

# Racial & Ethnic Disparities in Birth Outcomes



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# Babies

# Objectives



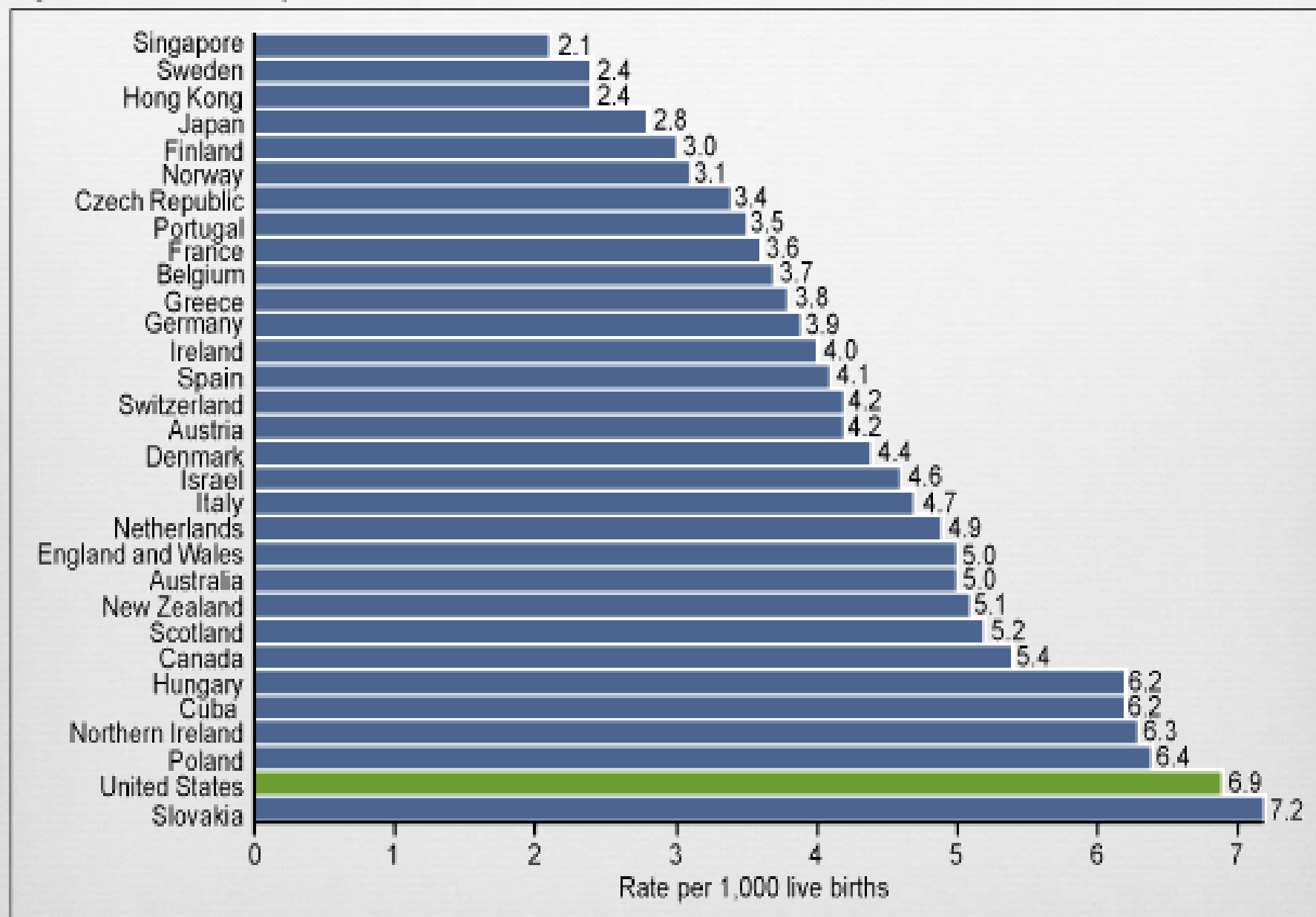
- ❧ Understand causes of U.S. infant mortality
- ❧ Identify the impact social determinates have on birth outcomes
- ❧ Identify best practices for improving infant mortality
- ❧ Discuss action steps necessary for improved infant mortality

# Definitions



- ❧ Infant mortality rate is defined as the number of deaths of infants up to one year old per 1,000 live births in a given time period.
- ❧ Neonatal mortality = birth to 28 days of life
- ❧ Postnatal mortality = 28 days of life to 1 year

Figure 1. Infant mortality rates, selected countries, 2005



SOURCE: Health, United States, 2008.

