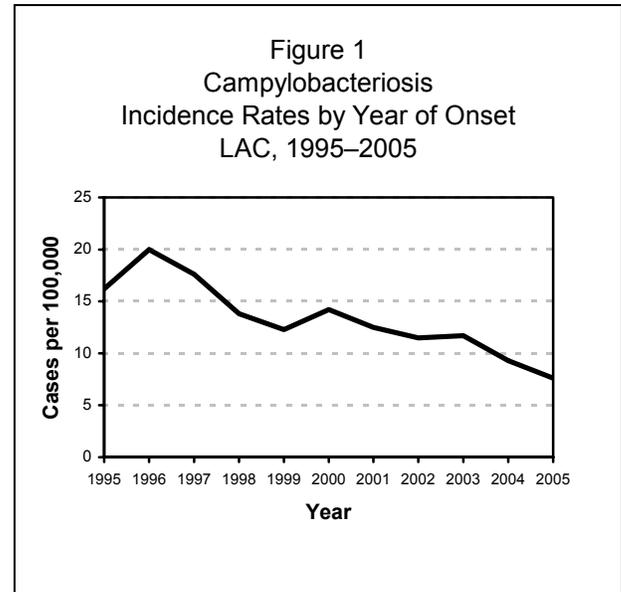
Campylobacteriosis is a bacterial disease caused by Gram-negative bacilli transmitted through ingestion of organisms via consumption of undercooked poultry or other meat, contaminated food, water or raw milk, or contact with infected animals. The incubation period is 2–5 days. Common symptoms include 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.

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).

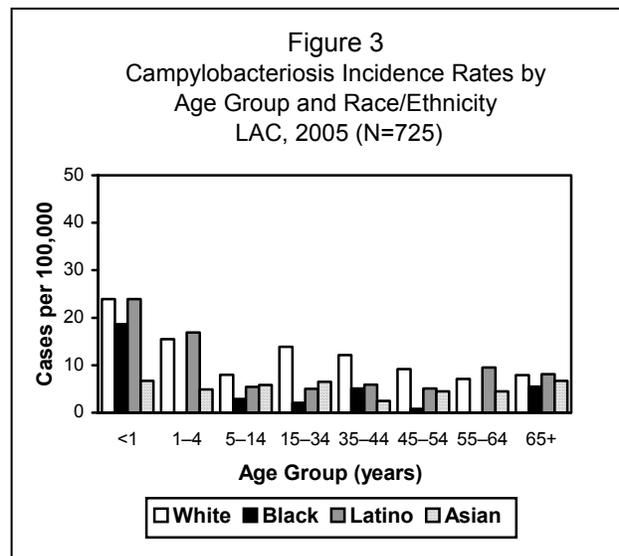
Race/Ethnicity: The highest overall age-adjusted rate was in Whites (11.0 cases per 100,000 population). In 2005 age-adjusted rates decreased for Latinos (7.0) although Latinos had similar incidence to Whites. Age-adjusted rates for Asians (5.2) and Blacks (2.8) decreased. Latino, White, and Black infants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

