

# Native American Births in Massachusetts Race vs. Ethnicity 1999-2005



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# Outline

- Background Information
- Demographics
- Study Design
  - Study Questions
  - Sources
  - Methods
- Results
- Summary
- Final Remarks



## Background

- Follow up study to the first report ever on the health status of American Indians in Massachusetts released by MDPH in November 2006
- Addresses the undercount of Native American births in Massachusetts caused by race-based ascertainment
- Examines variation among Native American sub-groups including tribal groupings



# Demographics



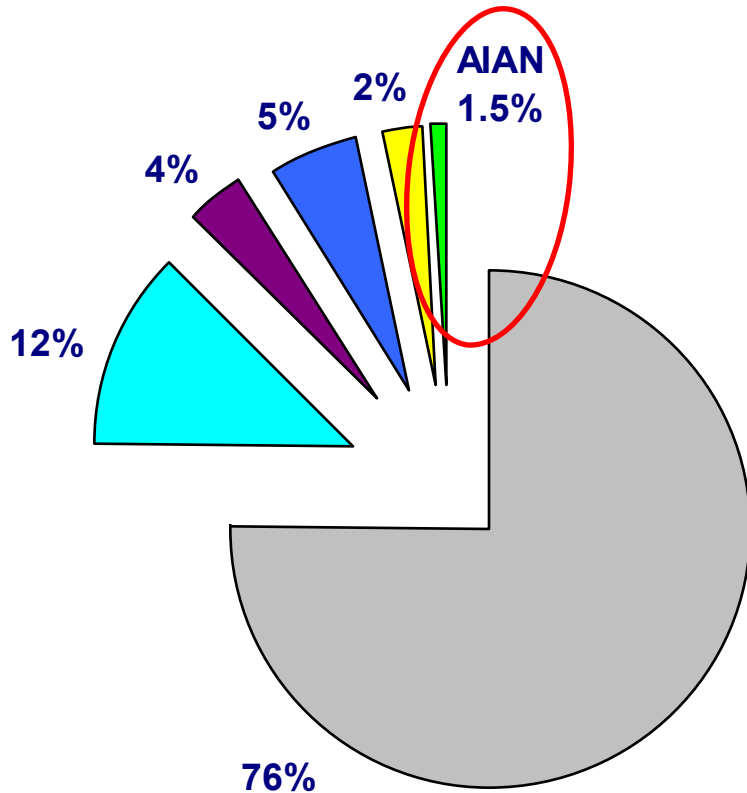
# Native Americans in Massachusetts

- In 2000, Massachusetts was one of the 21 states in which Native Americans made up less than 1% of the population
- Massachusetts has a small number of Native American births each year
  - 146 births per year on average from 1999 to 2005
  - MA ranked 40<sup>th</sup> in the U.S. in number of Native American births in 2004 (164 births)

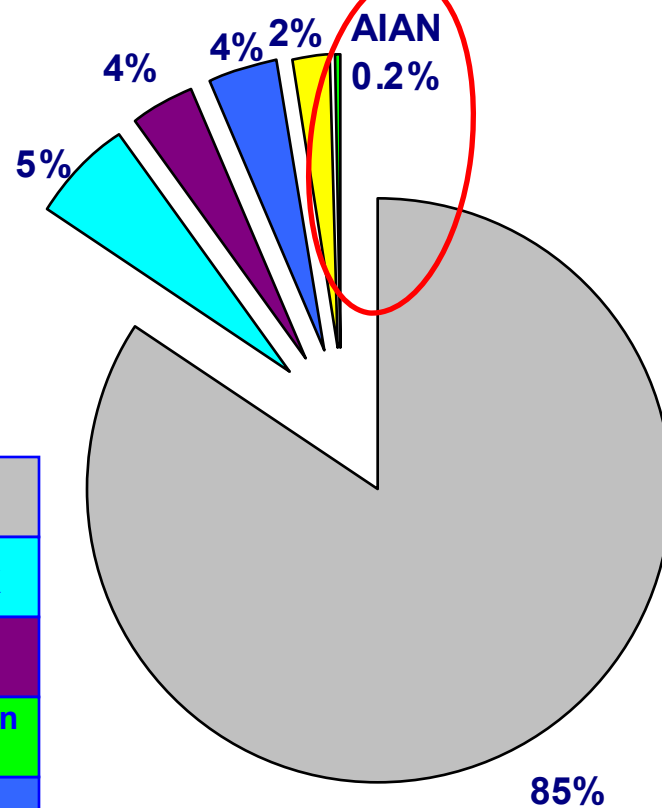


# Race According to Census 2000

United States



Massachusetts



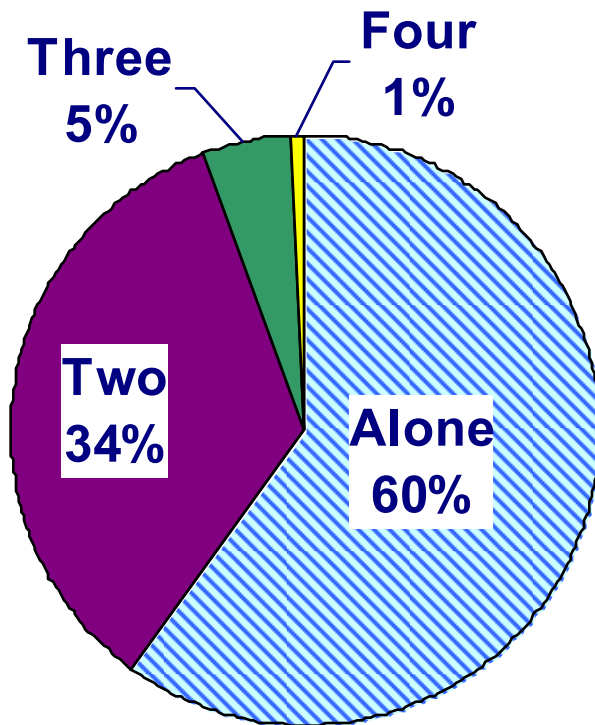
Source: Census 2000

Prepared by the Massachusetts Department of Public Health, Bureau of Health Information, Statistics, Research, and Evaluation

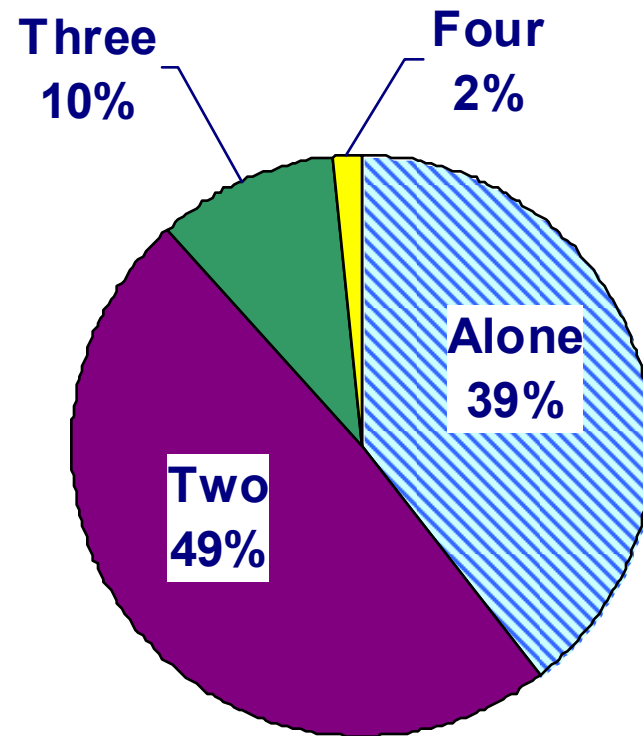


# Native Americans in Race Combinations Census 2000

United States



Massachusetts

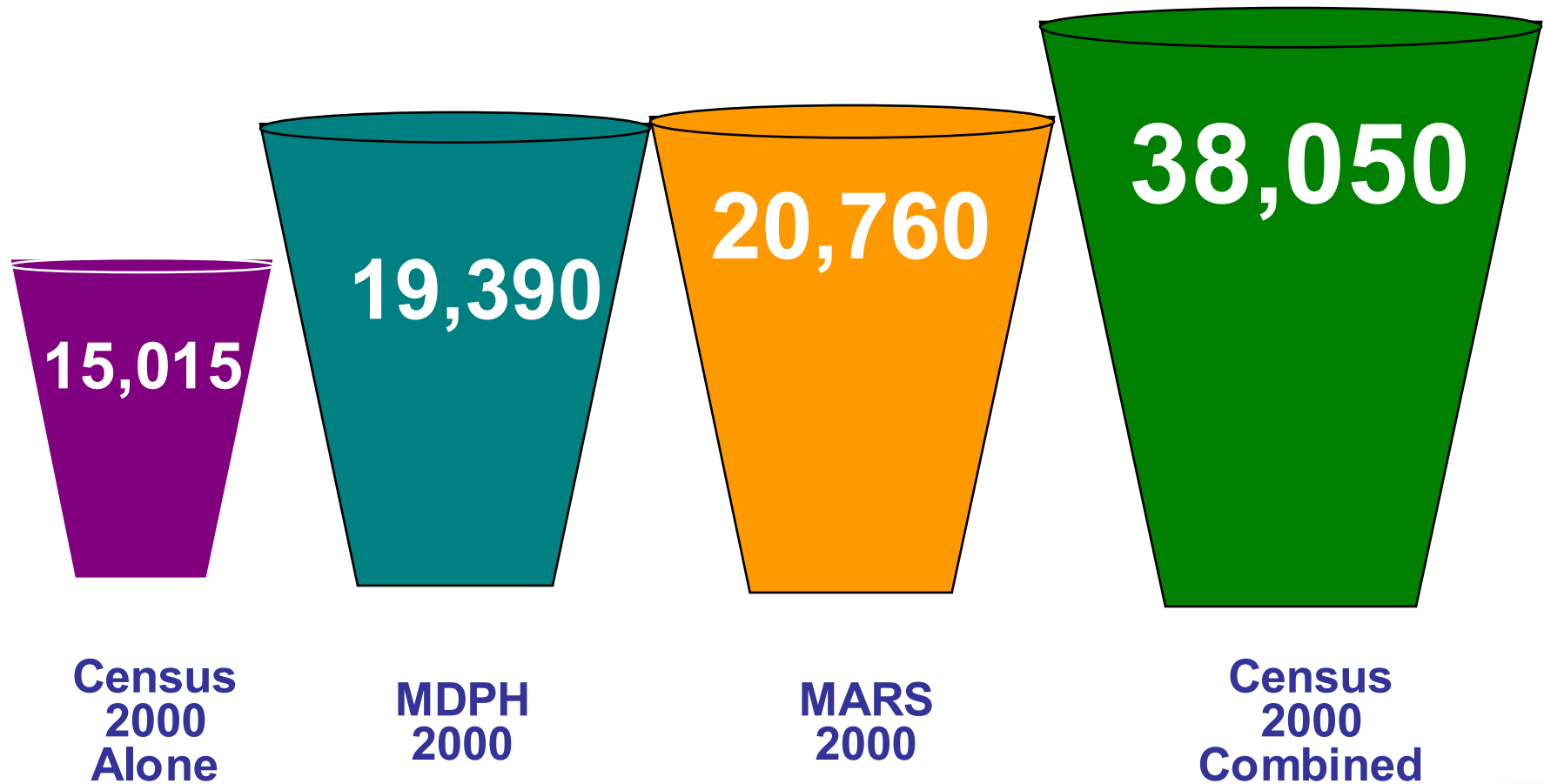


Source: U.S. Census 2000

Prepared by the Massachusetts Department of Public Health, Bureau of Health Information, Statistics, Research, and Evaluation

