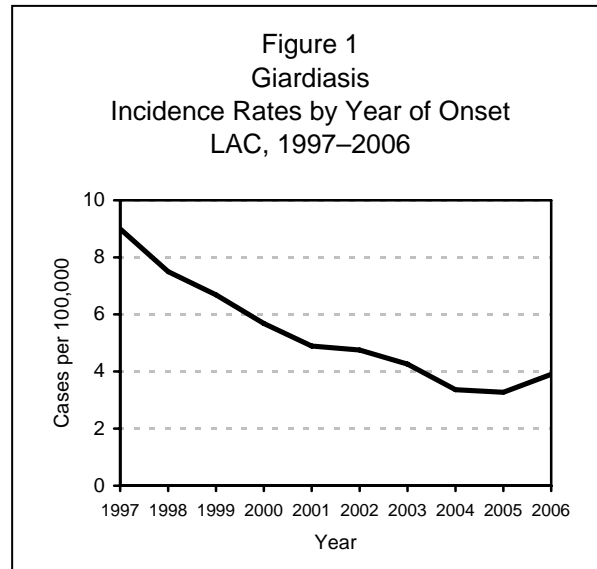


GIARDIASIS

CRUDE DATA	
Number of Cases	376
Annual Incidence ^a	
LA County	3.9
California	6.37 ^b
United States	6.39 ^b
Age at Diagnosis	
Mean	31
Median	30
Range	<1–89 years

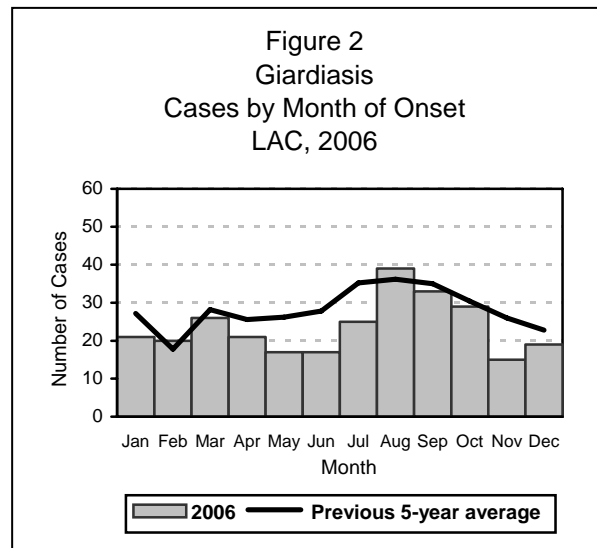
^a Cases per 100,000 population.

^b Calculated from 2007 Summary of notifiable diseases issue of MMWR (56:853-863).



DESCRIPTION

Giardiasis is an intestinal infection caused by the zoonotic protozoan parasite *Giardia intestinalis* (previously *G. lamblia*). *Giardia* cysts shed in animal or human feces may contaminate food or drinking water or be transferred on hands or fomites; recreational waters such as lakes and pools may also serve as vehicles of transmission. Incubation can range from 3-25 days or longer, but the median incubation time is 7-10 days. While usually asymptomatic, symptoms can include sulfurous burps, chronic diarrhea, frequent loose and pale greasy stools, bloating, cramps, fatigue, and weight loss. Complications are rare, but may include malabsorption of fats and fat-soluble vitamins. Children in day care represent a reservoir of disease in developed countries. There is no vaccine.



DISEASE ABSTRACT

- The incidence of reported Giardiasis in Los Angeles County has dropped dramatically over the past 10 years, and has remained low for the past 4 years.
- The incidence of Giardiasis in 2006 increase from 2005 (3.3 per 100,000) by 18%, primarily due to a 34% increase in the incidence rate for men (from 3.8 to 5.3 per 100,000).
- Incidence tends to increase during summer months when high-risk activities such as recreational water exposure also increase.

STRATIFIED DATA

Trends: Giardiasis incidence in LAC remains low in 2006 relative to the last 10 years, and the incidence has been reduced by over 50% since 1997 (Figure 1).

Seasonality: The number of cases typically increases during summer months when recreational exposure is more likely (i.e., swimming in infected pools, lakes, etc.) (Figure 2).

Age: As in previous years, the highest age-specific incidence rate occurred among children aged 1–4 years (8.1 cases per 100,000) (Figure 3).

Sex: Males are more than twice as likely to contract *Giardia* than females in 2006 (2.2:1), an increase from that seen in 2005 (1.4:1). The incidence for men in 2006 (5.3 per 100,000) increased from 2005 (3.8 per 100,000) by 34% where as the rate for woman dropped by 12% (2.7 to 2.4 per 100,000).

Race/Ethnicity: Whites continue to have higher race/ethnicity specific incidence rates (5.2 per 100,000) than other races (Figure 4).

Location: SPA 5 (West Area) had the highest reported incidence (6.9 per 100,000) followed by SPA 2 (San Fernando Area) (5.8 per 100,000).

COMMENTS

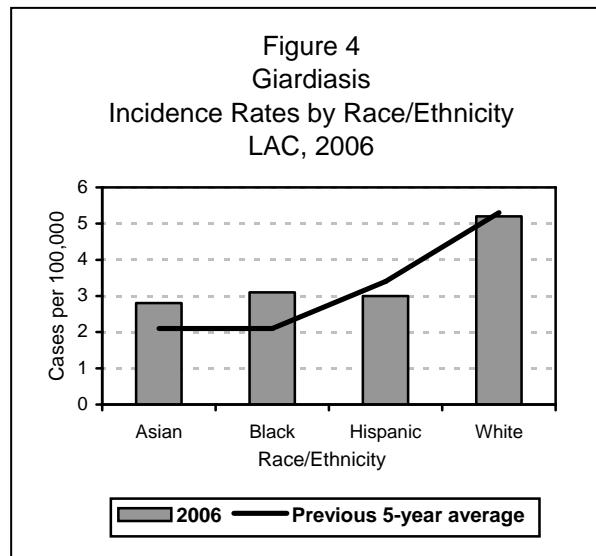
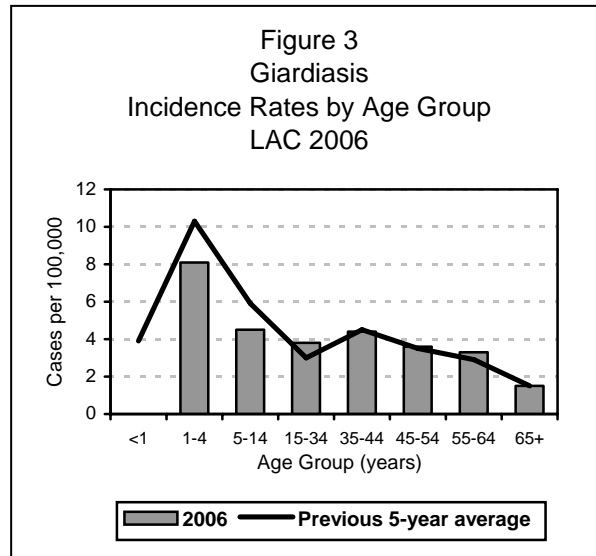
There has been a considerable decline in incidence of *Giardia* over the past decade. While the specific reasons for this decrease are unknown, several factors may have contributed including advances in food and water safety as well as improved education about safety regarding recreational water (i.e., avoiding drinking lake and pool water, keeping babies in diapers and individuals with diarrhea from swimming in public facilities). There was no outbreak reported in 2006.

