

Massachusetts Births 2006

Massachusetts Department of Public Health

**Bureau of Health Information,
Statistics, Research, and Evaluation**
Division of Research and Epidemiology
Registry of Vital Records & Statistics
MassCHIP

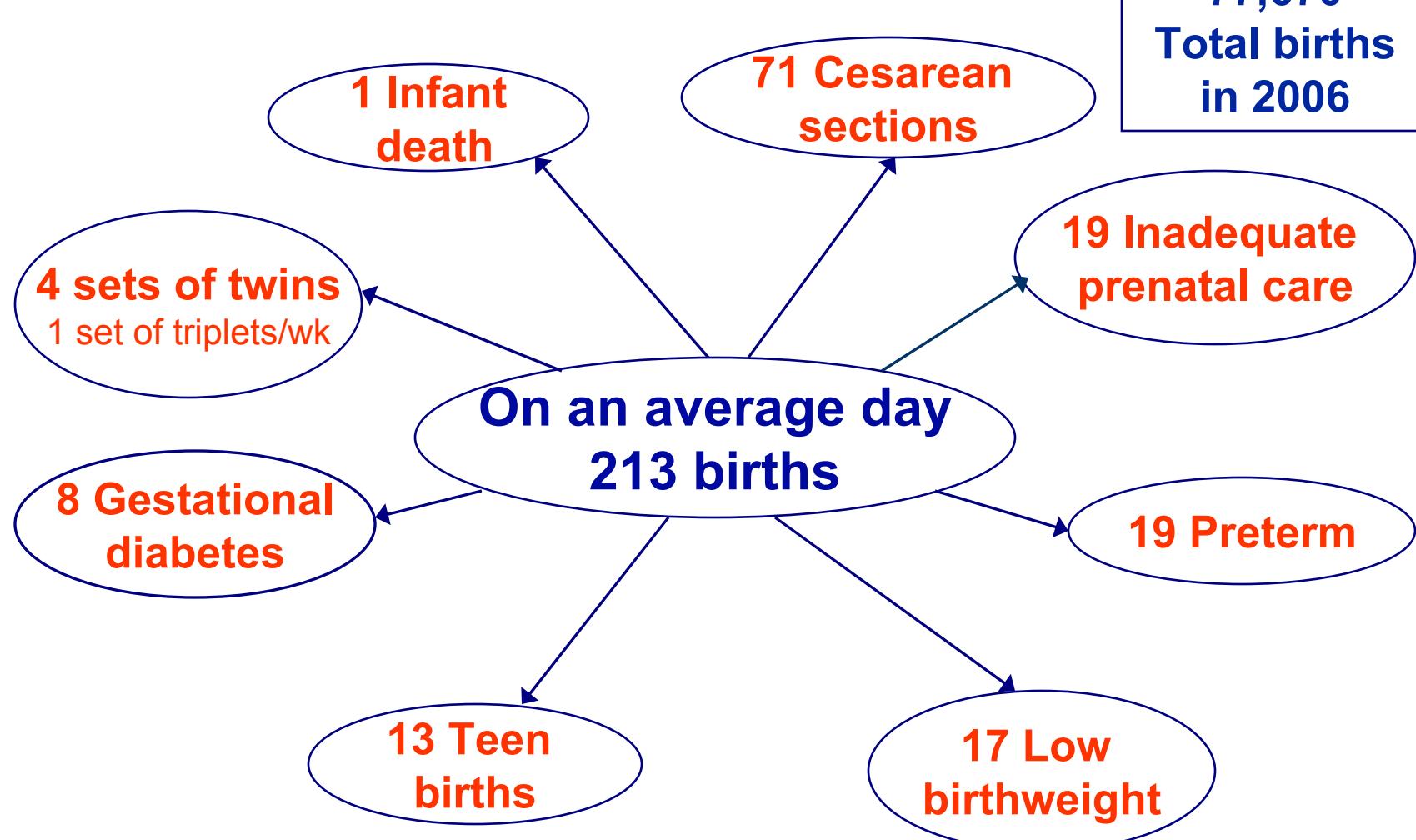


Bureau of Family Health and Nutrition

Outline

- I. Overview of MA Births 2006 and Comparison with U.S. indicators**
- II. Trends in MA Birth Outcomes**
- III. Infant & Fetal Mortality**
- IV. Teen Births**
- V. Gestational Diabetes Mellitus (new)**
- VI. Birth Outcomes by Maternal Socio-economic Characteristics**
- VII. Selected Communities**
- VIII. Summary**

On An Average Day, in Massachusetts, in 2006

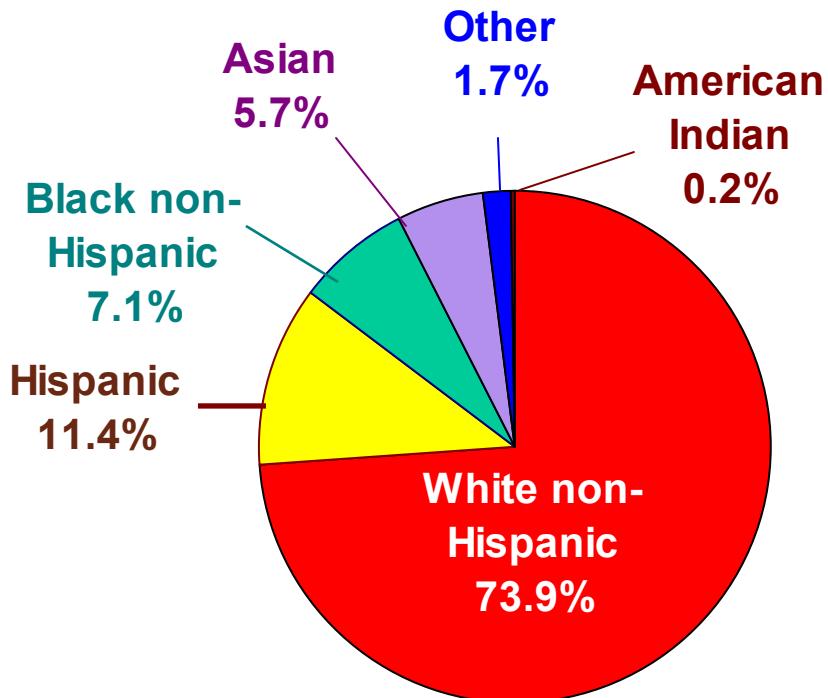


Note: These characteristics are not mutually exclusive

Births by Race and Hispanic Ethnicity Massachusetts: 2000 & 2006

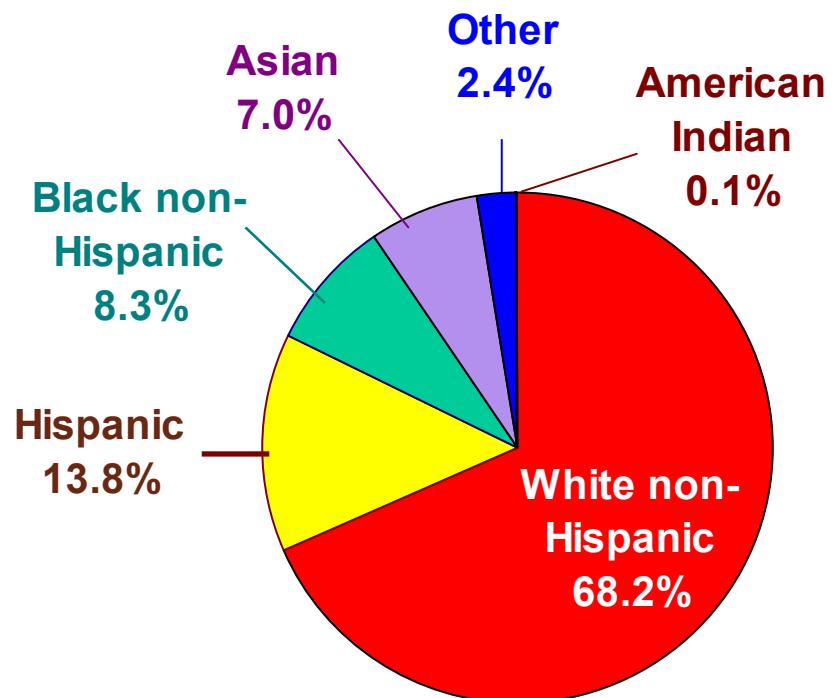
2000

81,256 births



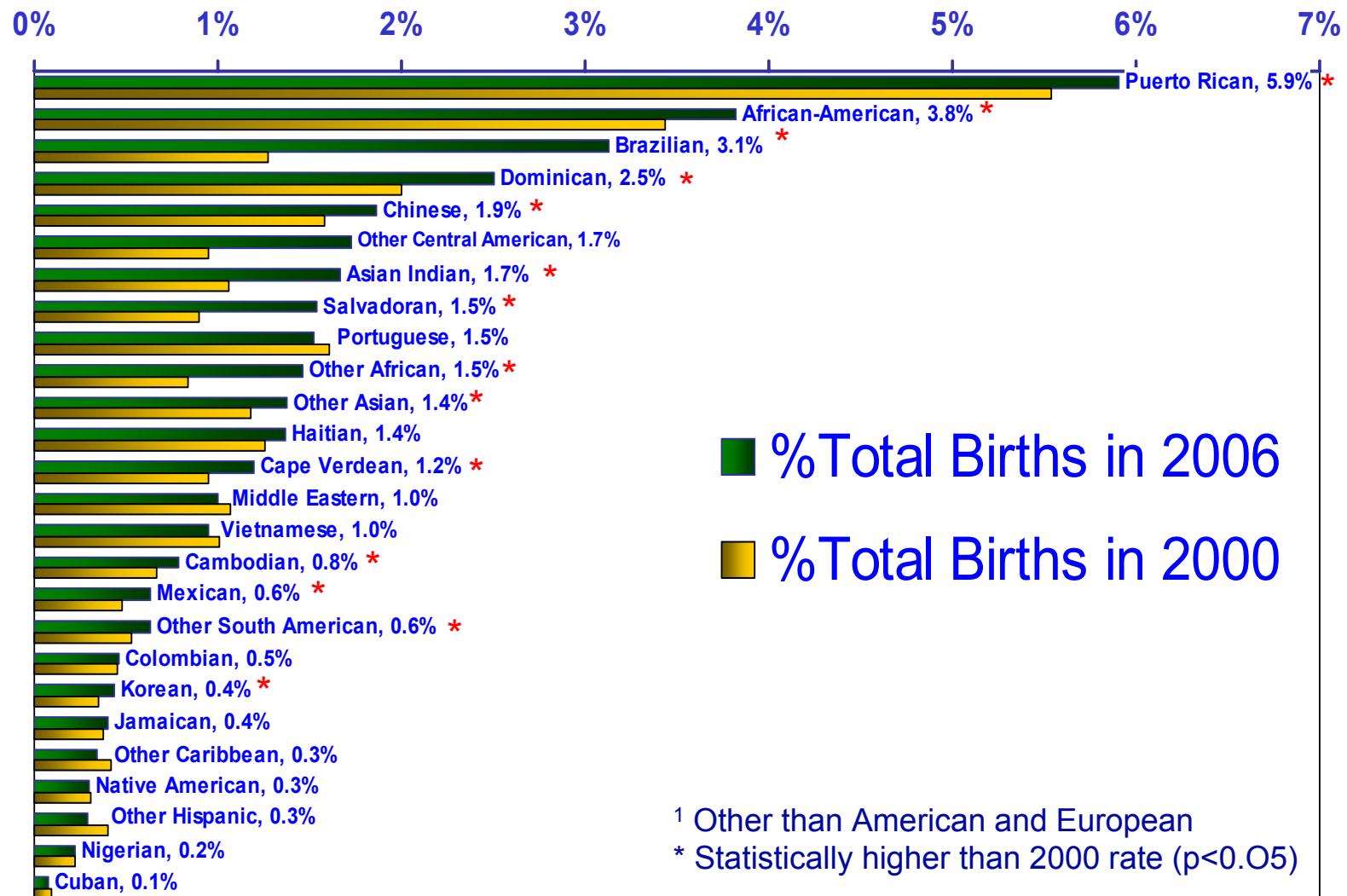
2006

77,670 births



Births by Maternal Ethnicity¹

Massachusetts Births 2000 & 2006



Largest Increase of Births by Maternal Ethnicity

Ethnicity	2000	2006	%Change
Brazilian	1,033	2,434	136%*
Salvadoran	736	1,198	63%*
African (other than African-American)	865	1,302	51%*
Asian Indian	861	1,300	51%*

* Statistically Significant ($p \leq .05$)

Overview of MA Births 2006 and Comparison with U.S. Births

A Comparison of 2006 Birth Indicators Massachusetts v. U.S.¹

	<u>MA</u>	<u>U.S.</u>
Fertility Rate (births /1000 ages 15-44)	56.7*	68.5
Teen Birth Rate (births/1000 ages 15-19)	21.3*	41.9
% Low Birthweight (< 5.5 lbs)	7.9*	8.3
% Preterm (< 37 weeks gestation)	9.0*	12.8
Infant Mortality Rate (IMR) (deaths per 1,000 live births)	4.8*	6.9²
% Smoking during pregnancy	7.4*	10.7^{2,3}
% Prenatal Care 1st trimester	82.1	4
% C-Section	33.4**	31.1

1. National Vital Statistics Report, Births *Preliminary Data for 2006*. Released on December 5, 2007.

2. Based on Final 2005 data. National Vital Statistics Reports, Vol. 56, No. 6, December 5, 2007. Data for 2006 have not yet been released.