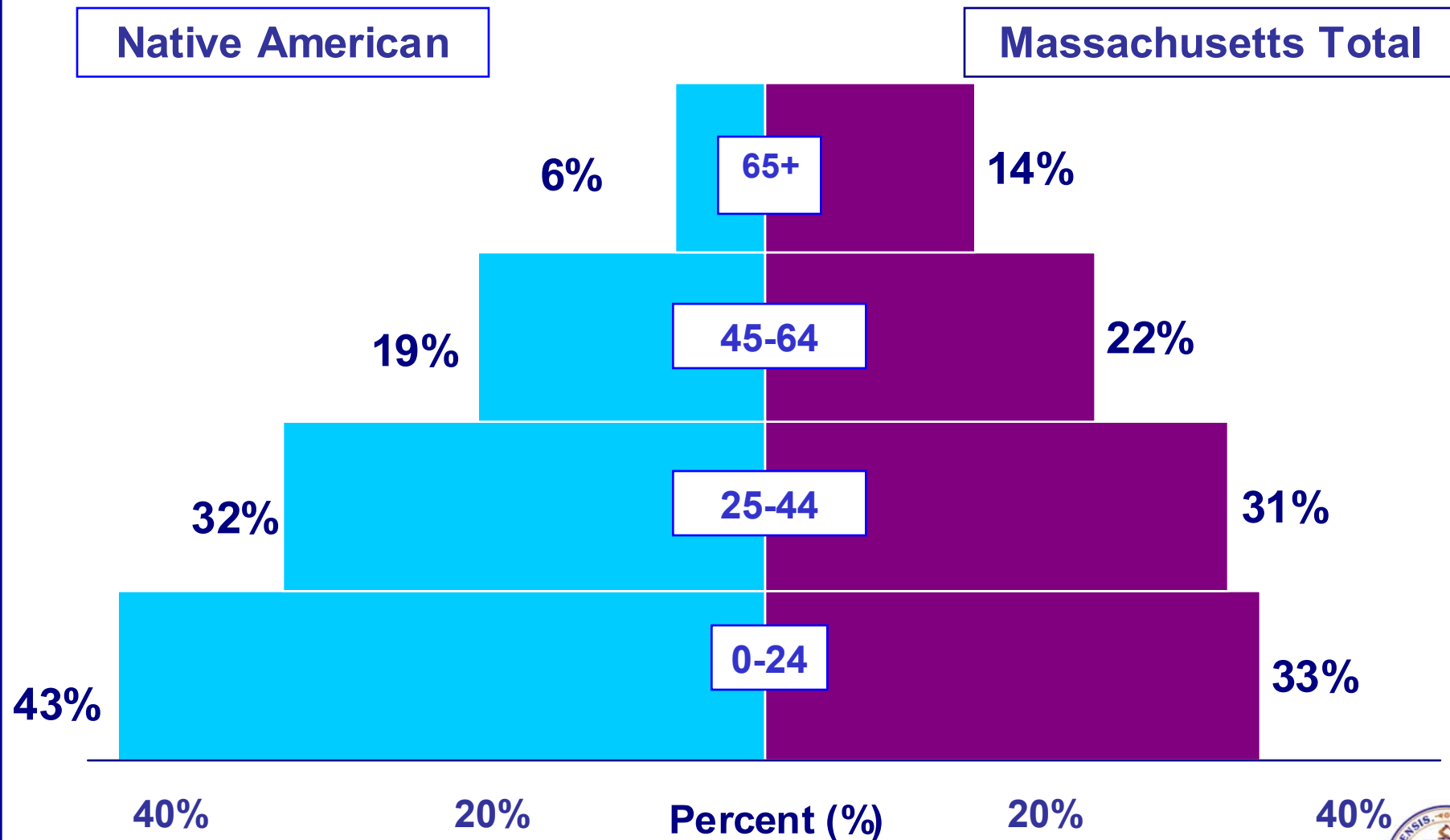


# Differing Counts of the Native American Population in Massachusetts: 2000





# Age Distribution of Native Americans in Massachusetts: Census 2000

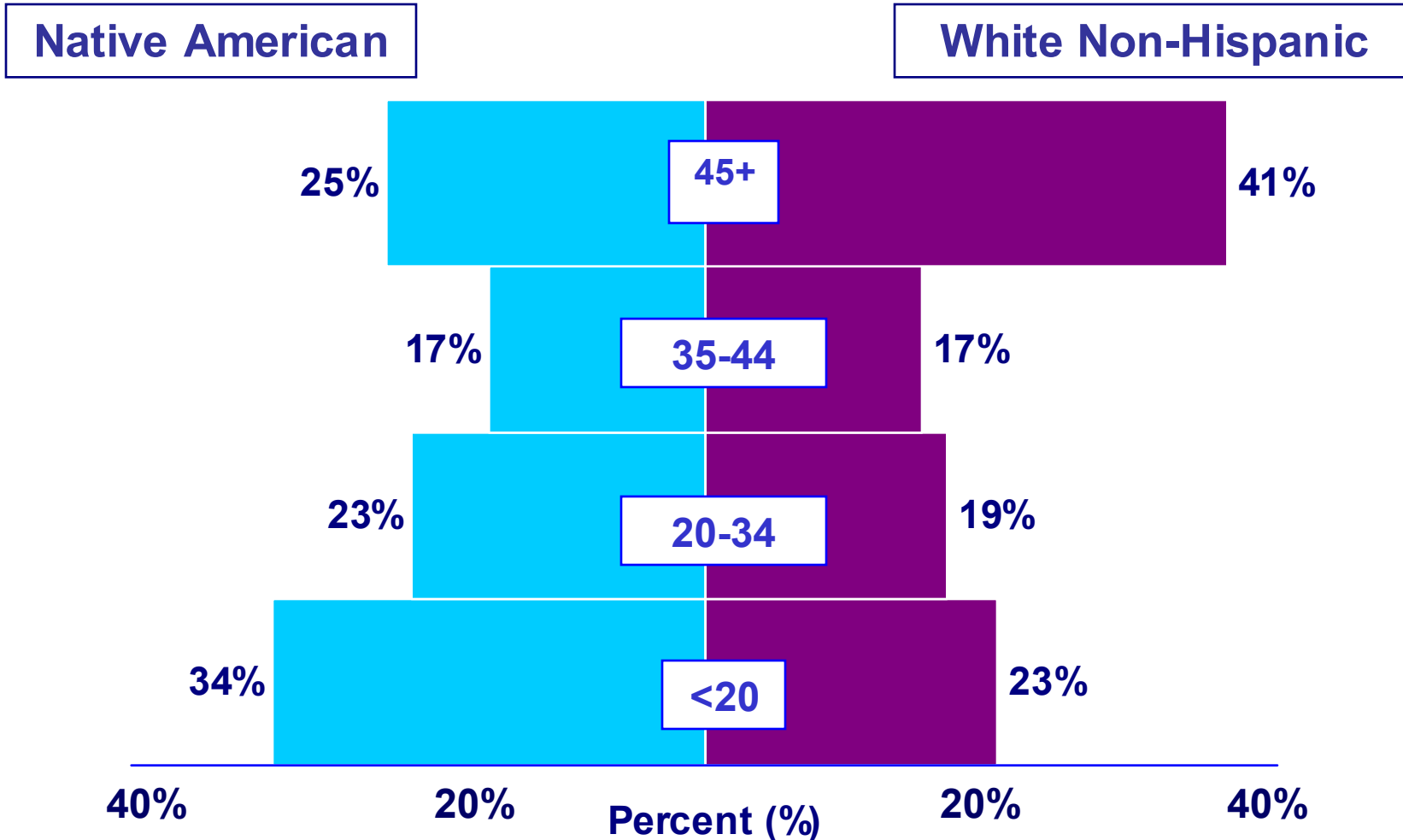


Source: Census 2000 with Bridged Race Categories, NCHS

Prepared by the Massachusetts Department of Public Health, Bureau of Health Information, Statistics, Research, and Evaluation