ADDITIONAL RESOURCES

CDC. Giardiasis surveillance--United States, 1992–1997. MMWR 2000; 49(SS07):1–13. Available at: www.cdc.gov/mmwr/preview/mmwrhtml/ss4907a1.htm

CDC. Parasitic Disease Information Fact Sheet—Giardiasis. Available at: www.cdc.gov/ncidod/dpd/parasites/giardiasis/factsht_giardia.htm

CDC. Surveillance for foodborne-disease outbreaks--United States, 1998—2002. MMWR 2006; 55(SS10):1-34. Available at: www.cdc.gov/mmwr/preview/mmwrhtml/ss5510a1.htm





GIARDIASIS

CRUDE DATA	
Number of Cases	313
Annual Incidence ^a	
LA County	3.27
United States	7.10
Age at Diagnosis	
Mean	32
Median	34
Range	<1–89 years
Case Fatality	
LA County	0.0%
United States	N/A

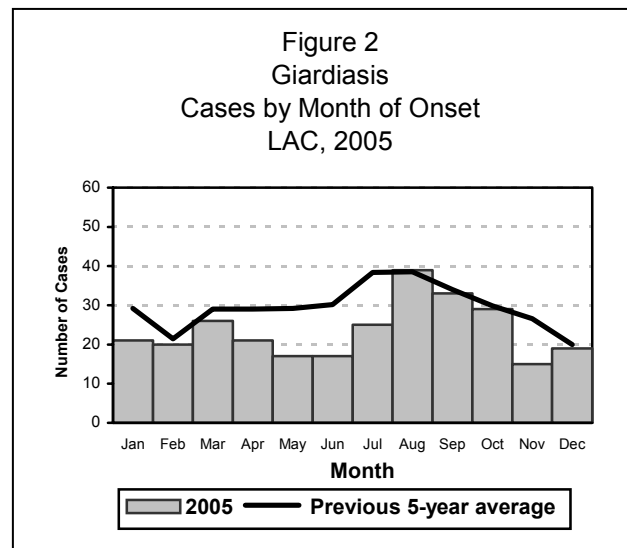
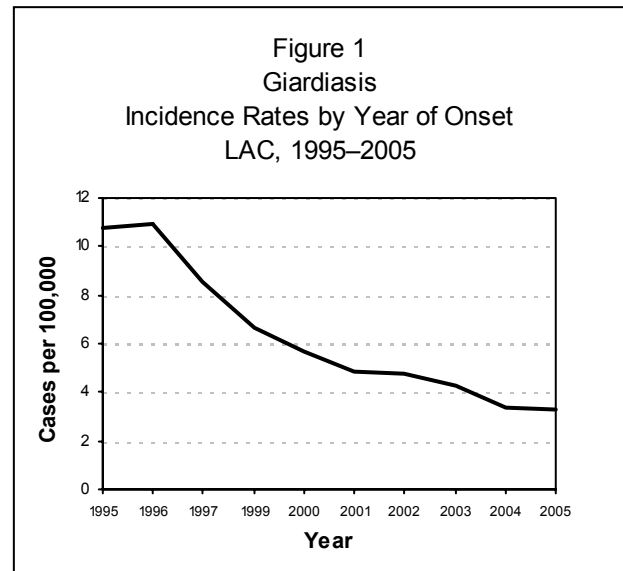
^a Cases per 100,000 population.

DESCRIPTION

Giardiasis is an intestinal infection caused by the zoonotic protozoan parasite *Giardia intestinalis* (previously *G. lamblia*). *Giardia* cysts shed in animal or human feces may contaminate food or drinking water or be transferred on hands or fomites; recreational waters such as lakes and pools may also serve as vehicles of transmission. Incubation can range from 3–25 days or longer, but the median incubation time is 7–10 days. While usually asymptomatic, symptoms can include sulfurous burps, chronic diarrhea, frequent loose and pale greasy stools, bloating, cramps, fatigue, and weight loss. Complications are rare, but may include malabsorption of fats and fat-soluble vitamins. Children in day care represent a reservoir of disease in developed countries. There is no vaccine.

DISEASE ABSTRACT

- The incidence of *Giardia* in LAC has dropped annually over the past 10 years, and has reached an all-time low in 2005.
- Incidence tends to increase during summer months when high-risk activities such as recreational water exposure also increase.





STRATIFIED DATA

Trends: Giardiasis incidence in LAC and has reached an all-time low during 2005; the number of cases reported decreased more than 70% over the past 10 years (1,161 cases reported in 1994, Figure 1). In fact, 2005 Giardiasis incidence in LAC is the lowest reported in the last 20 years.

Seasonality: The number of cases typically increases during summer months when recreational exposure is more likely (i.e., swimming in infected pools, lakes, etc.) (Figure 2).

Age: As in previous years, the highest age-specific incidence rate occurred among children aged 1–4 years (6.4 cases per 100,000); the 5–14 age group and the 35–44 age group followed with an incidence of about 3.8 cases per 100,000 each (Figure 3).

Sex: Males continue to be more likely to contract *Giardia* than females (1.4:1).

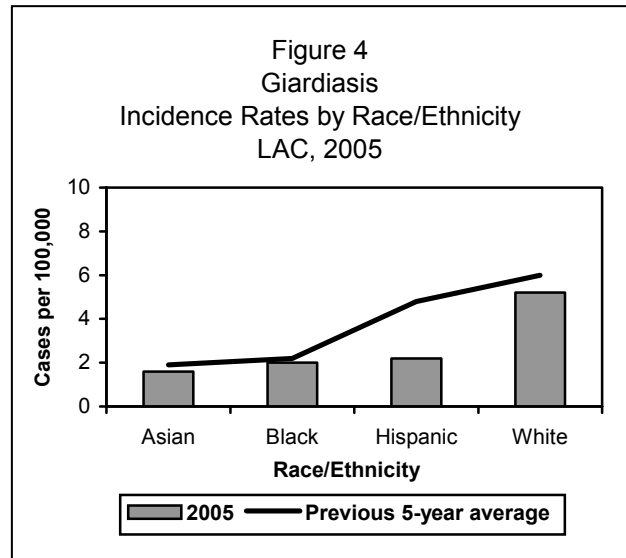
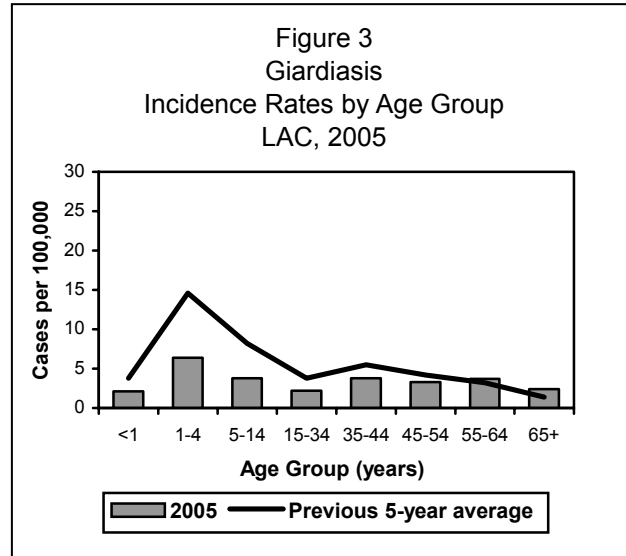
Race/Ethnicity: Whites continue to have higher race/ethnicity specific incidence rates than other races. Compared to the previous five-year average, the incidence for Hispanics has decreased 37% and the incidence for Blacks has decreased 5% (Figure 4); Hispanics continue to have a higher race/ethnicity specific incidence rate than Blacks. The race/ethnicity specific incidence rate for Asians decreased (9%) compared to previous years.

Location: Of the eight SPAs across LAC, three had rates that were higher than the overall county mean rate for this disease: SPA 2, San Fernando area (4.9 per 100,000); SPA 4 Metro area (3.9 per 100,000); and SPA 5 West (5.2 per 100,000). The rate in SPA 1 Antelope Valley dropped substantially from 3.9 to 0.9 cases per 100,000 population.

COMMENTS

There has been a considerable decline in incidence of *Giardia* over the past decade. While the specific reasons for this decrease are unknown, several factors may have contributed including advances in food and water safety as well as improved education about safety regarding recreational water (i.e., avoiding drinking lake and pool water, keeping babies in diapers and individuals with diarrhea from swimming in public facilities).

There was one outbreak reported in 2005, where 10 women became ill sharing a common water source at a gym. Please see 2005 special report for more details.