# Infant Mortality State Rankings

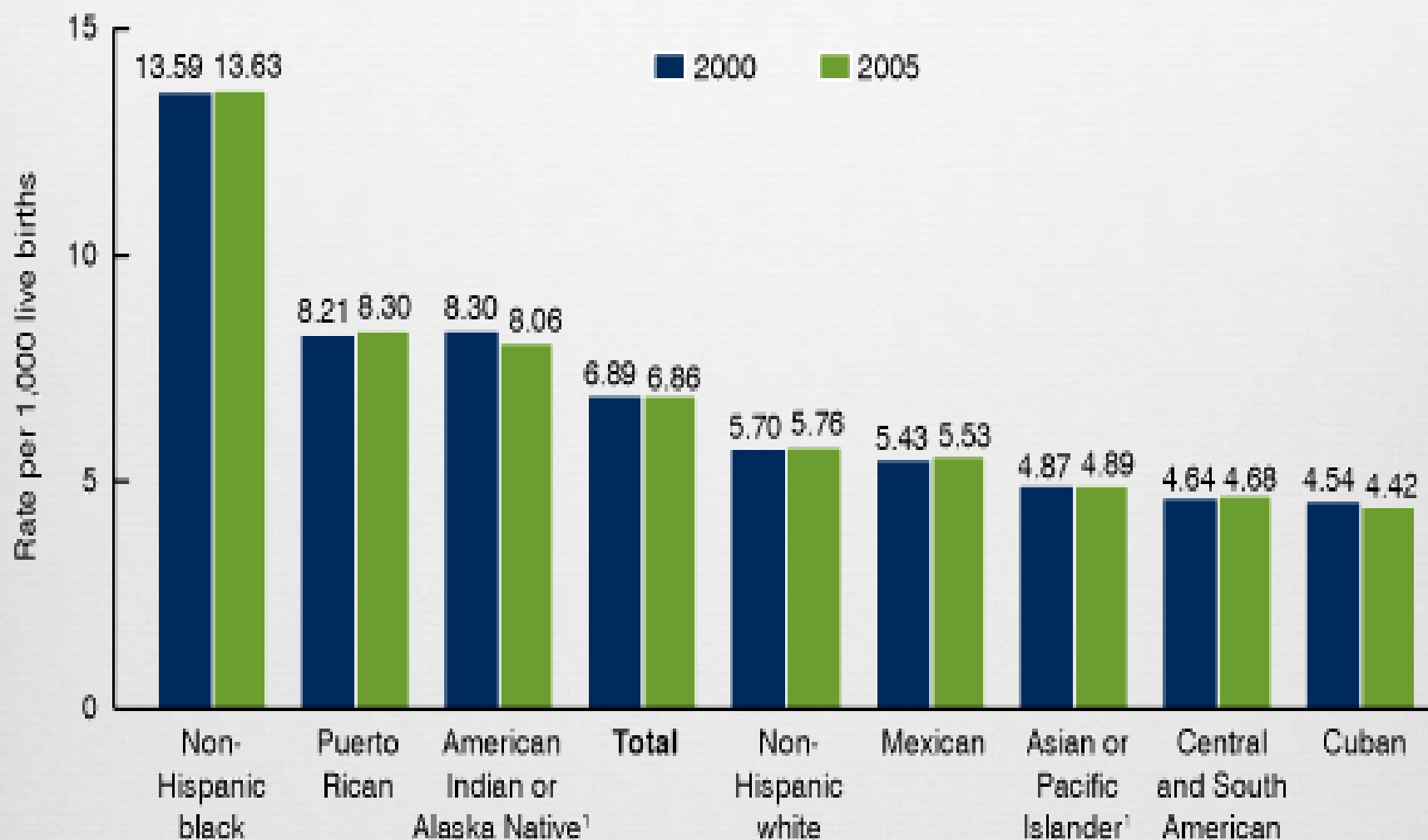
## Best

☞	<b>Utah</b>	4.550
☞	<b>Washington</b>	5.149
☞	<b>Minnesota</b>	5.148
☞	<b>Massachusetts</b>	5.247
☞	<b>New Jersey</b>	5.246
☞	<b>New Hampshire</b>	5.345

## Region VII

☞	<b>Iowa</b>	5.343
☞	<b>Kansas</b>	7.418
☞	<b>Missouri</b>	7.515
☞	<b>Nebraska</b>	5.642

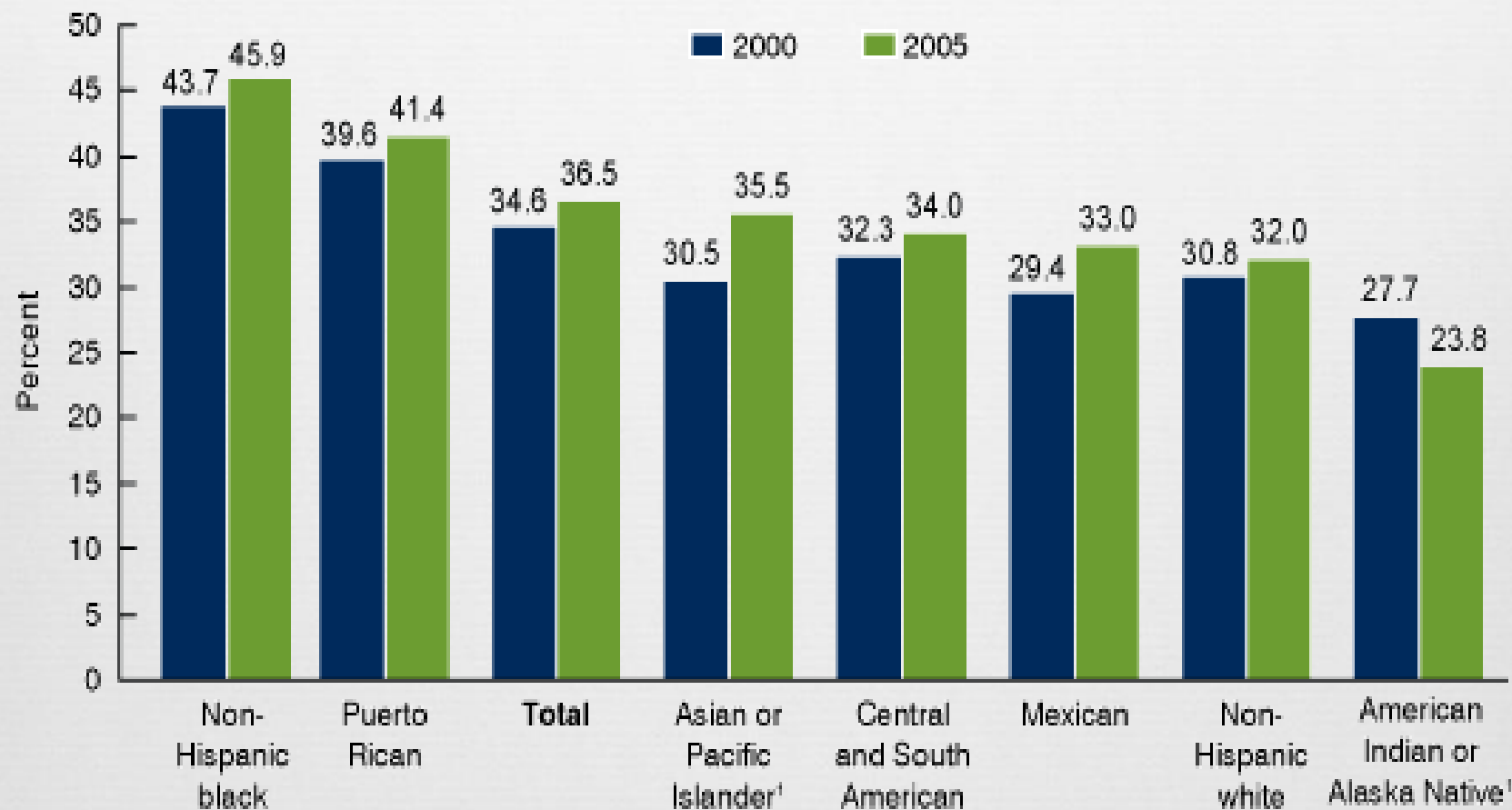
Figure 3. Infant mortality rates by race and ethnicity: United States, 2000 and 2005