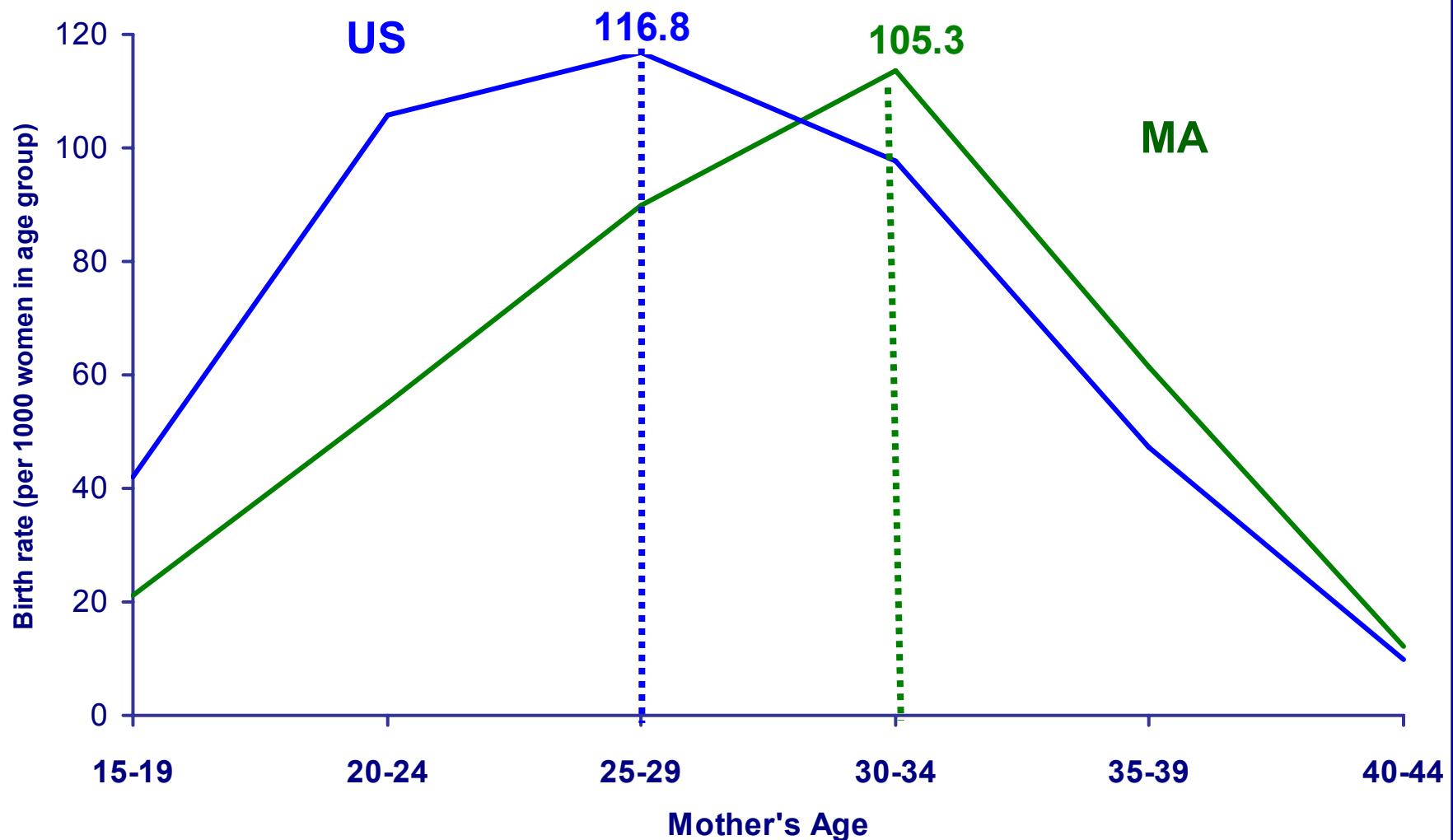
3. Based on a 40- or 41-state reporting area.

4. Calculations are not comparable.

* Statistically lower than US rate ($p \leq .05$)

** Statistically higher than US rate ($p < .05$)

Age-specific Birth Rates Massachusetts vs. U.S.¹: 2006



¹US Source: Births: Preliminary Data for 2006, NCHS. December 6, 2007

Trends in Massachusetts Birth Outcomes

Massachusetts Births 2000 & 2006

	<u>2006</u>	<u>% change 2000 and 2006</u>
Number of Births	77,670	- 5%*
Teen Birth Rate (births/1000 ages 15-19)	21.3	-18%*
% Smoking during pregnancy	7.4	-24%*
% Low Birthweight	7.9	+11%**
% C-Section	33.4	+43%**
% Multiple Births	4.5	+5%
Infant Mortality Rate (deaths per 1,000 live births)	4.8	+4%
- White Non-Hispanic IMR	4.2	+11%
- Black Non-Hispanic IMR	11.1	-13%
- Hispanic IMR	5.8	+12%

* Statistically lower than 2000 rate ($p \leq .05$)

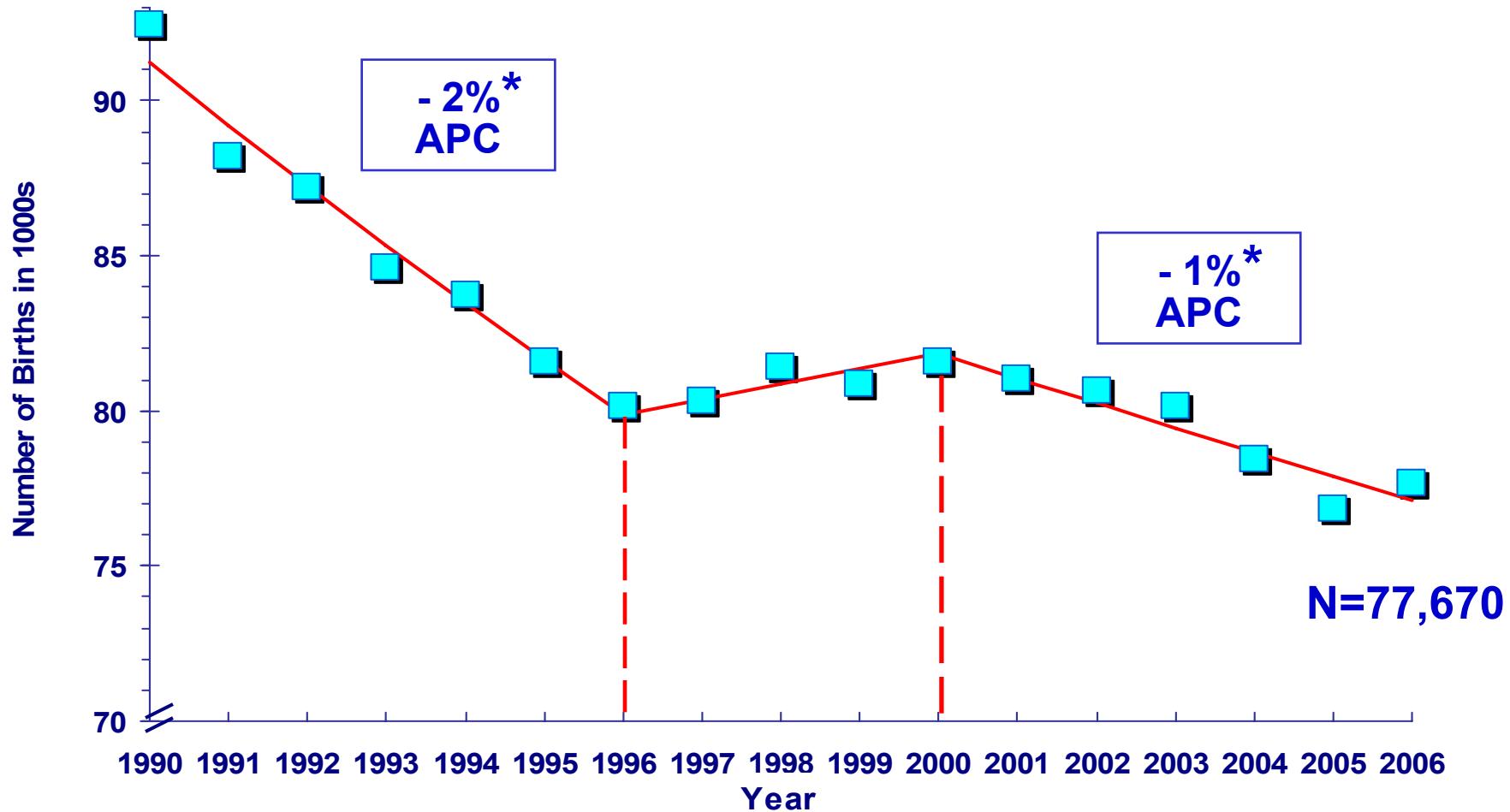
** Statistically higher than 2000 rate ($p < .05$)

Joinpoint Analysis (JPA)

- A trend analysis tool developed by the National Cancer Institute
- Creates a “model” (graph) that best describes the trend in events
- Points where the trend turns around are called “joinpoints”
- Shows the Annual Percentage Change (APC) for each line segment in the model

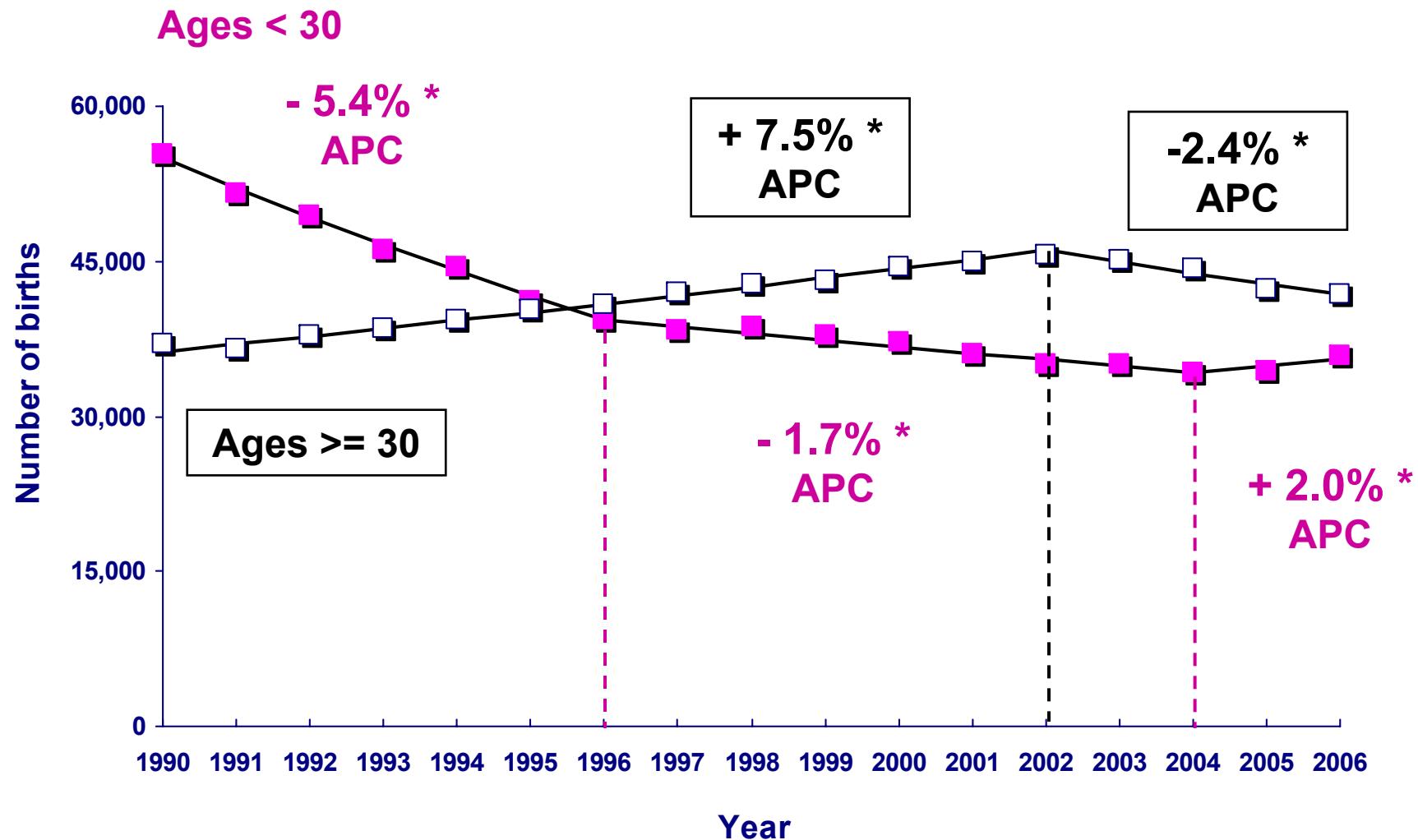
Trend in the Number of Births Massachusetts: 1990-2006