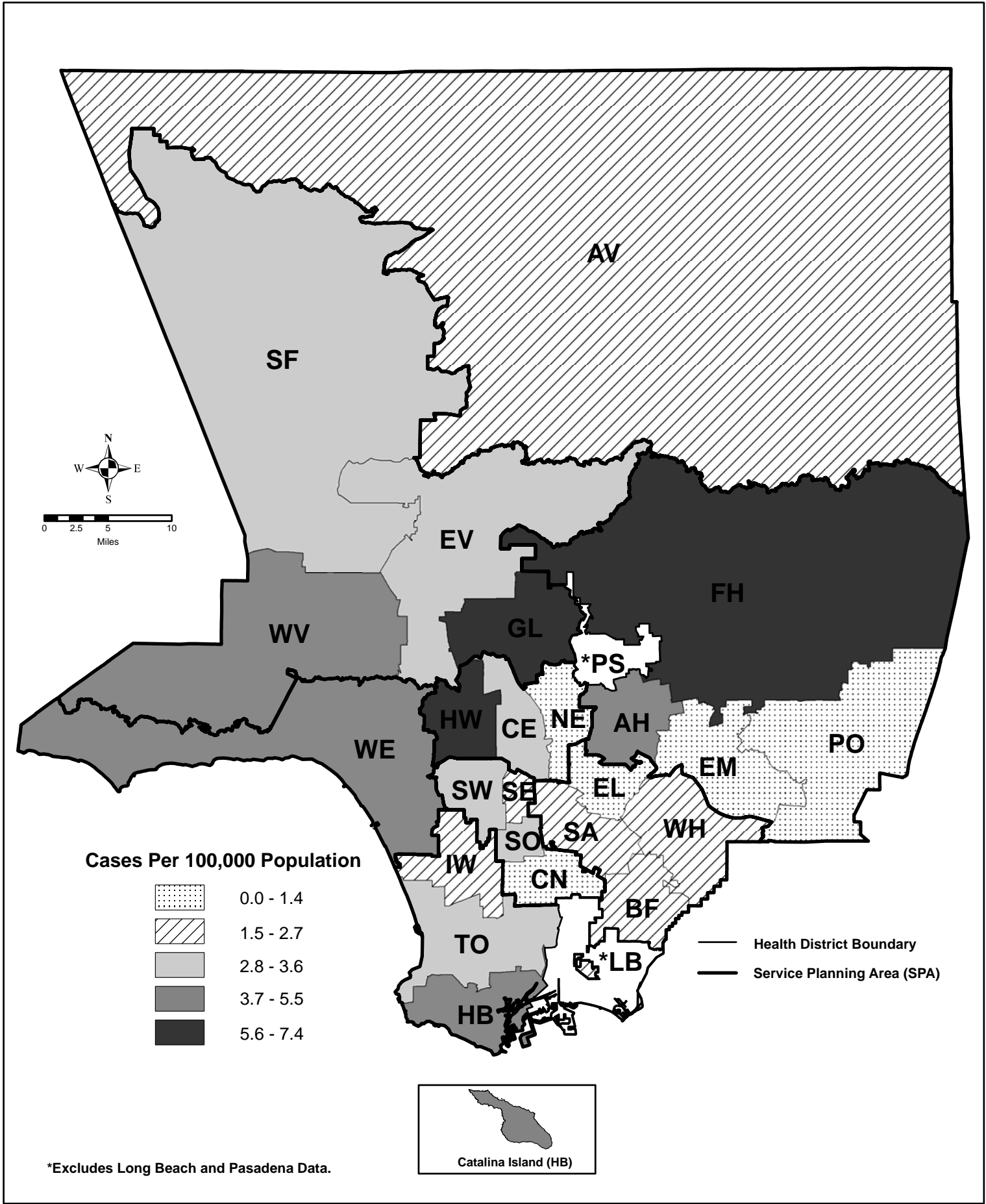
ADDITIONAL RESOURCES

CDC. Giardiasis Surveillance—United States, 1992–1997. MMWR 2000; 49(SS07); 1–13. Available at: www.cdc.gov/epo/mwr/preview/mmwrhtml/ss4907a1.htm

CDC. Parasitic Disease Information Fact Sheet—Giardiasis. Available at: www.cdc.gov/ncidod/dpd/parasities/giardiasis/factsht_giardia.htm

CDC. Surveillance for Waterborne Disease Outbreaks—United States, 1997–1998. MMWR 2000; 49(SS04); 1–35. Available at: www.cdc.gov/epo/mmwr/review/mmwrhtml/ss4904a1.htm

Map 6. Giardiasis Rates by Health District, Los Angeles County, 2005*





GIARDIASIS

CRUDE DATA	
Number of Cases	320
Annual Incidence ^a	
LA County	3.36
United States	7.10
Age at Diagnosis	
Mean	27
Median	24
Range	<1–89 years
Case Fatality	
LA County	0.0%
United States	N/A

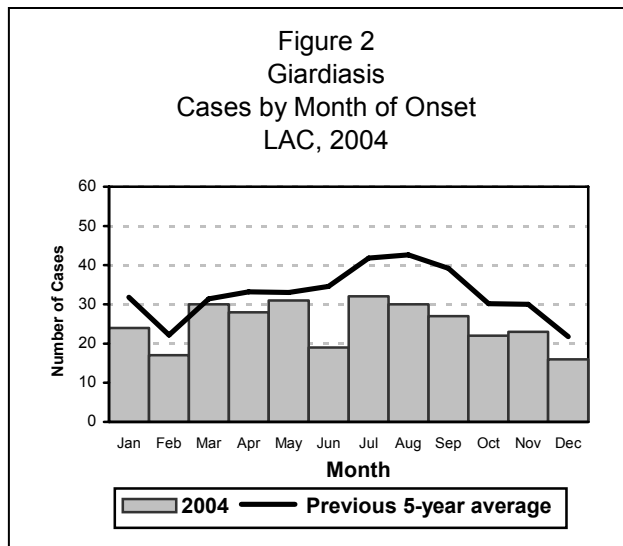
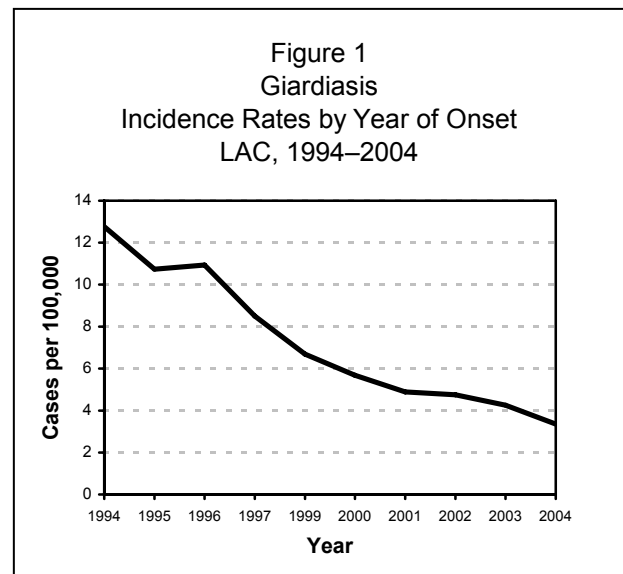
^a Cases per 100,000 population.

DESCRIPTION

Giardiasis is an intestinal infection caused by the zoonotic protozoan parasite *Giardia intestinalis* (previously *G. lamblia*). *Giardia* cysts shed in animal or human feces may contaminate food or drinking water or be transferred on hands or fomites; recreational waters such as lakes and pools may also serve as vehicles of transmission. Incubation can range from 3-25 days or longer, but the median incubation time is 7-10 days. While usually asymptomatic, symptoms can include sulfurous burps, chronic diarrhea, frequent loose and pale greasy stools, bloating, cramps, fatigue, and weight loss. Complications are rare, but may include malabsorption of fats and fat-soluble vitamins. Children in day care represent a reservoir of disease in developed countries. There is no vaccine.

DISEASE ABSTRACT

- The incidence of *Giardia* in Los Angeles County has dropped annually over the past 10 years, and has reached an all-time low in 2004.
- Incidence tends to increase during summer months when high-risk activities such as recreational water exposure also increase.





STRATIFIED DATA

Trends: Giardiasis incidence in LAC and has reached an all-time low during 2004; the number of cases reported decreased more than 72% over the past 10 years (1,161 cases reported in 1994, Figure 1). In fact, 2004 Giardiasis incidence in LAC is the lowest reported in the last 20 years.

Seasonality: The number of cases typically increases during summer months when recreational exposure is more likely (i.e., swimming in infected pools, lakes, etc.) (Figure 2).

Age: As in previous years, the highest age-specific incidence rate occurred among children aged 1–4 years (10.0 cases per 100,000); the children aged <1 group, the 5–14 age group and the 35–44 age group followed with an incidence of about 4.1 cases per 100,000 each (Figure 3).

Sex: Males continue to be more likely to contract *Giardia* than females (1.7:1).

