

Review of NCHS' Natality Program an Update

Stephanie J. Ventura, MA
Reproductive Statistics Branch
Division of Vital Statistics

Presented to the NCHS Board of Scientific Counselors,
April 25, 2008



Centers for Disease Control and Prevention
National Center for Health Statistics

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Conclusions of the Panel

NCHS Staff and Accomplishments

- **High level of consistent productivity despite staff and resource limitations (only 7 staff working on natality-related files in RSB)**
- **Production of several major complex data files each year**
- **Production of comprehensive annual reports on fertility and maternal and perinatal health including focused, topical analyses**
- **Publication of “excellent creative studies”**

Four categories of recommendations

- Organizational structure within NCHS/CDC
- Relationship of NCHS to the States
- Data Quality Issues
- Future Programmatic Enhancements

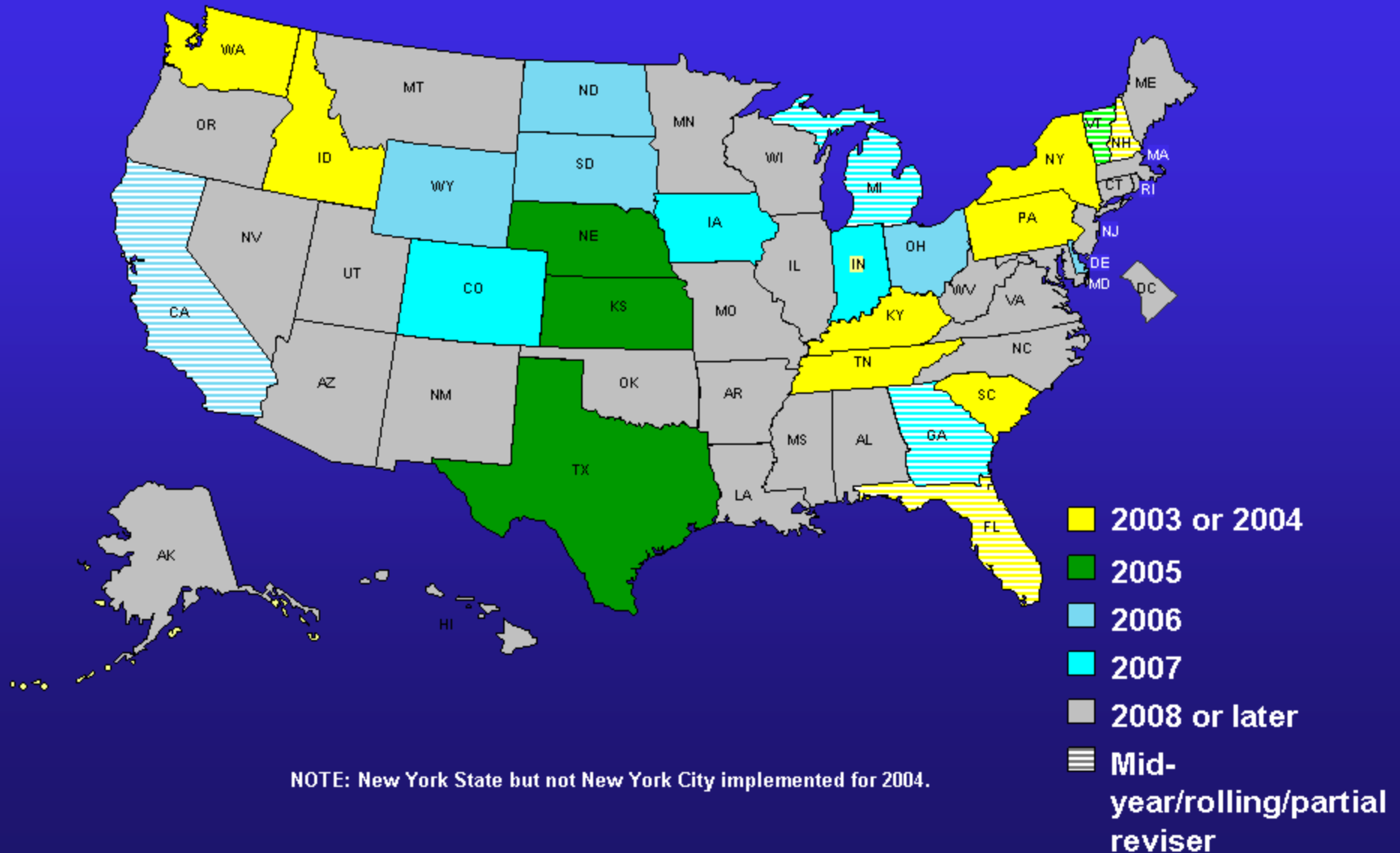
Panel's attention focused on

Implementation of 2003 Revised Birth
Certificate

Ongoing through 2009 and beyond
(for 11 jurisdictions)

No national data on new and revised items
for foreseeable future

Revision status - Births



Panel Emphasis: The Need for More Resources – Both Funds and Staff

- Many recommendations relate to financial support issues over which natality program staff have no control, e.g.
 - Need for adequate dollar support from CDC
 - Need for DVS to be a line item in the DHHS budget to highlight unique DVS role
 - Need for NCHS to provide appropriate support to States to fund data collection

Other recommendations relating to more resources

- More support needed for States to re-engineer their systems and implement the revised certificates
- Other topics
 - EVVE funding
 - Disaster recovery preparation
 - Intelligence Reform regulations

Most recommendations relate to more resources

- 17 specific recommendations of the total 24 require substantial additional funds
- 5 recommendations relate to supporting new staff within DVS or the States

Therefore,