N=92,460

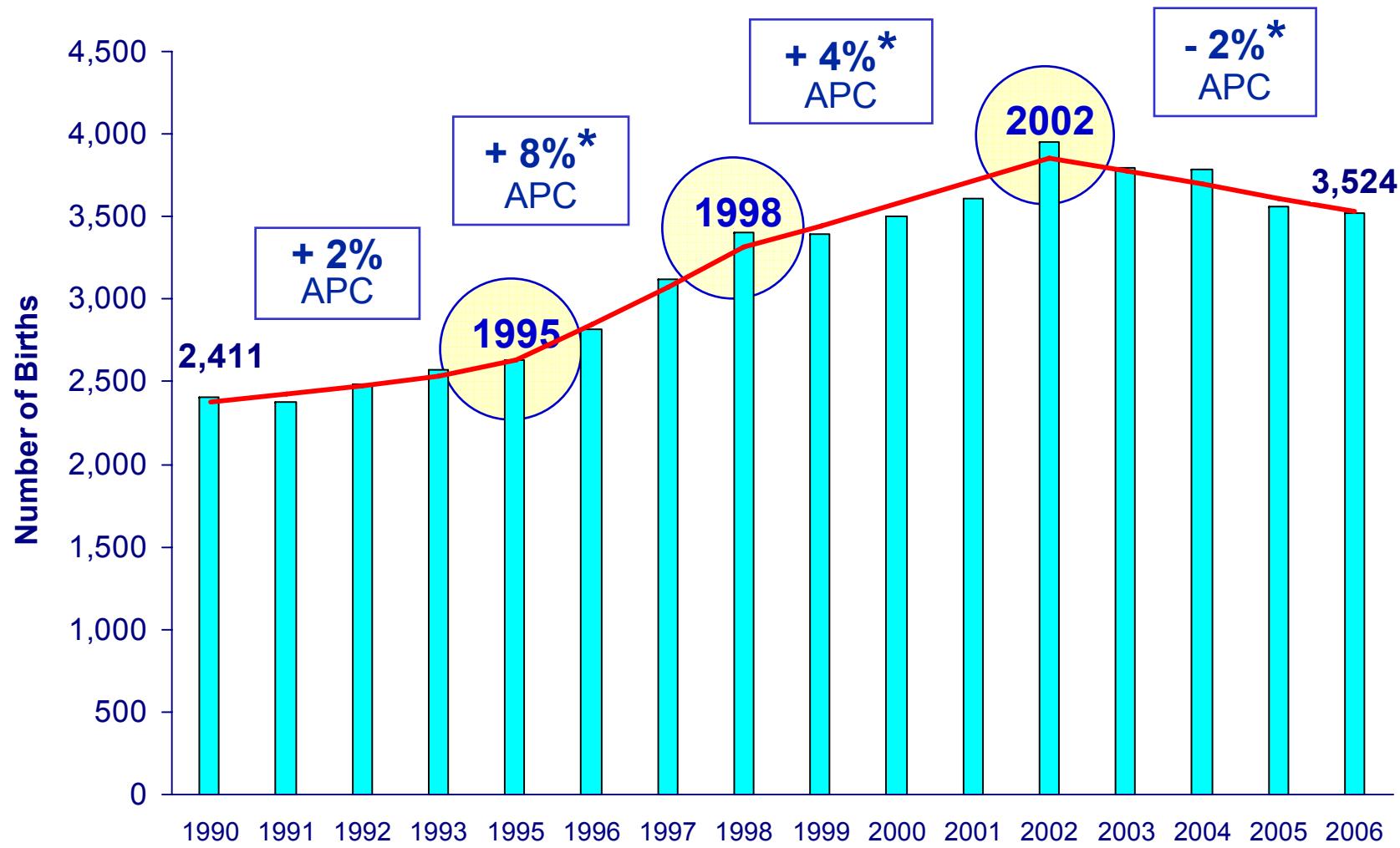


* Statistically Significant ($p \leq .05$) APC = Annual Percentage Change

Number of Births by Mother's Age (< 30 and 30+), Massachusetts: 1990-2006

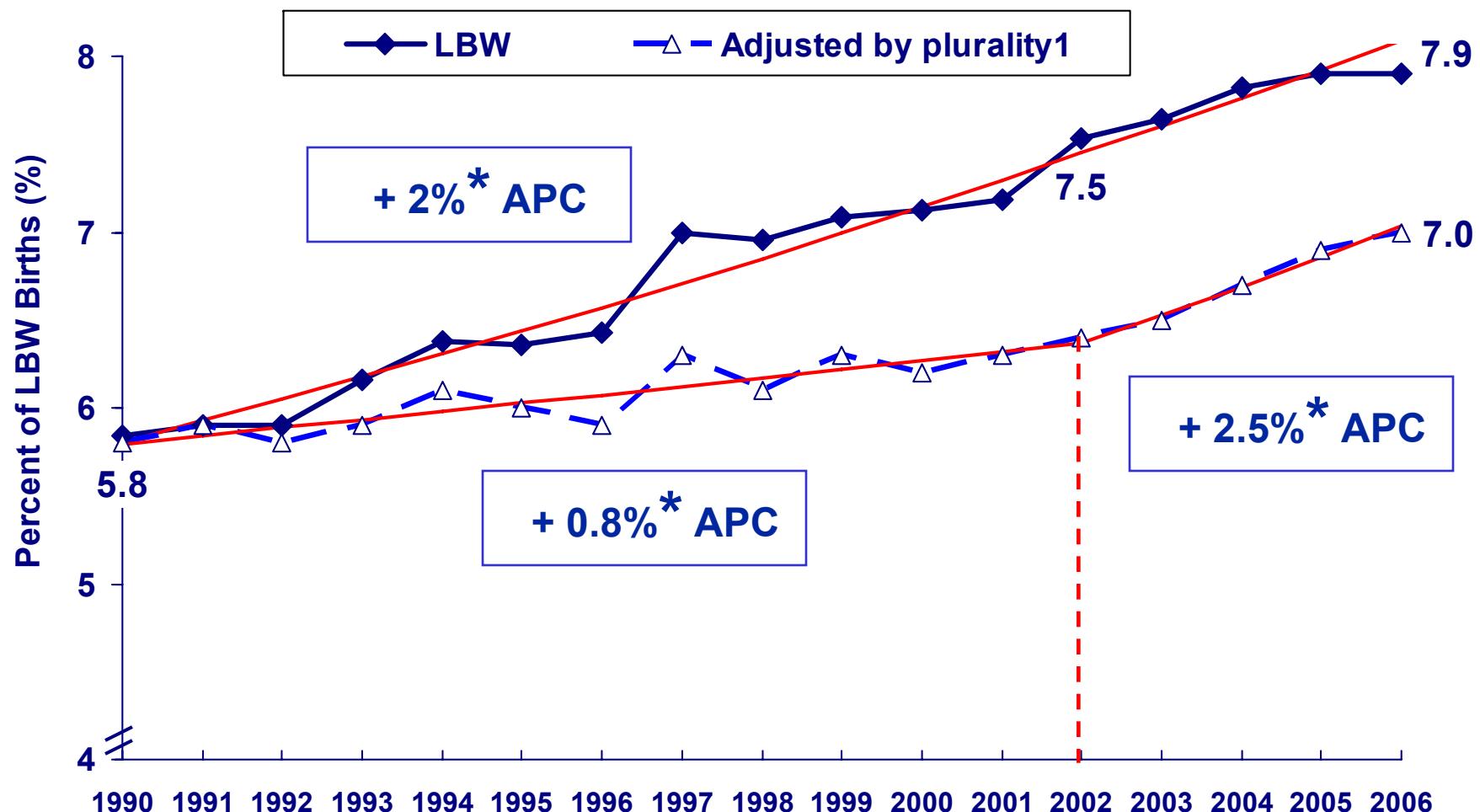


Number of Multiple Births Massachusetts: 1990-2006



* Statistically Significant ($p \leq .05$) APC = Annual Percentage Change

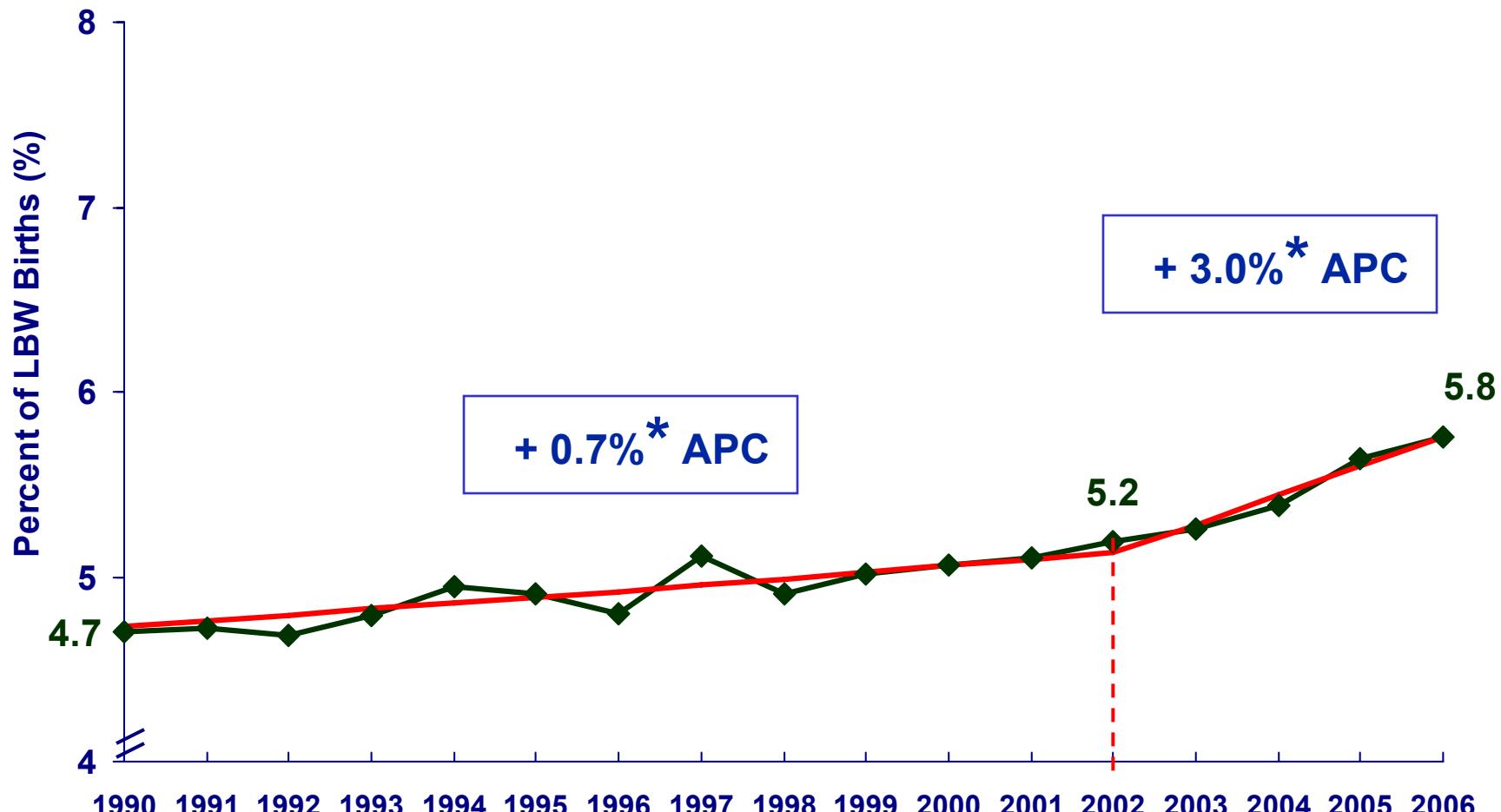
Low Birthweight (<2500g or 5.5lbs) Massachusetts: 1990-2006



¹ Plurality-adjusted LBW rate using 1990 plurality distribution as standard

* Statistically Significant ($p \leq .05$) APC = Annual Percentage Change

Singletons Low Birthweight ($<2500\text{g}$ or 5.5lbs) Massachusetts: 1990-2006



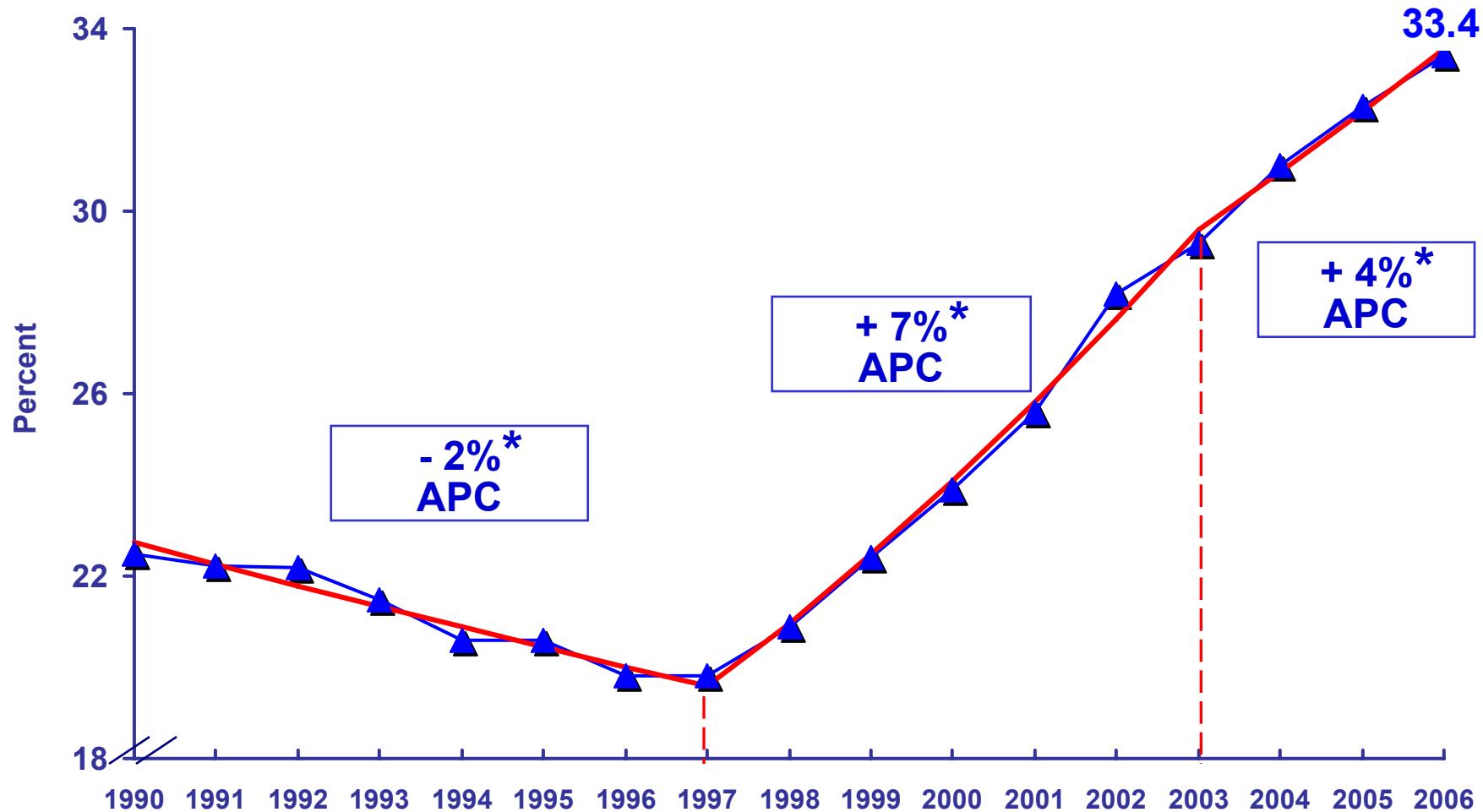
* Statistically Significant ($p \leq .05$)

APC = Annual Percentage Change

Source: Massachusetts Department of Public Health, Bureau of Health Information, Statistics, Research, and Evaluation