<sup>1</sup>Includes persons of Hispanic and non-Hispanic origin.

SOURCE: CDC/NCHS, linked birth/infant death data sets, 2000 and 2005.

Figure 6. Percentage of infant deaths from preterm-related causes, by race and ethnicity: United States, 2000 and 2005



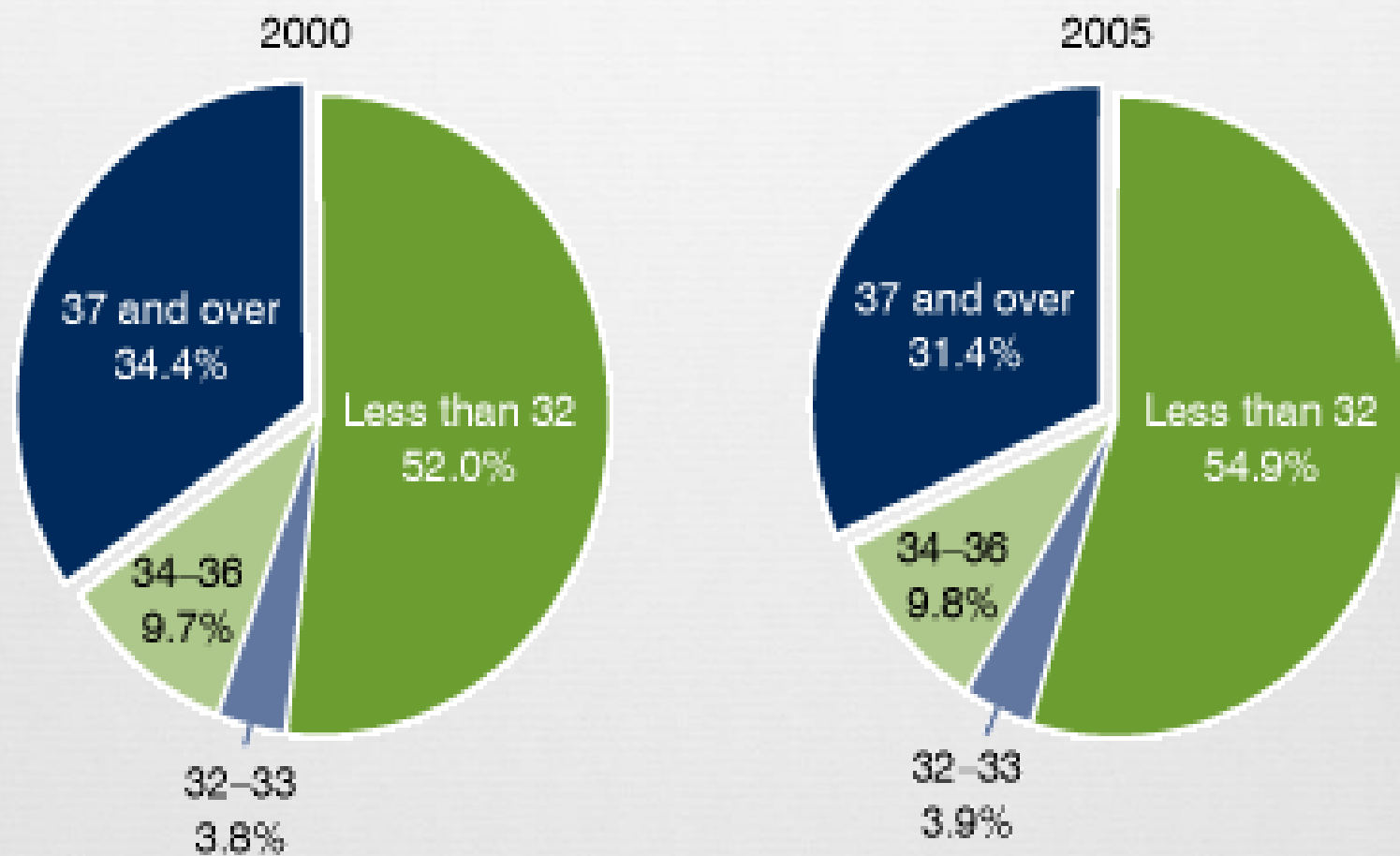
NOTE: Infants born at less than 37 weeks of gestation with cause of death that was a direct cause or consequence of preterm birth (*International Classification of Diseases, Tenth Revision* codes K550, P000, P010, P011, P015, P020, P021, P027, P070–P073, P102, P220–P229, P250–P279, P280, P281, P360–P369, P520–P523, and P77).