- Remainder of this presentation focuses on steps the Natality staff and DVS have taken to respond to panel recommendations that we can influence

Nativity Program Accomplishments

Promote and enhance accessibility of natality data

Vital Stats Home Page from NCHS Website

NCHS - VitalStats - Windows Internet Explorer

http://www.cdc.gov/nchs/VitalStats.htm

File Edit View Favorites Tools Help

NCHS - VitalStats

CDC Home | About CDC | Press Room | A-Z Index | Contact Us

CDC Department of Health and Human Services
Centers for Disease Control and Prevention

CDC en Español

Search:

National Center for Health Statistics...*Monitoring the Nation's Health*

VitalStats

VitalStats Links

- > [VitalStats Home](#)
- > [VitalStats: Births](#)
- > [VitalStats: Perinatal Mortality](#)
- > [Coming Soon](#)

Data Use Guides

- > [Quick Guide: Getting Started](#) PDF
- > [Quick Guide: Calculating Rates and Percents](#) PDF

Related Links

- > [Births Home](#)
- > [Deaths Home](#)
- > [National Vital Statistics System](#)

VitalStats Information

- > Email: VitalStats@cdc.gov

VITAL STATS Welcome to VitalStats, a collection of vital statistics products including tables, data files, and reports that allow users to access and examine vital statistics and population data interactively.

Use our prebuilt tables and reports for quick access to statistics. Or, you can use the data files to create your own tables--choosing from over 100 variables. Using the data files takes a little more time but gives you access to more data. You can customize the tables, and create charts, graphs, and maps. You can even export the data for use offline or in another format. Please see the [Getting Started Quick Guide](#) PDF for more information.

[Email this page](#)

[Printer-friendly version](#)



Tables, Data Files, and Reports

- **Births**
Access prebuilt tables or build your own tables using birth data files for 1990 through 2005.
- **Deaths (In Development)**
Death data will be available in the future.
- **Perinatal Mortality**
Access prebuilt linked birth/infant death and fetal death tables or build your own tables using fetal death data files for 2003 and 2004.

