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# EPI MONTHLY REPORT

MIAMI-DADE COUNTY HEALTH DEPARTMENT

EDC-IS
Epidemiology, Disease Control & Immunization Services
MDCHD

## Inside the Issue




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## Reported *Salmonella* Infection Trends in Miami-Dade County, 2005-2011

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**Background**

Salmonellosis is an infection with a Gram-negative bacteria called *Salmonella*. *Salmonella* germs were identified to cause illness over 100 years ago, discovered by an American scientist named Salmon. Most people infected with Salmonella develop diarrhea, fever, vomiting, and abdominal cramps 12 to 72 hours after infection. In most cases, the illness lasts four to seven days, and most people recover without treatment. However, in some persons, the diarrhea may be so severe that the patient needs to be hospitalized. The elderly, infants, and those with impaired immune systems are more likely to develop severe illness [1,2].

Transmission of *Salmonella* is ingestion of bacteria from contaminated food or water. The most frequent sources of *Salmonella* infection are contaminated poultry, eggs, meat, dairy products, fruits and vegetables. Up to 90% of *Salmonella* infections in the United States are foodborne in origin[3]. It is estimated that only 3% of *Salmonella* infections are laboratory confirmed and reported, because many milder cases are not diagnosed or reported [1,4]. However, an estimated 1.4 million people are infected with *Salmonella* in the United States annually.

The report describes reported *Salmonella* infection in Miami-Dade County through demographic and geographic characteristics between 2005 and 2011.

**Methodology**

Data was obtained from the Florida Department of Health, Epidemiology Disease Surveillance System Merlin between 01/01/2005 and 12/31/2011 based on case onset date. This report included only confirmed Non-typhoidal *Salmonella* infection cases. Age was divided into four groups: younger children aged 0-4 years, school aged children 5-17 years old, adults 18-64 years old and elderly adults aged 65 and older. Race/ethnicity was grouped as Non-Hispanic White, Non-Hispanic Black, Hispanic and Other. A retrospective space-time analysis was conducted to detect geographical clustering at the census tract level using the Poisson model in SaTScanTM [5]. SAS 9.3 and ArcGIS 10 were employed to analyze the data. Population data was collected from the 2010 US Census.

**Results**

In Miami-Dade County, the number of reported *Salmonella* cases was 661 (incidence rate 27.6 ) in 2005 and decreased to 435 (incidence rate 17.7 per 100,000 population) in 2007. Since then, the number of reported cases has been gradually increased to 606 with a rate of 23.9 per 100,000 population in 2011, of which 20.1% lead to hospitalization. During the same time period, the rate in Miami-Dade County was lower than the Florida state average level (Figure-1).

Race/Ethnicity and Age: The highest incidence rate was among the Hispanic population, (26.7 per 100,000 population) as compared to Non-Hispanic White (24.4) and Black (14.8) respectively in 2011 (Figure-2). The 65% of Hispanic population in Miami-Dade County accounted for 68-75% of all confirmed cases. However, compared to Non-Hispanic White and Black aged 18-64 and 65 and older, the incidence rates among Hispanic were not always the highest between 2005 and 2011 (Figure-3-Figire-7).

The *Salmonella* incidence rates were significantly higher in children under 5 years of age between 2005 and 2011. (Figure 3).

Sex: There was no significant change in pattern of gender found between 2005 and 2011. Males accounted for approximately 48-52% of all reported cases.

Seasonality and outbreak association: Seasonal Pattern
There is a clear seasonal pattern in the occurrence of *Salmonella* infection with a peak time from summer through fall although the number of reported cases may vary by month year to year (Figure-8). Between 2% and 15% of reported cases were associated with recognized outbreaks. Additionally, there were 5.1-7.5% of the cases were contracted outside of the United States annually in Miami-Dade County between 2005 and 2011.

Location: Although most of the reported cases of *Salmonella* infection occurred in highly dense areas of central and northern regions of Miami-Dade County between 2005 and 2011, there was a statistically significant hotspot detected (P=0.002) in the west of central Miami-Dade County in 2011 (Figure-9) using 2005-2011 incidence rates data at census tract level. In the clustering area, there are 98,897 population based on the 2010 census survey. Among of them, 87,247 (88.2%) are Hispanic.