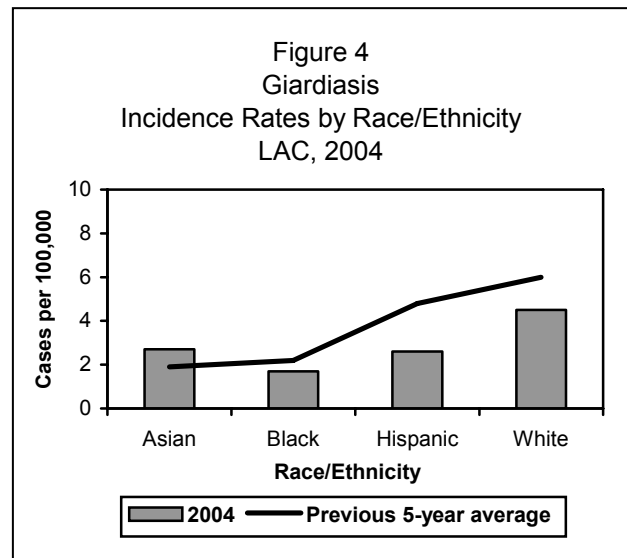
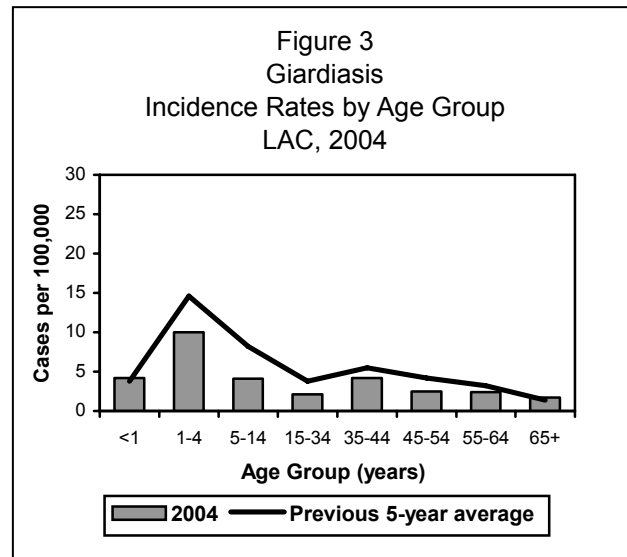
Race/Ethnicity: Whites continue to have higher race/ethnicity specific incidence rates than other races. Compared to the previous five year average, the incidence for Hispanics has decreased 46% and the incidence for Blacks has decreased 23% (Figure 4); Hispanics continue to have a higher race/ethnicity specific incidence than Blacks. The race/ethnicity specific incidence rate for Asians increased (42%) compared to previous years.

Location: Of the eight SPAs across LAC, four had rates that were higher than the overall county mean rate for this disease: SPA 1, Antelope Valley area (3.9 per 100,000); SPA 2, San Fernando area (4.1 per 100,000); SPA 4 Metro area (4.9 per 100,000); and SPA 5 West (6.8 per 100,000). The rate in SPA 8 South Bay dropped substantially from 3.8 to 2.2 cases per 100,000 population.

COMMENTS

There has been a considerable decline in incidence of *Giardia* over the past decade. While the specific reasons for this decrease are unknown, several factors may have contributed including advances in food and water safety as well as improved education about safety regarding recreational water (i.e., avoiding drinking lake and pool water, keeping babies in diapers and individuals with diarrhea from swimming in public facilities).

There was one outbreak reported in 2004, three children were ill at a daycare center.





ADDITIONAL RESOURCES

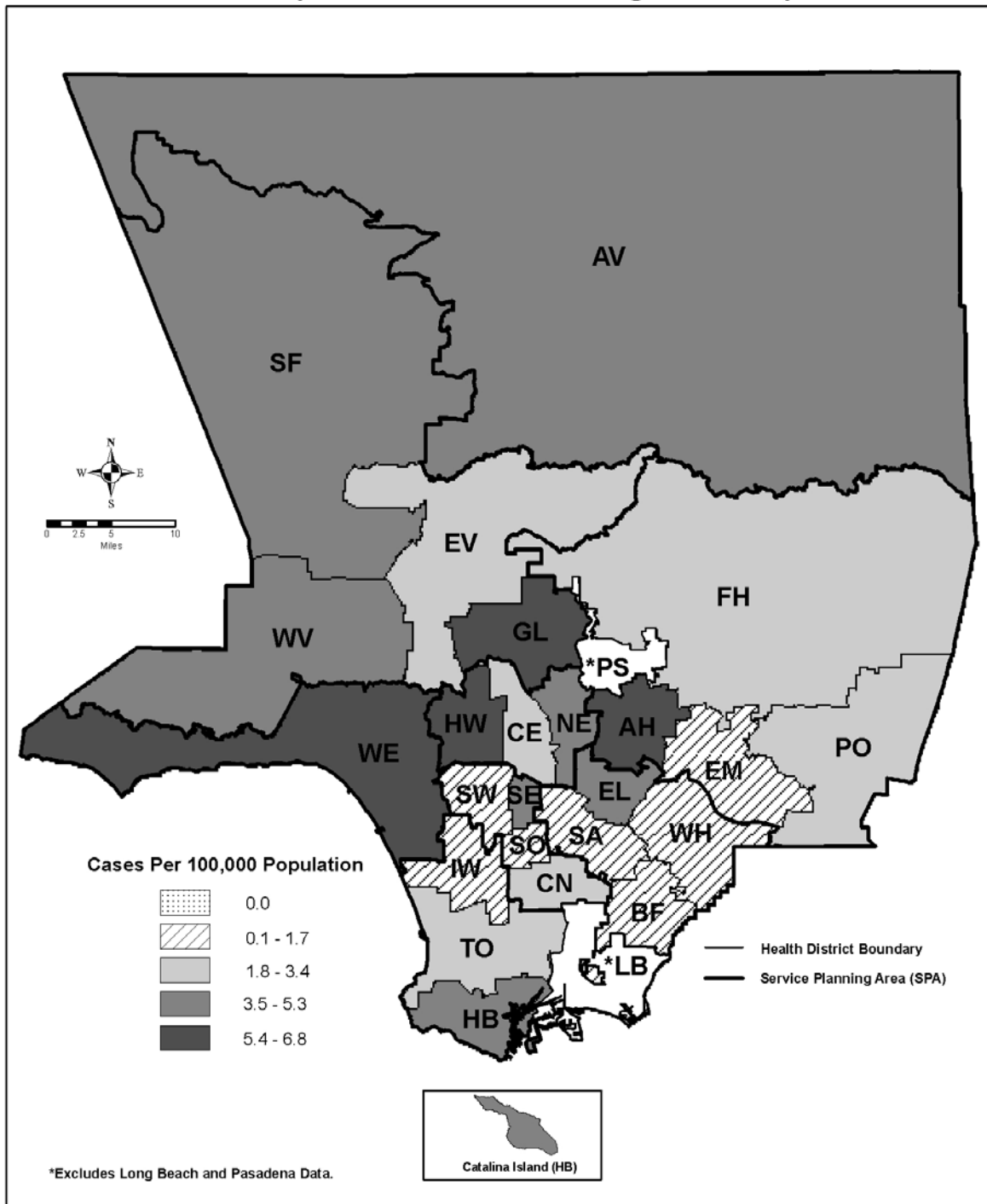
CDC. Giardiasis Surveillance—United States, 1992–1997. MMWR 2000; 49(SS07); 1–13. Available at: www.cdc.gov/epo/mwr/preview/mmwrhtml/ss4907a1.htm

CDC. Parasitic Disease Information Fact Sheet—Giardiasis. Available at: www.cdc.gov/ncidod/dpd/parasities/giardiasis/factsht_giardia.htm

CDC. Surveillance for Waterborne Disease Outbreaks—United States, 1997–1998. MMWR 2000; 49(SS04); 1–35. Available at: www.cdc.gov/epo/mmwr/review/mmwrhtml/ss4904a1.htm



**Map 6. Giardiasis
Rates by Health District, Los Angeles County, 2004***





GIARDIASIS

CRUDE DATA	
Number of Cases	401
Annual Incidence ^a	
LA County	4.27
United States	6.33
Age at Diagnosis	
Mean	26.7
Median	25
Range	<1–88 years
Case Fatality	
LA County	0.0%
United States	N/A

^a Cases per 100,000 population.