Coming Soon

Trusted sites 100%

- **Development of *VitalStats*, interactive web system for accessing birth and perinatal data**
 - **All public use birth files for 1990-2005 available including state and county identifiers**
 - **Pre-tabulated linked file data for 1995-2004**
 - **Fetal death public use files for 2003-2004**
 - **Ability to**
 - **tabulate**
 - **chart**
 - **map data**
 - **Usage growing monthly: 3,500+ unique visitors in March... 600+ visited more than once**

Other web enhancements to improve data access

The screenshot shows a Windows Internet Explorer browser window displaying the CDC Vital Statistics Online website. The address bar shows the URL: <http://www.cdc.gov/nchs/about/major/dvs/Vitalstatsonline.htm>. The browser's menu bar includes File, Edit, View, Favorites, Tools, and Help. The website header features the CDC logo, the text "Department of Health and Human Services Centers for Disease Control and Prevention", and a search bar. Below the header, the page title is "National Center for Health Statistics...Monitoring the Nation's Health". The main content area is titled "Vital Statistics Information Sources" and is divided into several sections:

- Data File Links:** A list of links including Vital Statistics, Published Data, Interactive Tools, and Downloadable Files.
- Related Links:** A list of links including Births, Deaths, and Marriages & Divorces.
- Vital Statistics Data Available Online:** A section with a sub-header and a paragraph describing the portal's purpose. It includes links for "Email this page" and "Printer-friendly version".
- Published Statistical Data:** A section with a sub-header and a list of links for National Vital Statistics Reports, Vital Statistics of the United States, Series 20, and Series 21.
- Interactive Online Data Access Tools:** A section with a sub-header and a paragraph describing the collection of products. It includes links for VitalStats and WONDER.
- Downloadable Data Files:** A section with a sub-header and a paragraph describing public use data files.

At the bottom of the page, there is a link for "NCHS Data Release Policy". The browser's status bar at the bottom shows "Trusted sites" and "100%". The Windows taskbar at the very bottom shows the start button and several open applications.

- **Natality and linked birth/infant death public use files and documentation available for downloading from NCHS website**
 - **Annual natality files for 1968-2005**
 - **Annual *period* linked birth/infant death files for 1995-2004**
 - **Annual *cohort* linked files for 1983-91 and 1995-2001**

Different levels of birth and fetal death data

- Items common AND comparable across revisions (marital status, birthweight)
- Items Common but NOT comparable across revisions (tobacco use, education, timing of prenatal care)
- **Releasable** NEW data items (NICU admission, pre-existing and gestational diabetes)
- **Non-releasable** NEW data items (infertility therapy, BMI, maternal morbidity)

The New birth, fetal and linked birth/infant death files:

- Greatly increased record length

(record length increased from 350 in 2002 to 1500 in 2004)