Serotypes
In 2011, 327 of 606 (54%) confirmed cases had *Salmonella* serotypes available in the laboratory reports. The top 5-serotype groups were group-B (84, 25.7%), group-D (73, 22.3%), group-C (64, 19.6%), group-C2 (25, 7.7%) and group-Z (25, 7.7%).

**Discussion**
*Salmonella* infection has not declined significantly in more than a decade and instead has increased by 10 percent in recent years, according to a new Vital Signs report released by the Centers for Disease Control and Prevention [6]. Over the last 4 years, the *Salmonella* incidence rate has gradually increased in Miami-Dade County. The children under 5 years of age had the highest rate of *Salmonella* infection among all age groups. This data is consistent with national trends, which show that children are more likely to become infected with *Salmonella*.

The *Salmonella* incidence rate was higher among Hispanics and lower among Non-Hispanic Blacks. A clustering was detected by space-time scan statistic that was located west of central Miami-Dade County area with 88.2% Hispanic population. The hotspot of *Salmonella* incidence rate was partially overlapped with one of four clusters of Campylobateriosis in 2011.

Campylobacteriosis and Salmonellosis are the most common reported enteric diseases and have common source such as poultry meat and derivatives. The incidence rate of Campylobacteriosis is greater in Miami-Dade County than as compared to the Florida State average level [7], but the *Salmonella* incidence rate was lower in Miami-Dade County as compared to state level as a whole during 2005-2011.

There is no vaccine to protect against non-typhoidal *Salmonella* infections. Therefore, it is very important for people to prevent *Salmonella* infection when preparing food or providing care for infants and older adults. Be sure to cook food thoroughly and refrigerate or freeze food promptly.