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

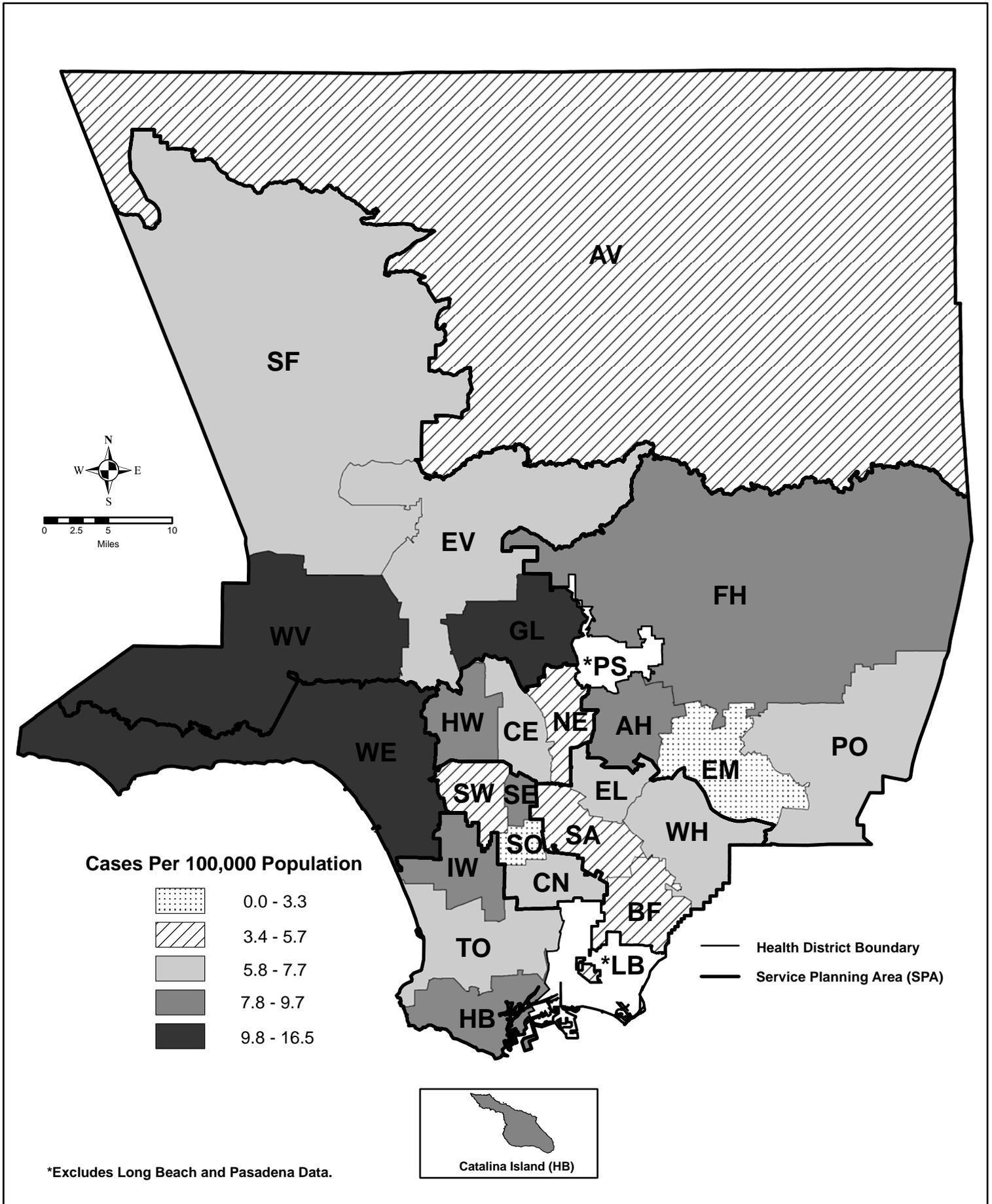
1. Allos, B.M. Campylobacter jejuni infections: update on emerging issues and trends. *Clinical Infectious Diseases* 2001;32:1201–6.

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*

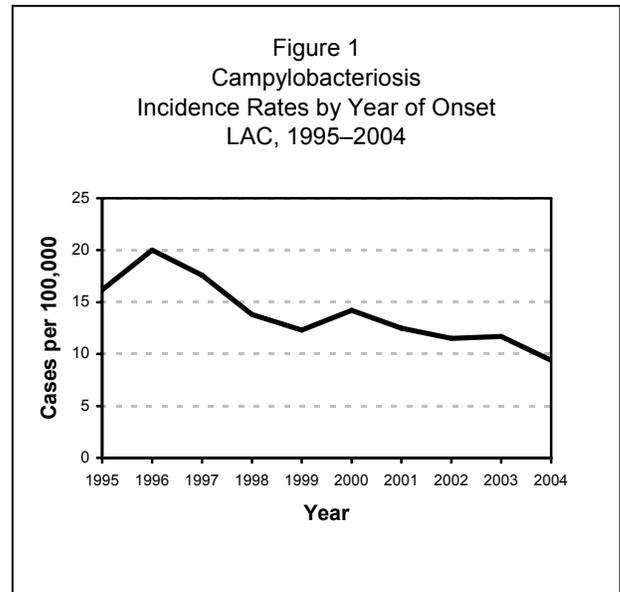




CAMPYLOBACTERIOSIS

| 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.



