

# BACKGROUND

Giardia lambia is a microscopic parasite that causes a diarrheal illness called giardiasis. The parasite is typically found on surfaces, and in food, soil, and water, that has been contaminated with feces from an infected animal or human. Acute symptoms may include diarrhea, gas, greasy stools that tend to float, abdominal cramps, vomiting, and dehydration, which can last for one to two weeks. Asymptomatic infections are common, especially among individuals living in endemic areas. Treatment of Giardiasis typically includes metronidazole, tinidazole, and nitazoxanide (1).

Between 2011 and 2014, the Florida Department of Health Refugee Health Assessment Program (RHAP) provided services to roughly 118,000 newly immigrated individuals in Miami-Dade County, 98.1% of which having just arrived from Cuba. During this same timeframe, the Florida Department of Health in Miami-Dade County (DOH-Miami-Dade) received 1,219 positive Giardiasis laboratory results. This study aimed to determine the epidemiology of Giardiasis cases among both refugees and residents of Miami-Dade County, with emphasis on risk factors such as: age, gender, and race/ethnicity, and origin of infection.

METHODS

Giardiasis cases from 2011-2014 were obtained from Merlin, the Florida Department of Health Surveillance System. Residential status, Miami-Dade County or refugee (RHAP), was distinguished according to the laboratory reporting facility recorded in the laboratory result. Data was analyzed using SAS v9.3 and ArcGIS (2, 3).

RESULTS

Among the 1,219 positive *Giardia lambia* laboratory results, 1,064 were reported as symptomatic Giardiasis cases, a quarter of which were identified through RHAP health screenings. Sixty-two percent were Hispanic, 14.3% were Non-Hispanic White, and 4.6% were Non-Hispanic Black. Age group distribution was 0-4 (19.7 %), 5-17 (29.8%), 18-64 (45.6%), and 65+ (5%). Commonly reported symptoms were diarrhea (64.3%), abdominal pain (53.7%), loss of appetite (21.3%), weight loss (14.1%), nausea (13%), bloating (5%), and malabsorption (3.2%).

Among the 782 Miami-Dade County residents who were symptomatic, 71.1% were Hispanic, 19.2% were Non-Hispanic White, and 6.0% were Non-Hispanic Black. Sixty-six percent were male. Seventy-eight percent acquired Giardiasis while in Florida. Hot-spots of reported cases in Miami were seen in the neighborhoods of Little Havana and South Beach (Figure 1). Eighty-five percent of cases reported on South Beach were male. Among the 19.8% travel-associated cases, 32.7% were from Cuba, Central America (25%), South America (10.9%), Caribbean (9.6%), Asia (9.6%), North America (6.4%), Africa (3.2%), Europe (1.3%), and Unknown (1.3%).

# Refugees and Residents: The Epidemiology of Giardiasis in Miami-Dade County, Florida, 2011-2014 Florida Department of Health in Miami-Dade County Isabel Griffin, Danielle Fernandez, Guoyan Zhang

HEALTH

Little Havana has one of the highest concentration of Hispanics (98%) among neighborhoods in Miami-Dade County, many of whom frequently travel back-and-forth to Central and South America and the Caribbean (4). International travel to endemic areas have been shown to increase an individual's risk of acquiring Giardiasis (5).

South Beach is a popular vacation destination for homosexual (gay) men, in addition to being home to a large residential population of men who have sex with men (MSM) (6, 7). In 1984, a San Francisco Bay study examining the prevalence of intestinal parasitic infections among MSM found that oral-anal sex was associated with giardia infection (P < 0.001) (8). South Beach also has a high prevalence of individuals infected with HIV, which is associated with prolonged Giardiasis infection (6, 7, 9). These hypotheses regarding MSM being a risk factor for acquiring Giardia infection in Miami-Dade County require further examination as questions regarding sexual orientation and HIV status are not asked during routine interviews with Giardiasis cases in Miami-Dade County.

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Figure 1. Hotspots of Giardiasis among Residents, Miami-Dade County, Florida, 2011–2014



# DISCUSSION

Given the high-percentage of symptomatic locally-acquired Giardiasis cases, Miami-Dade County residents would greatly benefit from targeted education on the prevention of Giardiasis while at home and abroad.

The Centers for Disease Control and Prevention currently provides the following recommendations to prevent the transmission of Giardia: practice good hand hygiene, avoid swallowing potentially contaminated drinking and recreational water, avoid eating potentially contaminated food, and take steps to prevent transmission during oral-anal sex (1). Residents should take precautions to wash hands with soap and water for 20 seconds after using the restroom, and before cooking or eating food. Individuals should avoid swallowing water while swimming in pools, lakes, rivers, and the ocean. Residents should wash fruits and vegetables in safe uncontaminated water, and avoid eating raw or undercooked foods when traveling internationally. In addition to all of these precautions, individuals should use barrier methods during oral-anal sex, and wash hands immediately after handling a condom used during anal sex.

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## CONCLUSION

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