**Figure-1. *Salmonella* Incidence Rate in Miami-Dade County and Florida, 2005-2011**

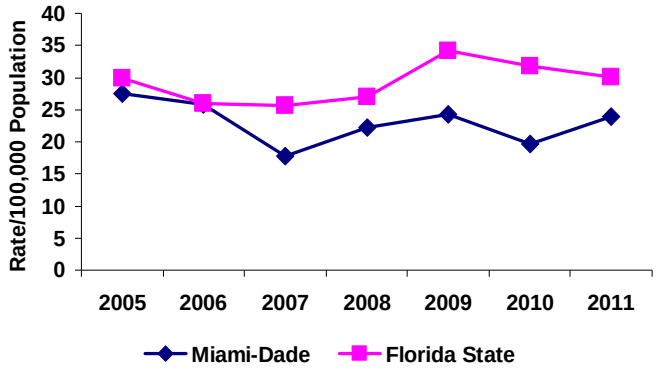



**Figure-2. *Salmonella* Incidence Rate by Race/Ethnicity in Miami-Dade County, 2005-2011**

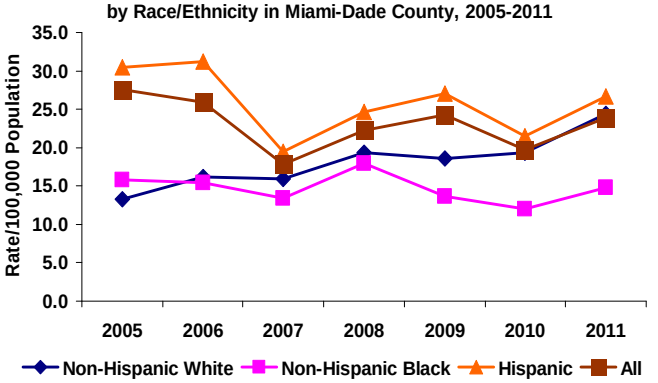



**Figure-3. *Salmonella* Incidence Rate by Age Group and Race/Ethnicity in Miami-Dade County, 2011**

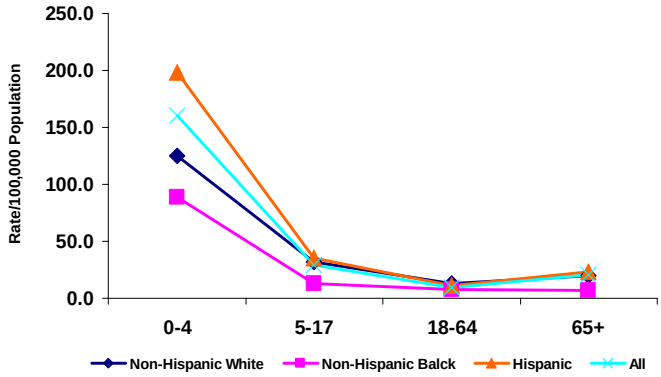


Figure-4. *Salmonella* Incidence Rate by Race/Ethnicity among Younger Children Aged 0-4 Years in Miami-Dade County, 2005-2011

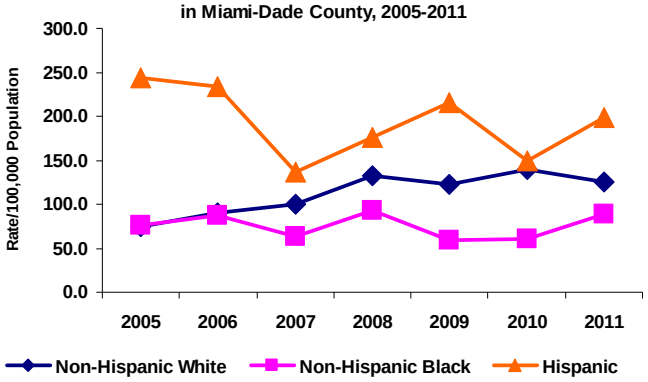



Figure-5. *Salmonella* Incidence Rate by Race/Ethnicity among School Children Aged 5-17 Years in Miami-Dade County, 2005-2011

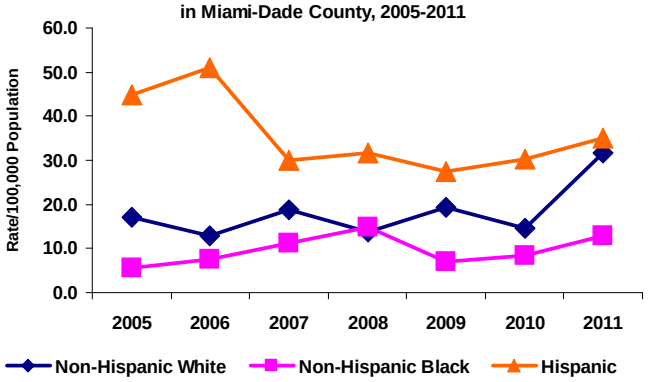



Figure-6. *Salmonella* Incidence Rate by Race/Ethnicity among Adults Aged 18-64 Years in Miami-Dade County, 2005-2011

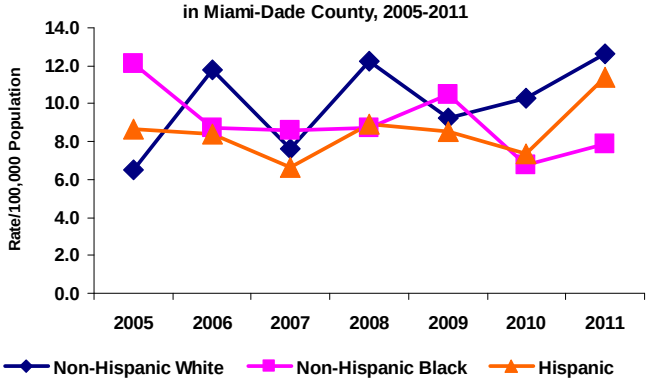



Figure-7. *Salmonella* Incidence Rate by Race/Ethnicity among Ederly Adults Aged 65+ Years in Miami-Dade County, 2005-2011