DESCRIPTION

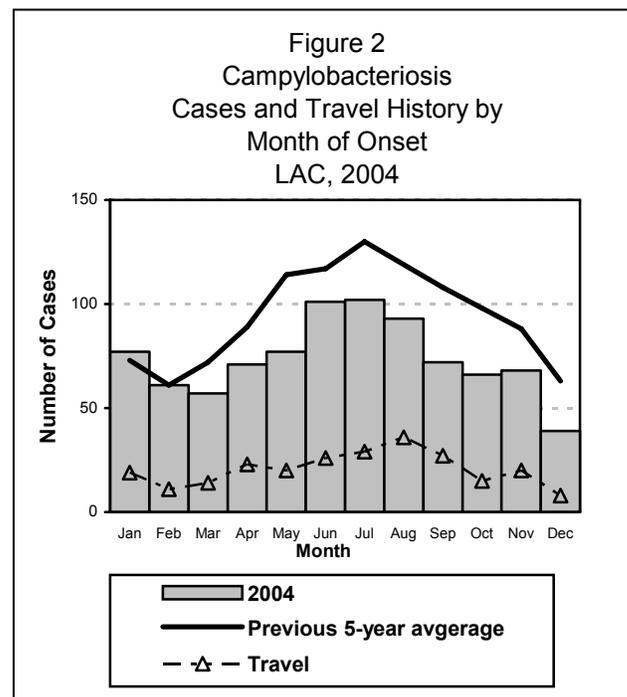
Campylobacteriosis is a bacterial disease caused by gram-negative bacilli transmitted through ingestion of organisms via consumption of undercooked poultry or other meat, contaminated food, water or raw milk, or contact with infected animals. The incubation period is 2-5 days. Common symptoms include 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 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).

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 3
Campylobacteriosis
Incidence Rates by Age Group
LAC, 2004

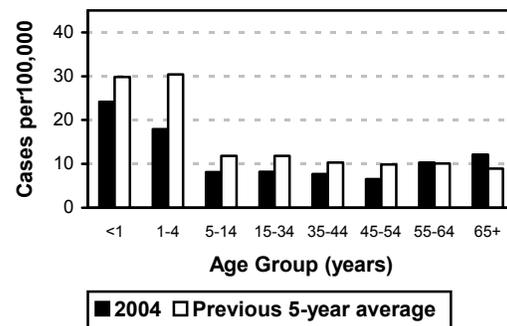
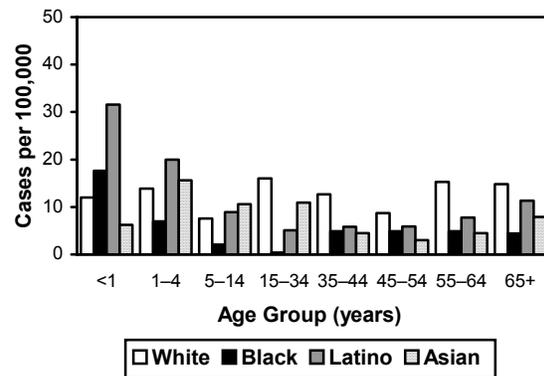


Figure 4
Campylobacteriosis Incidence Rates by
Age Group and Race/Ethnicity
LAC, 2004 (N=872)





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.