<sup>1</sup>Includes persons of Hispanic and non-Hispanic origin.

SOURCE: CDC/NCHS, linked birth/infant death data sets, 2000 and 2005.



Figure 5. Percentage of infant deaths by weeks of gestation: United States, 2000 and 2005



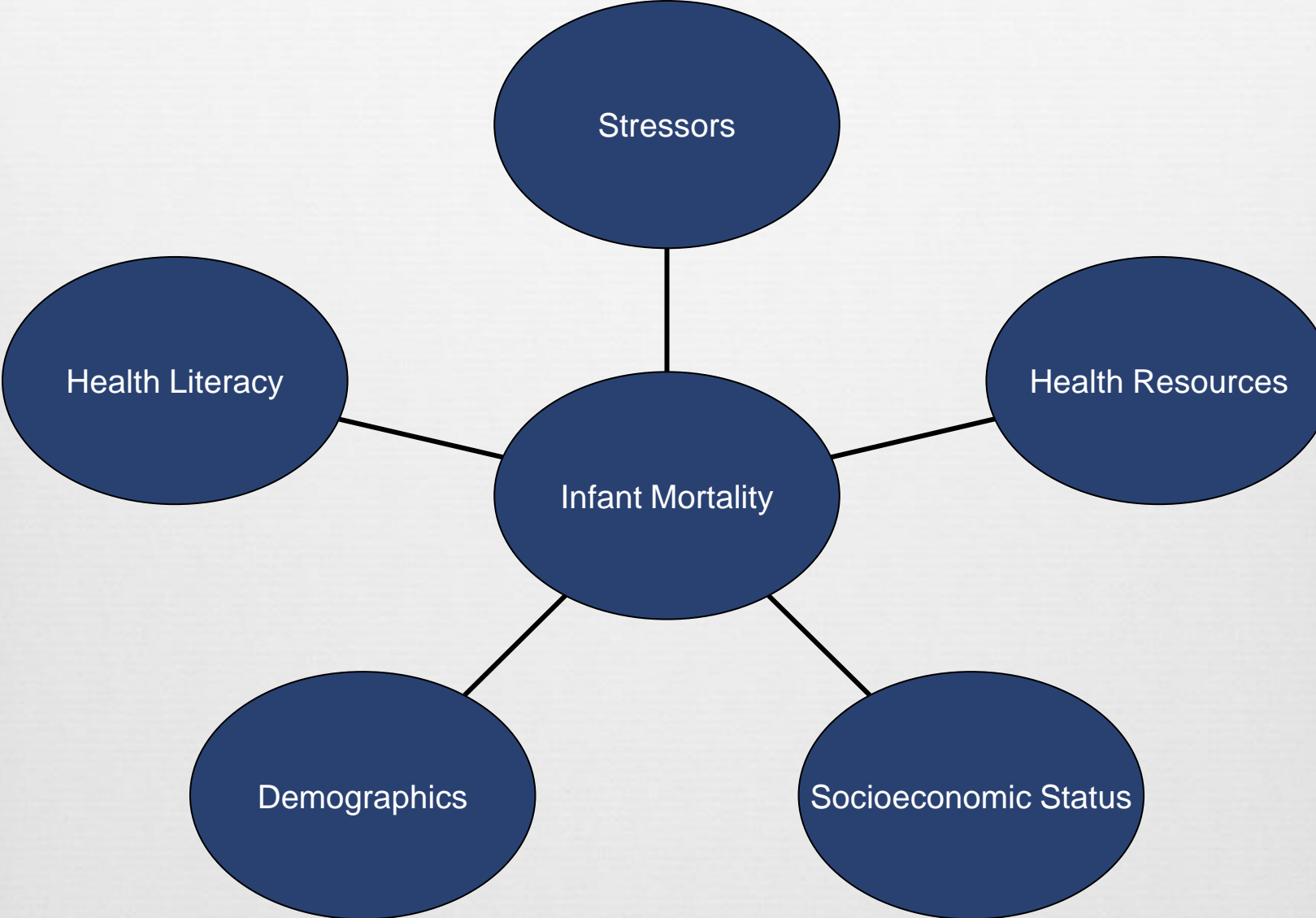
SOURCE: CDC/NCHS, linked birth/infant death data sets, 2000 and 2005.

# Rates of Legal Abortions By Country

☞ Singapore	2008	23.4%
☞ Sweden	2008	25.8%
☞ Hong Kong	2005	19.9%
☞ Japan	2007	19.1%
☞ Finland	2008	14.9%
☞ United States	2005	22.6%

# Causes of U.S. Infant Mortality

- ❧ Congenital malformations, deformations and chromosomal abnormalities
- ❧ Short gestation disorders
- ❧ SIDS
- ❧ Maternal complications
- ❧ Accidents
- ❧ Complications of the placenta, cord or membranes
- ❧ Sepsis
- ❧ Respiratory distress
- ❧ Circulatory system disorders
- ❧ Neonatal hemorrhage



# Stress

Perceived stress can cause low birth weight and preterm delivery in blacks at a rate double that of other races.

High stress levels increased the rate of alcohol and drug use in blacks.