DESCRIPTION

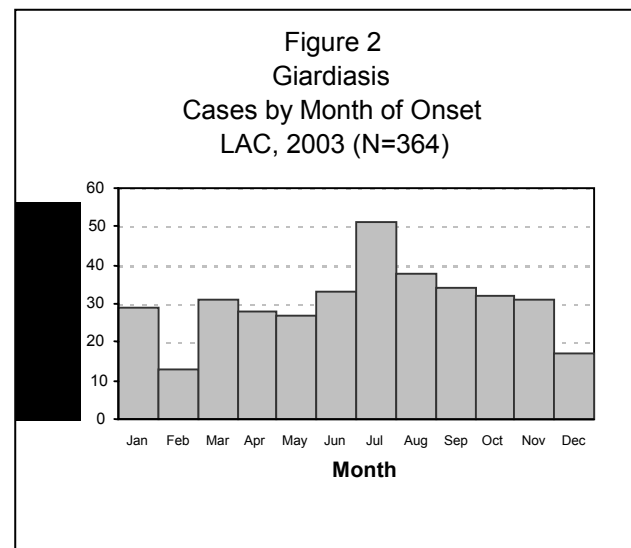
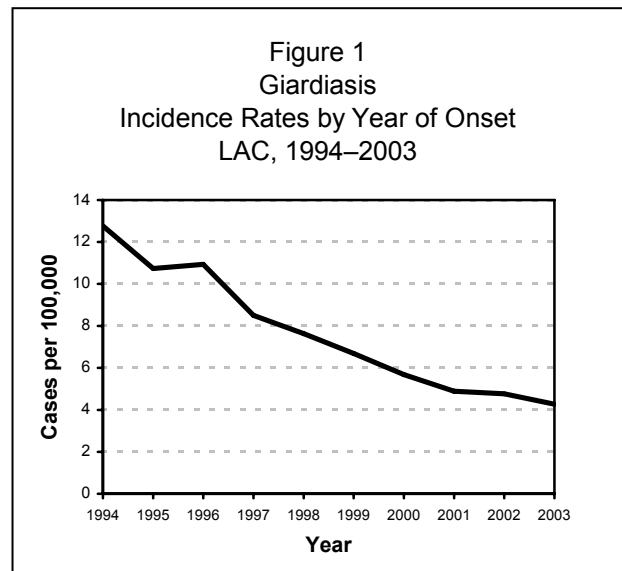
Giardiasis is an intestinal infection caused by the zoonotic protozoan parasite *Giardia intestinalis* (previously *G. lamblia*). *Giardia* cysts shed in animal or human feces may contaminate food or drinking water or be transferred on hands or fomites; recreational waters such as lakes and pools may also serve as vehicles of transmission. Incubation can range from 3-25 days or longer, but the median incubation time is 7-10 days. While usually asymptomatic, symptoms can include sulfurous burps, chronic diarrhea, frequent loose and pale greasy stools, bloating, cramps, fatigue, and weight loss. Complications are rare, but may include malabsorption of fats and fat-soluble vitamins. Children in day care represent a reservoir of disease in developed countries. There is no vaccine.

DISEASE ABSTRACT

- The incidence of *Giardia* in LAC has dropped annually over the past 10 years, and has reached an all-time low in 2003.
- Incidence tends to increase during summer months when high-risk activities such as recreational water exposure also increase.

STRATIFIED DATA

Trends: Giardiasis incidence in LAC has dropped annually in the last 10 years, and has reached an all-time low during 2003; the number of cases reported decreased more than 67% over the past 10 years (1,104 cases reported in 1994, Figure 1).





Seasonality: The number of cases typically increases during summer months when recreational exposure (i.e., swimming in infected pools, lakes, etc.) is more likely (Figure 2).

Age: As in previous years, the highest age-specific incidence rate occurred among children aged 1–4 years (8.2 cases per 100,000), followed by children aged 5-14 (6.1 cases per 100,000).

Sex: Males continue to be more likely to contract *Giardia* than females (1.5:1).

Race/Ethnicity: Whites continue to have higher race/ethnicity specific incidence rates than other races. Compared to previous years, the incidence for Hispanics has decreased while the incidence for Blacks has increased (Figure 3); Hispanics have a slightly higher race/ethnicity specific incidence than Blacks, and Asians have the lowest race/ethnicity specific incidence.

Location: Of the eight SPAs across LAC, three had rates that were higher than the overall county mean rate for this disease: SPA 2, San Fernando area (5.0 per 100,000), SPA 4 Metro area (4.9 per 100,000), and SPA 5 West (9.4 per 100,000). The rate in SPA 8 South Bay dropped substantially from 5.3 to 3.8 cases per 100,000 population.

COMMENTS

There has been a considerable decline in incidence of *Giardia* over the past decade. While the specific reasons for this decrease are unknown, several factors may have contributed including advances in food and water safety as well as improved education about safety regarding recreational water (i.e., avoiding drinking lake and pool water, keeping babies in diapers and individuals with diarrhea from swimming in public facilities).

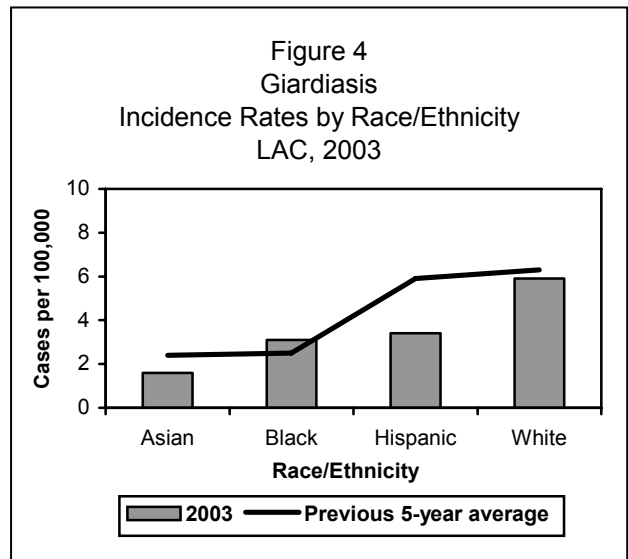
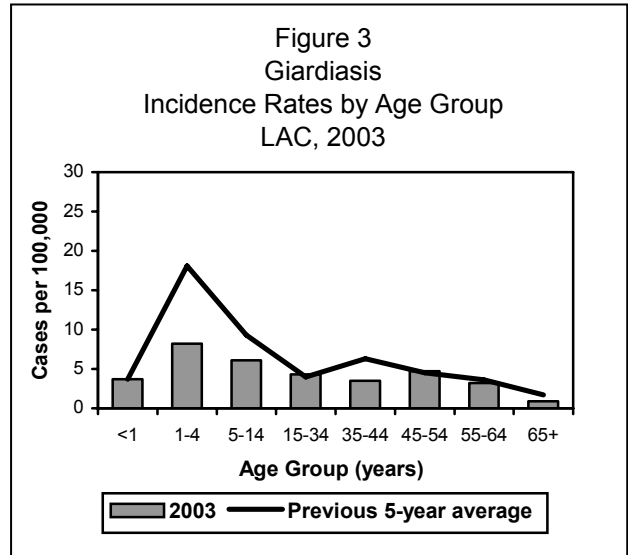
There were no outbreaks reported in 2003.

ADDITIONAL RESOURCES

CDC. *Giardiasis* Surveillance—United States, 1992–1997. MMWR 2000; 49(SS07): 1–13. Available at: www.cdc.gov/epo/mwr/preview/mmwrhtml/ss4907a1.htm