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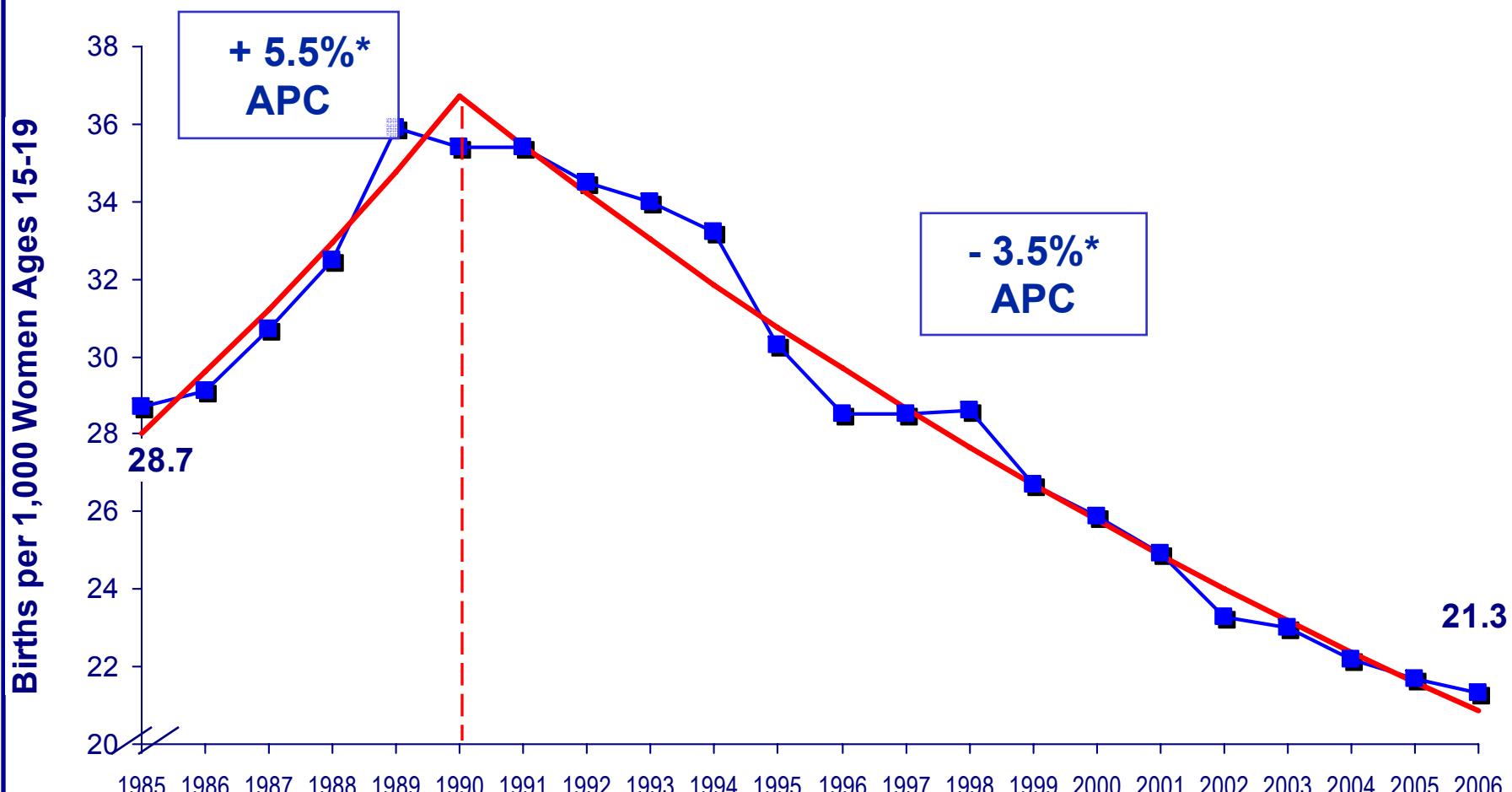
Infants Delivered by C-Section Massachusetts: 1990-2006



* Statistically Significant ($p \leq .05$)

APC = Annual Percentage Change

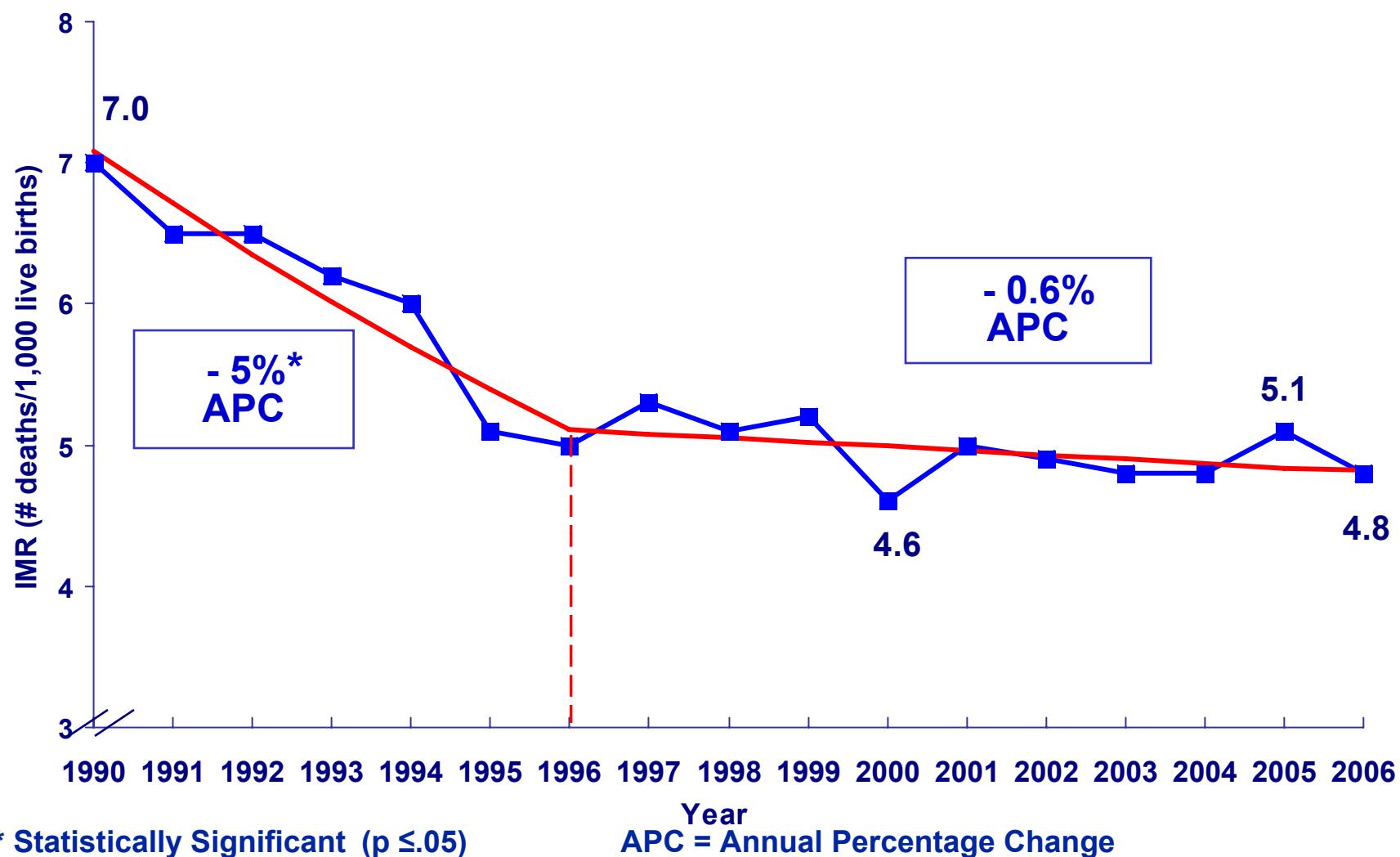
Teen Birth Rates Massachusetts : 1985-2006



* Statistically Significant ($p \leq .05$)

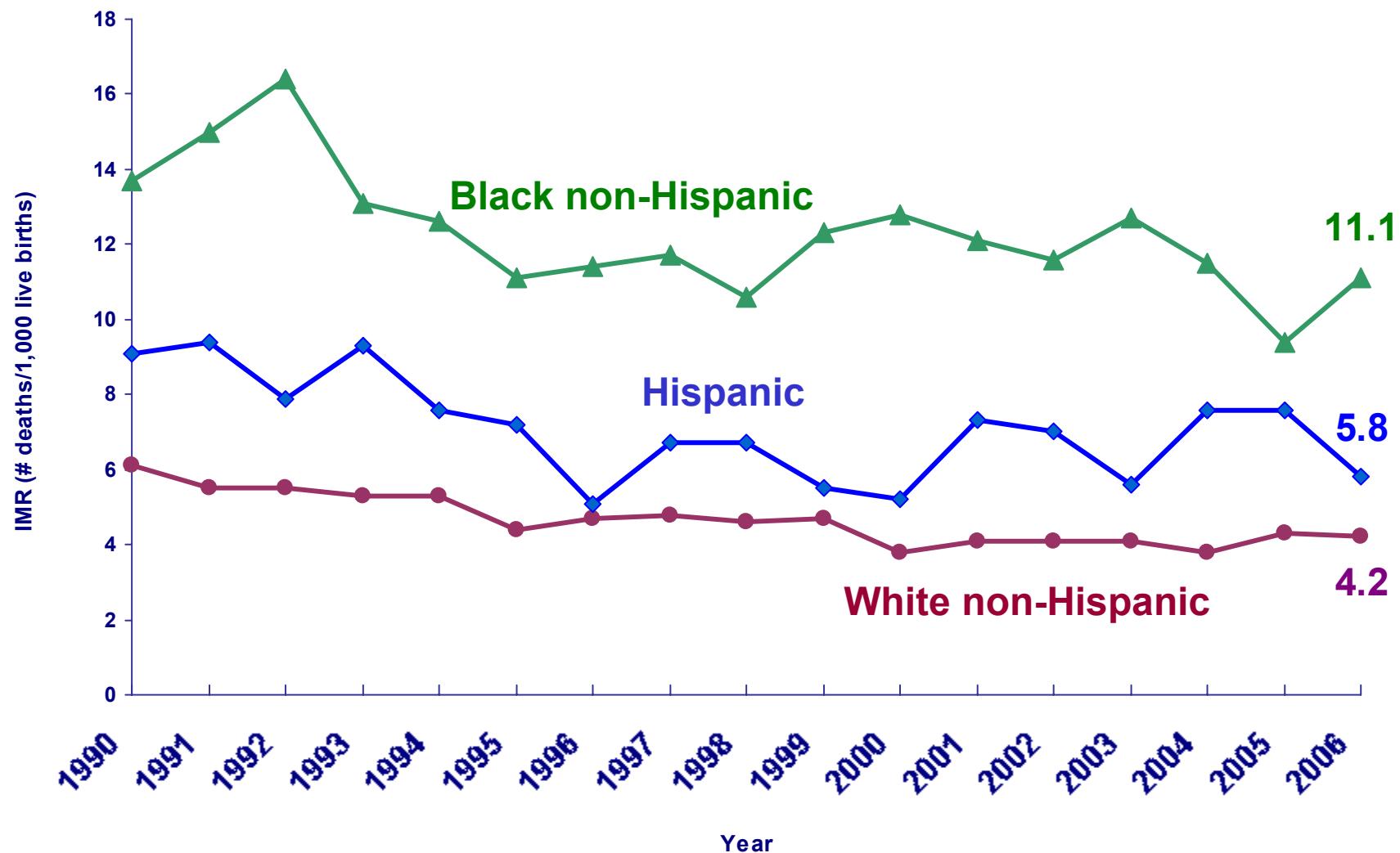
Trends in Infant & Fetal Mortality

Infant Mortality Rate (IMR) Massachusetts: 1990-2006

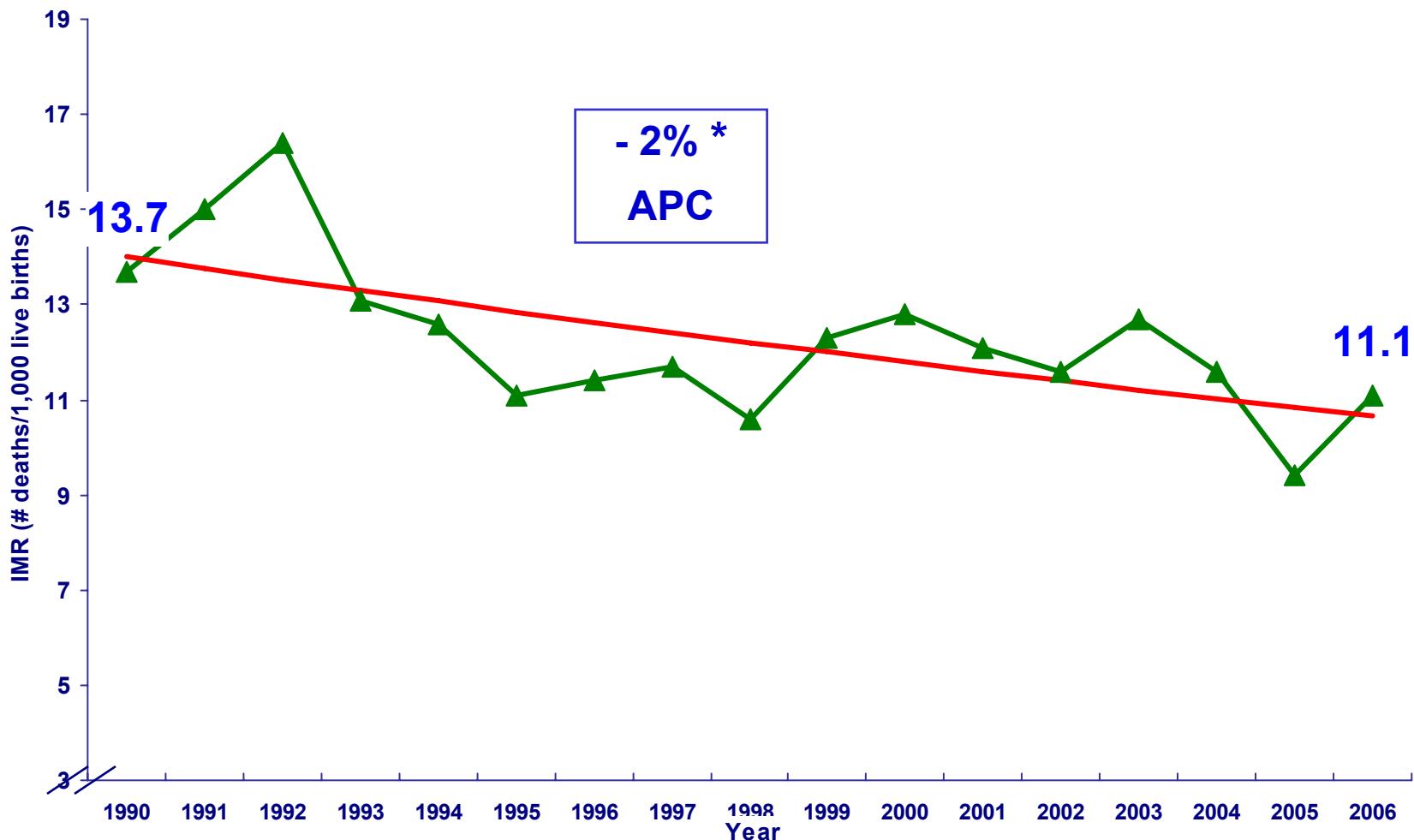


Source: Massachusetts Department of Public Health, Bureau of Health Information, Statistics, Research, and Evaluation