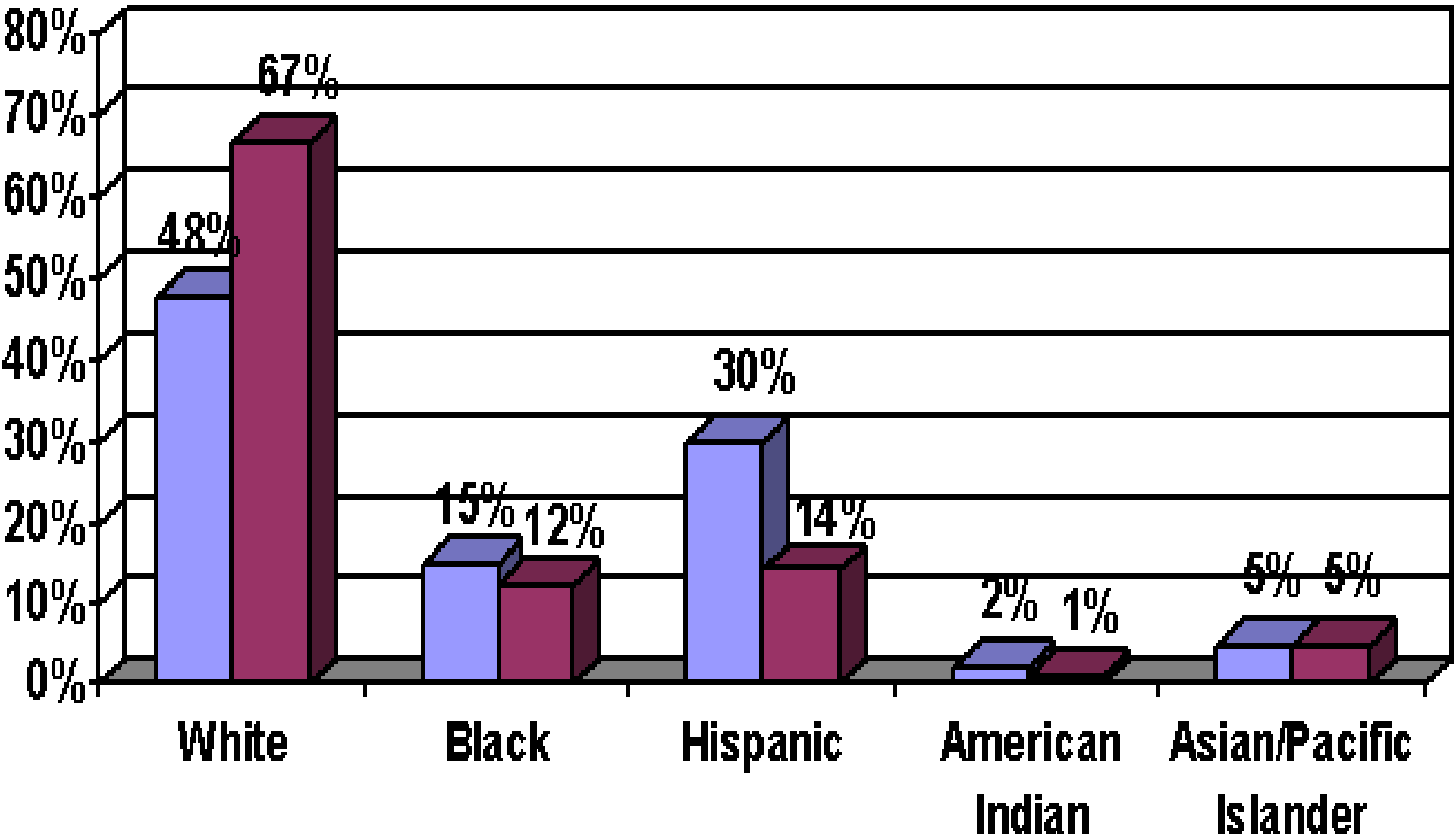
- ☞ Race
- ☞ Economics
- ☞ Living environment
- ☞ Unplanned pregnancy
- ☞ Non functioning or dysfunctional support systems
- ☞ Poor health choices
- ☞ Lack of control

# Low Socioeconomic Status

- ❧ Dictates living environment
- ❧ Dictates mobility
- ❧ Impacts Nutritional Status
- ❧ Effects likelihood of substance/tobacco use
- ❧ Inability to purchase protective items
- ❧ Quality childcare
- ❧ Healthcare access

# Health Resources

- ❧ Access to quality healthcare and or specialty care
- ❧ Ability to purchase pharmaceuticals
- ❧ Eligibility for government health insurance
- ❧ Knowledge of available resources
- ❧ Navigate the healthcare system