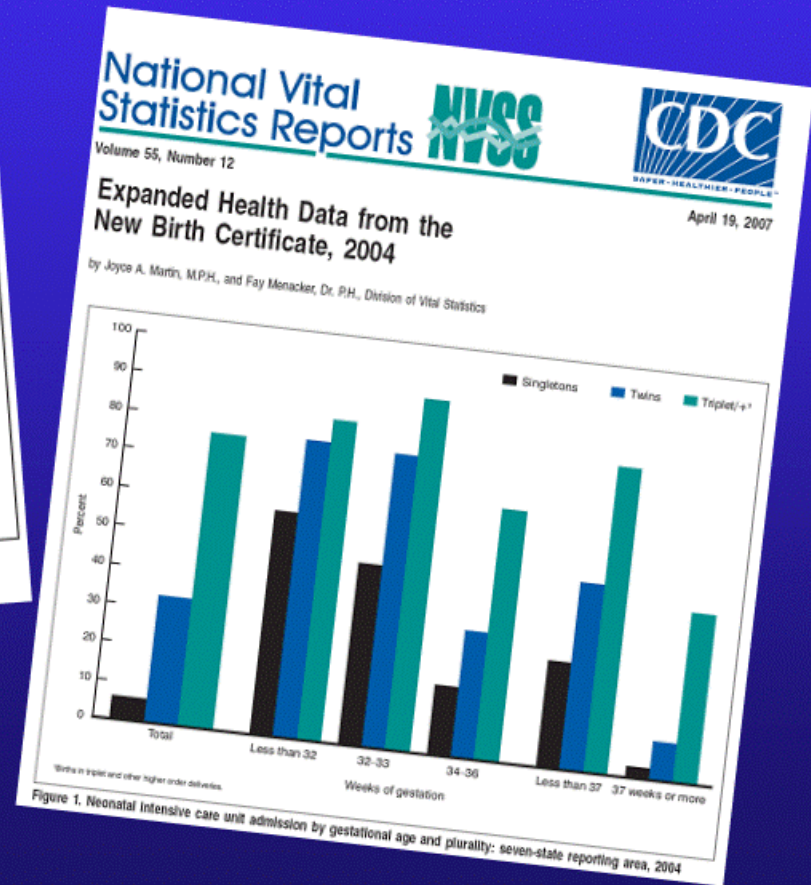
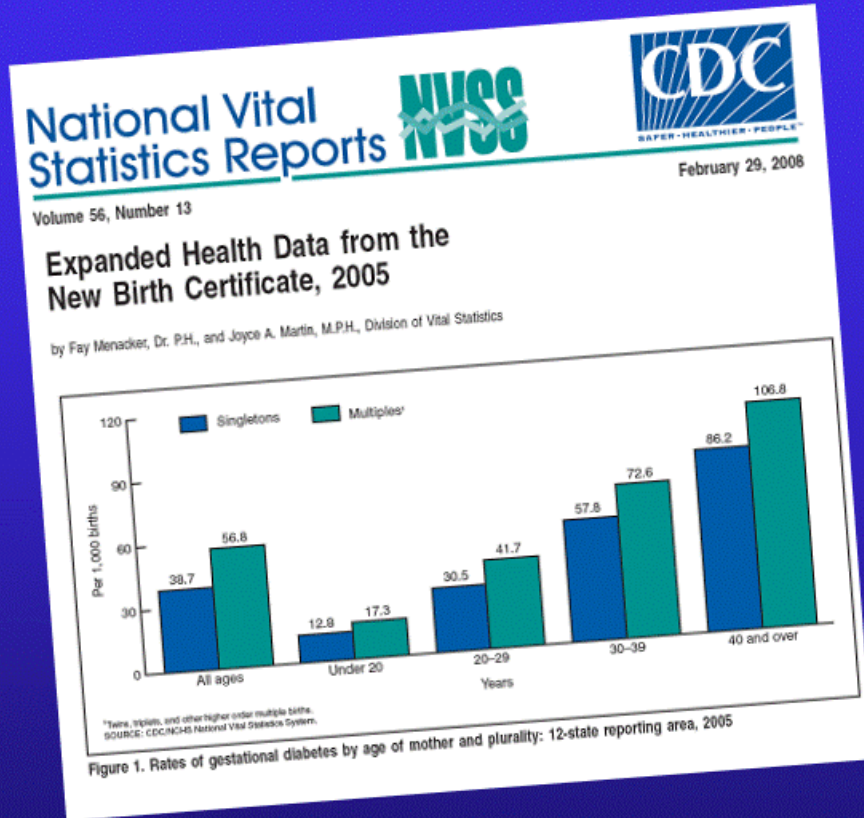
- Accommodates both revised and unrevised data
- Use of reporting flags expanded (flag for every item beginning in 2004)
- Detailed information on multiple race

- **New public use data access policy developed**
 - **Responsive to concerns raised by NAPHSIS about NCHS' release of geographic detail on public use files**
 - **National data only on public use vital statistics files beginning with 2005 events**
 - **Policy includes mechanism for researchers and others to obtain geographic identifiers**
 - **DVS staff and NAPHSIS representative review special requests**