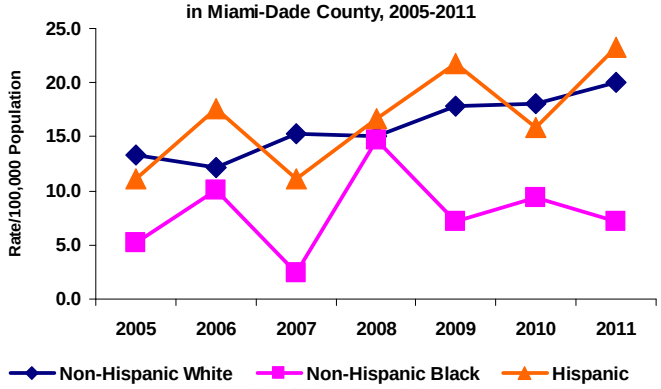



Figure-8. Reported Cases of Salmonellosis by Month in Miami-Dade County, 2005-2011

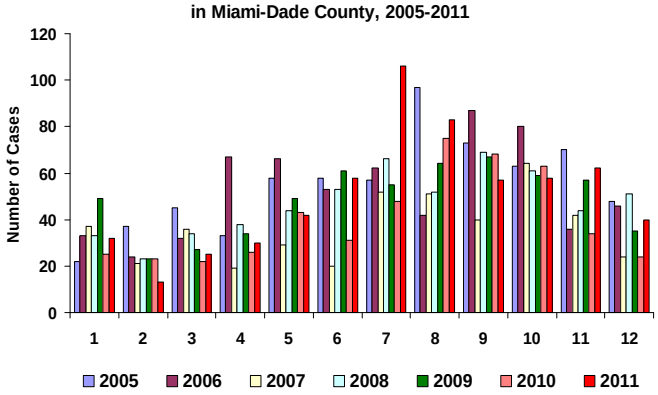
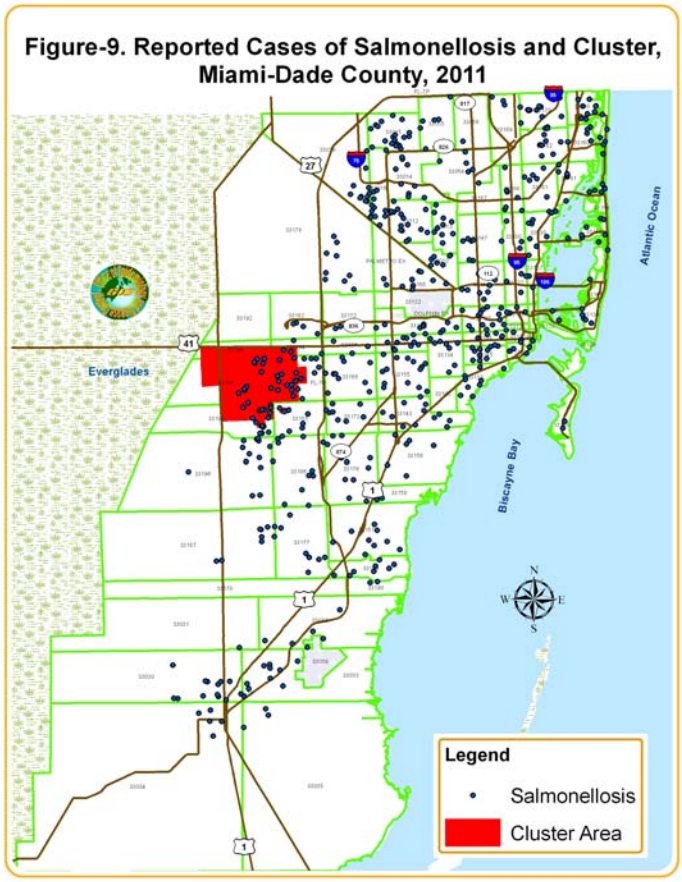



Figure-9. Reported Cases of Salmonellosis and Cluster, Miami-Dade County, 2011




*References*

*1. Centers for Disease Control and Prevention (CDC), Coordinating Center for Infectious Diseases, Division of Bacterial and Mycotic Diseases. \http://www.cdc.gov/ncidod/dbmd/diseaseinfo/salmonellosis_g.htm*