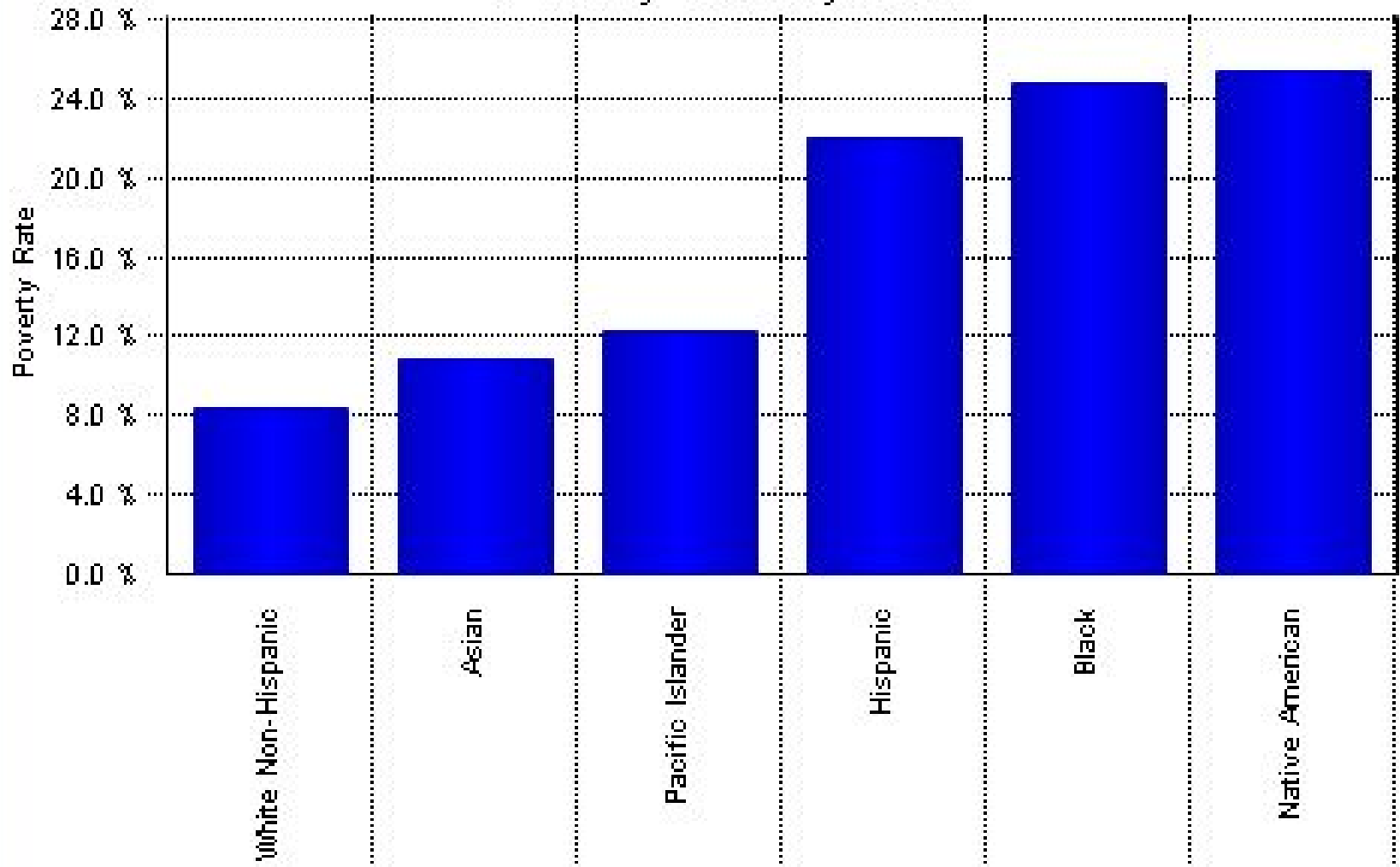
■ Uninsured ■ Total Population



# Demographics

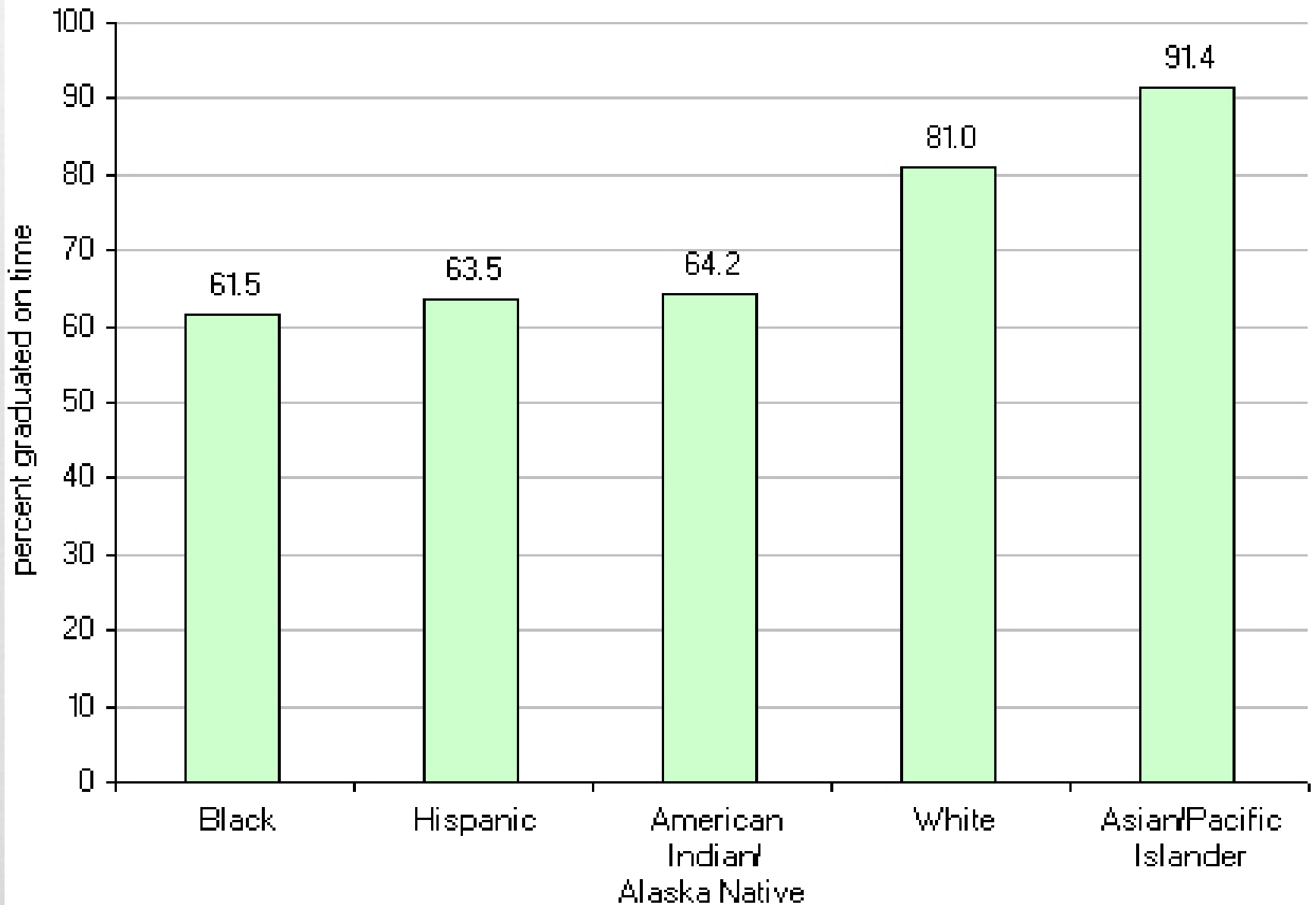
- ☞ Race
- ☞ Zip Code
- ☞ Age
- ☞ Education
- ☞ Employment
- ☞ Number of pregnancies/children
- ☞ Urban/Rural