Natality Program Accomplishments

- Evaluate and publish selected new health data from the revised birth certificate
 - Analyses focus on new checkboxes that are “releasable”
 - Introduce new information on e.g., gestational and pre-existing diabetes, NICU admissions, attempts at trial of labor, and other topics
 - Analyses so far suggest great utility and promise for the new information and suggest areas for validation studies
 - Reports published for 2004 and 2005 data

National Vital Statistics Reports



Natality Program Accomplishments

- **Develop new perinatal research program**
 - **Design and produce annual reports on fetal and perinatal mortality**
 - Reports published for 2003 and 2004
 - Report for 2005 in development
 - **Develop an evaluation study on revised cause of fetal death**
 - Purpose: to improve quality and accessibility of fetal cause-of-death information
 - EIS officer working with DVS staff on this issue

Recent fetal cause-of-death work

- **Outreach:**

- Presenting at conferences and meetings and NCHS-sponsored training
- Publications – *NCHS Vital News*
- Paper submitted for peer-review publication

- **Collaborations:**

- New interagency workgroup (DVS, CDC's DRH, and NCBDDD) established to improve fetal death surveillance

National Vital Statistics Reports

National Vital Statistics Reports **NVSS** **CDC**
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 October 11, 2007
 Volume 56, Number 3
Fetal and Perinatal Mortality, United States, 2004

by Marian F. MacDorman, Ph.D.; Martha L. Munson, M.S.; and Sharon Kimreyer, Ph.D., Division of Vital Statistics

Abstract

Objectives—This report presents 2004 fetal and perinatal mortality data by a variety of characteristics, including maternal age, marital status, race, Hispanic origin and state of residence; and by infant birthweight, gestational age, plurality and sex. Trends in fetal and perinatal mortality are also examined.

Methods—Descriptive tabulations of data are presented and interpreted.

Results—In 2004, there were 25,655 reported fetal deaths of 20 weeks of gestation or more in the United States. The U.S. fetal mortality rate was 6.20 fetal deaths of 20 weeks of gestation or more per 1,000 live births and fetal deaths, not significantly different from the rate of live births and fetal deaths, of 6.23 in 2003. The fetal mortality rate for non-Hispanic black women (11.25) was 2.3 times the rate for non-Hispanic white women (4.98), whereas the rate for Hispanic women (5.43) was 9 percent higher than the rate for non-Hispanic white women. Fetal and perinatal mortality rates have declined slowly but steadily from 1990 to 2004. Fetal mortality rates for 28 weeks of gestation or more have declined substantially whereas those for 20–27 weeks of gestation have not declined. Fetal mortality rates are elevated for a number of groups, including teenagers, women aged 35 years and over, unmarried women, and multiple deliveries. In 2004, one-half of fetal deaths of 20 weeks of gestation or more occurred between 20 and 27 weeks of gestation.

Keywords: fetal mortality • perinatal mortality • fetal death • stillbirth • pregnancy loss

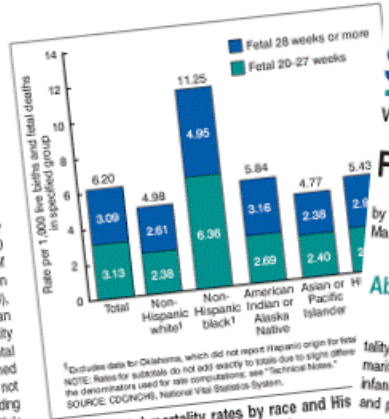


Figure 1. Fetal mortality rates by race and Hispanic origin of mother: United States, 2004

National Vital Statistics Reports **NVSS** **CDC**
 SAFER • HEALTHIER • PEOPLE™
 February 21, 2007
 Volume 55, Number 6
Fetal and Perinatal Mortality, United States, 2003

by Marian F. MacDorman, Ph.D.; Donna L. Hoyert, Ph.D.; Joyce A. Martin, M.P.H.; Martha L. Munson, M.S.; and Brady E. Hamilton, Ph.D., Division of Vital Statistics

Abstract

Objectives—This report presents 2003 fetal and perinatal mortality data by a variety of characteristics, including maternal age, marital status, race, Hispanic origin, and state of residence; and by infant birthweight, gestational age, plurality, and sex. Trends in fetal and perinatal mortality are also examined.