# Age Distribution of Women Native American v. White Non-Hispanic Massachusetts: Census 2000

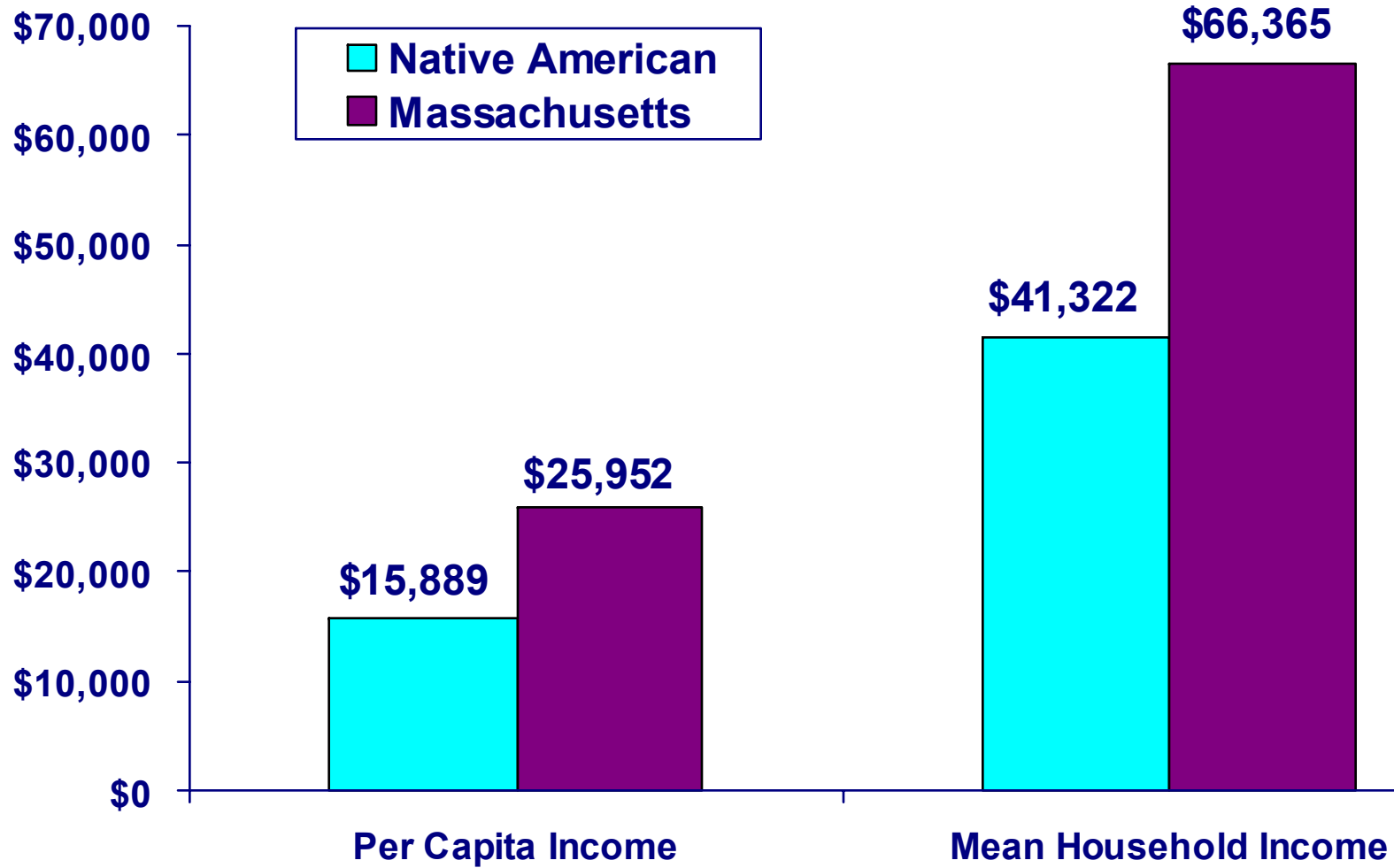


Source: Census 2000 with Bridged Race Categories, NCHS

Prepared by the Massachusetts Department of Public Health, Bureau of Health Information, Statistics, Research, and Evaluation



# Economic Indicators: 1999



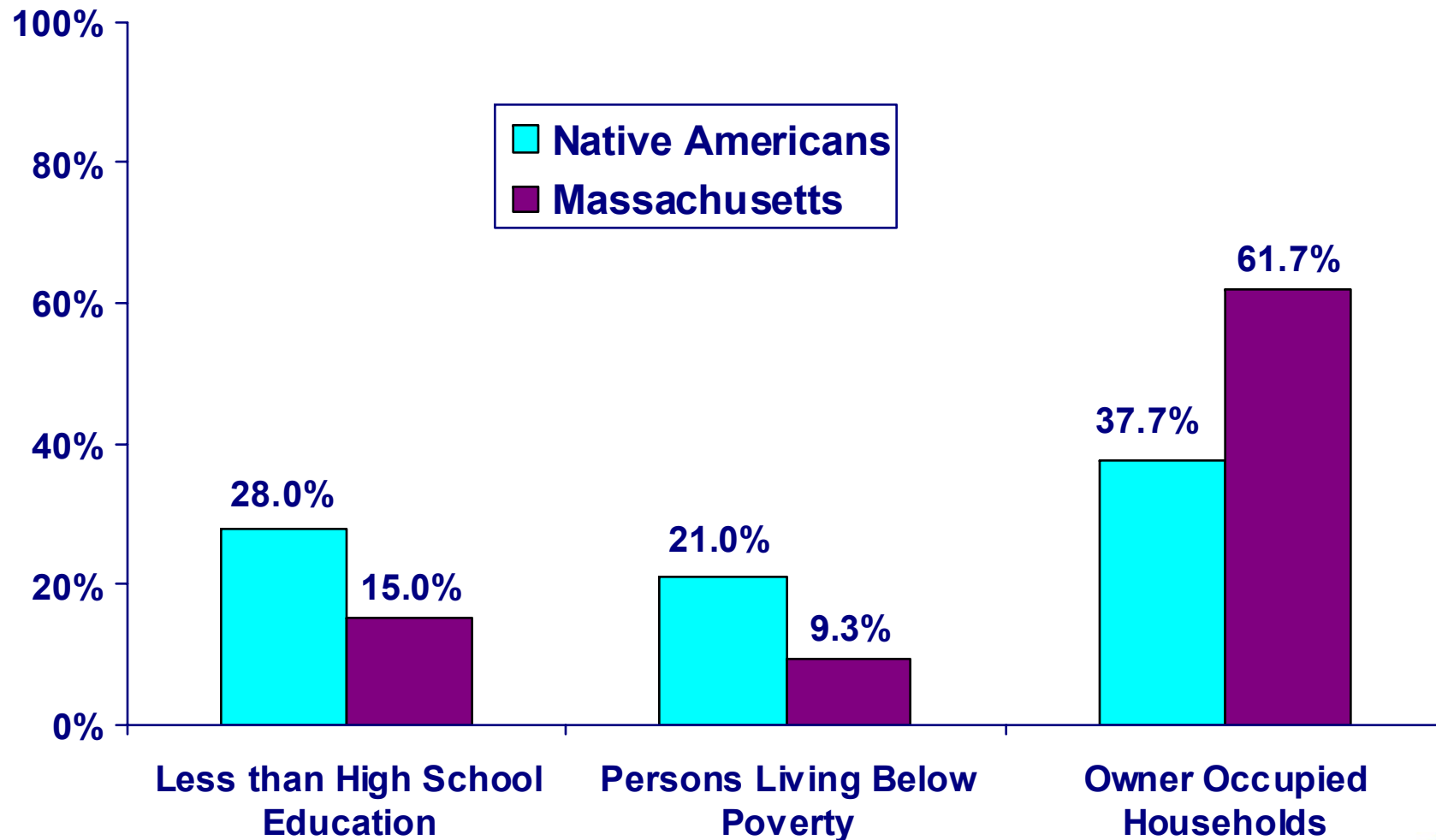
Source: U.S. Census 2000



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# Socio-Demographic Indicators: 2000



Source: U.S. Census 2000

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# Study Design





## Study Questions

- How many Native American births are there in Massachusetts each year?
- Do birth outcomes vary depending upon the way (by race, ethnicity, or both) that mothers report that they are Native American?
- Does tribal affiliation impact Native American birth outcomes in Massachusetts?



## Methods

- Data for Massachusetts resident mothers were aggregated for the years 1999-2005
- Native American Designation Methods (NADM):
  - American Indian race alone 
  - Native American\American Indian ethnicity alone 
  - Both American Indian by race and Native American/American Indian by ethnicity
- Count before exclusions:  
2,114 ( 0.38% of 559,537 MA births)



# Methods: Exclusion Criteria and Counts

**Total Exclusions:** 257 (12%)

1. Misclassifications
  - (NADM = ethnicity) Mother's ancestry write-in  
e.g., West Indian, Iranian - 57
  - (NADM = any)  
Mothers' birthplace code = India (127, 89%)  
and neighboring countries - 143
2. twins or higher order multiples - 54
3. birthweight less than 500 grams - 3

**2,114 - 257 = 1,857**

**Original - Exclusions = Final Study Group**





# Statistical Methods

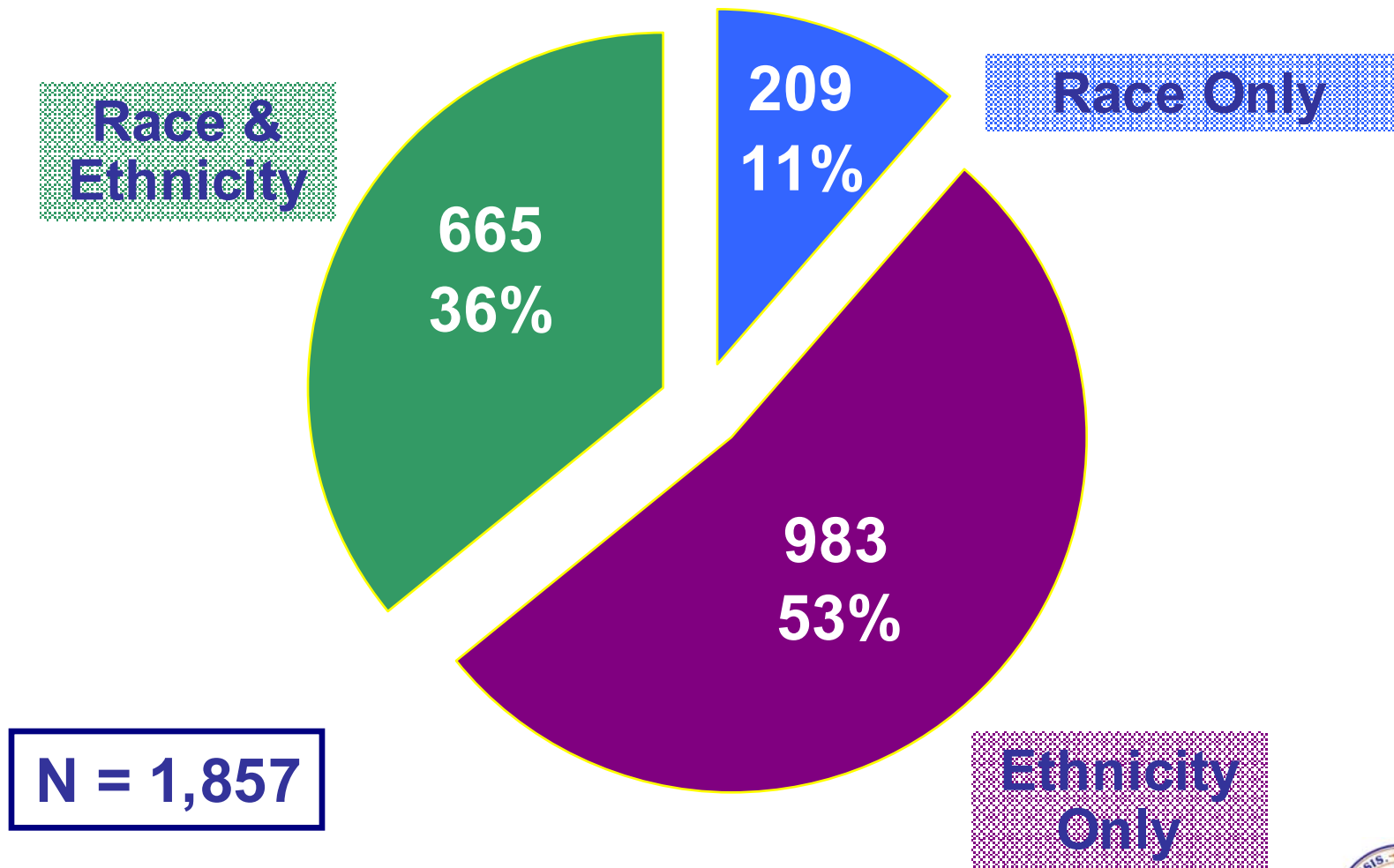
- For comparisons of more than 100 events, the binomial distribution is assumed, and confidence intervals are examined to see whether they overlap.
- When the number of events is less than 100, a Poisson distribution is assumed, and confidence intervals are constructed based upon the Poisson distribution.
- For mean age and mean birthweight used T-tests