IMR by Race & Hispanic Ethnicity Massachusetts: 1990-2006

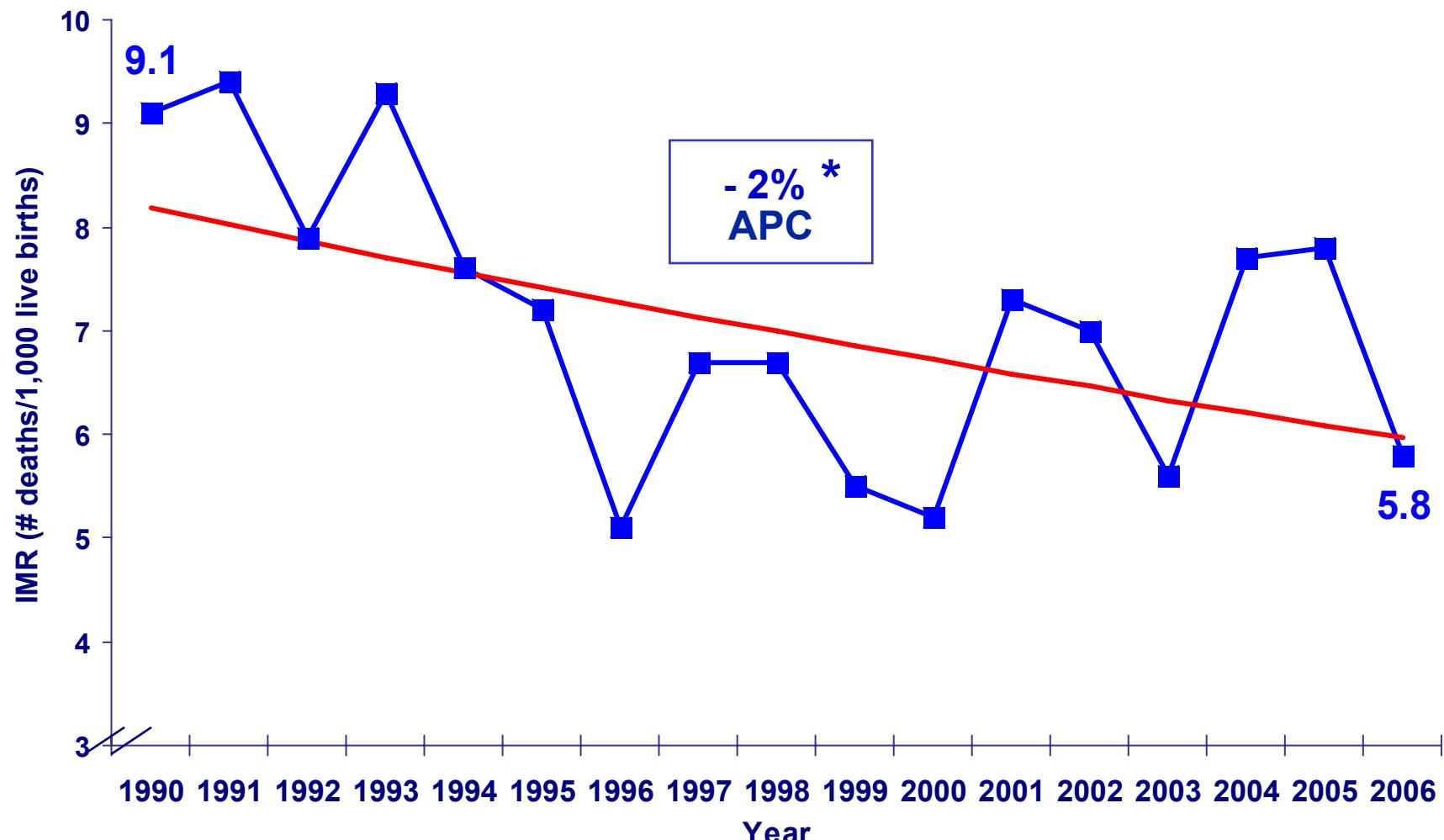


Black Non-Hispanic IMR Massachusetts: 1990-2006



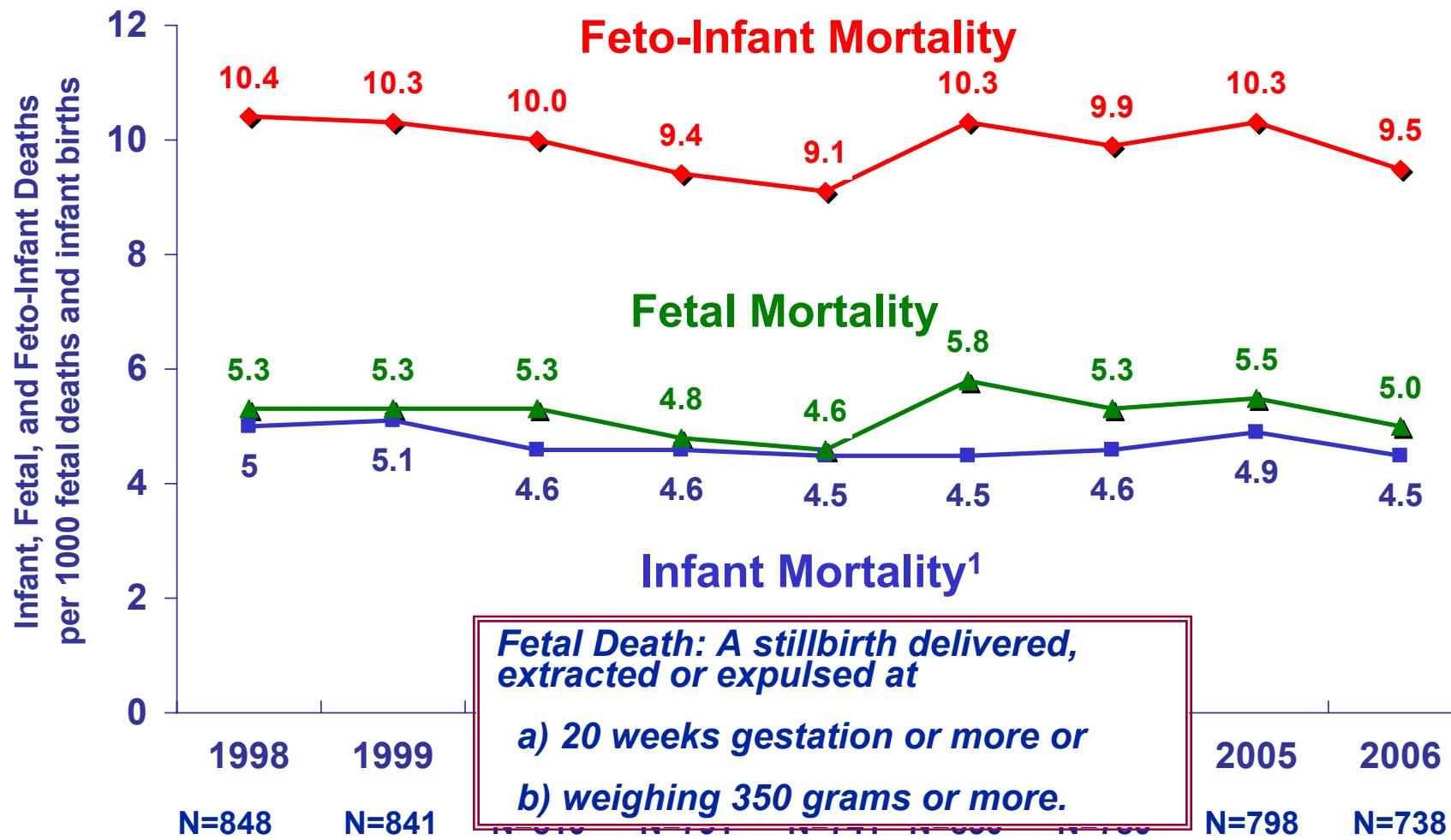
* Statistically Significant ($p \leq .05$) APC = Annual Percentage Change

Hispanic IMR Massachusetts: 1990-2006



* Statistically Significant ($p \leq .05$) APC = Annual Percentage Change

Infant & Fetal Mortality Rate Massachusetts: 1998-2006



¹ Infant Mortality = # of infant deaths/(fetal deaths + live births)

Teen Births

Births to Teens (15-19 years) Massachusetts and U.S.¹ : 2006

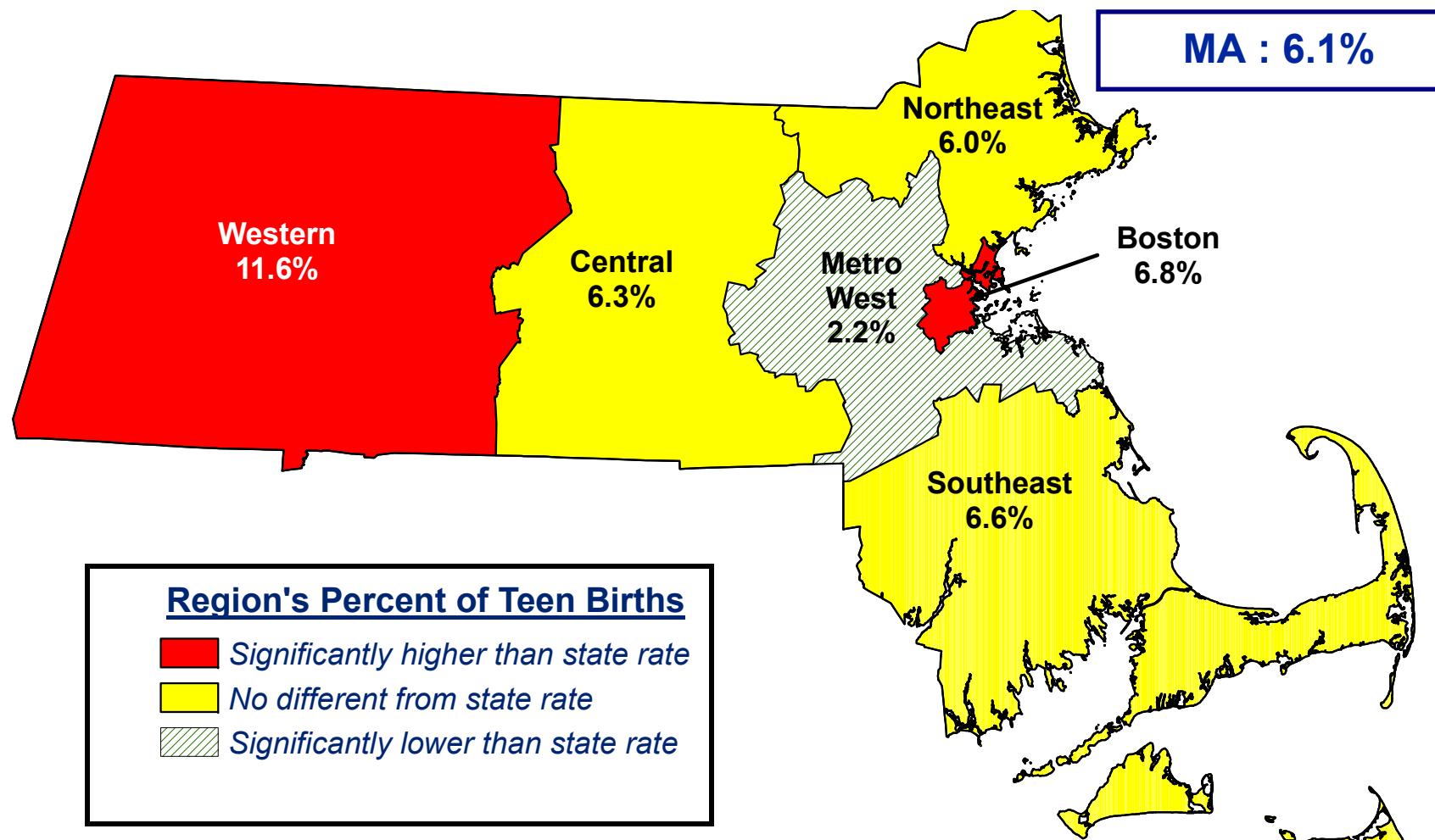
	<u>Massachusetts</u>	<u>United States¹</u>
Teen Births	4,722	435,427
Teen Birth Rates (births per 1,000 females ages 15-19)	21.3*	41.9
White non-Hispanic	12.5*	26.6
Black non-Hispanic	34.4*	63.7
Asian²	13.4	16.7
Hispanic	72.7*	83.0

¹National Vital Statistics Report, Preliminary Births for 2006. Released December 07, 2007.

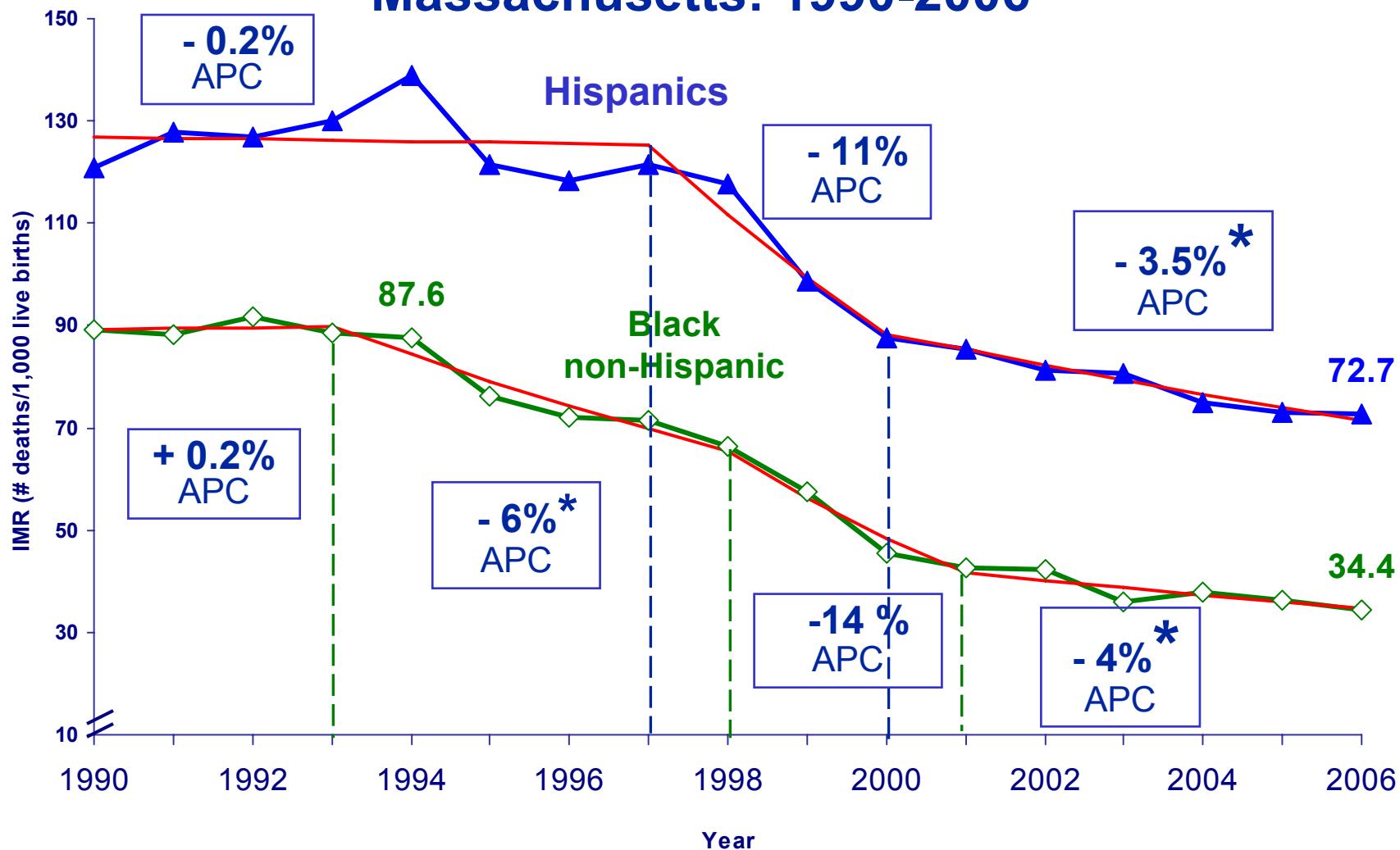
² For U.S. data, Asian category includes persons of Hispanic and non-Hispanic origins