*2. http://www.fsis.usda.gov/factsheets/salmonella_questions_&_answers/index.asp#3*

*3. http://www.dhh.state.la.us/assets/oph/Center-PHCH/Center-CH/infectious-epi/Annuals/LaIDAnnual_Salmonella.pdf*

*4. Centers for Disease Control and Prevention. Preliminary FoodNet Data on the incidence of infection with pathogens transmitted commonly through food--10 States, 2008. MMWR Morb Mortal Wkly Rep. Apr 10 2009;58(13):333-7.*

*5. Kulldorff M. SaTScan User Guide for version 9.0, August 2010.*

*6. Vital Signs: Incidence and Trends of Infection with Pathogens Transmitted Commonly Through Food — Foodborne Diseases Active Surveillance Network, 10 U.S. Sites, 1996–2010 MMWR / June 10, 2011 / Vol. 60 / No. 22 749-755*

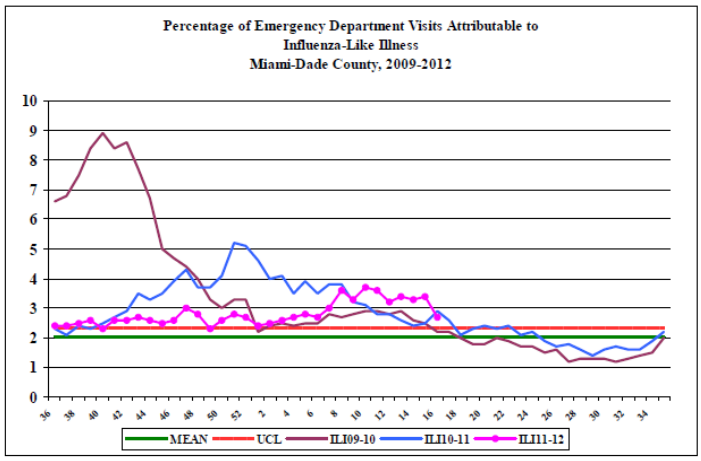
**Miami-Dade County Health Department**

**EDC-IS Influenza/Respiratory Illness Surveillance Report**

**Week 16: 04/15/2012– 04/21/2012**

Miami Dade County Health Department EDC-IS collects and analyzes weekly information on influenza activity in Miami-Dade County. On a daily basis, selected Miami-Dade County hospitals electronically transmit hospital emergency department data to the Miami-Dade County Health Department.

This data is then categorized into 11 distinct syndromes. The influenza-like illness (ILI) syndrome consists of fever with either cough or sore throat. It can also include a chief complaint of "flu". Each week, staff will determine the percentage of all emergency department visits that-fall into the ILI category.




During this period, there were 22,314 ED visits; among them 611 (2.7%) were ILI. At the same week of last year, 2.9% of ED visits were ILI.

**TO REPORT ANY DISEASE AND FOR INFORMATION CALL:**
**Epidemiology, Disease Control & Immunization Services**

| | |
|---|---|
| Childhood Lead Poisoning Prevention Program | 305-470-6877 |
| Hepatitis | 305-470-5536 |
| Immunizations or outbreaks | 305-470-5660 |
| HIV/AIDS Program | 305-470-6999 |
| STD Program | 305-575-5430 |
| Tuberculosis Program | 305- 575-5415 |
| Immunization Service | 305-470-5660 |
| To make an appointment | 786-845-0550 |

# PARTICIPATE IN INFLUENZA SENTINEL PROVIDER SURVEILLANCE

**The Miami-Dade County Health Department NEEDS Influenza Sentinel Providers!!**

Sentinel providers are key to the success of the Florida Department of Health's Influenza Surveillance System. Data reported by sentinel providers gives a picture of the influenza virus and ILI activity in the U.S. and Florida which can be used to guide prevention and control activities, vaccine strain selection, and patient care.

- Providers of any specialty, in any type of practice, are eligible to be sentinel providers.
- Most providers report that it takes **less than 30 minutes a week** to compile and report data on the total number of patients seen and the number of patients seen with influenza-like illness.
- Sentinel providers can submit specimens from a subset of patients to the state laboratory for virus isolation **free of charge**.