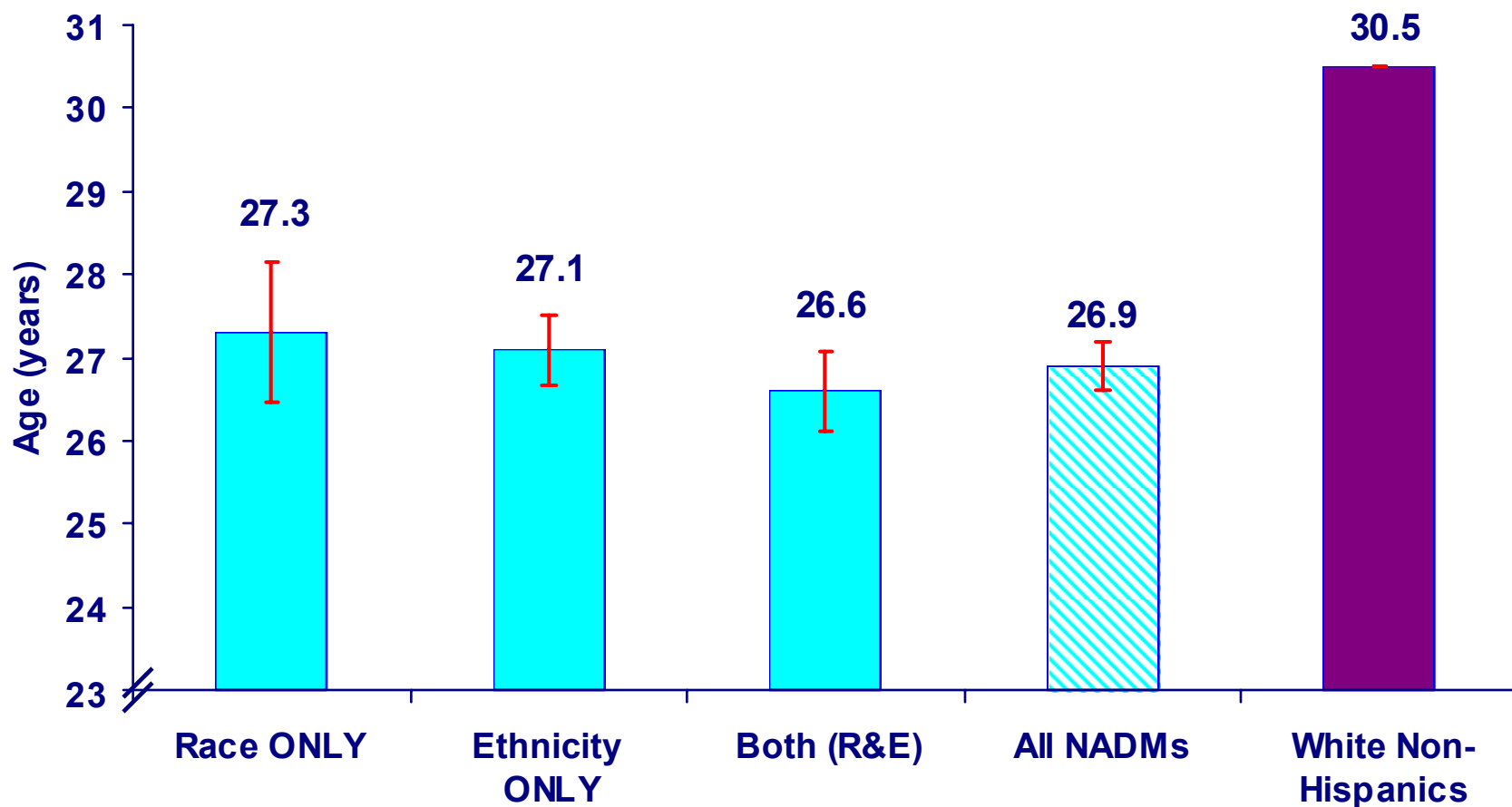
# Results



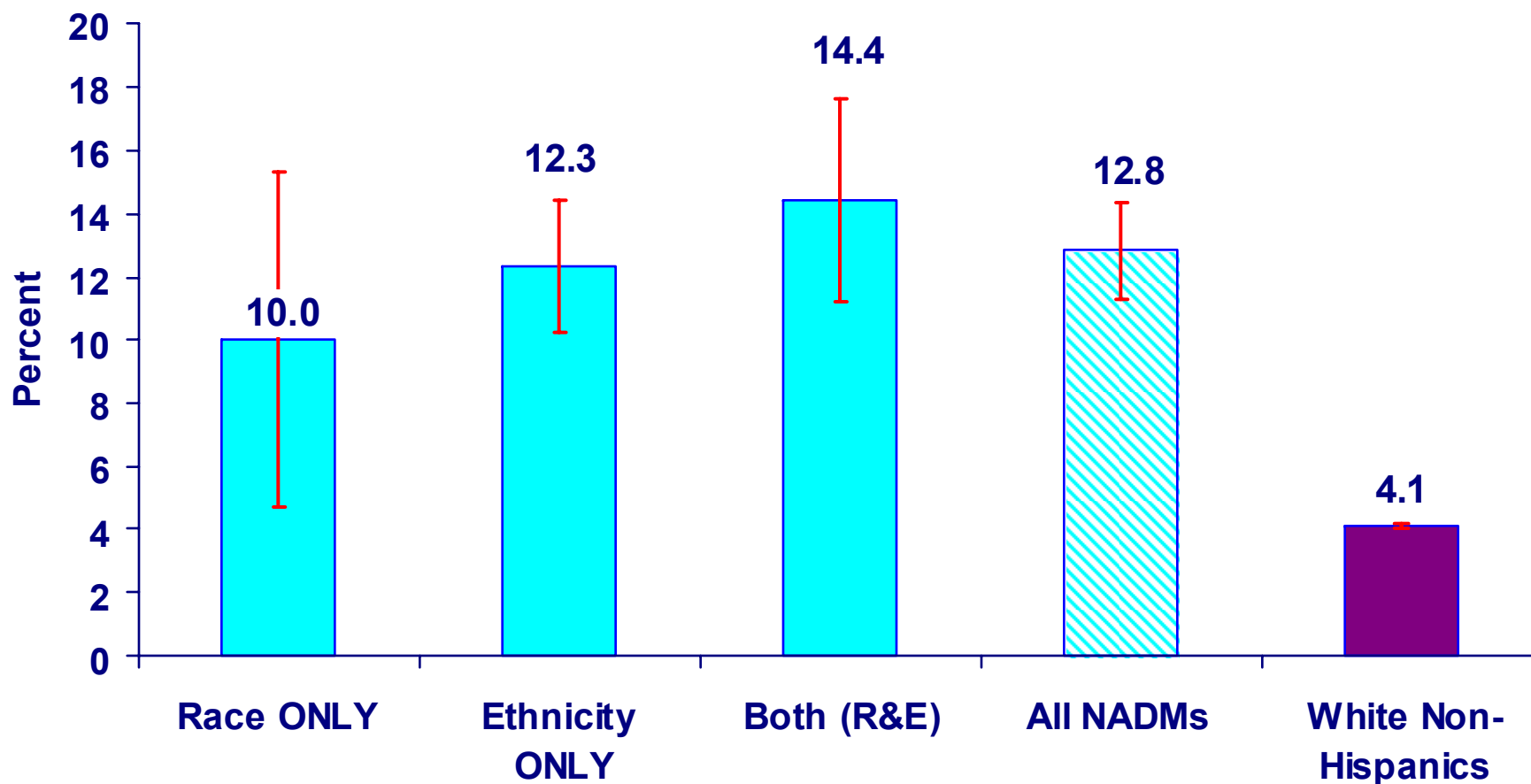
# NADMS - Native American Mothers Massachusetts: 1999-2005



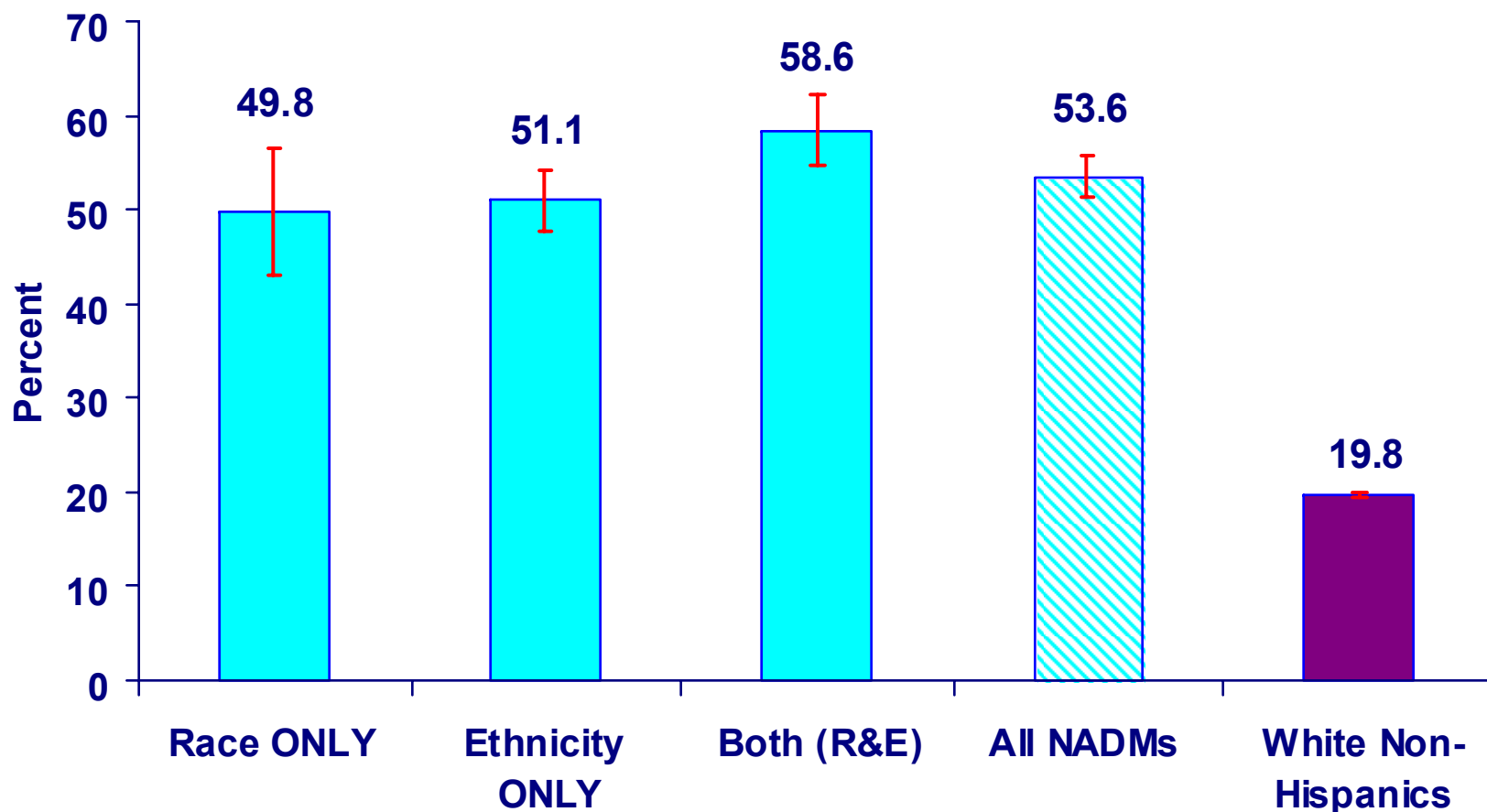
# Native American Mothers' Mean Age by NADM Compared with White Non-Hispanics



