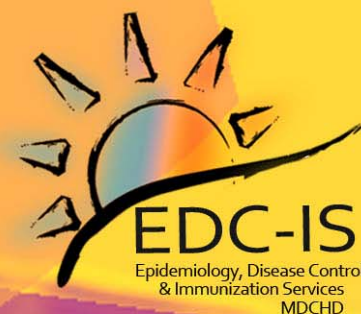


EPI MONTHLY REPORT



Technical Capabilities of Miami-Dade County Hospital Laboratories to Diagnose Malaria Cases

Natacha Vega, MPH, and Pedro Noya-Chaveco, MPH

Introduction

In the United States, approximately four million people travel frequently to malaria endemic areas. Although malaria was controlled in the early 1950's, in the last four decades, 63 outbreaks have been reported in US. In Florida, an increased number of cases have been reported during the last three years.

The majority of cases are among US travelers visiting developing countries or by immigrants. On January 12, 2010 an earthquake occurred in Haiti, a malaria endemic region, which increases the risk of probable malaria cases brought to the US. In Miami-Dade County, there were 43 cases of malaria reported between 2007 and 2009. Twenty of them (46%) visited Haiti sometime before the onset of disease. Malaria is a treatable disease if the patient has access to early diagnosis. Diagnosis of malaria is with a microscopic examination of blood film or a rapid diagnostic test. However, it can be difficult to distinguish the specific species. This study focuses on evaluating the technical capabilities of hospital laboratories to diagnose malaria cases, specifically to identify *Plasmodium parasites*.

Methods

The Florida Department of Health, Bureau of Laboratories, Miami Branch, was used as a reference source to evaluate the performance of 12 laboratories. All hospitals in the County are required to submit a specimen of every presumptive positive malaria case to the laboratory for confirmation. A prospective study was used (1) confirmed cases in 2009 were retrieved from Merlin, a Florida statewide communicable disease surveillance system. (2) Supervisors from each of the laboratory department performing the Plasmodium parasite identification were interviewed using a questionnaire.

Additionally, a set of 2 slides (one commercially prepared positive control of *Plasmodium falciparum* and one negative control slide already stained) were provided to each laboratory to be reviewed by the technologists who usually perform the test. Staff was instructed to read the entire slide using the standard procedure established at their laboratory and to document the results on a provided form.

Competency to evaluate testing personnel capability to identify malaria parasite is conducted annually by all participated laboratory of this study. This competency is required by the College of American Pathologist (CAP), a non-profit organization that inspects hospital laboratories every two

Inside this issue:

Technical Capabilities of Miami-Dade County Hospital Laboratories to Diagnose Malaria Cases **1**

Selected Notifiable Disease Reports, Historical data, August 2010 **3**

EDC-IS Influenza/Respiratory Illness Surveillance Report **4**

Monthly Report, Selected Reportable Diseases/ Conditions in August 2010 **5**

Fermin Leguen MD, MPH
 Chief Physician, Miami-Dade County Health Department
 Epidemiology, Disease Control & Immunization Services
 8600 NW 17th Street
 Suite 200



years. Additionally, proficiency testing is provided by the CAP to every laboratory, and they are used as a performance tool to evaluate laboratories individually

Results

Of the 12 laboratories, 58 percent performed the test at the Hematology Department and forty-two percent performed it at the Microbiology Department. The majority (75%) considered the test as a STAT test. All laboratories used the peripheral blood smear method to diagnose malaria parasites.

Regarding the type of stain used, eight percent of the laboratories used the Giemsa stain; fifty-nine percent used the Wright stain and thirty-three percent used a Giemsa-Wright stain combination.

The level of parasite identification also varies among laboratories. Sixty-seven percent reported the parasite at the genus level and thirty-three percent reported it to the species level. In all cases, the laboratory Medical Director, a Pathologist, reviewed the smear before presumptive identification was reported. Then, all positive smears were submitted to the Bureau of Laboratories in Miami. One of the participants failed to identify the malaria properly. Six out of seven technologists identified the parasite species incorrectly as *Plasmodium malaria* instead of *Plasmodium falciparum*. All cases reviewed at the State laboratory were correctly identified by the submitting laboratory up to the genus level. Few discrepancies were found at the species level.

On the CAP evaluation, all of them demonstrated a 100 % in the proficiency test used to identify blood parasite in blood smears. All laboratories identified correctly both slides provided for this study. The percentage of accuracy of assessment was 100% for all the participants' laboratories up to the genus level.

Conclusions

The level of proficiency of laboratories to detect malaria is important. This study also demonstrated that Miami-Dade County hospitals are indeed technically prepared to identify positive cases of *Plasmodium* genus accurately; however, more training on properly identifying at the species level is recommended. Fur-

thermore, CDC recommended in the last Malaria: Haiti Pre-Decision Brief for Public Health Action that implementation of Rapid Diagnostic Test should be used for prompt diagnosis especially during natural incidents that requires humanitarian efforts and exposure to high risk area of communicable disease.

Acknowledgements:

This study would not have been accomplished without the participations of the eleven hospitals from the Miami-Dade County area and the cooperation of the Miami Branch State Lab.

Picture of *Plasmodium falciparum*.