*Statistically significant lower than US rate ($p \leq .05$)

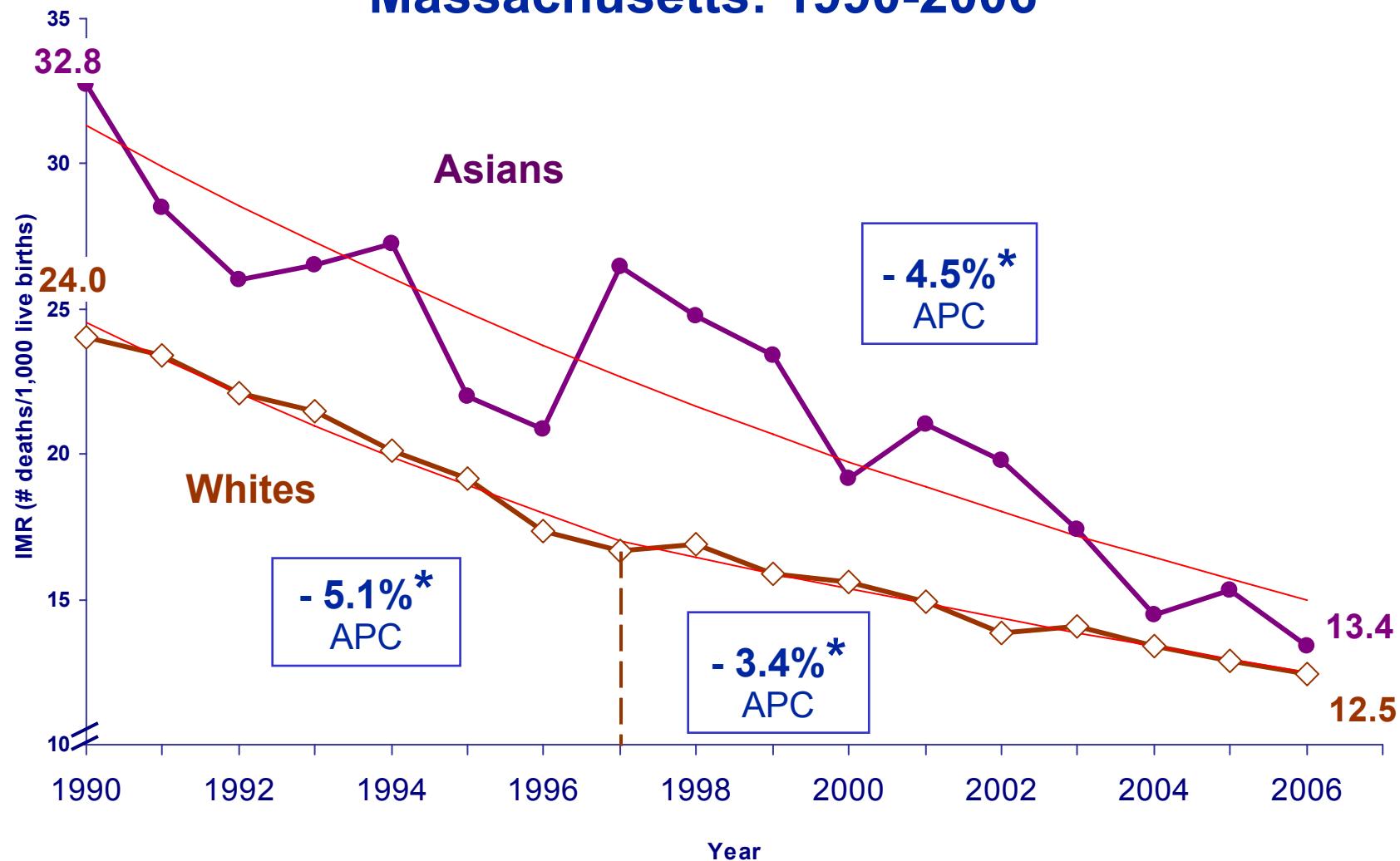
Teen Births as Percent of All Births by MDPH Regions Massachusetts: 2006



Teen Birth Rates for Hispanics and Black non-Hispanics Massachusetts: 1990-2006



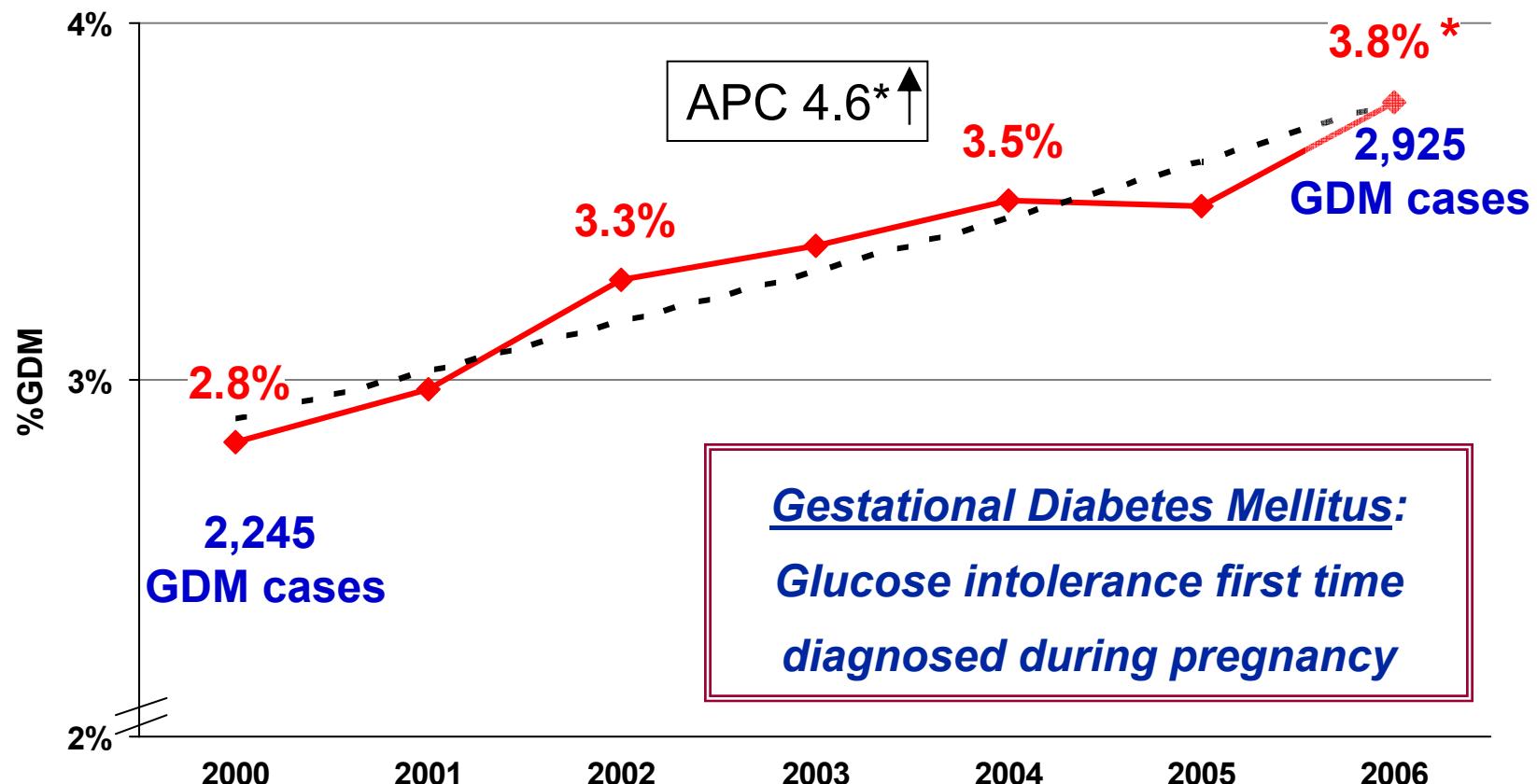
Teen Birth Rates for Non-Hispanic Asians and Whites Massachusetts: 1990-2006



Source: Massachusetts Department of Public Health, Bureau of Health Information, Statistics, Research, and Evaluation

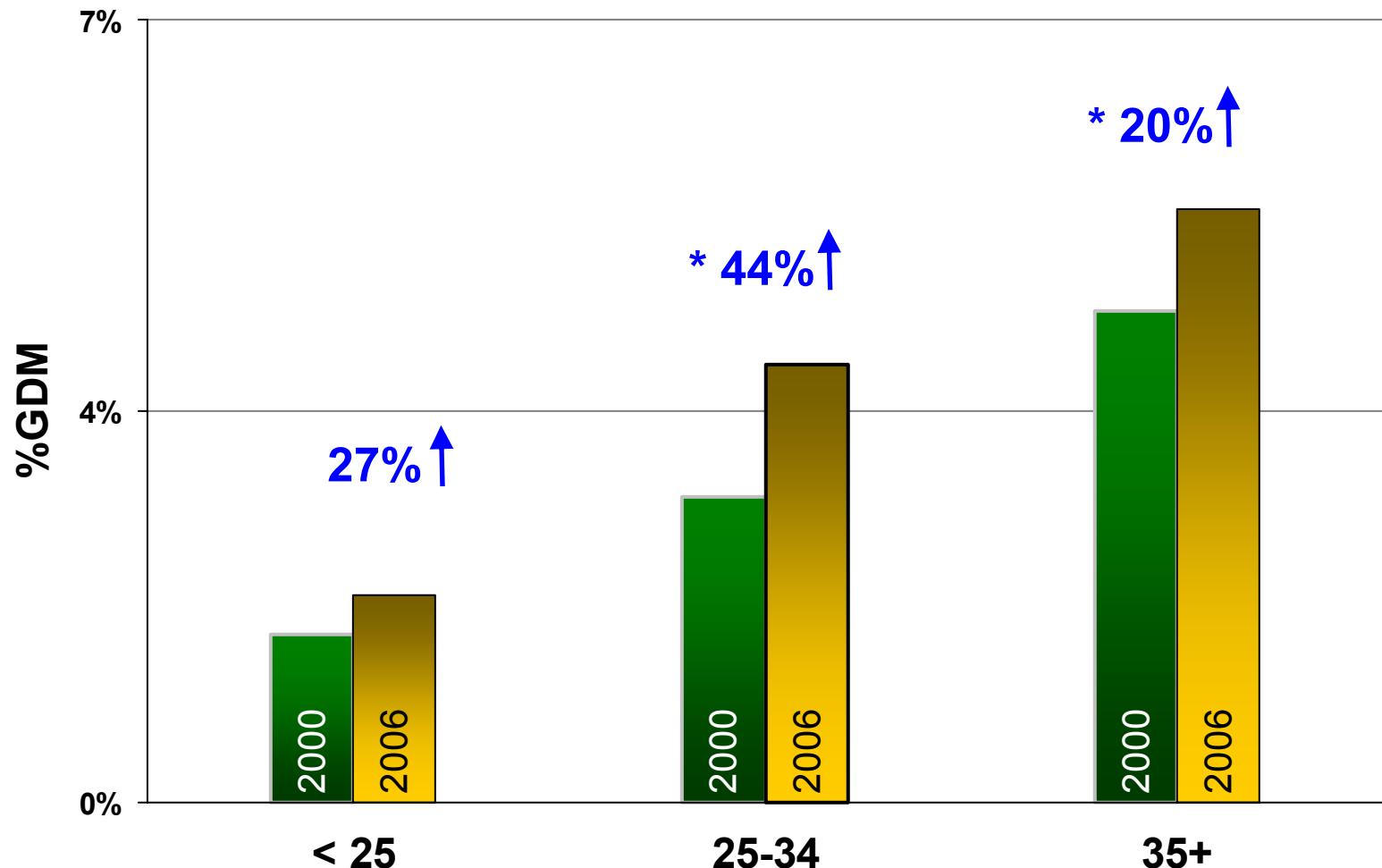
Gestational Diabetes Mellitus (GDM)

Gestational Diabetes Mellitus (GDM) Massachusetts Births 2000-2006



In 2006, %GDM increased statistically significantly by 9% from 2005, and by 36% from 2000 ($p<0.05$).

