



# Epi Monthly Report

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## Maternal Mortality in Miami-Dade County, 1994-2003

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*This article is a summary of a presentation that was given at the 11th Annual Maternal and Child Health Epidemiology Conference in December 2005.*

### Background

Maternal mortality is an issue of great public health concern. Nationally, maternal mortality rates decreased by 99% in the 20<sup>th</sup> century; however, there have been no substantial decreases since 1982 (Centers for Disease Control and Prevention, 1998). The purpose of this study was to examine trends in maternal mortality for Miami-Dade County.

### Methods

Death certificates were used to identify maternal deaths. Maternal death is defined as death during pregnancy, childbirth or within one year of termination of pregnancy, as identified by death certificate ICD-9 codes 630-676 or ICD-10 codes O00-O99. The maternal mortality rate was calculated as the number of maternal deaths per 100,000 live births. Mortality rates were analyzed with respect to age, racial/ethnic group and geographic area. Geographic area was determined based on residence either North or South of Flagler Street.

### Results

There were 55 maternal deaths in Miami-Dade County between 1994 and 2003. The most common causes of death were eclampsia and pre-eclampsia, complications of the puerperium, and other direct obstetric causes. The maternal mortality rate was consistently higher than state and national rates (Figure 1) peaking to 28.6 deaths per 100,000 live births in 1999.

Rates of maternal mortality in Miami-Dade County differed substantially by age group. From 1994-1998 and 1999-2003, the overall maternal mortality rates were 15.0 and 19.3, respectively. In women ages 35-39, however, the mortality rates from 1994-1998 and 1999-2003 were 21.8 and 37.5, respectively (Figure 2). Rates were even higher among women aged  $\geq 40$  (72.7 from 1994-1998 and 100.3 from 1999-2003).

Differences were also seen by racial/ethnic group. Rates for Non-Hispanic Whites and Hispanics were less than 10 per 100,000 live births throughout the period from 1994-2003 (Figure 3). Rates were much higher, however, among Non-Hispanic Blacks and Haitians (Figure 3).

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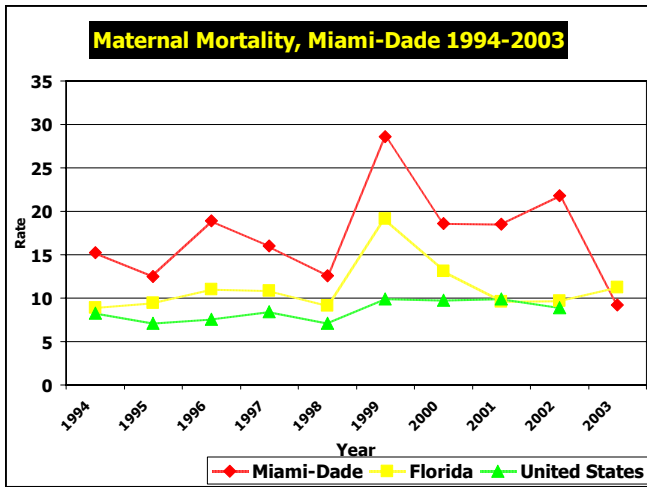
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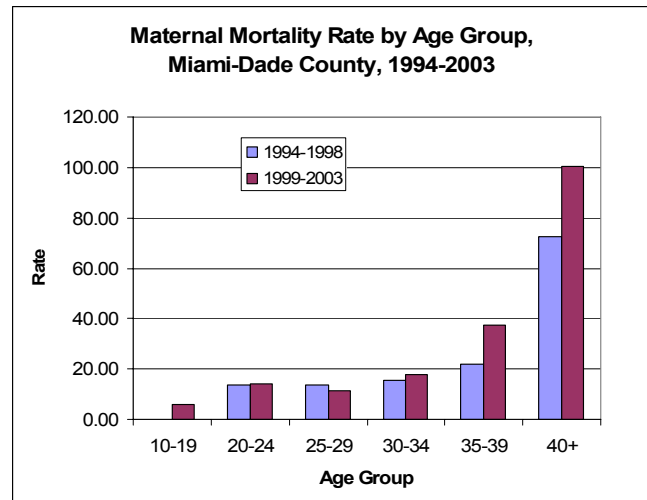
**Figure 1.** Maternal Mortality in Miami-Dade County, 1994-2003. Rate is per 100,000 live births.

When age and race were considered together, maternal mortality rates were low (less than 25 per 100,000 live births) among Non-Hispanic White and Hispanic women <40 years old (Figure 4). Among Non-Hispanic White and Hispanic women ≥ 40 years old, however, rates were much higher (104 and 64 deaths per 100,000 live births, respectively). Among Non-Hispanic Blacks and Haitians, rates increased consistently as age increased. Overall, the highest mortality rate (180 per 100,000 live births) was seen among Haitian women ≥ 40 years old (Figure 4).