For more information, please contact **Lakisha Thomas** at 305-470-5660.

**About the Epi Monthly Report**

The Epi Monthly Report is a publication of the Miami-Dade County Health Department, Epidemiology, Disease Control & Immunization Services, The publication serves a primary audience of physicians, nurses, and public health professionals. Articles published in the Epi Monthly Report may focus on quantitative research and analysis, program updates, field investigations, or provider education. For more information or to submit an article, contact Lizbeth Londoño at 305-470-6918.

# Miami-Dade County Monthly Report
# Select Reportable Disease/Conditions
# March 2012

| Diseases/Conditions | 2012 Current Month | 2012 Year to Date | 2011 Year to Date | 2010 Year to Date |
|---|---|---|---|---|
| **HIV/AIDS** | | | | |
| AIDS* | 26 | 145 | 158 | 176 |
| HIV | 98 | 313 | 358 | 271 |
| **STD** | | | | |
| Infectious Syphilis* | 28 | 85 | 80 | 88 |
| Chlamydia* | 829 | 2346 | 2079 | 2056 |
| Gonorrhea* | 228 | 639 | 515 | 560 |
| **TB** | | | | |
| Tuberculosis** | 5 | 14 | 25 | 31 |
| **Epidemiology, Disease Control & Immunization Services** | | | | |
| **Epidemiology** | | | | |
| Campylobacteriosis | 14 | 66 | 77 | 35 |
| Ciguatera Poisoning | 1 | 1 | 4 | 0 |
| Cryptosporidiosis | 2 | 4 | 5 | 1 |
| Cyclosporiasis | 0 | 0 | 0 | 0 |
| Dengue Fever | 0 | 1 | 3 | 2 |
| E. coli, O157:H7 | 0 | 2 | 4 | 1 |
| E. coli, Non-O157 | 0 | 0 | 0 | 0 |
| Encephalitis (except WNV) | 0 | 0 | 0 | 0 |
| Encephalitis, West Nile Virus | 0 | 0 | 0 | 0 |
| Giardiasis, Acute | 17 | 38 | 82 | 144 |
| Influenza Novel Strain | 0 | 0 | 0 | 14 |
| Influenza, Pediatric Death | 2 | 2 | 0 | 0 |
| Legionellosis | 2 | 3 | 7 | 1 |
| Leptospirosis | 0 | 0 | 0 | 0 |
| Listeriosis | 1 | 1 | 0 | 3 |
| Lyme disease | 0 | 0 | 0 | 0 |
| Malaria | 1 | 2 | 6 | 6 |
| Meningitis (except aseptic) | 2 | 6 | 8 | 8 |
| Meningococcal Disease | 0 | 5 | 2 | 5 |
| Salmonellosis | 27 | 83 | 62 | 65 |
| Shigellosis | 5 | 9 | 24 | 36 |
| Streptococcus pneumoniae, Drug Resistant | 7 | 28 | 24 | 59 |
| Toxoplasmosis | 0 | 0 | 0 | 0 |
| Typhoid Fever | 0 | 0 | 1 | 0 |
| Vibriosis | 1 | 1 | 1 | 0 |
| West Nile Fever | 0 | 0 | 0 | 0 |
| **Immunization Preventable Diseases** | | | | |
| Measles | 0 | 0 | 0 | 0 |
| Mumps | 1 | 1 | 0 | 0 |
| Pertussis | 4 | 10 | 4 | 5 |
| Rubella | 0 | 0 | 0 | 0 |
| Tetanus | 0 | 0 | 0 | 0 |
| Varicella | 4 | 13 | 10 | 23 |
| **Hepatitis** | | | | |
| Hepatitis A | 4 | 6 | 10 | 11 |
| Hepatitis B (Acute) | 1 | 3 | 2 | 5 |
| **Lead** | | | | |
| Lead Poisoning | 3 | 14 | 30 | 48 |

*Data is provisional at the county level and is subject to edit checks by state and federal agencies.
** Data on tuberculosis are provisional at the county level.