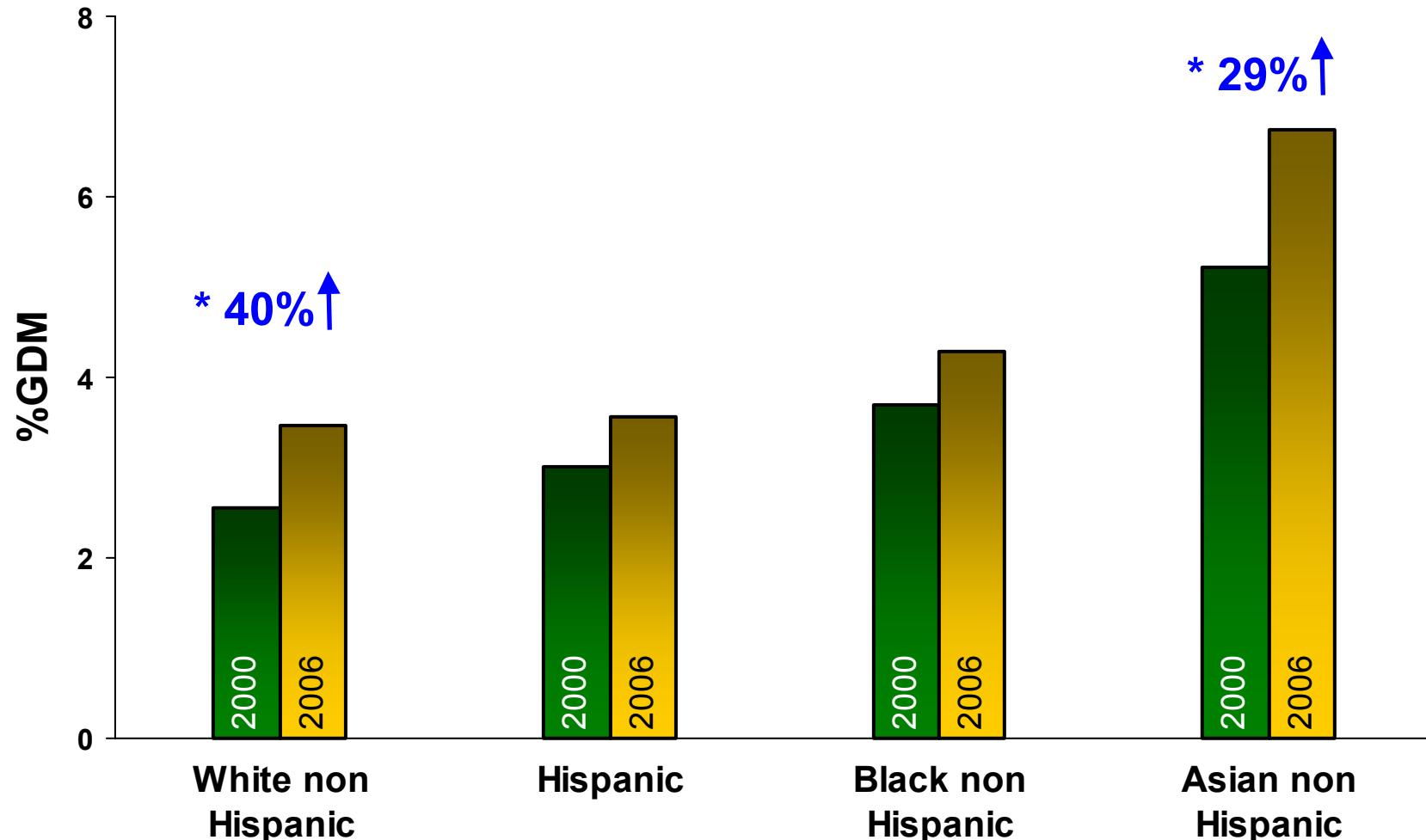
GDM by Maternal Age Massachusetts Births 2000 vs. 2006



* Statistically higher than 2000 rate ($p<0.05$)

GDM by Maternal Race and Hispanic Ethnicity

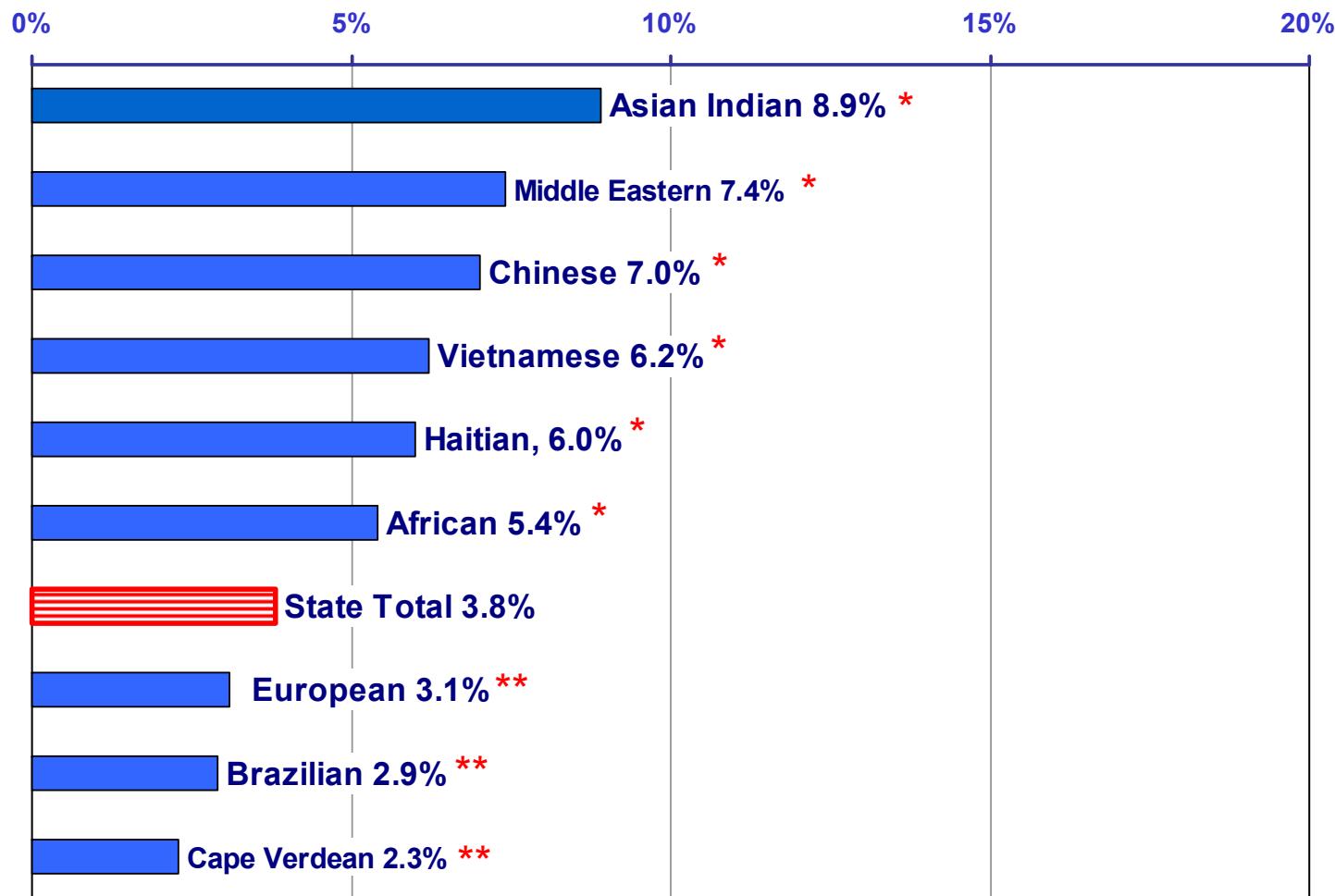
Massachusetts Births 2000 vs. 2006



* Statistically higher than 2000 rate ($p<0.05$)

Source: Massachusetts Department of Public Health, Bureau of Health Information, Statistics, Research, and Evaluation

GDM by Maternal Ethnicity¹ Massachusetts Births 2006

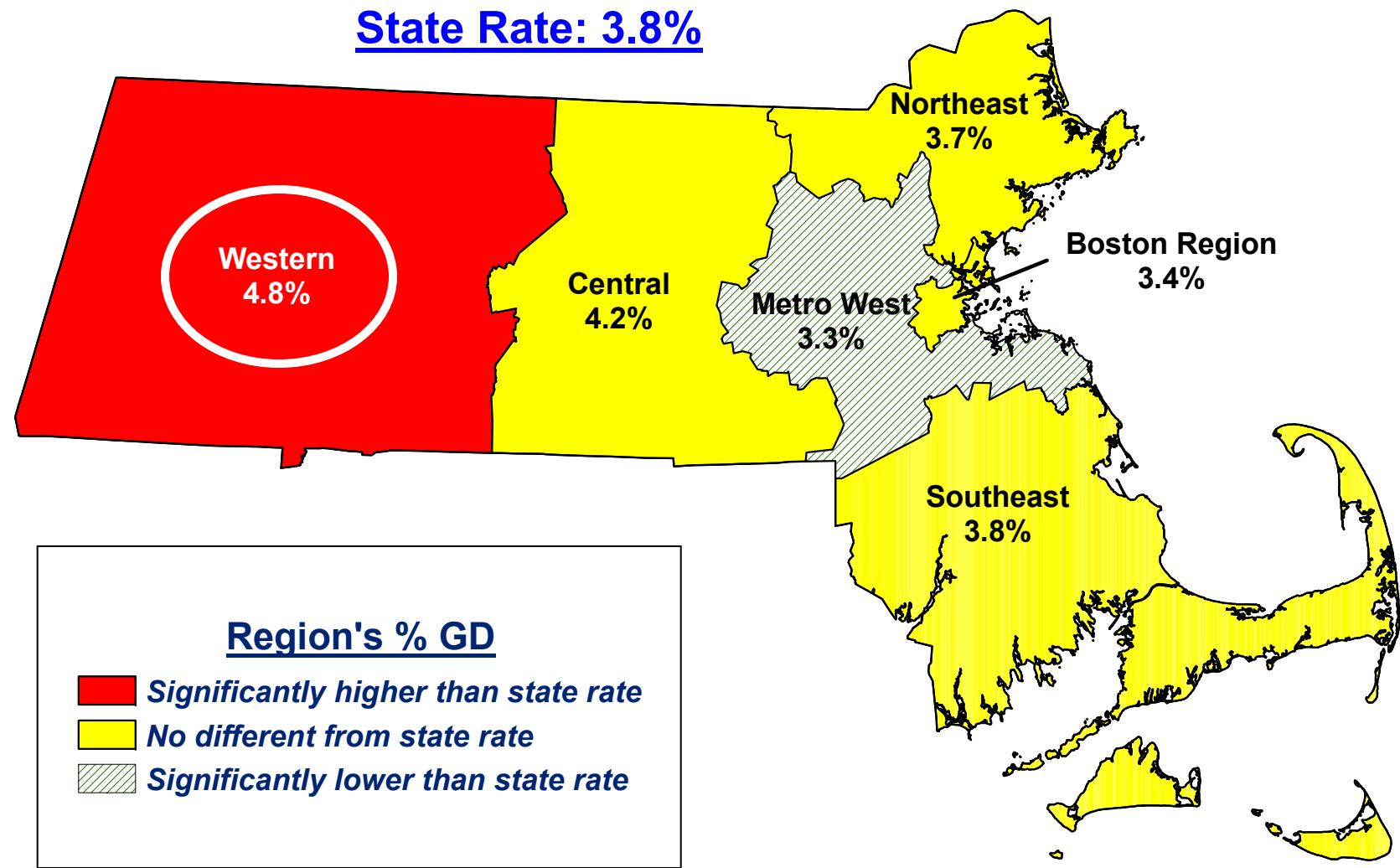


¹ Only ethnic groups statistically different from the state rate are included

* Statistically higher than state rate ($p \leq .05$)

** Statistically lower than state rate ($p < .05$)

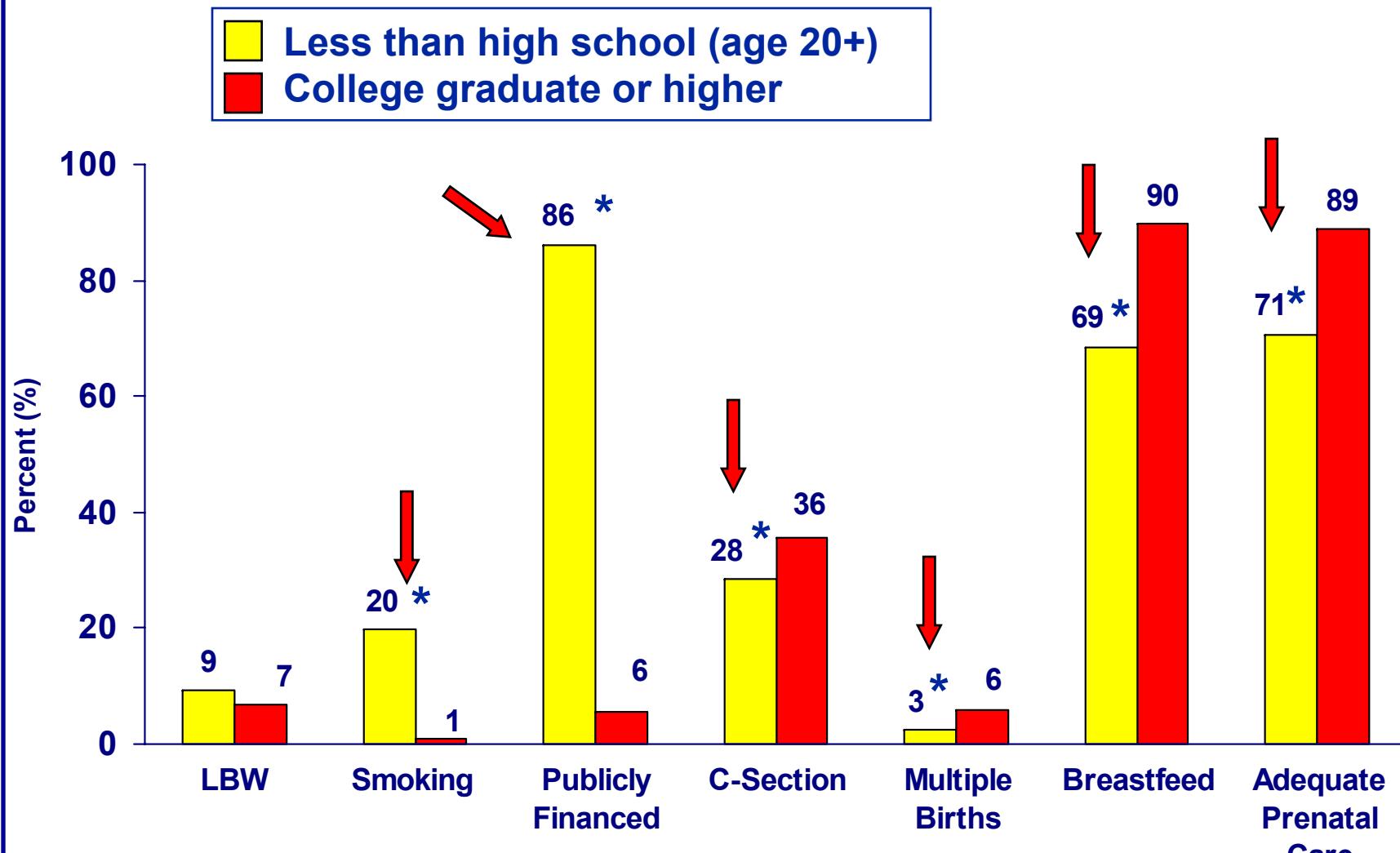
GDM By Regions Massachusetts Births 2006



Source: Massachusetts Department of Public Health, Bureau of Health Information, Statistics, Research, and Evaluation