Maternal mortality rates were also calculated with respect to geographic area (Figure 5). From 1994-1998, rates in North Miami-Dade County were much higher than those seen in South Miami-Dade County (22.6 versus 4.5). From 1999-2003, however, the two rates grew more similar (20.6 in North Miami-Dade and 17.7 in South Miami-Dade). Further analyses showed an increase in the maternal mortality rate among Hispanics and Non-Hispanic Blacks in South Miami-Dade between the 1994-1998 period and the 1999-2003 period (Figure 6).

## Discussion

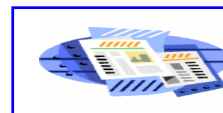
Maternal mortality is a significant public health problem in Miami-Dade County; county rates are consistently higher than both state and national rates. Further, Miami-Dade County maternal mortality rates are much higher than the Healthy People 2010 target of 3.3 maternal deaths per 100,000 live births. There are substantial disparities in maternal mortality rates with respect to both maternal age and race/ethnicity. The high mater-

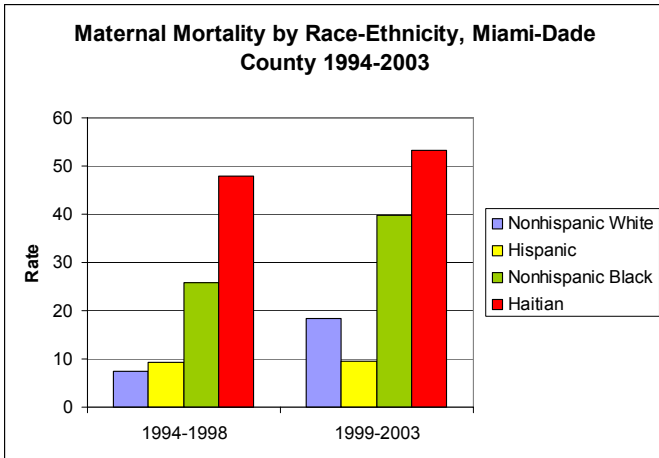


**Figure 2.** Maternal Mortality by Age Group, Miami-Dade County, 1994-2003. Rate is per 100,000 live births.

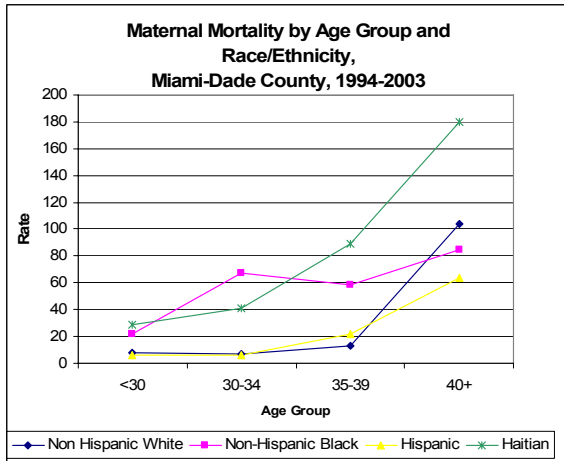
nal mortality rates seen among Non-Hispanic Blacks and Haitians mirror other poor maternal and child health outcomes among these two groups, including high rates of infant mortality, low birth weight, and preterm birth. These poor outcomes could be linked to the high poverty and low utilization of health care services seen among these groups. For example, in 1999, only 75.9% of Non-Hispanic Black and 81.6% of Haitian mothers in Miami-Dade County reported prenatal care in the first trimester of pregnancy. In contrast, 91.9% of Non-Hispanic White and 88.5% of Hispanic mothers reported prenatal care in the first trimester. Better utilization of prenatal care could lead to prevention of maternal deaths due to causes such as ectopic pregnancy and some cases of infection and hemorrhage. It could also lead to early identification of women at high risk for pre-eclampsia.

Many states (including Florida) have established maternal mortality review boards that evaluate a subset of maternal deaths that occur each year in order to identify common risk factors. Such a review board at the local level might help to identify and target the main determinants of maternal death in Miami-Dade County.