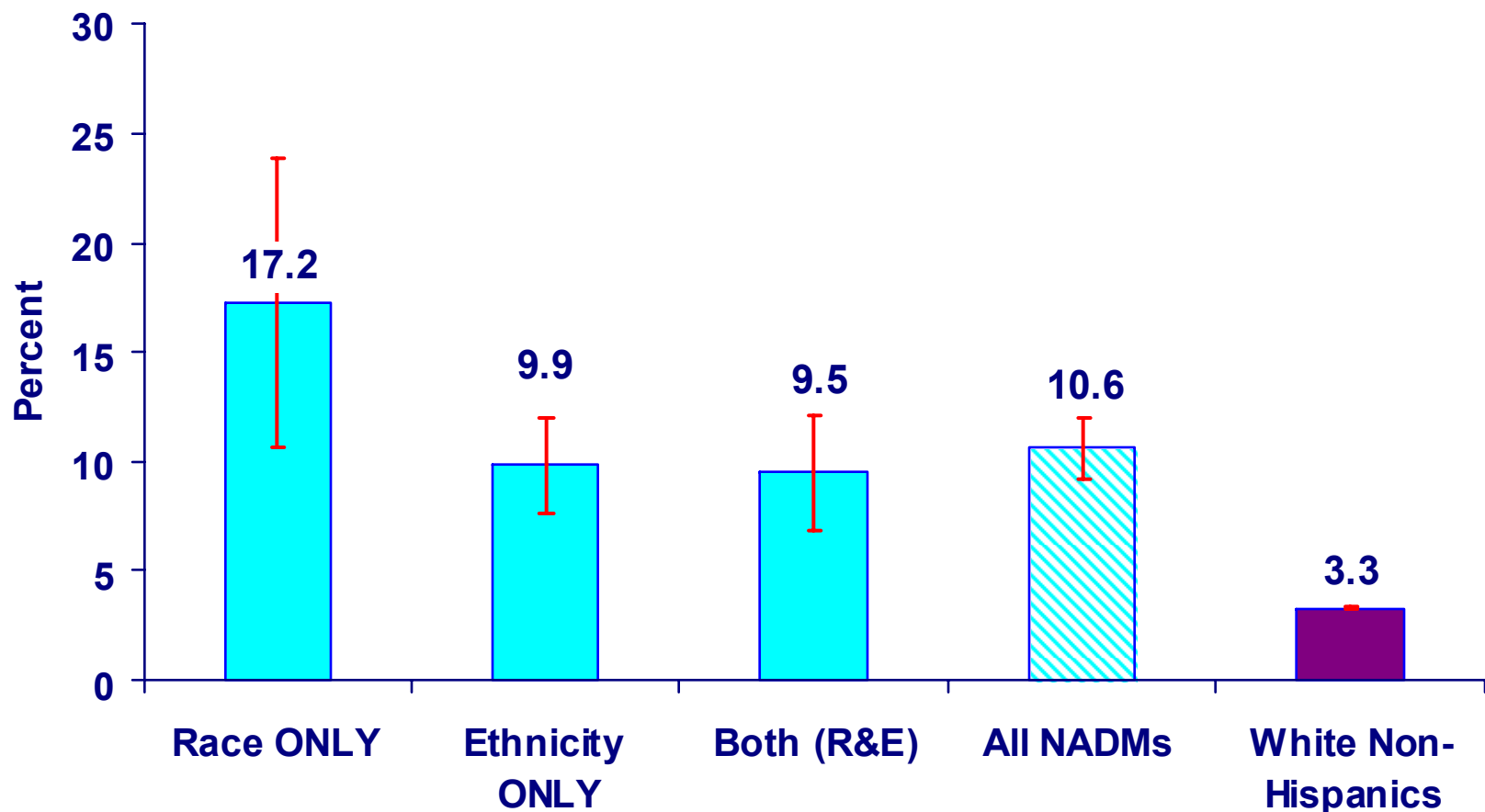
# Native American Percent Teen Births by NADM Compared with White Non-Hispanics