Methods—Descriptive tabulations of data are presented and interpreted.

Results—The U.S. fetal mortality rate in 2003 was 6.23 fetal deaths of 20 weeks of gestation or more per 1,000 live births and fetal deaths. Fetal and perinatal mortality rates have declined slowly but steadily from 1990 to 2003. Fetal mortality rates for 28 weeks of gestation or more have declined substantially, whereas those for 20–27 weeks of gestation have not declined. Fetal mortality rates are higher for a number of groups, including non-Hispanic black women, teenagers, women aged 35 years and over, unmarried women, and multiple deliveries. Over one-half (51 percent) of fetal deaths of 20 weeks of gestation or more occurred between 20 and 27 weeks of gestation.

Keywords: fetal mortality • perinatal mortality • fetal death • stillbirth • pregnancy loss

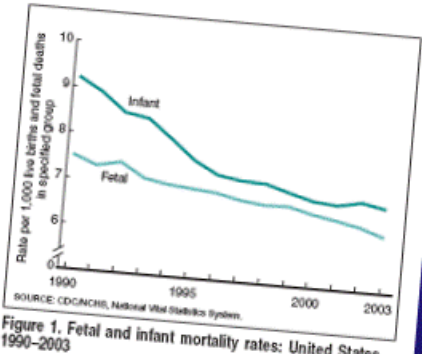


Figure 1. Fetal and infant mortality rates: United States, 1990–2003

Introduction

Natality Program Accomplishments

- Collaborate on enhanced assessment of preterm birth-related causes of infant deaths
 - A critical public health issue: More than 1 in 8 babies born preterm in 2006
 - Extends beyond traditional analyses of leading causes of infant mortality based on ICD codes
 - RSB and MSB analysts and colleagues from CDC's DRH developed better measurement of *impact* of preterm-related infant deaths on infant mortality
 - Preterm-related cause analysis now included in annual linked file report

**TRENDS IN PRETERM-RELATED INFANT
MORTALITY BY RACE AND ETHNICITY,
UNITED STATES, 1999–2004**

Marian F. MacDorman, William M. Callaghan, T. J. Mathews,
Donna L. Hoyert, and Kenneth D. Kochanek

Trends in preterm-related causes of death were examined by maternal race and ethnicity. A grouping of preterm-related causes of infant death was created by identifying causes that were a direct cause or consequence of preterm birth. Cause-of-death categories were considered to be preterm-related when 75 percent or more of total infant deaths attributed to that cause were deaths of infants born preterm, and the cause was considered to be a direct consequence of preterm birth based on a clinical evaluation and review of the literature. In 2004, 36.5 percent of all infant deaths in the United States were preterm-related, up from 35.4 percent in 1999. The preterm-related infant mortality rate for non-Hispanic black mothers was 3.5 times higher and the rate for Puerto Rican mothers was 75 percent higher than for non-Hispanic white mothers. The preterm-related infant mortality rate for non-Hispanic black mothers was higher than the total infant mortality rate for non-Hispanic white, Mexican, and Asian or Pacific Islander mothers. The leveling off of the U.S. infant mortality decline since 2000 has been attributed in part to an increase in preterm and low-birthweight births. Continued tracking of preterm-related causes of infant death will improve our understanding of trends in infant mortality in the United States.