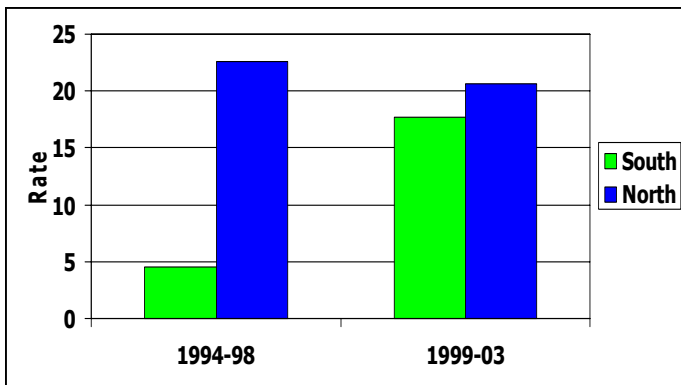




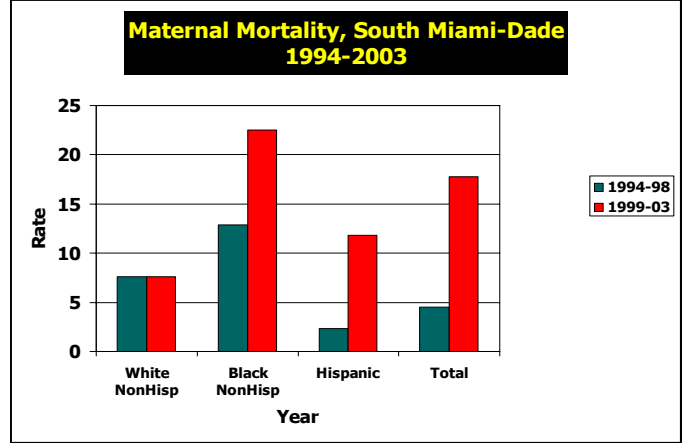
**Figure 3.** Maternal Mortality by Race-Ethnicity, Miami-Dade County, 1994-2003. Rate is per 100,000 live births.



**Figure 4.** Maternal Mortality by Age Group and Race-Ethnicity, Miami-Dade County, 1994-2003. Rate is per 100,000 live births.



**Figure 5.** Maternal Mortality Rate by Geographic Area, Miami-Dade County, 1994-2003. Rate is per 100,000 live births.



**Figure 6.** Maternal Mortality in South Miami-Dade County, 1994-2003. There were no deaths to Haitian mothers in South Miami-Dade during this period. Rate is per 100,000 live births.

### References

“Maternal Mortality—United States 1982-1996”. MMWR: Morbidity and Mortality Weekly Report. September 4, 1998:705-7. Centers for Disease Control and Prevention.

**Pandemic FLU**

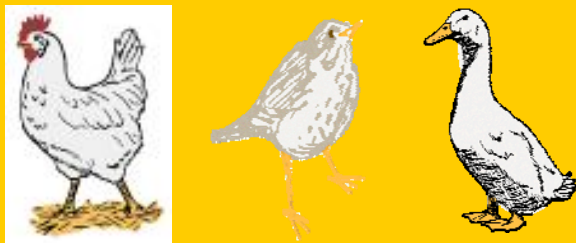
The Miami-Dade County Health Department, Miami-Dade County, and Dade County Medical Association Cordially Invite You to the Conference

**“PREPARING FOR THE NEXT PANDEMIC IN MIAMI-DADE COUNTY”**

Saturday, January 21, 2006  
8 a.m. - 11 a.m.  
University of Miami  
School of Business Administration Complex  
Storer Auditorium  
5250 University Drive  
Coral Gables, FL

Please RSVP to Margarita Fernandez  
Phone: (305) 470-5660  
Email: Margarita\_Fernandez@doh.state.fl.us

## AVIAN FLU WATCH



Unless otherwise noted, all information is current as of December 23, 2005

- Since 2003, 141 confirmed human cases of avian influenza (H5N1) have been reported to the World Health Organization (WHO). Of these, 73 have been fatal.
- Countries with confirmed human cases include Cambodia, China, Indonesia, Thailand, and Vietnam. Vietnam has had the most cases (93 cases), with 42 deaths.
- The most recent cases were confirmed in Indonesia. The first case was an 8-year-old boy who developed symptoms of fever and cough on December 8. He was hospitalized on December 13 and died December 15. The second case occurred in a 39-year-old man who developed respiratory symptoms on December 9. He was hospitalized on December 11 and died on December 12. Close contacts and family members of both cases were placed under observation. Investigations are being undertaken to determine the source of exposure for both cases, including testing of samples from area birds.
- No human cases of avian influenza (H5N1) have been reported in the United States.
- H5N1 has been confirmed in birds in several countries, including Cambodia, China, Croatia, Hong Kong, Indonesia, Japan, Kazakhstan, Korea, Malaysia, Mongolia, Romania, Russia, Thailand, Turkey, Ukraine, and Vietnam (Current as of 12/27/05).
- No restrictions on travel to affected countries have been imposed. Travelers should avoid contact with live poultry and monitor their health for ten days after returning from an affected country.