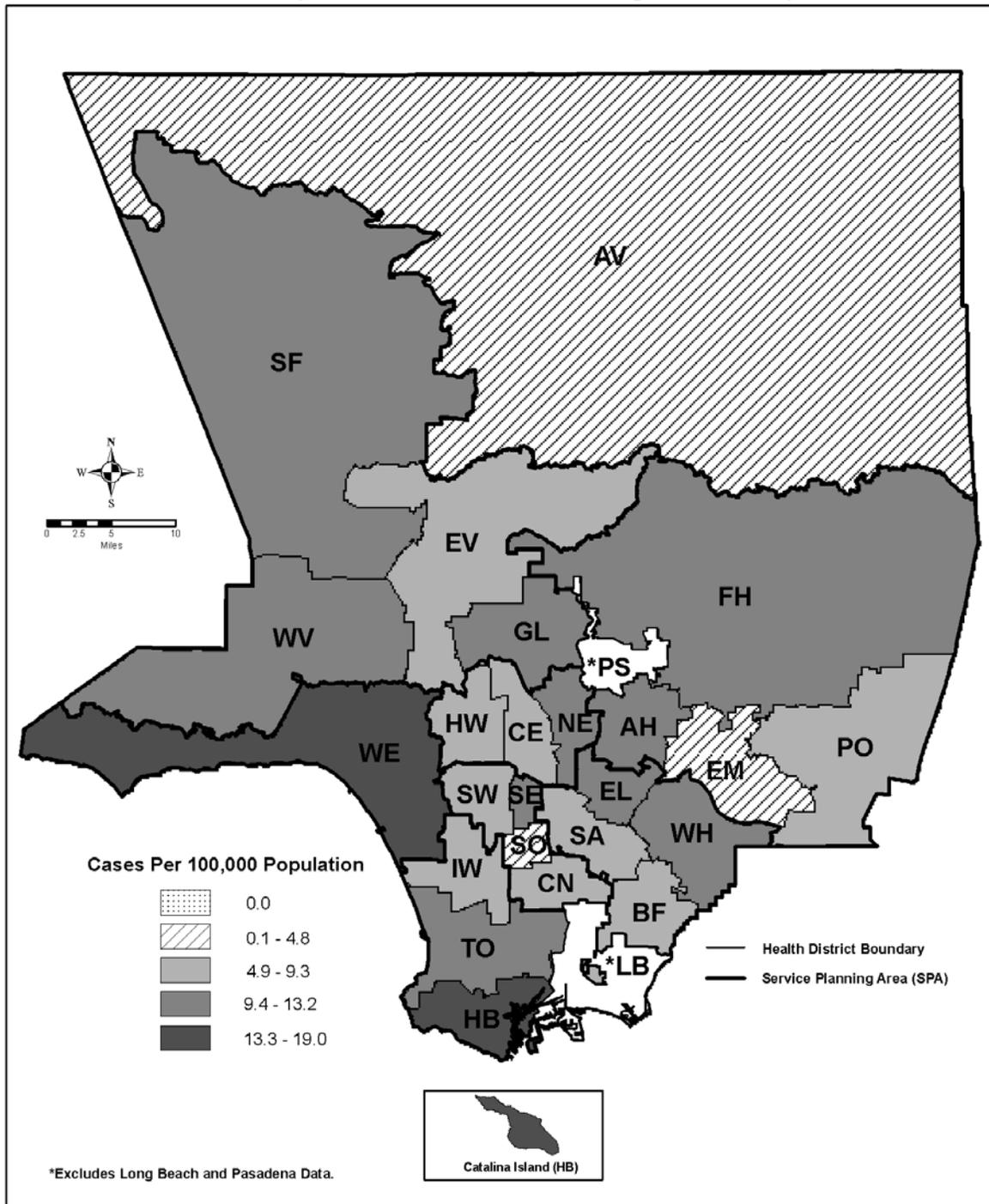
ADDITIONAL RESOURCES

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.

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.