# Native American Percent Not Married by NADM Compared with White Non-Hispanics



# Native American Percent Low Education\* by NADM Compared with White Non-Hispanics

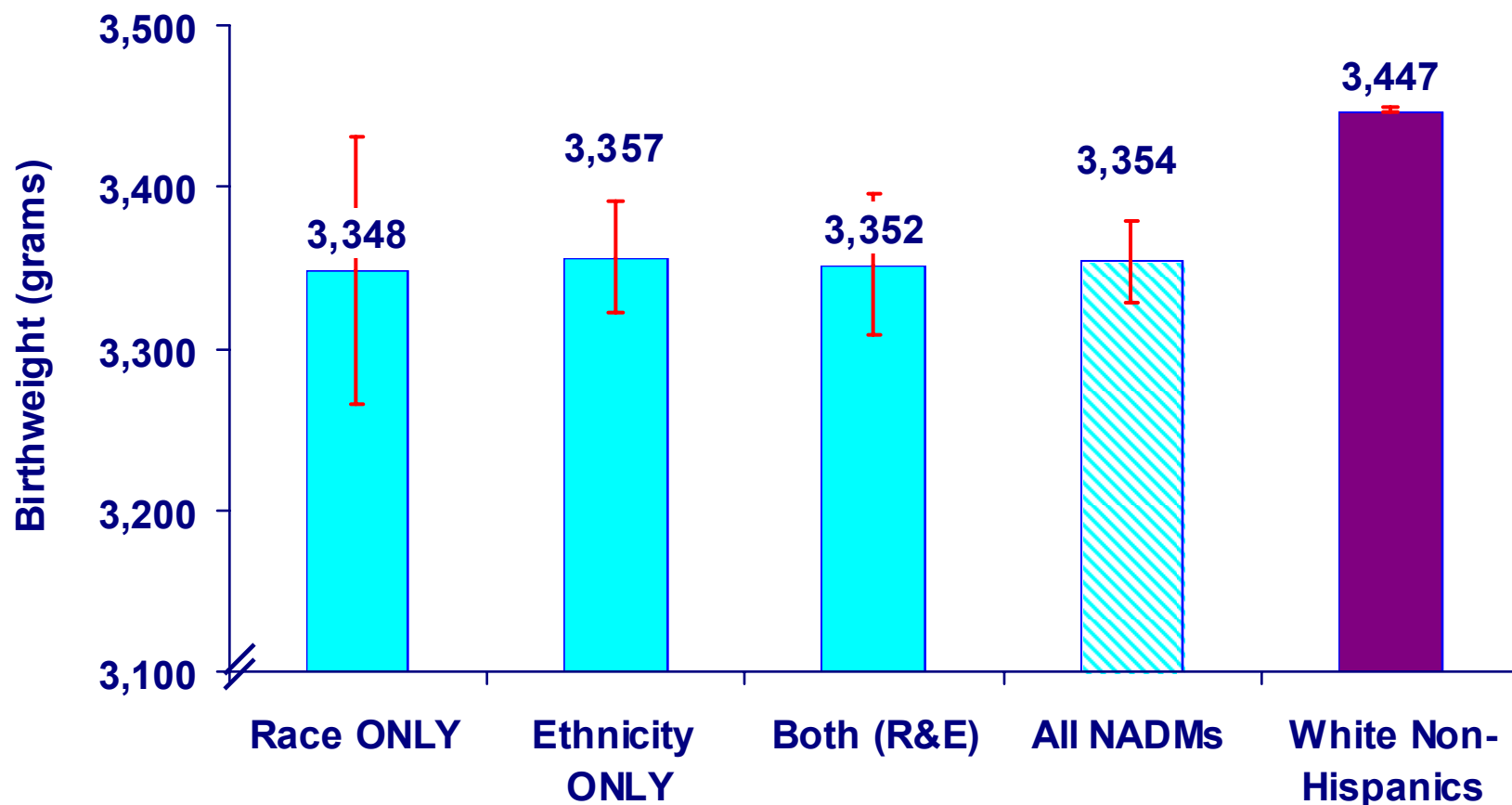


\*Mothers ages 20+ with less than a high school education

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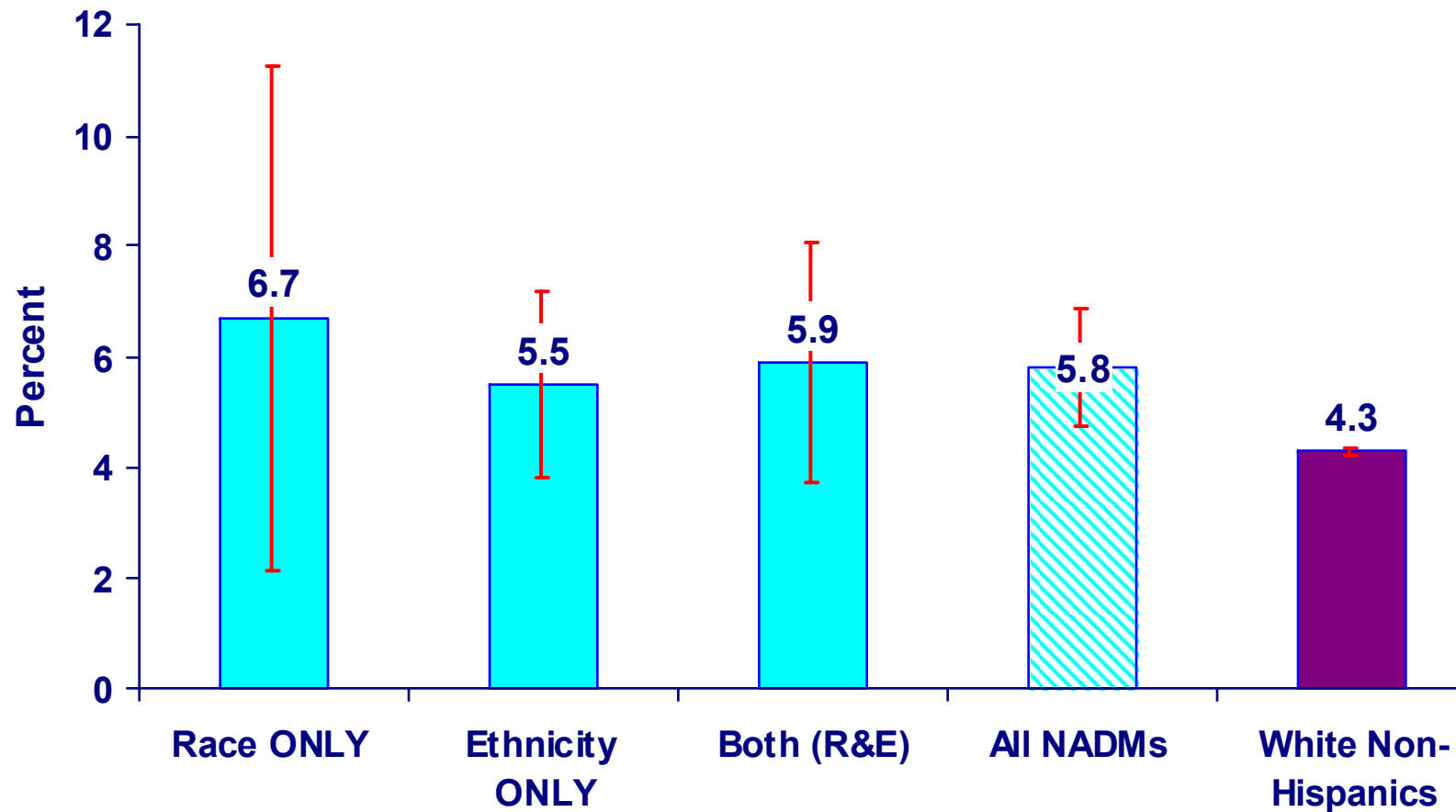


# Native American Mean Birthweight by NADM Compared with White Non-Hispanics

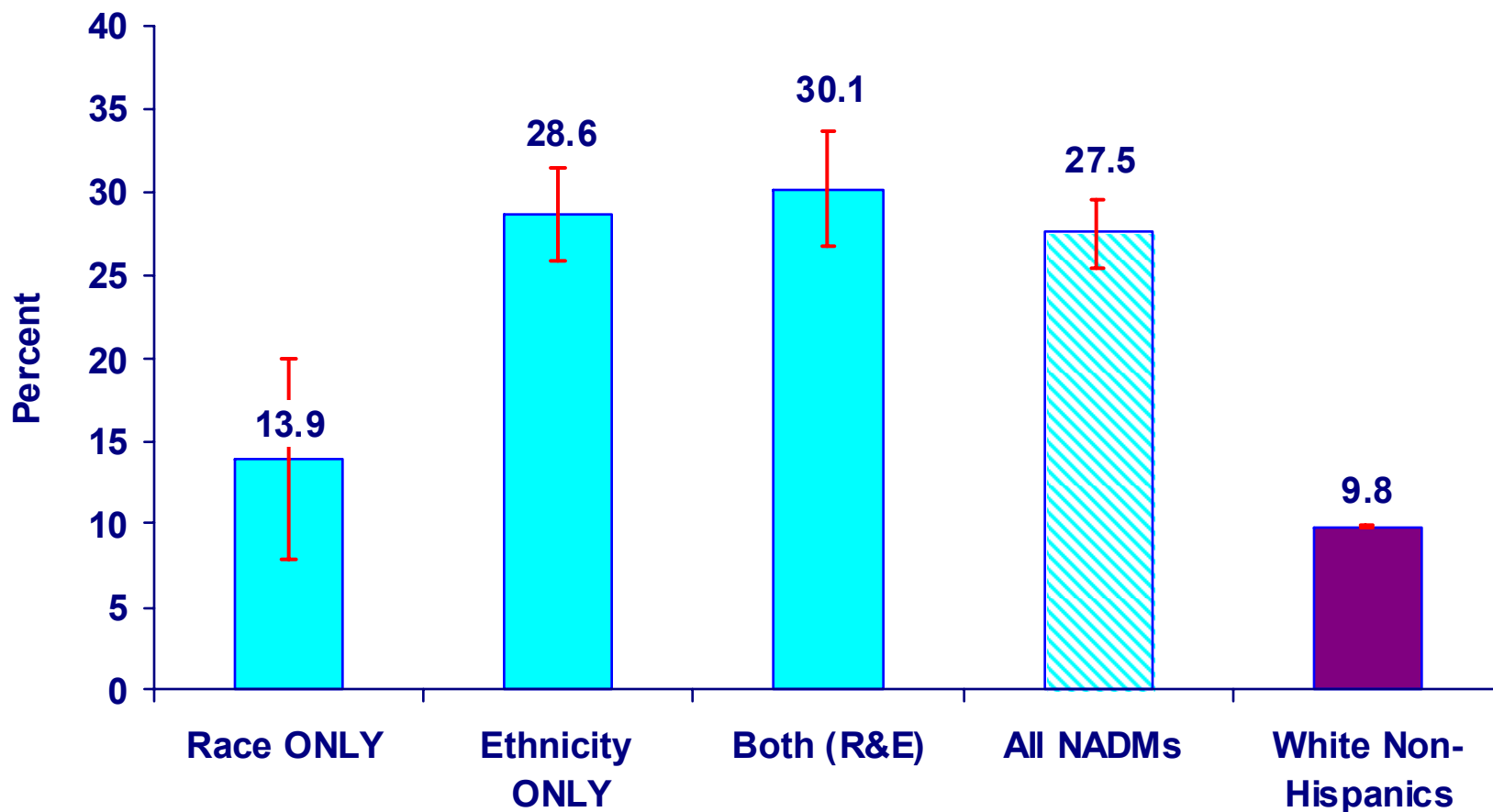




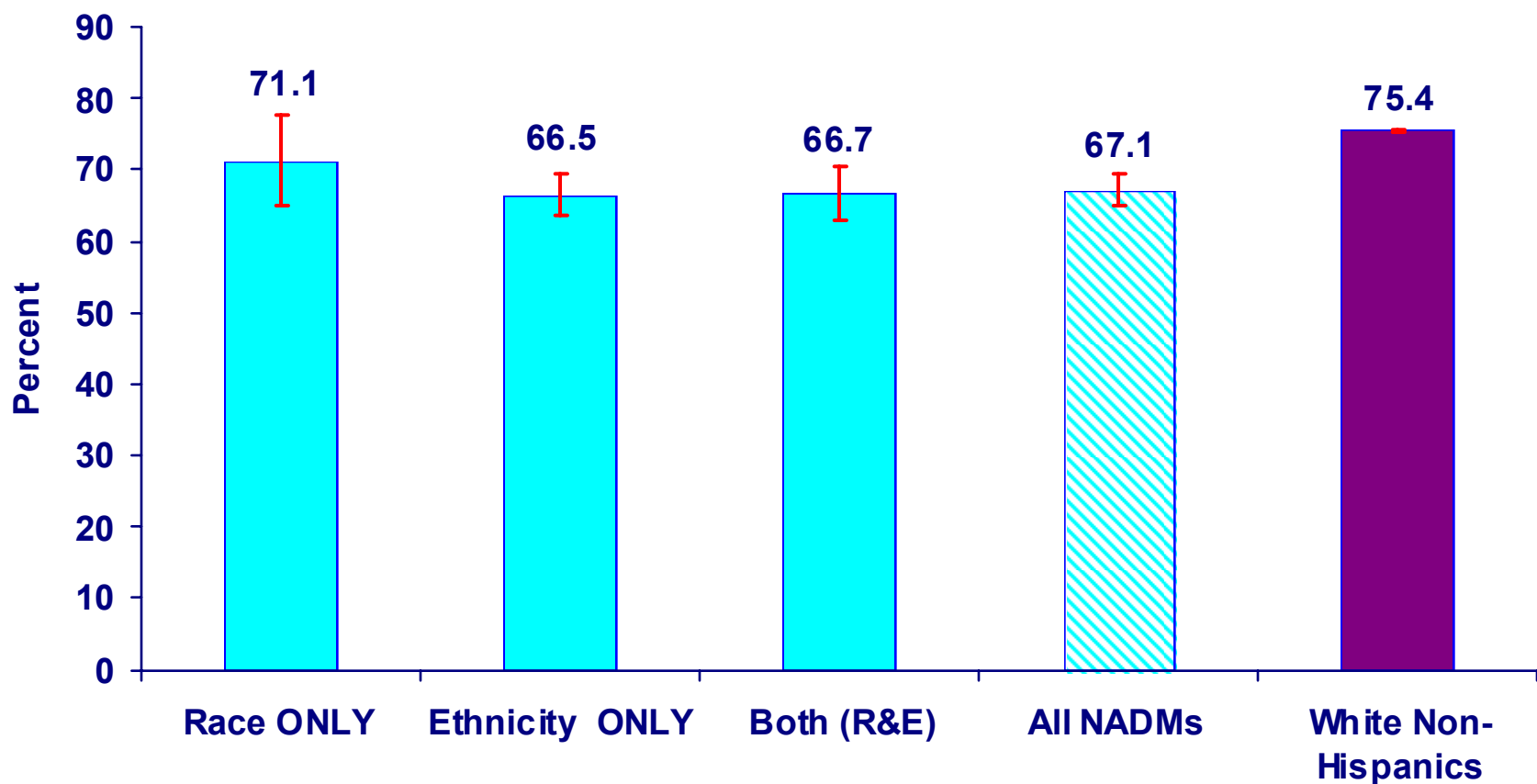
# Native American Percent Low Birthweight by NADM Compared with White Non-Hispanics