Addressing non-comparable data in standard NCHS reports

- Careful ongoing evaluation of key non-comparable items
 - Presentation of unrevised and revised data in standard reports to assist researchers and other users
- Ongoing technical support for revising states on measurement challenges
- Detailed documentation for public-use file users

Table D. Educational attainment, smoking during pregnancy, timing of prenatal care, and primary cesarean and vaginal birth after previous cesarean (VBAC) by race and Hispanic origin of mother: 12 and 7 states (revised) and 37 states (unrevised), District of Columbia, and New York City, 2004 and 2005

Race and Hispanic origin of mother	Educational attainment									
	Revised (12 state reporting area) ^{1,2}		Revised (7 state reporting area) ^{1,3}				Unrevised (37 state reporting area) ⁴			
	High school diploma (GED) or higher	Bachelor's degree or higher	High school diploma (GED) or higher		Bachelor's degree or higher		12 years or more years of school		16 years or more years of school	
	2005	2005	2005	2004	2005	2004	2005	2004	2005	2004
All races and origins ⁵	76.5	23.3	80.8	81.0	26.3	26.4	79.1	79.0	27.8	27.8
Non-Hispanic white	87.5	31.6	87.1	87.0	31.2	31.0	89.4	89.2	37.4	37.1
Non-Hispanic black	75.3	10.7	73.5	73.0	10.2	10.1	77.1	76.4	14.1	13.8
Hispanic ⁶	52.0	8.6	47.4	47.8	7.6	7.5	52.7	52.2	8.4	8.2

Race and Hispanic origin of mother	Smoking during pregnancy					
	Revised (11 state reporting area) ^{1,7}		Revised (7 state reporting area) ^{1,3}		Unrevised (36 state reporting area) ⁸	
	Smoker		Smoker		Smoker	
	2005	2005	2005	2004	2005	2004
All races and origins ⁵	12.4	12.4	16.2	16.3	10.7	10.9
Non-Hispanic white	17.7	17.7	19.2	19.0	13.9	14.0
Non-Hispanic black	10.3	10.3	12.5	13.0	8.5	8.7
Hispanic ⁶	2.7	2.7	5.4	5.7	2.9	3.1

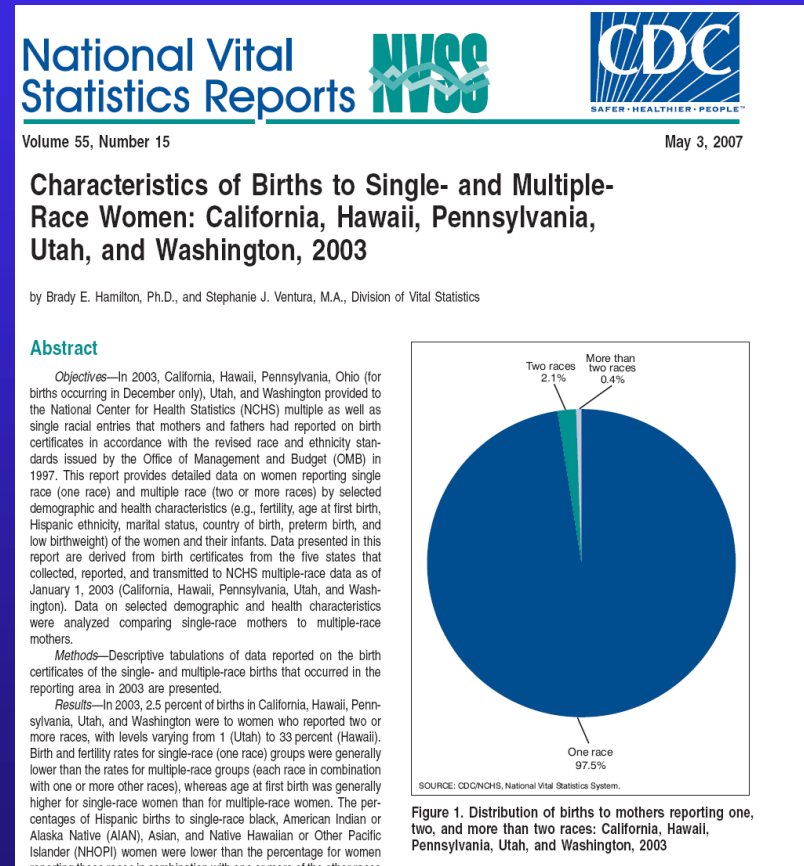
Race and Hispanic origin of mother	Timing of prenatal care (PNC)									
	Revised (12 state reporting area) ^{1,2}		Revised (7 state reporting area) ^{1,3}				Unrevised (37 state reporting area) ⁴			
	1st trimester PNC	Late or no PNC	1st trimester PNC		Late or no PNC		1st trimester PNC		Late or no PNC	
	2005	2005	2005	2004	2005	2004	2005	2004	2005	2004
All races and origins ⁵	70.2	7.7	72.8	72.9	6.0	6.2	83.9	84.2	3.5	3.5
Non-Hispanic white	77.2	4.9	77.8	78.0	4.4	4.5	88.7	89.0	2.2	2.1
Non-Hispanic black	60.1	11.3	59.3	58.9	10.8	11.4	76.5	76.3	5.6	5.7
Hispanic ⁶	60.0	11.9	57.0	56.5	10.8	11.0	77.6	77.7	5.1	5.2