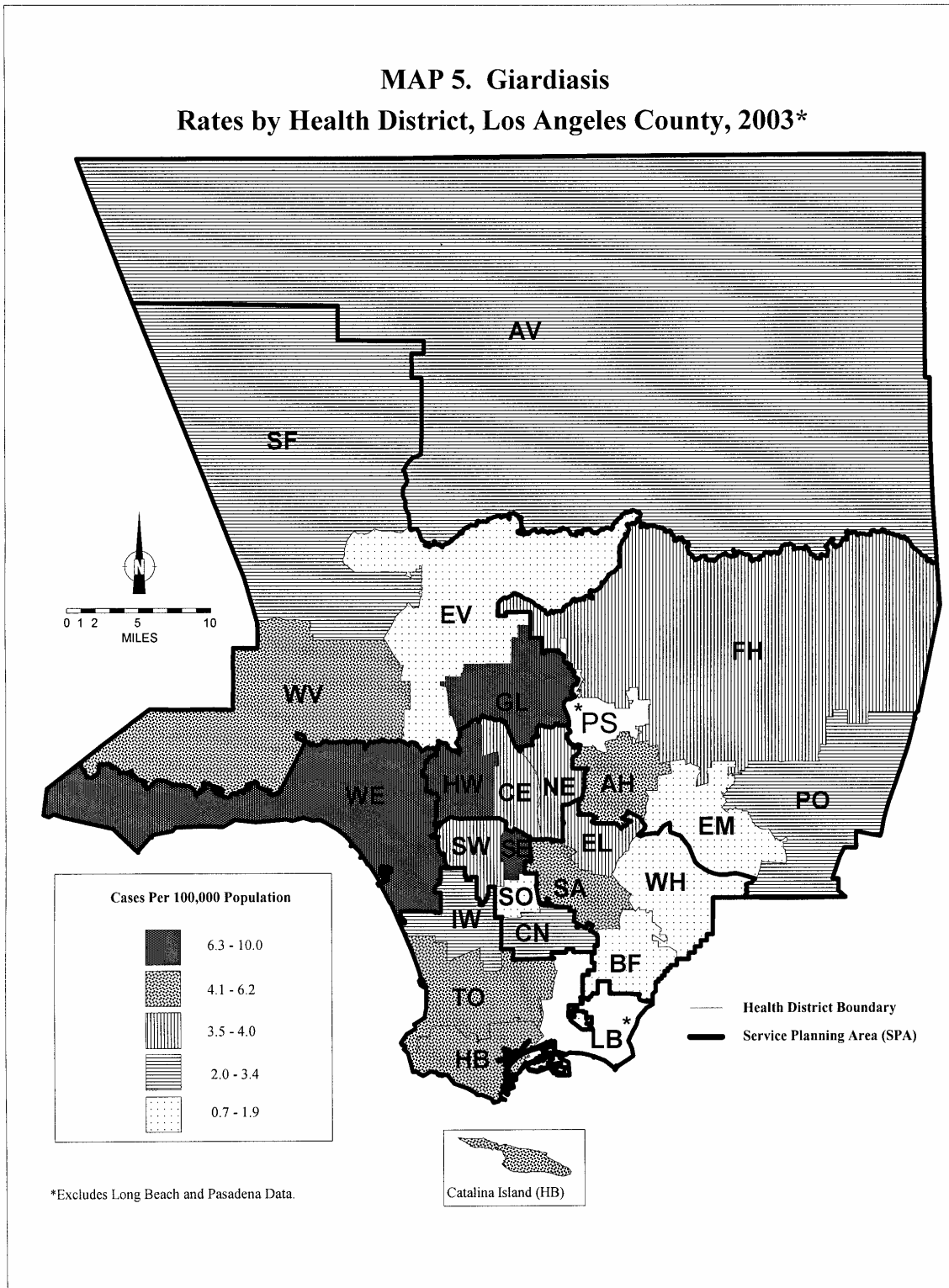
CDC. Parasitic Disease Information Fact Sheet—*Giardiasis*. Available at: www.cdc.gov/ncidod/dpd/parasites/giardiasis/factsht_giardia.htm

CDC. Surveillance for Waterborne Disease Outbreaks—United States, 1997–1998. MMWR 2000; 49(SS04): 1–35. Available at: www.cdc.gov/epo/mmwr/review/mmwrhtml/ss4904a1.htm





MAP 5. Giardiasis
Rates by Health District, Los Angeles County, 2003*



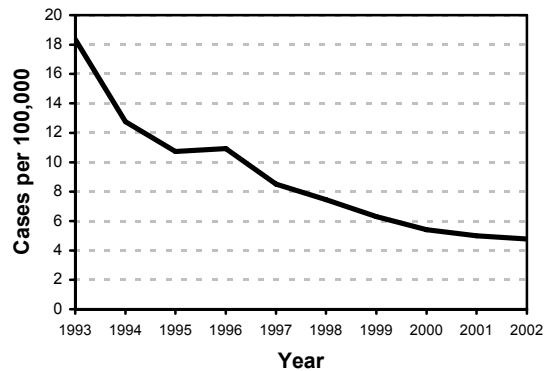


GIARDIASIS

CRUDE DATA	
Number of Cases	441
Annual Incidence ^a	
LA County	4.8
United States	N/A
Age at Diagnosis	
Mean	25
Median	22
Range	<1–85 years
Case Fatality	
LA County	0.0%
United States	N/A

^a Cases per 100,000 population.

Figure 1
Giardiasis
Incidence Rates by Year
LAC, 1993–2002



DESCRIPTION

Giardiasis is an intestinal infection caused by the zoonotic protozoan parasite *Giardia intestinalis* (previously *G. lamblia*). *Giardia* cysts shed in animal or human feces may contaminate food or drinking water or be transferred on hands or fomites; recreational waters such as lakes and pools may also serve as vehicles of transmission. While usually asymptomatic, symptoms can include chronic diarrhea, bloating, cramps, fatigue, and weight loss. Complications are rare, but may include malabsorption of fats and fat-soluble vitamins. Children in day care represent a reservoir of disease in developed countries. There is no vaccine.

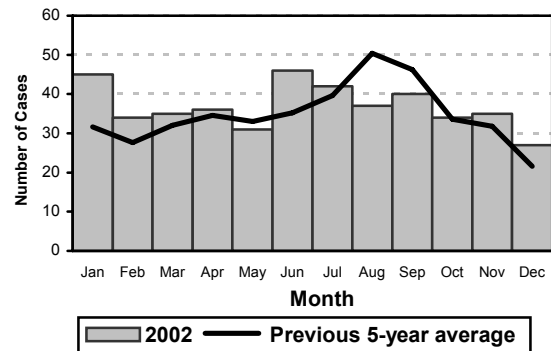
DISEASE ABSTRACT

- The incidence of *Giardia* has reached an all-time low; more than 74% fewer cases were reported in 2002 (N=441) as compared to 1993 (N=1,563).
- Incidence tends to increase during summer months when high-risk activities such as recreational water exposure also increase.

STRATIFIED DATA

Trends: Giardiasis incidence in LAC reached an all-time low during 2002; the number of cases reported decreased more than 74% over the past 10 years (1,563 cases reported in 1993, Figure 1).

Figure 2
Giardiasis
Cases by Month of Onset
LAC, 2002





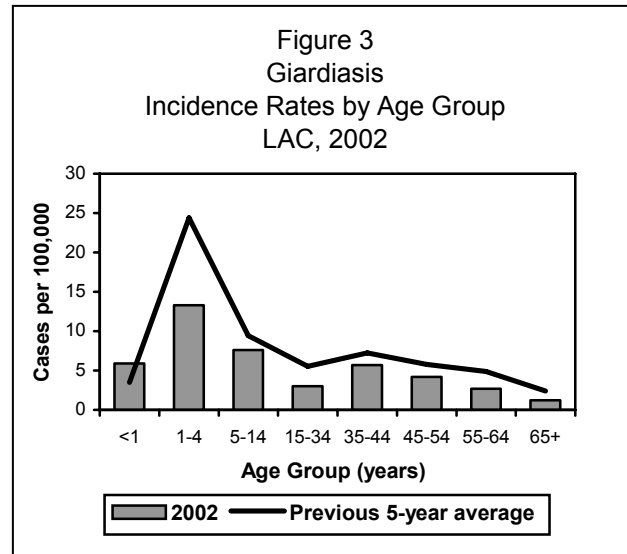
Seasonality: While the number of cases typically increases during summer months when recreational exposure is more likely (i.e., swimming in infected pools, lakes, etc.), there were only minor seasonal changes during 2002 (Figure 2).

Age: As in previous years, the highest age-specific incidence rate occurred among children aged 1–4 years (13.3 cases per 100,000).

Sex: Males continue to be more likely to contract amebiasis than females (1.4:1).

Race/Ethnicity: Latinos and Whites continue to have higher race/ethnicity specific incidence rates than Asians and Blacks.

Location: Of the eight SPAs across LAC, four had rates that were higher than the overall county mean rate for this disease: SPA 2, San Fernando area (5.9 per 100,000); SPA 4 Metro area (5.5 per 100,000); SPA 5 West (7.2 per 100,000); and lastly, SPA 8, South Bay (5.3 per 100,000).



COMMENTS

There has been a considerable decline in incidence of *Giardia* over the past decade. While the specific reasons for this decrease is unknown, several factors may have contributed including advances in food and water safety as well as improved education about safety regarding recreational water (i.e., avoiding drinking lake and pool water, keeping babies in diapers and individuals with diarrhea from swimming in public facilities).

There were no outbreaks reported in 2002.