## Poverty Rate by Race



■ 2006

## Averaged Freshman Graduation Rate, 2007-2008 School Year



## TEENAGE PREGNANCY AND BIRTH RATES, PER 1,000 WOMEN BETWEEN 15 AND 19 YEARS OLD

Country	Pregnancies	Births
<b>Netherlands</b>	15	7.7
<b>Sweden</b>	33.2	11.7
<b>Denmark</b>	34.0	12.0
<b>Finland</b>	37.4	15.7
<b>Canada</b>	45.4	24.8
<b>Norway</b>	45.8	19.6
<b>New Zealand</b>	52.8	32.4
<b>England and Wales</b>	53.4	27.5
<b>Czechoslovakia</b>	79.3	53.7
<b>Hungary</b>	99.3	54.2
<b>United States</b>	109.9	51.7

SOURCE: Data from the Alan Guttmacher Institute, cited in *Adolescent Health, Volume II: Background and the Effectiveness of Selected Prevention and Treatment Services*, U.S. Office of Technology Assessment (Washington, D.C.: November 1991), p. 329.

# Teen Mothers

- ❧ 10% of births in 2006 were in 20 y/o or younger.
- ❧ 3/10 Teens become pregnant before age 20.
- ❧ 1/4 teens under 18 have 2nd child w/in 2 years.
- ❧ Preterm births in women under 20 occurs 14.5% (prior to 37 weeks)

# Teen Pregnancy

## Experience:

- ⌘ Biological immaturity <16 y/o
- ⌘ High stress rates
- ⌘ Low education
- ⌘ Low SES
- ⌘ Lack of social support
- ⌘ Inadequate prenatal care
- ⌘ Delayed recognition of pregnancy

## Results in:

- ⌘ Increased risk of low birth weight
- ⌘ Preterm delivery
- ⌘ Congenital defects
- ⌘ Low APGAR scores
- ⌘ Increased risk of subsequent pregnancies within short time span
- ⌘ Inconsistent prenatal care

Table 1 Characteristics of subjects in different maternal age groups (%)

Variables	Maternal age (years old)				
	10–15	16–17	18–19	20–24	25–29
No. of live birth	175,019	646,594	1,058,101	1,879,714	2,006,650
<b>Maternal race</b>					
White	58.22	70.43	76.09	72.48	81.45
Other	3.41	3.28	3.22	3.26	4.50
Black	38.37	26.29	20.68	24.26	14.05
<b>Education</b>					
Age-appropriate	93.36	83.07	72.77	78.23	83.34
Age-inappropriate	6.64	16.93	27.23	21.77	16.66
<b>Marital status</b>					
Married	6.87	14.25	26.76	20.60	54.54
Unmarried	93.13	85.75	73.24	79.40	45.64
<b>Tobacco use during pregnancy</b>					
No	75.21	70.30	68.82	69.92	72.25
Yes	8.64	13.08	14.40	13.41	9.76
Not reported	16.15	16.62	16.78	16.67	17.99
<b>Alcohol use during pregnancy</b>					
No	85.80	85.77	85.62	85.69	84.50
Yes	0.61	0.63	0.64	0.63	0.62
Not reported	13.59	13.60	13.74	13.68	14.88
<b>Prenatal care (Modified Kessner index)</b>					
Adequate	46.62	58.84	66.69	62.12	75.76
Intermediate	37.81	31.66	26.46	29.31	19.49
Inadequate	15.57	9.49	6.85	8.57	4.75
<b>Weight gain during pregnancy (kg/week)</b>					
<0.16	8.32	8.39	8.55	8.48	6.98
0.16	65.42	67.83	68.40	67.93	68.91
50.60	5.40	4.66	4.60	4.69	4.76
Not reported	20.86	19.12	18.45	18.90	19.35