Race and Hispanic origin of mother	Method of delivery									
	Revised (12 state reporting area) ^{1,2}		Revised (7 state reporting area) ^{1,3}				Unrevised (37 state reporting area) ⁴			
	Primary cesarean	Vaginal birth after previous cesarean	Primary cesarean		Vaginal birth after previous cesarean		Primary cesarean		Vaginal birth after previous cesarean	
	2005	2005	2005	2004	2005	2004	2005	2004	2005	2004
All races and origins ⁵	24.3	10.1	23.4	23.1	12.0	14.1	20.3	19.6	7.9	9.1
Non-Hispanic white	24.5	9.6	23.7	23.4	11.1	12.9	20.8	20.0	7.7	9.0
Non-Hispanic black	25.7	10.7	24.2	23.9	14.8	17.8	22.8	21.7	7.9	9.7
Hispanic ⁶	23.3	10.7	20.6	20.5	13.7	16.0	17.5	16.9	7.9	8.6

Martin JA, Hamilton BE, Sutton PD, Ventura SJ, Menacker F, Kirmeyer S, Munson ML. Births: Final data for 2005. National vital statistics reports; vol 56 no 6. Hyattsville, MD: National Center for Health Statistics. 2007.

Addressing multiple-race data in NCHS reports

- Preparation of special report on births to multiple race mothers
 - Measures size of likely population
 - Compares characteristics of single- and multiple-race mothers and births



Other recommendations being addressed

- **Training**
 - DVS analysts taught week-long enhanced course on vital statistics measurement issues to state colleagues; course well-received
- **Validation of revised data**
 - RSB staff working with state colleagues to develop more systematic validation of data collection issues and impact on revised data, e.g.
 - **Method of delivery**
 - **Prenatal care receipt**
- **On-going collaboration with NAPHSIS staff** -- through NCHS-funded cooperative agreement, on improved data collection strategies, e.g.,
 - Development of brochure to encourage moms to complete birth information

Ongoing Efforts – even with resource constraints

- RSB analysts prepared reports assessing quality of new data items and shared reports with State colleagues to encourage improved data collection
 - Breastfeeding and WIC
 - Infant living at time of report
 - Report on BMI components (prepregnancy weight/weight at delivery/height) in preparation
- DVS analysts prepared analysis of apparent under-reporting of infant deaths
 - Complements ongoing efforts by NAPHSIS on this issue

New Development:

- Fruitful discussions underway with NAPHSIS on strategies to analyze and publish data on new (now “unreleasable”) items...
 - Stay tuned!**

Important Challenges and Unmet Needs:

- Growing resource constraints translate into
 - Sharply curtailed data quality activities especially for revised and new data items
 - No opportunities for followback studies and other efforts to enhance value of birth certificate data
 - No possibilities for small special projects

For more information, please contact:

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