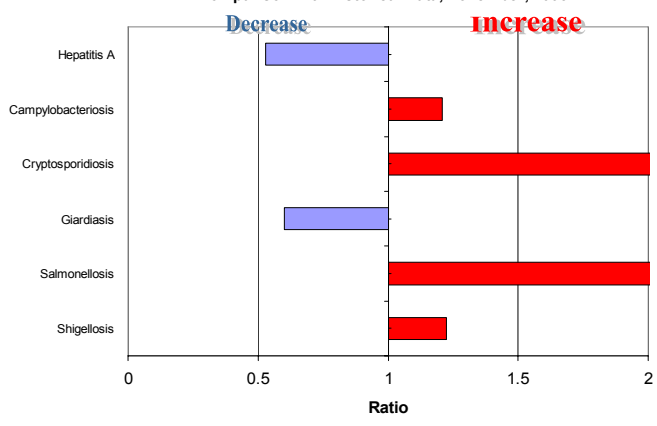
SOURCES: World Health Organization; World Organisation for Animal Health; Centers for Disease Control

<http://www.who.int>

<http://www.oie.int>

<http://www.cdc.gov/travel/outbreaks.htm>

Selected Notifiable Disease Reports, Miami-Dade County, Comparison with Historical Data, November, 2005



\*Ratio of current month total to mean of 15 month totals (from previous, comparable, and subsequent month periods for the past 5 years).

TO REPORT ANY DISEASE AND FOR INFORMATION CALL:

Office of Epidemiology and Disease Control



Childhood Lead Poisoning Prevention Program	(305) 470-6877
Hepatitis	(305) 470-5536
Other diseases and outbreaks	(305) 470-5660
HIV/AIDS Program	(305) 470-6999
STD Program	(305) 325-3242
Tuberculosis Program	(305) 324-2470
Special Immunization Program	(786) 845-0550



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## Monthly Report

### Selected Reportable Diseases/Conditions in Miami-Dade County, November 2005

Diseases/Conditions	2005 this Month	2005 Year to Date	2004 Year to Date	2003 Year to Date	2002 Year to Date	2001 Year to Date
AIDS <sup>Provisional</sup>	108	1181	1306	938	1005	1093
Animal Rabies	0	0	0	0	0	1
Campylobacteriosis	14	129	127	132	102	107
<i>Chlamydia trachomatis</i>	196	3553	4286	4014	4320	3382
Ciguatera Poisoning	0	0	0	0	2	0
Cryptosporidiosis	8	35	17	13	12	12
Cyclosporiasis	9	20	2	1	1	0
Dengue Fever	0	3	5	1	5	5
Diphtheria	0	0	0	0	0	0
<i>E. coli</i> , O157:H7	0	0	5	0	0	2
<i>E. coli</i> , Non-O157	0	1	1	2	2	1
<i>E. coli</i> , Other	1	1	0	0	0	0
Encephalitis (except WNV)	0	0	1	0	1	0
Encephalitis, West Nile Virus	0	0	15	6	2	0
West Nile Fever	0	0	6	0	1	0
Giardiasis, Acute	14	199	259	197	205	228
Gonorrhea	93	1504	1646	1687	1847	1728
Hepatitis A	5	59	40	56	134	175
Hepatitis B	6	45	35	49	42	64
HIV <sup>Provisional</sup>	120	1302	1590	1519	1766	1528
Lead Poisoning	14	160	278	254	273	263
Legionnaire's Disease	2	8	11	8	1	3
Leptospirosis	0	2	0	0	0	0
Lyme disease	0	0	3	4	2	6
Malaria	2	10	18	12	12	17
Measles	0	0	1	0	0	0
Meningitis (except aseptic)	0	11	11	7	10	9
Meningococcal Disease	0	6	20	4	12	15
Mumps	0	0	0	0	0	0
Pertussis	0	9	9	9	6	2
Polio	0	0	0	0	0	0
Rubella	0	0	0	0	0	0
Rubella, Congenital	0	0	0	0	0	0
Salmonellosis	81	550	409	493	308	271
Shigellosis	19	242	143	275	224	128
<i>Streptococcus pneumoniae</i> , Drug Resistant	3	59	60	109	108	154
Syphilis, Infectious	10	147	197	174	200	175
Syphilis, Other	30	507	744	935	1024	798
Tetanus	0	0	0	0	0	1
Toxoplasmosis	0	9	11	9	22	11
Tuberculosis <sup>Provisional</sup>	21	186	230	194	206	209
Typhoid Fever	0	2	3	4	4	2
<i>Vibrio cholera</i> Type O1	0	0	0	0	0	0
<i>Vibrio cholera</i> Non-O1	0	0	0	0	1	0
<i>Vibrio</i> , Other	0	0	0	1	0	0

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