ADDITIONAL RESOURCES

CDC. Giardiasis Surveillance—United States, 1992–1997. MMWR 2000; 49(SS07);1–13.

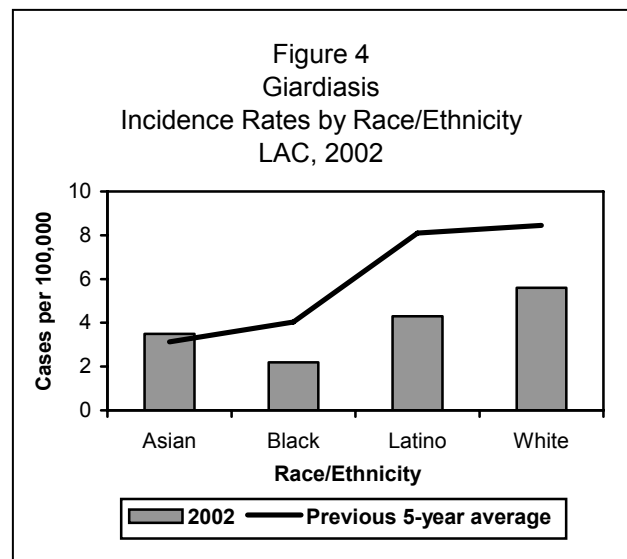
Available at:

www.cdc.gov/epo/mwr/preview/mmwrhtml/ss4907a1.htm

CDC. Parasitic Disease Information Fact Sheet—Giardiasis. Available at:

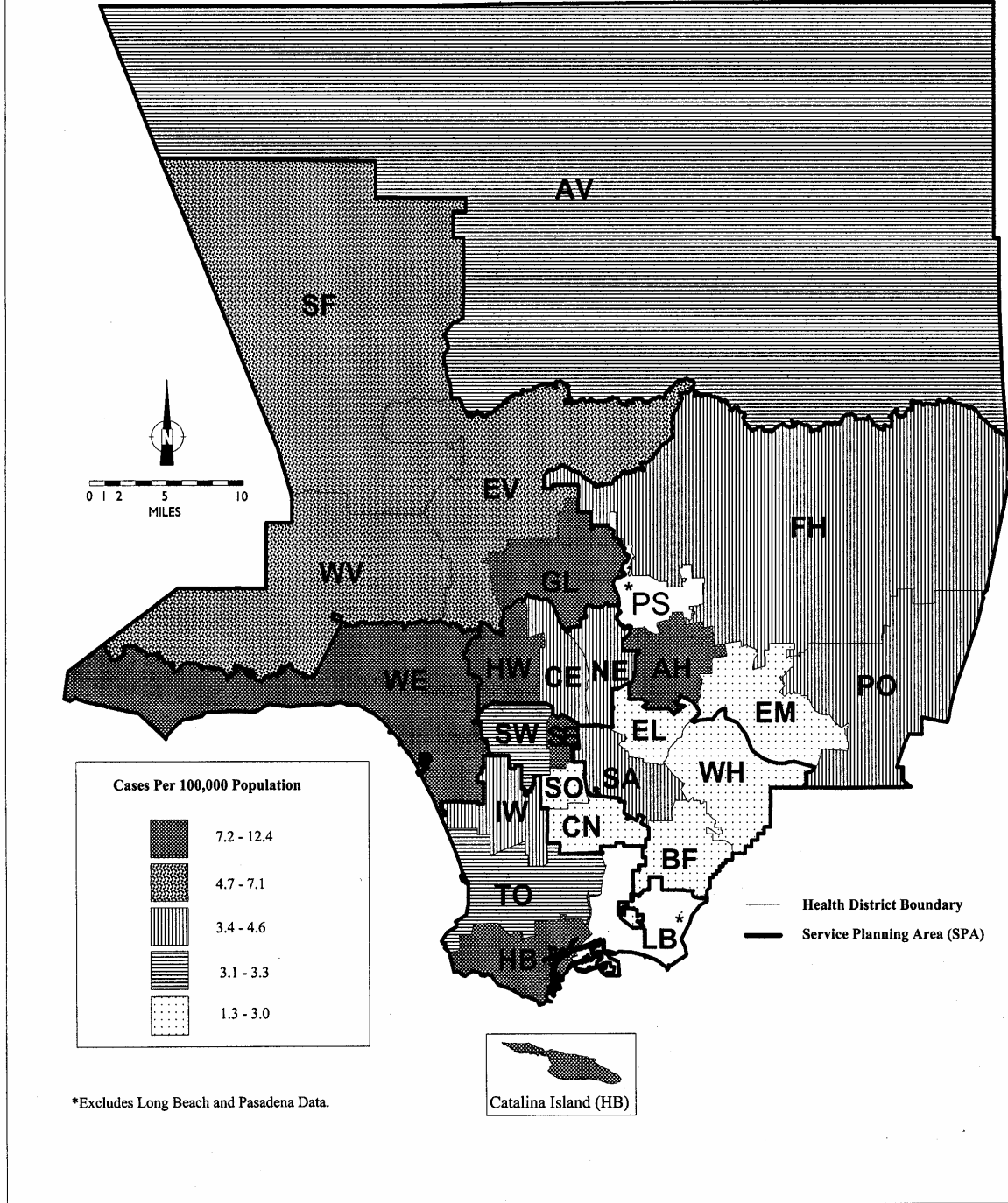
www.cdc.gov/ncidod/dpd/parasities/giardiasis/factsht_giardia.htm

CDC. Surveillance for Waterborne Disease Outbreaks—United States, 1997–1998. MMWR 2000; 49(SS04);1–35. Available at: www.cdc.gov/epo/mmwr/review/mmwrhtml/ss4904a1.htm





MAP 6. Giardiasis Rates by Health District, Los Angeles County, 2002*



GIARDIASIS

CRUDE DATA	
Number of Cases	446
Annual Incidence ^a	
LA County	5.0
United States	N/A
Age at Diagnosis	
Mean	24
Median	19
Range	0-86 years
Case Fatality	
LA County	0.0%
United States	N/A

^a Cases per 100,000 population.

DESCRIPTION

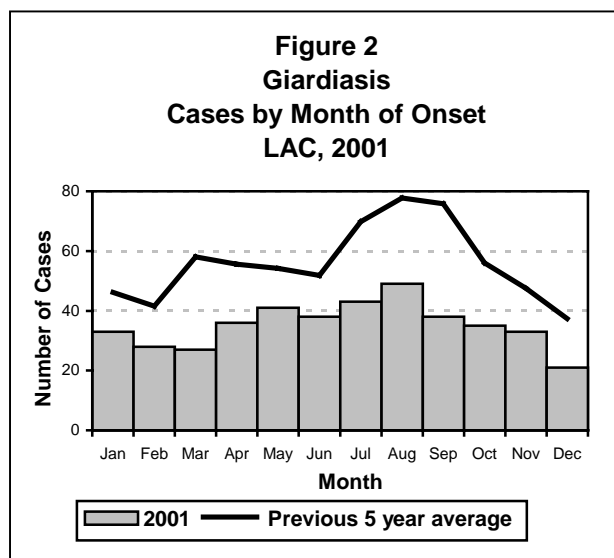
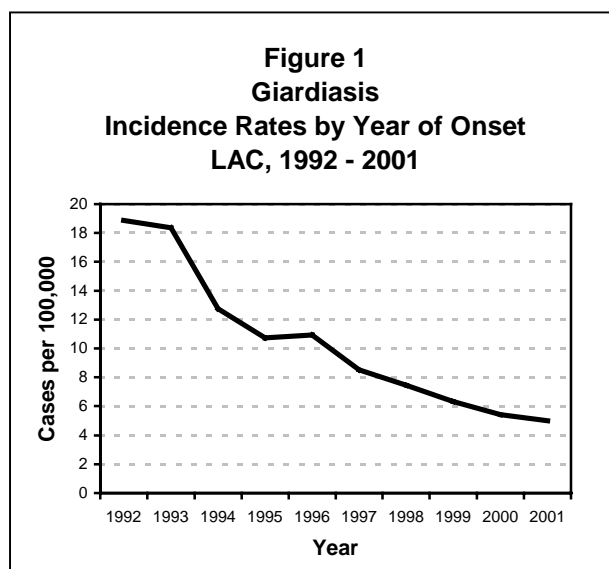
Giardiasis is an intestinal infection caused by the zoonotic protozoan parasite *Giardia intestinalis* (previously *G. lamblia*). Giardia cysts shed in animal or human feces may contaminate food or drinking water or be transferred on hands or fomites; recreational waters such as lakes and pools may also serve as vehicles of transmission. The disease is usually asymptomatic. Symptoms can include chronic diarrhea, bloating, cramps, fatigue, and weight loss. Complications are rare, but may include malabsorption of fats and fat-soluble vitamins. Children in day care represent a reservoir of disease in developed countries. There is no vaccine.