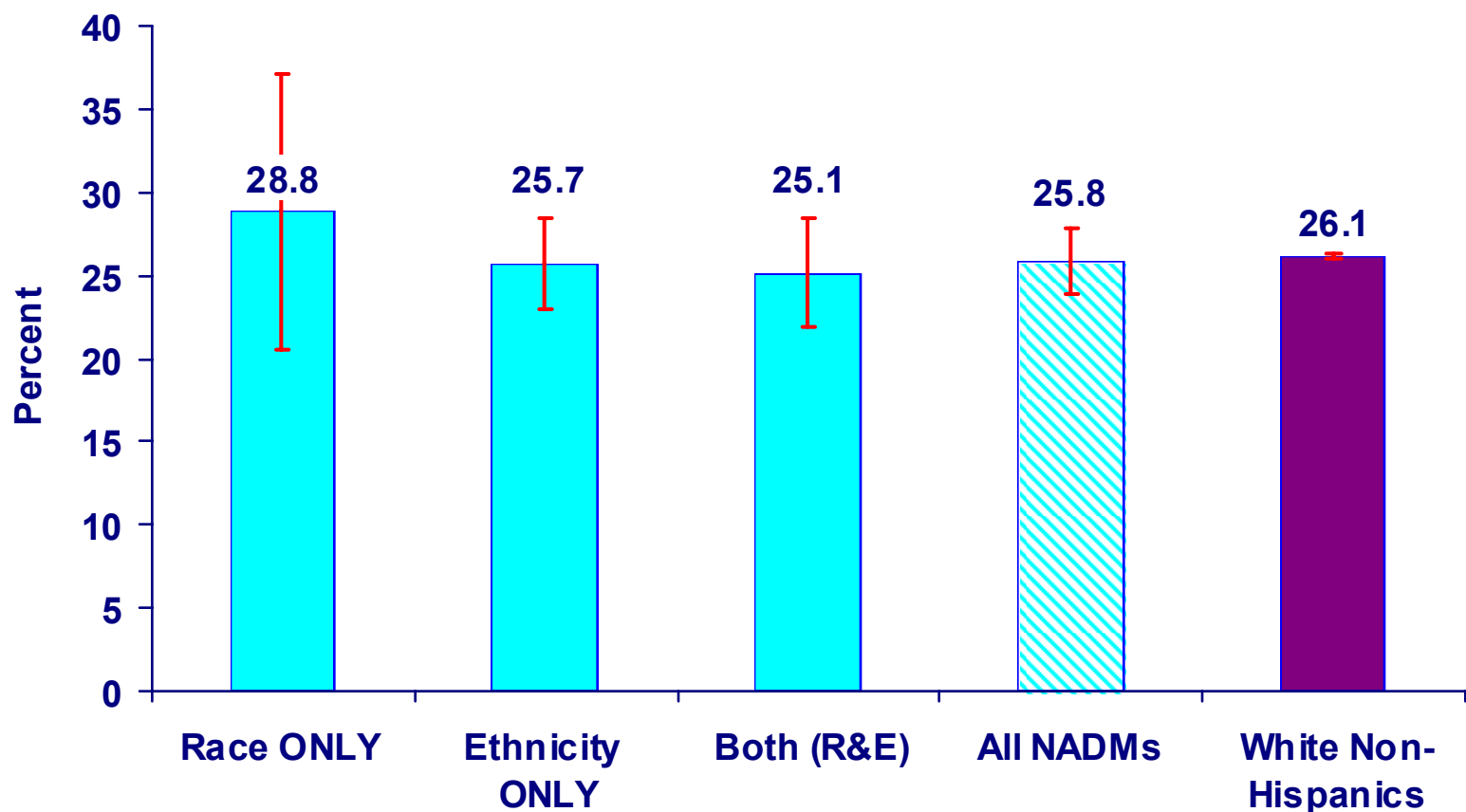
# Native American Percent Smoking During Pregnancy by NADM Compared with White Non-Hispanics



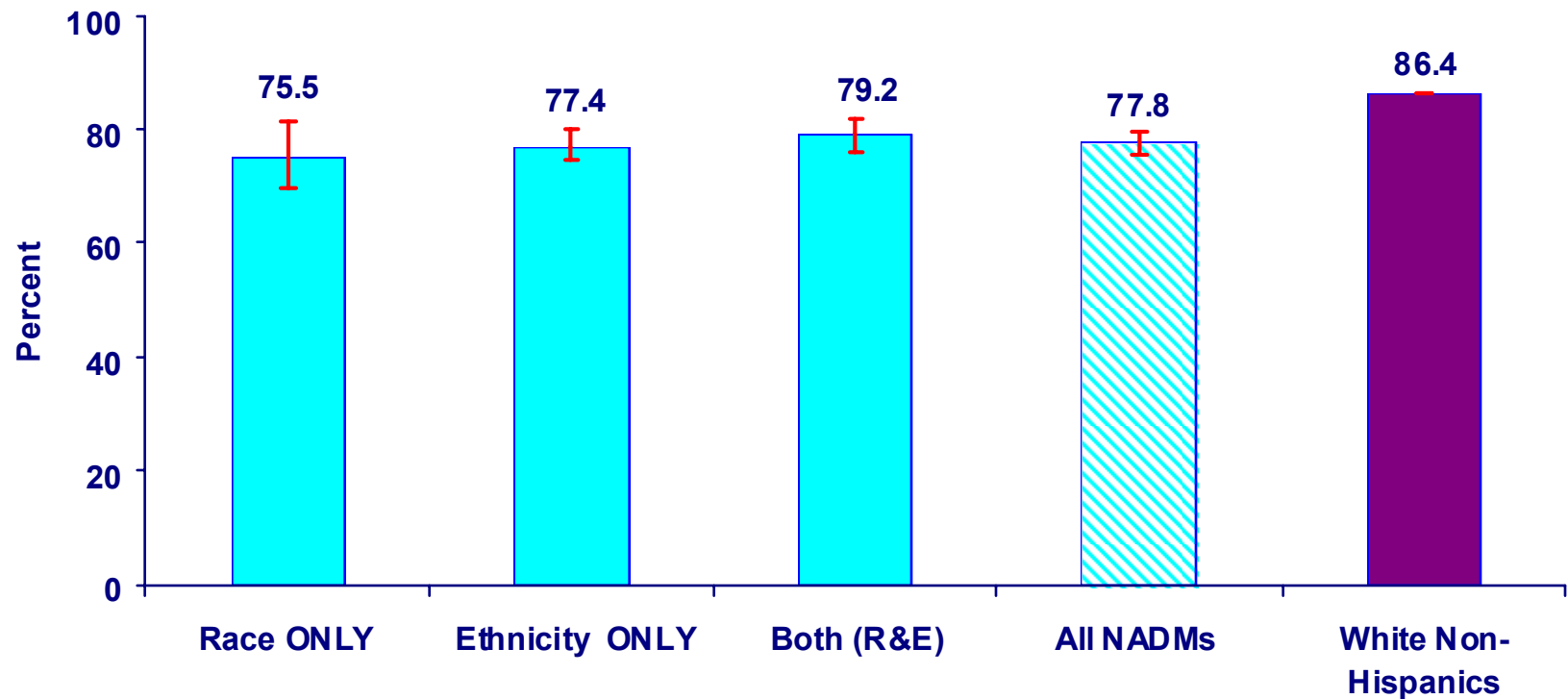
# Native American Percent Breastfeeding by NADM Compared with White Non-Hispanics



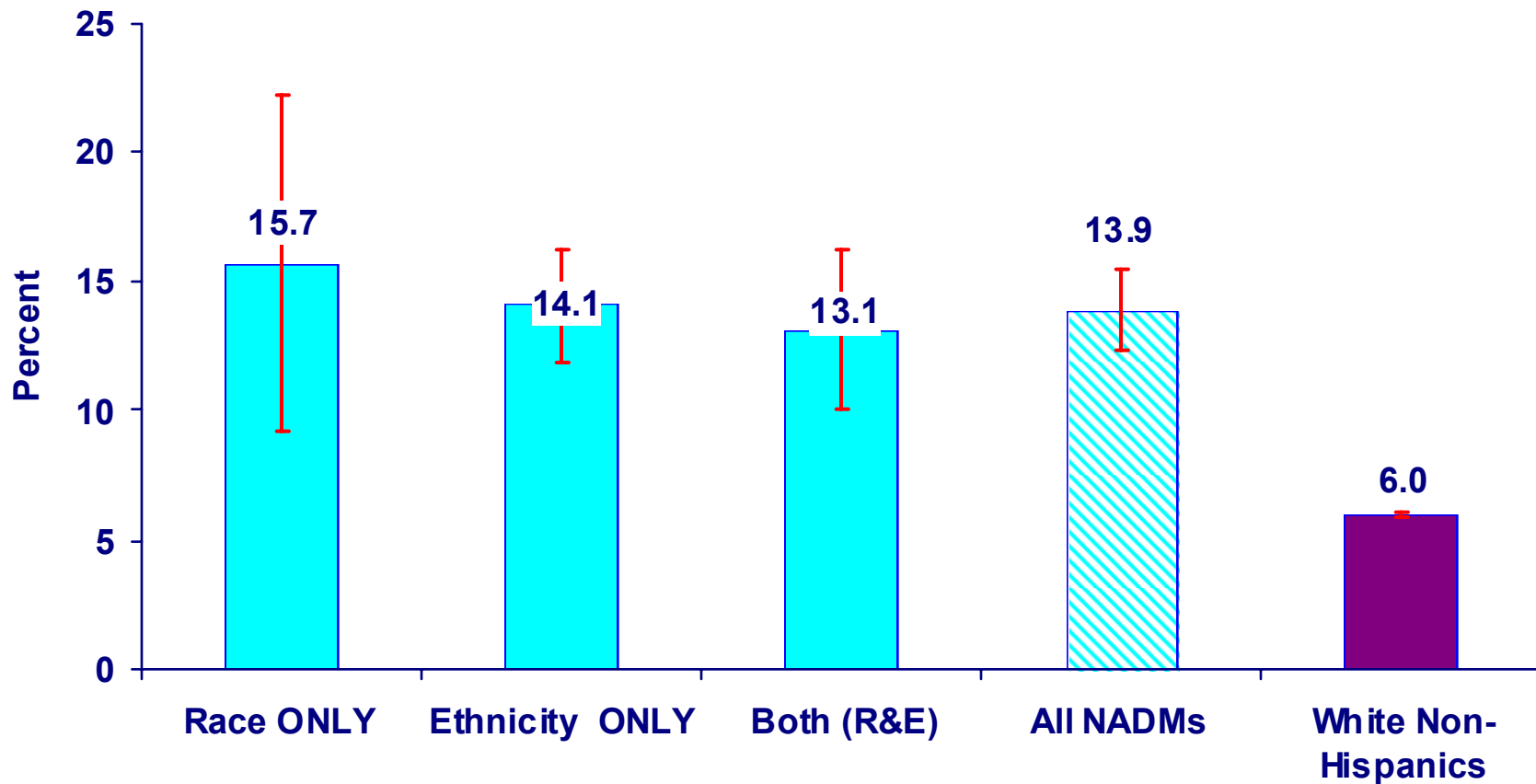
# Native American Percent Cesarean Section Delivery by NADM Compared with White Non-Hispanics