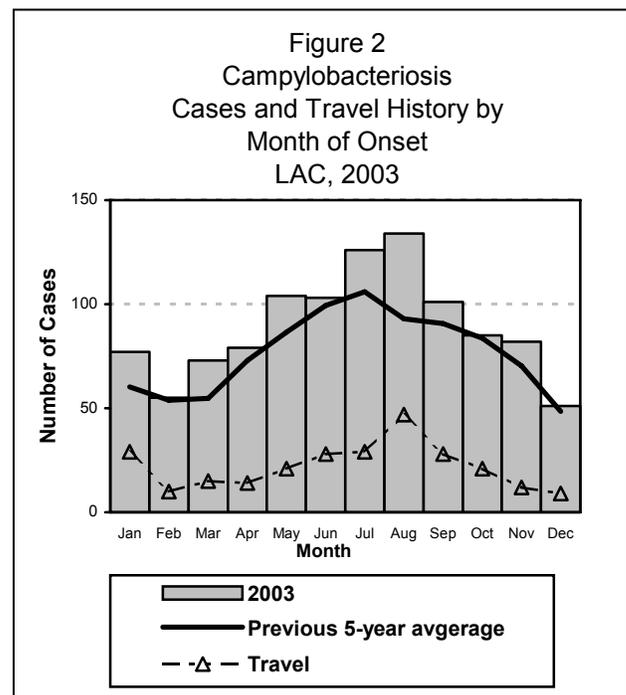
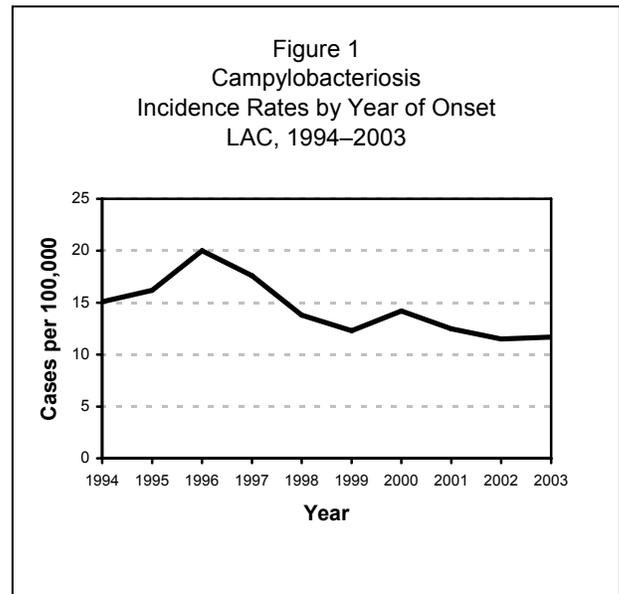
DISEASE ABSTRACT

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

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.

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].

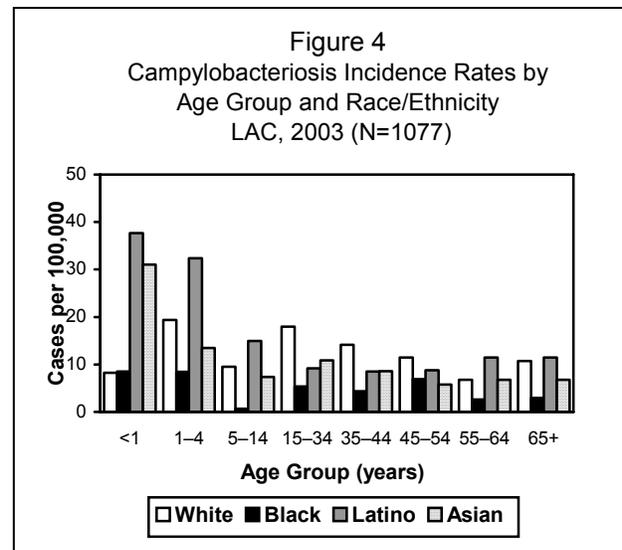
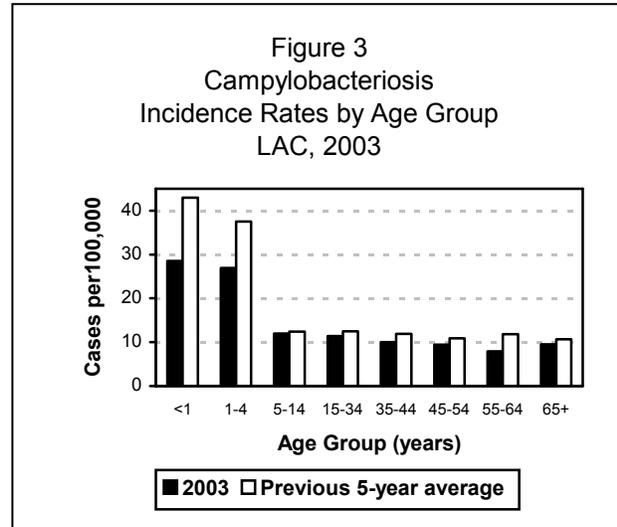
Race/Ethnicity: In 2003, Latinos and Whites again had similar crude rates in spite of there being 58% more reported cases in Latinos. Latino infants continued to have higher age-adjusted rates compared to other race/ethnicities (Figure 4), however, in 2003, rates in Asian infants increased. The highest 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.