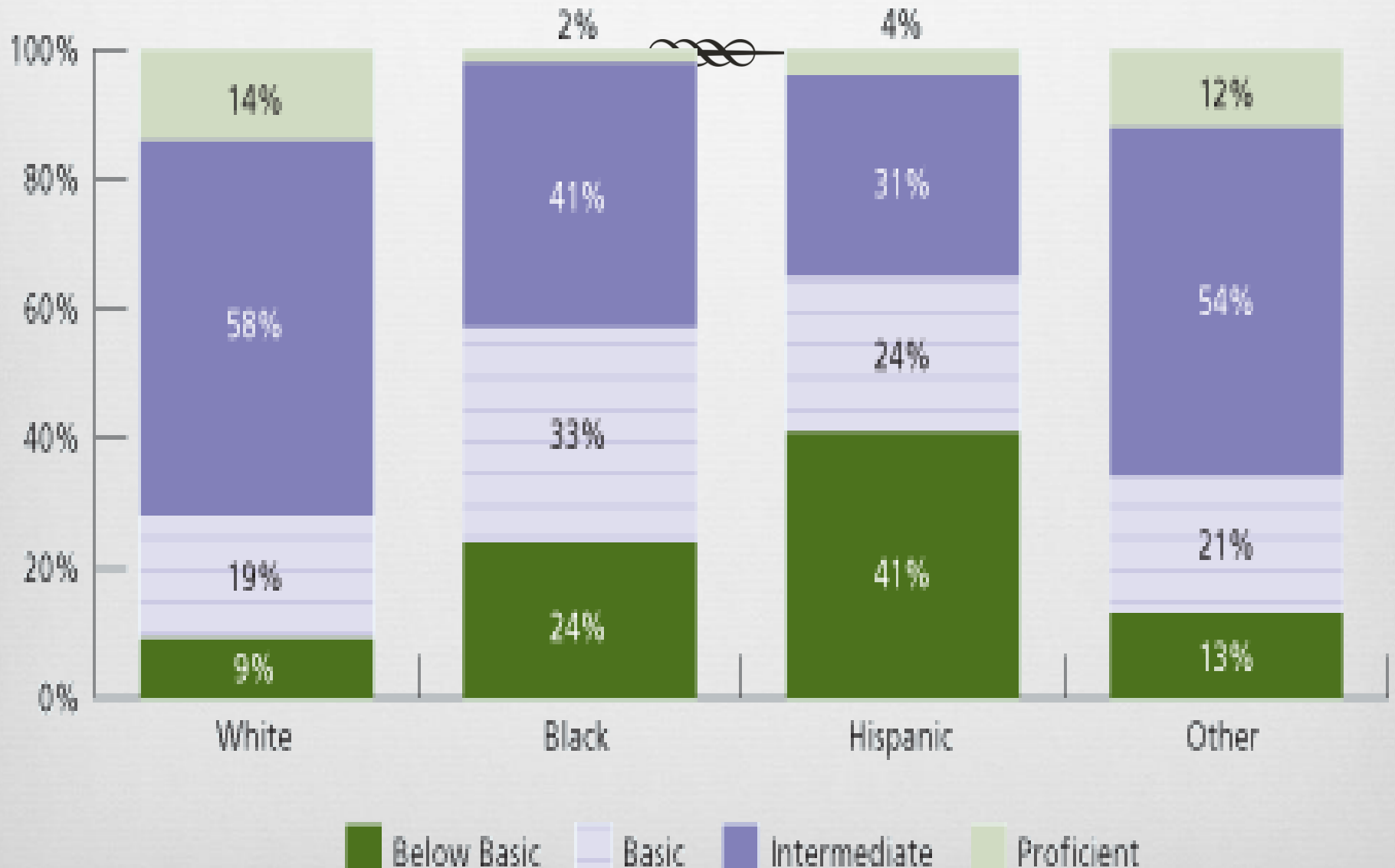
# Health Literacy

- ❧ Ability to recognize current health status
- ❧ Understanding of risks and benefits of actions
- ❧ Knowledge to navigate healthcare system
- ❧ Ability to self advocate
- ❧ Ability to process information and apply it to the decision making process



# Health Literacy by Race

U.S. Department of Education, Institute of Education Sciences, 2003 National Assessment of Adult Literacy



# Japan

- ❧ Infant mortality rate of 2.8
  - ❧ Congenital defects
  - ❧ Birth trauma/asphyxia
  - ❧ Injuries/poisoning
- ❧ Most children born to mother aged 20 – 34 with largest cohort being 25-29.
- ❧ Majority are married
- ❧ Pregnancy and children are revered
- ❧ Multiple community supports
- ❧ Maternal Child Health Handbook
- ❧ High health literacy
- ❧ Developmental data book from conception to age 6
- ❧ Midwives and Generalists attend most births (< 1% occur outside of a hospital/clinic)
- ❧ Government subsidies for neonatal complications or high risk pregnancies
- ❧ Postpartum hospital stays are 1 week
  - ❧ Promote lactation (80% BF)
  - ❧ Monitor for complications

# Japan's 1951 Children's Charter

# Can U.S. Replicate the Japanese System?

- ❧ Homogenous country
- ❧ Highly educated society
- ❧ Universal healthcare
- ❧ Strong cultural influence on
  - ❧ Birth decisions
  - ❧ Teen pregnancy
  - ❧ Unmarried mothers

# What are the risks by stages?

## Preconception

- Poor maternal health status
- Use of RX/altering substances
- Lack of contraceptive use
- Poor health literacy

## Conception

- Delayed pregnancy dx
- Use of RX/substances
- Accidents/Violence
- Poor prenatal care
- Poor nutrition

## Delivery

- Preterm
- Birth trauma
- No medical intervention
- Congenital defects

## Newborn

- Preterm
- Birth trauma
- Congenital defects
- Accident/violence
- Exposure to substances
- Lack of pediatric care
- Unrecognized illness
- SIDS
- Infection

## Infant

- Unrecognized illness
- Congenital defects
- Accident/violence
- Lack of pediatric care
- Poor nutrition
- Lack of safety equipment
- SIDS

# Current U.S. Programs

- ☞ Healthy Start
- ☞ Medicaid/SCHIP
- ☞ Immunization Initiative
- ☞ Folic Acid Campaign
- ☞ Decreasing HIV transmission
- ☞ Back to Sleep Campaign
- ☞ Maternal & Child Health Services
- ☞ Teen Pregnancy Prevention
- ☞ Prenatal Care Hotlines

# What needs to be done to decrease U.S. Infant Mortality

- ☞ Provide comprehensive health services
  - ☞ Nutritional
  - ☞ Behavioral Health
  - ☞ Case Management
  - ☞ Behavior Modification
  - ☞ Lactation support
- ☞ Evaluate all pregnant mothers for level of perceived stress
- ☞ Decrease Teen Pregnancy
- ☞ Incentives for healthy behavioral choices
- ☞ Improve community support programming
- ☞ Increase the value of children
- ☞ Improve insurance coverage of contraceptives
- ☞ Focus on male contribution to preconception activities, healthy pregnancy and infant care

# Next Steps

- ❧ Evaluate the best 5 U.S. States in infant mortality for:
  - ❧ Health Access programs
  - ❧ Methods for addressing low SES
  - ❧ Teen pregnancy prevention programs
  - ❧ Nutritional programs
  - ❧ Behavioral health programs
  - ❧ Health literacy programs



Let's Discuss Next Steps

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