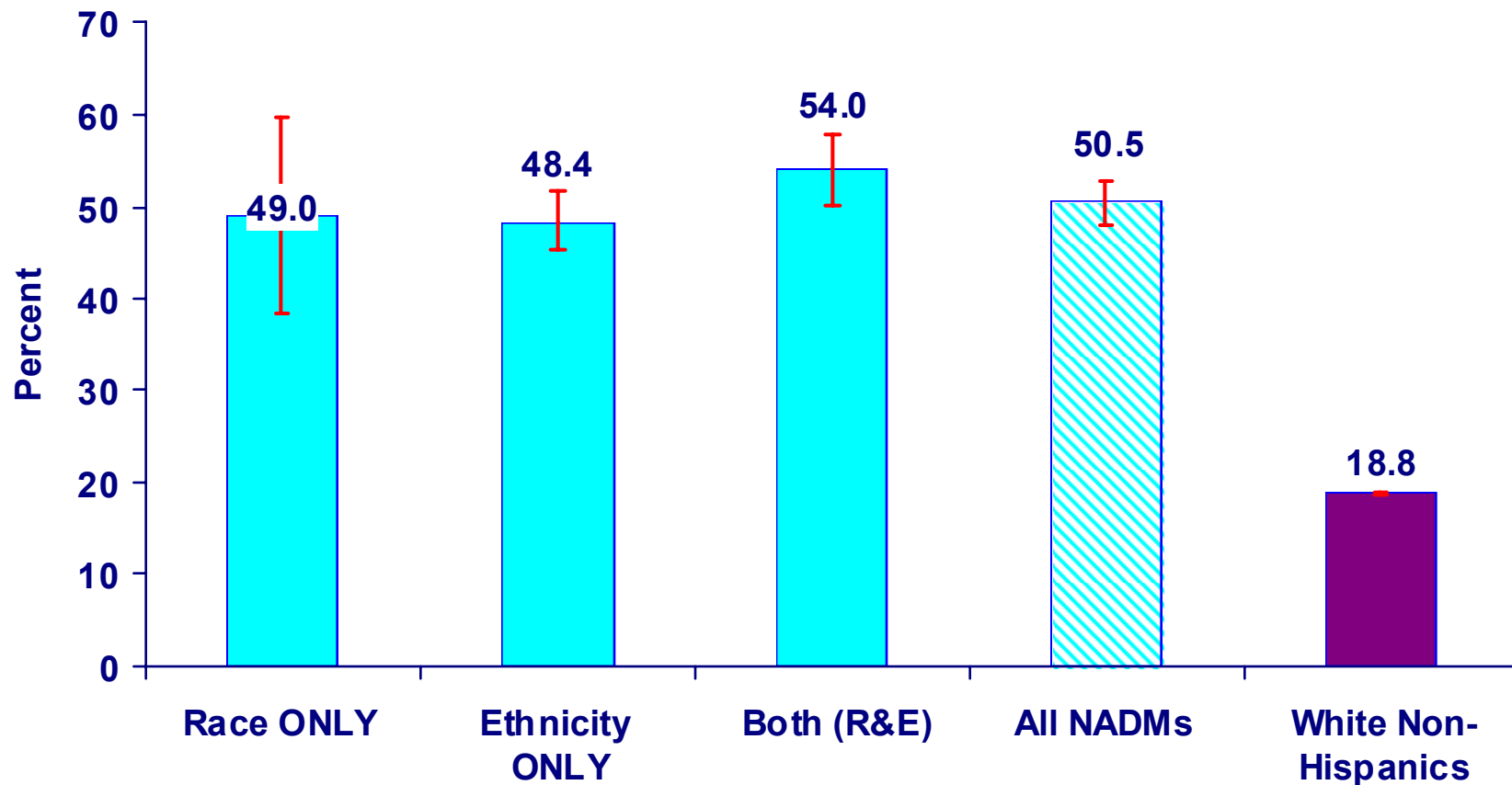
# Native American Percent Adequate Prenatal Care by NADM Compared with White Non-Hispanics



# Native American Percent No Prenatal Care by NADM Compared with White Non-Hispanics



# Native American Percent Public Funding for Prenatal Care by NADM Compared with White Non-Hispanics




# Analysis by Tribal Groupings





## Methods

- Mothers who answered “Native American/American Indian” were asked to write in their tribe/affiliation 
- Mothers’ write-ins were grouped into 22 unique tribal groupings (e.g., ABANACHE, ABANACKY, ABANAKE, ABANAKEE, ABANAKI, ABINAKI = ABENAKI )
- If two or more tribes were specified, analysis was done on the first mentioned tribe
- Number of mothers who specified tribe = 1,383 (75% of study group)



# TRIBAL GROUPS

Tribal Groupings	Count	Percent of Known Tribes
CHEROKEE	358	28%
BLACK FOOT	177	14%
WAMPANOAG	176	14%
MIC'MAC	150	12%
IROQUOIS	82	6%
NIPMUK	66	5%
SIOUX	50	4%
ABENAKI	32	3%
NAVAJO	21	2%
APACHE	20	2%
CHIPPEWA	19	1%
CHOCTAW	17	1%
PASSAMAQUODDY	17	1%
PENOBSCOT	17	1%
ALGONQUIN	13	1%
NARRAGANSETT	13	1%
SEMINOLE	11	1%
ALASKA NATIVE	9	1%
OJIBWA	9	1%
POTAWATOMI	9	1%
SHOSHONE	6	0%



## Five Largest Tribal Groupings Massachusetts: 1999-2005

Largest Tribal Groupings	Number
Cherokee	358
Blackfoot	177
Wampanoag (includes Mashpee & Gay Head)	176
Mic'Mac	150
Iroquois	82



# Mothers Characteristics: Largest Tribal Groupings Compared with White Non-Hispanics Massachusetts: 1999-2005

Mothers Characteristics	Cherokee	Black Foot	Wampanoag	White Non-Hispanics
<b>Total Births 1999-2005</b>	358	177	176	383,232
<b>Mean Age</b>	27.0	25.3*	26.5*	30.5
<b>Teen births (%)</b>	14.2*	18.6*	13.6*	4.1
<b>Less than High School Education (%)</b>	10.9*	14.7*	7.4*	3.3
<b>Not Married (%)</b>	51.7*	61.0*	68.2*	19.8

\* Significantly different from White non-Hispanics (p < 0.05)



## Birth Outcomes by Largest Tribes Massachusetts: 1999-2005

Birth Outcomes	Cherokee	Black Foot	Wampanoag	White Non-Hispanics
Mean birthweight (grams)	3,365.8*	3,359.0*	3,284.7*	3,447.1
% of mothers smoking during pregnancy	26.8*	27.5*	33.5*	9.8
% mothers breastfeeding	63.2*	61.0*	64.9*	75.4
% Cesarean births	25.6	27.3	26.6	26.1

\* Statistically significantly different from white non-Hispanics ( $p < 0.05$ )



## Birth Outcomes by Largest Tribes Massachusetts: 1999-2005

Birth Outcomes	Cherokee	Black Foot	Wampanoag	White non-Hispanics
% receiving adequate prenatal care (Kotelchuck Index)	78.1*	76.8*	81.0	86.4
% no prenatal care	14.0*	13.0*	12.6*	6.0
% public source of prenatal care	52.1*	58.2*	67.0*	18.8

\* Statistically significantly different from white non-Hispanics ( $p < 0.05$ )



# Summary



## Summary of Findings

- Using ethnicity in addition to race leads to a better ascertainment of Native American births
- Compared with White Non-Hispanic mothers, Native American mothers had a higher risk profile and significant disparities in birth outcomes
  - Younger
  - Unmarried
  - Have less than a High School education
  - Smoke during pregnancy
  - Have inadequate or no prenatal care
  - Have low birthweight infants
  - Receive public funds for prenatal care
  - Don't breastfeed





## Summary of Findings

- There were no significant differences in outcomes among the NADMs
- Tribal Analysis
  - 75% of Native American Mothers specified a tribe/affiliation
  - The top 3 tribal groupings (Cherokee, Black Foot, and Wampanoag) made up 1/2 of all mothers who specified a tribe
  - Cherokee, Black Foot, and Wampanoag, compared with White Non-Hispanics, have significantly worse outcomes
  - There were no significant differences among the largest tribal groupings



## Final Remarks

- Race, ethnicity, and tribal affiliation must be collected and examined routinely
- More research is needed to generate and test hypotheses about the differences found among NADMs
- Design and research of studies must be done collaboratively with Native Americans
- More resources must be targeted to address the health disparities of Native American mothers and infants



# Thank You

Massachusetts Department of Public Health

Bureau of Health Information,  
Statistics, Research, and Evaluation  
Division of Research and Epidemiology

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# Parent's Worksheet – Race Question

## Massachusetts Births – Parent Worksheet

MOTHER'S RACE (Please mark the one category that best describes the mother's race):

- 1  White
- 2  Black
- 3  Asian/Pacific Islander

4  American Indian

(specify): \_\_\_\_\_



# Parent's Worksheet – Ancestry Question

## MOTHER'S ANCESTRY

Please mark the *one* category that *best describes* the mother's ancestry or ethnic heritage:

### HISPANIC/LATINA

- 1  Puerto Rican
- 2  Dominican
- 3  Mexican
- 4  Cuban
- 5  Colombian
- 6  Salvadoran
- 7  Other Central American (specify): \_\_\_\_\_
- 8  Other South American (specify): \_\_\_\_\_
- 9  Other Hispanic/Latina (specify): \_\_\_\_\_

### ASIAN/PACIFIC ISLANDER

- 10  Chinese
- 11  Vietnamese
- 12  Cambodian
- 13  Asian Indian
- 14  Korean
- 15  Filipino
- 16  Japanese
- 17  Laotian
- 18  Pakistani
- 19  Thai
- 20  Hawaiian
- 21  Other Asian/Pacific Islander (specify): \_\_\_\_\_

### PORTUGUESE SPEAKING

- 22  Cape Verdean
- 23  Brazilian
- 24  Other Portuguese (specify): \_\_\_\_\_

### WEST INDIAN/CARIBBEAN ISLANDER

- 25  Haitian
- 26  Jamaican
- 27  Barbadian
- 28  Other West Indian/Caribbean Islander (specify): \_\_\_\_\_

### AFRICAN/AFRICAN AMERICAN

- 29  African-American/ Afro-American
- 30  Nigerian
- 31  Other African (specify): \_\_\_\_\_

### MIDDLE EASTERN

- 32  Lebanese
- 33  Iranian
- 34  Israeli
- 35  Other Middle Eastern (specify): \_\_\_\_\_

### AMERICAN ANCESTRY

36  Native American/ American Indian (specify tribe/affiliation): \_\_\_\_\_

### EUROPEAN and OTHER ancestries

- 38  European (specify): \_\_\_\_\_
- 39  Other (specify): \_\_\_\_\_



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