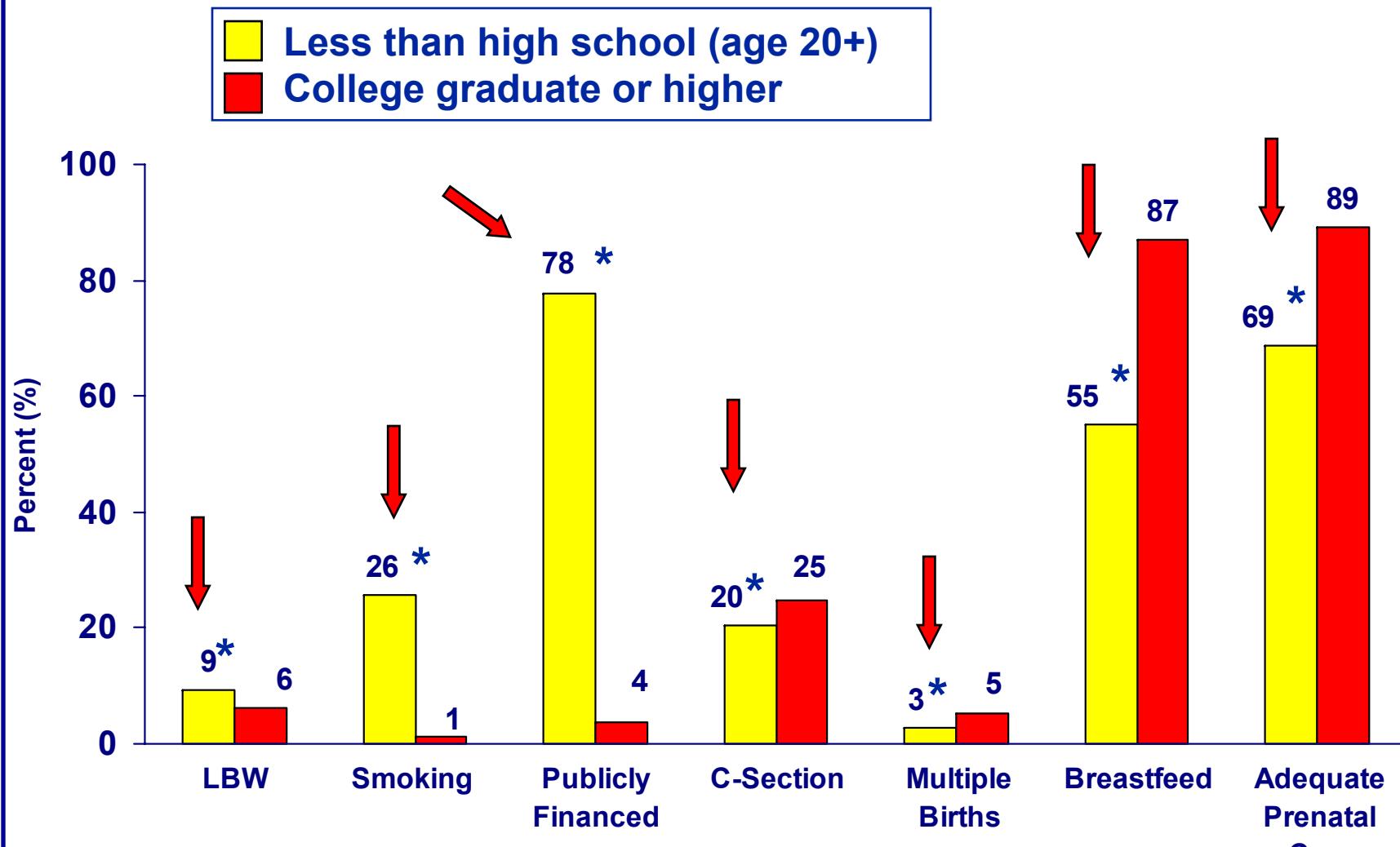
Birth Outcomes by Maternal Socio-economic Characteristics

Birth Characteristics by Maternal Education Massachusetts: 2006



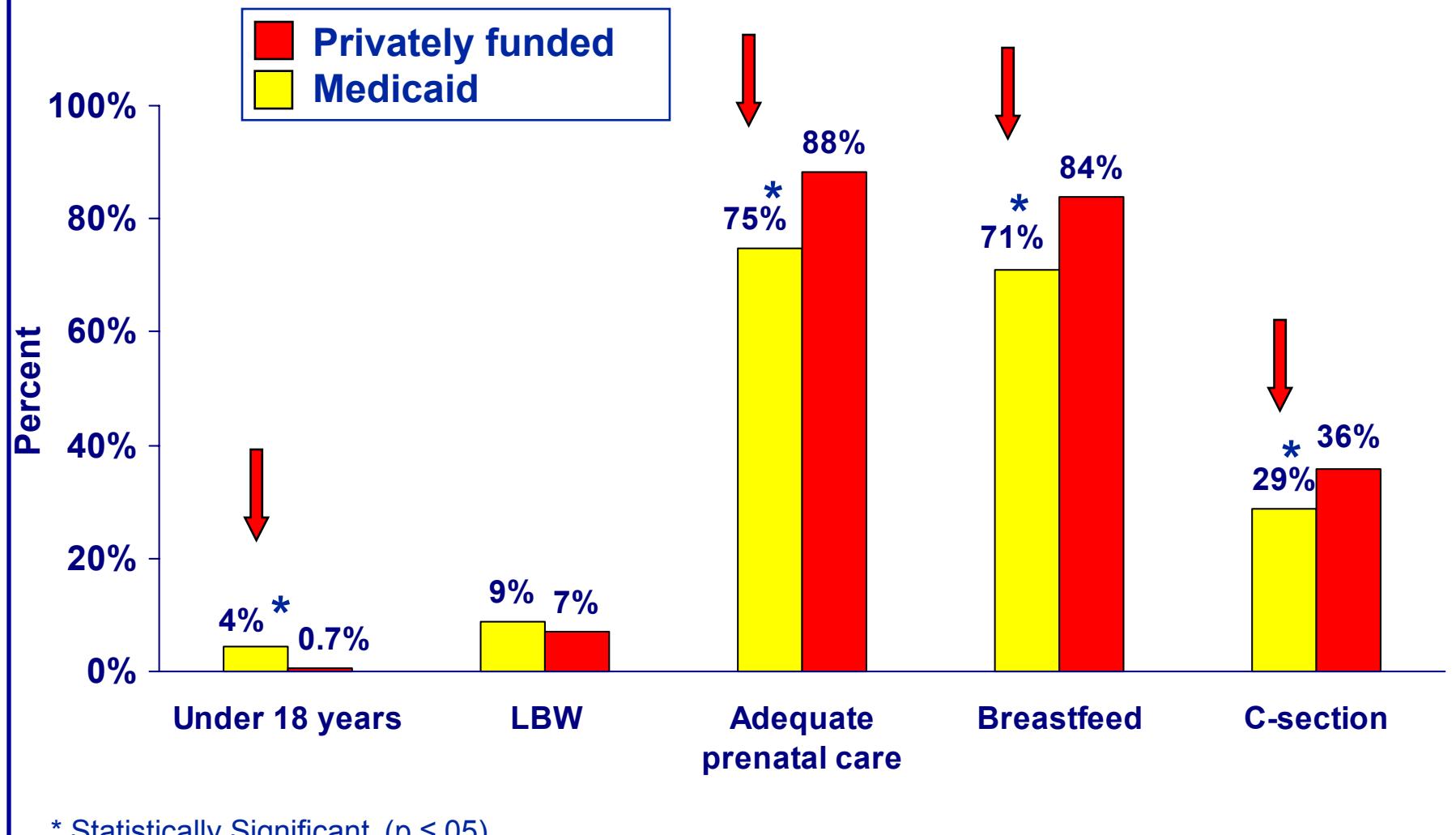
* Statistically Significant ($p \leq .05$)

Birth Characteristics by Maternal Education Massachusetts: 2000



Source: Massachusetts Department of Public Health, Bureau of Health Information, Statistics, Research, and Evaluation

Birth Characteristics by Funding Source of Prenatal Care, Massachusetts: 2006



Birth Outcomes for Selected Communities

Highest Infant Mortality Rates Among the 30 Largest Communities¹ Massachusetts: 2006

	IMR	95% CI ²	Number of Deaths
State	4.8	[4.3,5.2]	369
Revere	11.7	[3.6,19.7]	8
Leominster	9.4	[1.2, 17.6]	5
Weymouth	9.2	[1.9, 16.5]	6
Springfield	9.1*	[5.4, 12.8]	23
New Bedford	8.9	[4.1, 13.7]	13

¹Selected among the 30 Massachusetts communities with the largest populations. IMR = infant deaths per 1,000 live births.

²A Confidence Interval for a population parameter is a range in which you are 95% certain that the true population estimate is within. It is a function of variability and the number of events.

* Statistically Significant ($p \leq .05$)

Percent Low Birthweight for 30 Largest Communities¹ Massachusetts: 2006

Massachusetts	7.9%
<u>Best</u>	
Brookline	5.9% **
Leominster	6.0%
Plymouth	6.3%
<u>Worst</u>	
Brockton	11.5% *
Springfield	10.9% *
New Bedford	10.6% *
Haverhill	10.5% *
Fall River	10.5% *

¹Selected among the 30 Massachusetts communities with the largest populations.

* Statistically higher than state rate ($p \leq .05$)

** Statistically lower than state rate ($p < .05$)

Percent of Mothers Receiving Adequate Prenatal Care for 30 Largest Communities¹ Massachusetts: 2006

Massachusetts	83.1%
<u>Best</u>	
Brookline	92.3% *
Quincy	88.7% *
Plymouth	88.4% *
Weymouth	88.3% *
Newton	87.5% *
<u>Worst</u>	
Pittsfield	65.9% **
Lowell	68.5% **
Springfield	71.3% **
Worcester	73.0% **
Brockton	75.1% **

¹Selected among the 30 Massachusetts communities with the largest populations. * Statistically higher than state rate ($p \leq .05$)
Based on the Adequacy of Prenatal Care Utilization (APNCU) Index ** Statistically lower than state rate ($p < .05$)

Summary – Successes

- **Many Massachusetts perinatal health indicators are better than those of the U.S.**
- **Continuing decrease in teen births**
- **Decline in Hispanic IMR**
- **4 out of 5 women breastfeed**

Summary– Challenges

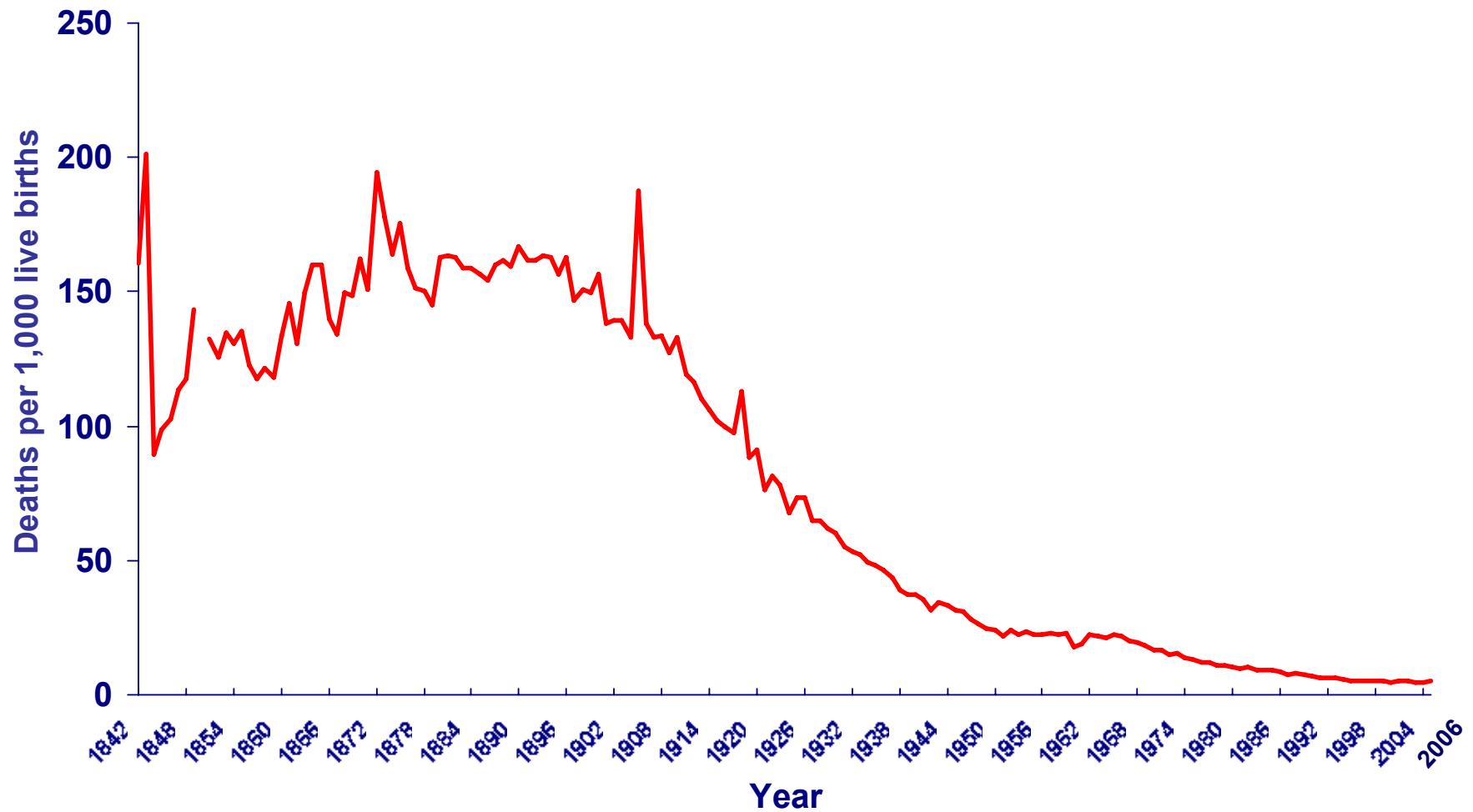
Trends that must be closely monitored:

- ☞ **C-section deliveries**
- ☞ **Gestational diabetes mellitus**
- ☞ **Low birth weight among singletons**
- ☞ **Births to mothers receiving inadequate prenatal care**

Disparities Persist by Race, Ethnicity, Geography, and SES

- Black non-Hispanic IMR is more than twice as high as the white non-Hispanic IMR
- Hispanic teen birth rate is almost 6 times that for white non-Hispanics
- Infant mortality rate in Springfield is almost 2 times the statewide rate
- The C-section rate among Brazilian mothers is 1.4 times the state rate
- 1 out of 3 mothers in Pittsfield did not receive adequate prenatal care, compared to 1 out of 5 mothers in the state overall
- Less educated mothers have worse birth outcomes than more educated mothers

Infant Mortality Rate Massachusetts: 1842-2006



Source: Massachusetts Department of Public Health, Bureau of Health Information, Statistics, Research, and Evaluation

How Can You Access the *Massachusetts Births 2006 Report?*

- Hard Copies: (617) 740-2670
- TDD/TTY: (617) 624-6001
- DPH Website:
mass.gov/dph/bhsre/resep/resep.htm#birth

Accessing Massachusetts Births 2006 Data on MassCHIP

- **MassCHIP (DPH's Internet-based public health information service)**
 - **Website:** <http://masschip.state.ma.us>
 - **Telephone:** **1-888-MASCHIP (Mass only)**
(617) 624-5629
 - **New Release (Version 3.0 r 320)**
 - **Massachusetts Births 2006**
 - **Updated Data Sets**