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.

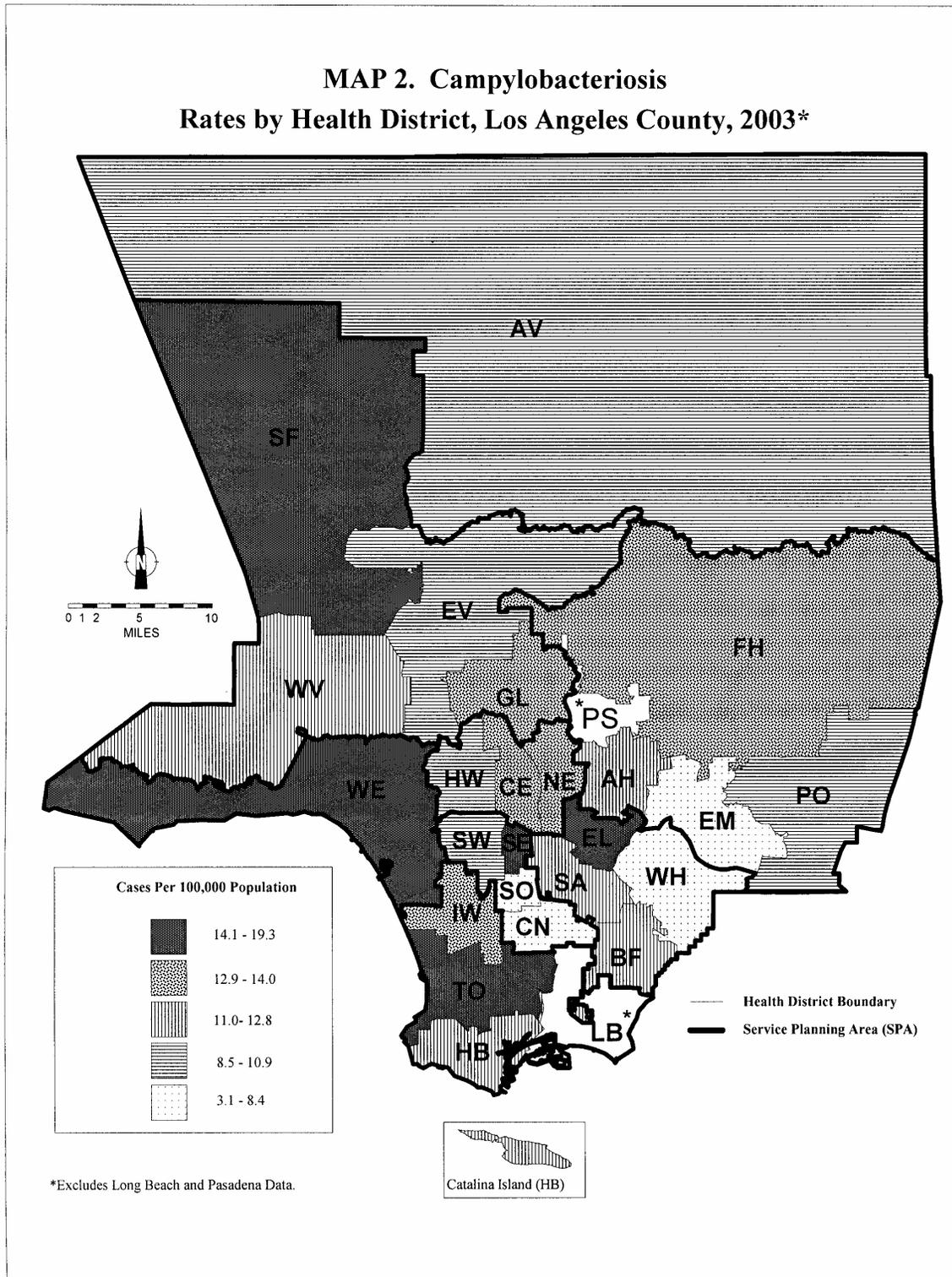
ADDITIONAL RESOURCES

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



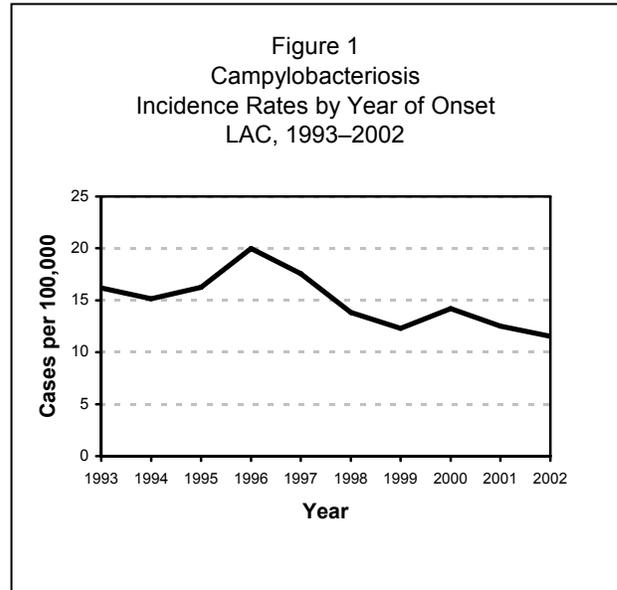
MAP 2. Campylobacteriosis Rates by Health District, Los Angeles County, 2003*





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.

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.

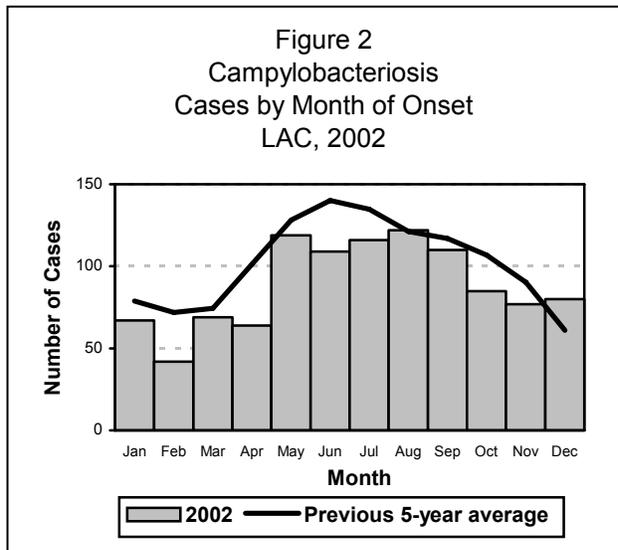
DISEASE ABSTRACT