DISEASE ABSTRACT

- Chiefly a pediatric disease; rates fell in all categories analyzed.
- Significant numbers of cases occur among adults.
- Risk factors are not summarized routinely.

STRATIFIED DATA

Trends: The annual rate and number of reported cases have fallen for more than ten years, with the lowest rate on record recorded in 2001 (Figure 1). Rates fell in all age group, sex, and race/ethnic categories.



Seasonality: Rates are typically higher in the summer, consistent with increased recreational exposure to pools, lakes, and similar water venues (Figure 2).

Age: The age-specific incidence of giardiasis was greatest in children aged 1-4 years (14 per 100,000) followed by children aged 5-14 years (8.2 per 100,000) (Figure 3). Among Whites, there was no age difference between male and female cases; however, among Latino cases females were significantly older than males ($p=0.02$).

Sex: The male-to-female rate ratio was 1.3:1.

Race/Ethnicity: As in past years, rates for Latinos and Whites were substantially higher than those of Asians and Blacks (Figure 4). White cases were more likely to be male, compared to Latino cases.

Location: The rate reported by Glendale District (16.2 per 100,000) was nearly twice as great as the next highest district rate, West District, at 8.3 per 100,000. Glendale District cases did not differ by age group or sex from all other districts, but were more likely to be White, a reflection of that district's makeup.

COMMENTS

There were no outbreaks reported.

ADDITIONAL RESOURCES

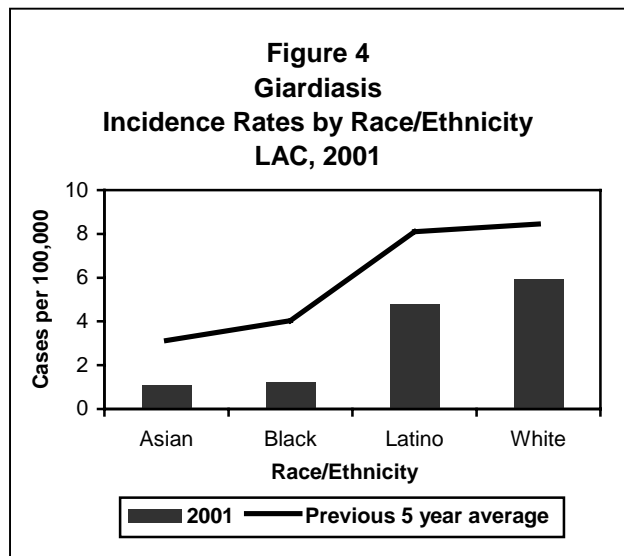
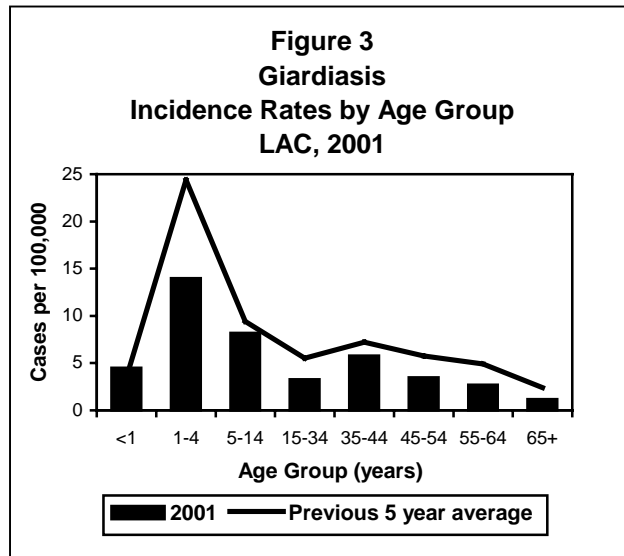
Giardiasis Surveillance — United States, 1992 – 1997. MMWR August 11, 2000/49(SS07);1-13. Available at:

www.cdc.gov/epo/mwr/preview/mmwrhtml/ss4907a1.htm

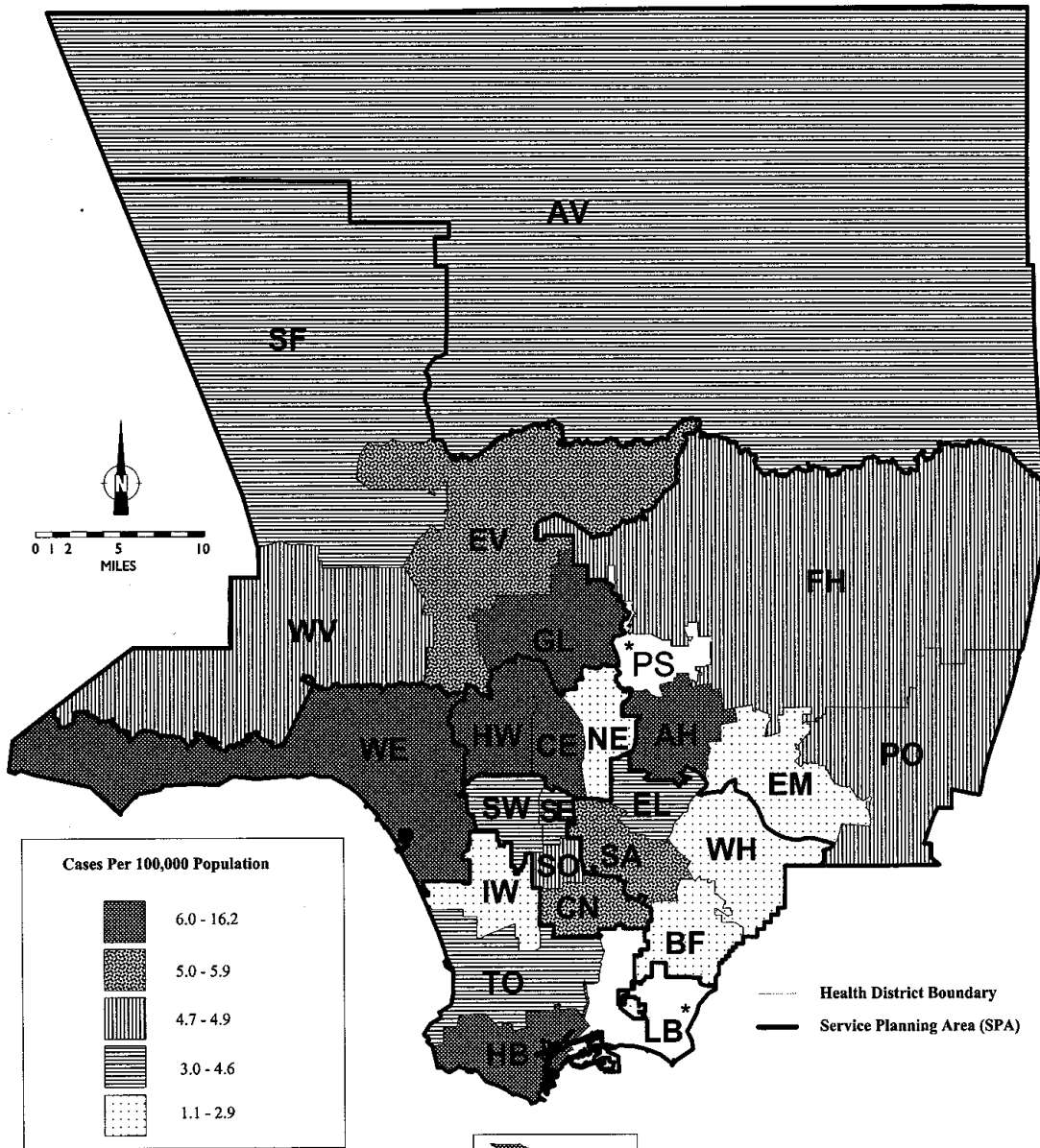
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www.cdc.gov/ncidod/dpd/parasities/giardiasis/factsht_giardia.htm

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**MAP 3. Giardiasis
Rates by Health District, Los Angeles County, 2001***



*Excludes Long Beach and Pasadena Data.

Catalina Island (HB)