Prepare for **October**

Halloween Health and Safety Tips

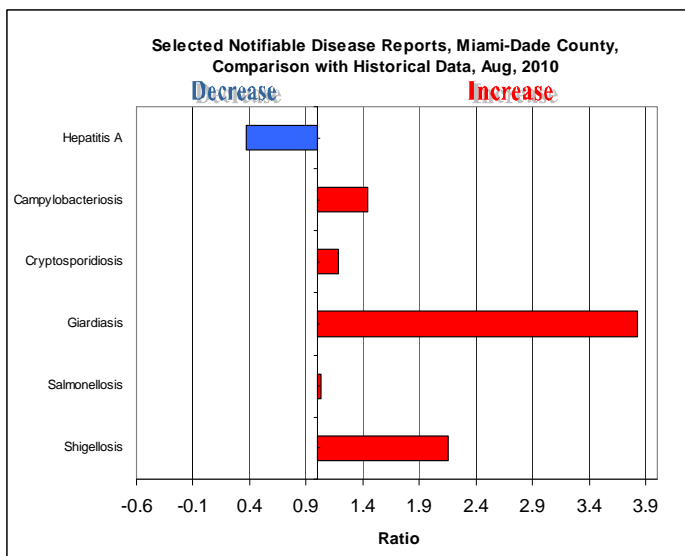


For many people, autumn events like Halloween and Harvest Day are fun times to dress up in costumes, go trick-or-treating, attend parties, and eat yummy treats. These events are also opportunities to provide nutritious snacks, get physical activity, and focus on safety. Below are tips to help make the festivities fun and safe for trick-or-treaters and party guests.

-  Provide healthier treats for trick-or-treaters, such as individual packs of raisins, trail mix, or pretzels. For party guests, offer a variety of fruits, vegetables, and cheeses.
-  Use party games and trick-or-treat time as an opportunity for kids to get their daily dose of 60 minutes of physical activity.
-  Be sure walking areas and stairs are well-lit and free of obstacles that could result in falls.
-  Keep candle-lit jack-o'-lanterns and luminaries away from doorsteps, walkways, landings, and curtains. Place them on sturdy tables, keep them out of the reach of pets and small children, and never leave them unattended.

Remind drivers to watch out for trick-or-treaters and to drive safely.

Please visit <http://www.cdc.gov/family/halloween/>



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

- Childhood Lead Poisoning Prevention Program305-470-6877
- Hepatitis305-470-5536
- Immunizations or outbreaks305-470-5660
- HIV/AIDS Program305-470-6999
- STD Program305-325-3242
- Tuberculosis Program305-324-2470



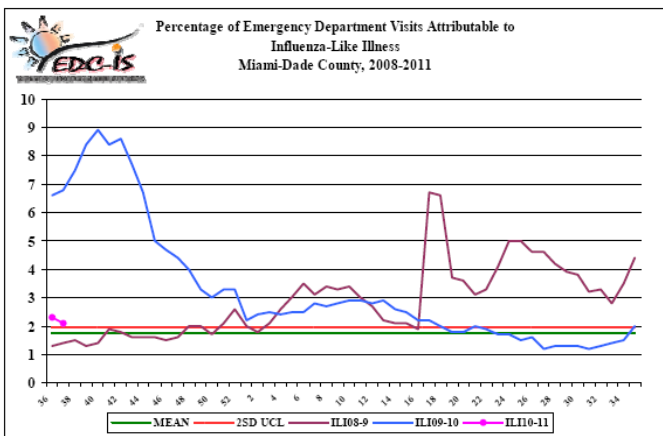
Miami-Dade County Health Department
EDC-IS Influenza/Respiratory Illness
Surveillance Report



Week 37: 09/12/2010– 09/18/2010

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 10 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 19,616 ED visits; among them 418 (2.1%) were ILI. At the same week of last year, 6.8% of ED visits were ILI.

For more information, please contact
Erin O’Connell at 305-470-5660.

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
Erin O’Connell 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

August 2010

Diseases/Conditions	2010	2010	2009	2008
	Current Month	Year to Date	Year to Date	Year to Date
HIV/AIDS				
AIDS*	87	509	641	785
HIV	136	759	807	1101
STD				
Infectious Syphilis	33	231	N/A	N/A
Chlamydia	720	5707	N/A	N/A
Gonorrhea	226	1592	N/A	N/A
TB				
Tuberculosis**	10	97	N/A	N/A

Epidemiology, Disease Control & Immunization Services

Epidemiology

Campylobacteriosis	21	142	103	97
Ciguatera Poisoning	8	13	29	18
Cryptosporidiosis	3	9	14	23
Cyclosporiasis	0	1	1	5
Dengue Fever	9	27	4	3
E. coli, O157:H7	0	0	0	2
E. coli, Non-O157	0	0	0	1
Encephalitis (except WNV)	0	0	0	5
Encephalitis, West Nile Virus	0	0	0	0
Giardiasis, Acute	92	490	421	165
Influenza Novel Strain	0	20	1247	0
Influenza, Pediatric Death	0	0	2	0
Legionellosis	1	6	11	6
Leptospirosis	0	0	0	0
Listeriosis	0	13	0	4
Lyme disease	1	3	2	4
Malaria	3	18	14	6
Meningitis (except aseptic)	0	0	0	3
Meningococcal Disease	0	14	13	6
Salmonellosis	61	263	310	287
Shigellosis	28	135	110	32
Streptococcus pneumoniae, Drug Resistant	3	110	78	80
Toxoplasmosis	0	1	1	0
Typhoid Fever	0	2	3	1
Vibriosis	0	0	0	2
West Nile Fever	0	0	0	0

Immunization Preventable Diseases

Measles	0	0	0	0
Mumps	0	3	0	2
Pertussis	3	25	28	17
Rubella	0	0	0	1
Tetanus	0	0	0	0
Varicella	3	64	46	38

Hepatitis

Hepatitis A	2	34	35	22
Hepatitis B (Acute)	5	23	9	13

Lead

Lead Poisoning	29	182	70	111
----------------	----	-----	----	-----

*Data on AIDS are 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.