- 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.

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.

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

Figure 3
Campylobacteriosis
Incidence Rates by Age Group
LAC, 2002

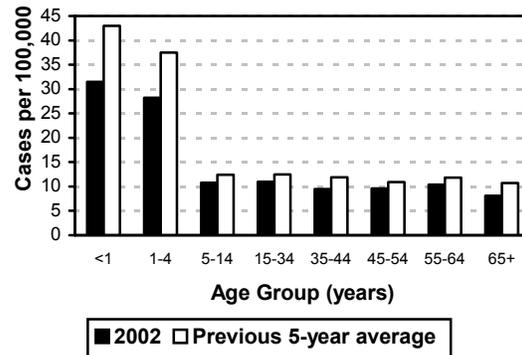
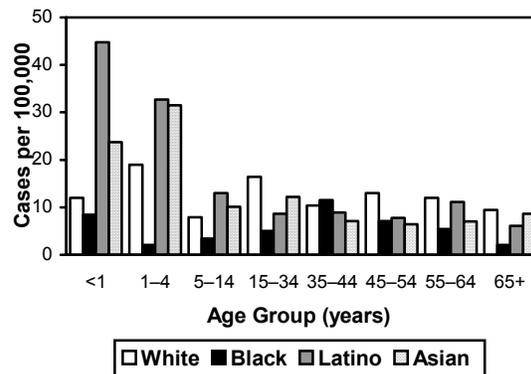


Figure 4
Campylobacteriosis Incidence Rates by
Age Group and Race/Ethnicity
LAC, 2002 (N=1068)





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*

