

California Department of Public Health: **Strategic Plan**

- **Goal #1**

Increase Quality and Years of Healthy Life,
Reduce Disparities and Promote Health Equity

- **Objective**

Reduce deaths of infants (under 1 year of age)

Infant Mortality

Infant Mortality Rate

- defined as the number of deaths in infants per 1000 live births
- one of the most important indicators of the health of a nation, as it is associated with a variety of factors such as:
 - **maternal health**
 - **quality and access to medical care**
 - **socioeconomic conditions, and**
 - **public health practices**
- continued to steadily decline over the past several decades:
26.0 per 1000 live births in 1960 to 6.9 per 1000 live births in 2000 (USA)
- U.S. was ranked 12th in the world in 1960; however, we are currently ranked ***29th in the world in infant mortality (2004 data)***
 - This ranking is due in large part to disparities which continue to exist among various racial and ethnic groups, particularly African Americans

Infant Mortality Rates by Country 2004 Data

| Rank | Country | IMR |
|------|---------------|-----|
| 1 | Singapore | 2.0 |
| 2 | Hong Kong | 2.5 |
| 3 | Japan | 2.8 |
| 4 | Sweden | 3.1 |
| 5 | Norway | 3.2 |
| 29 | Poland | 6.8 |
| 29 | Slovakia | 6.8 |
| 29 | United States | 6.8 |

California Demographic Characteristics: 2006

- **State Projected Total Population** **37.4 million**
 - **Hispanic** **13.2 million (35%)**
 - **Non-Hispanic** **24.2 million (65%)**
 - **White** **16.4 million (44%)**
 - **Asian** **4.3 million (12%)**
 - **Pacific Islander** **0.1 million (0.4%)**
 - **African American** **2.3 million (6%)**
 - **American Indian** **0.2 million (0.6%)**
 - **Multi-Race** **0.8 million (2.1%)**

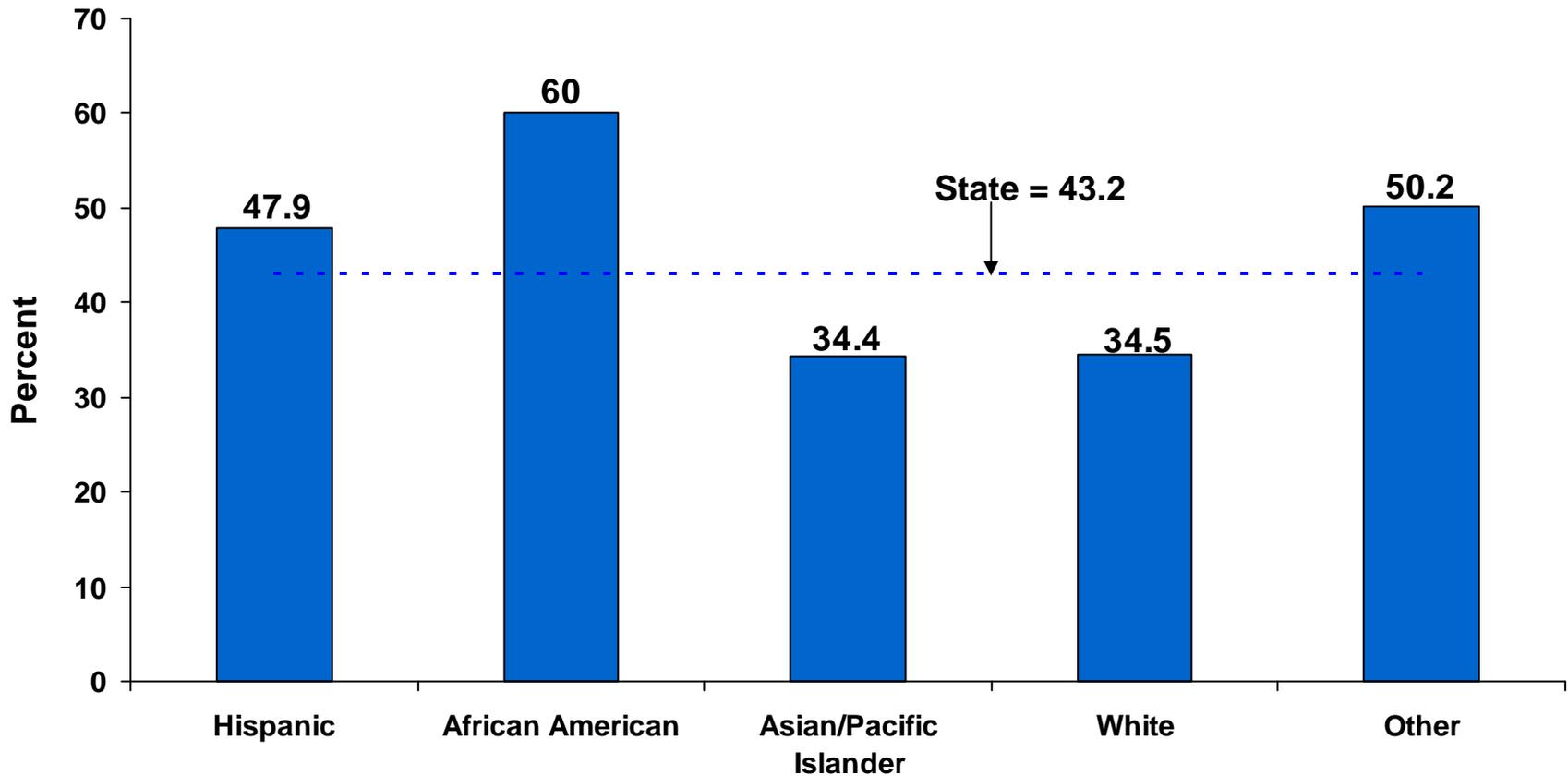
- **California Resident Women Births** **562,157**
 - **13.3% of 2005 US Births**

- **Births to Resident Hispanic Women** **52% of total births**

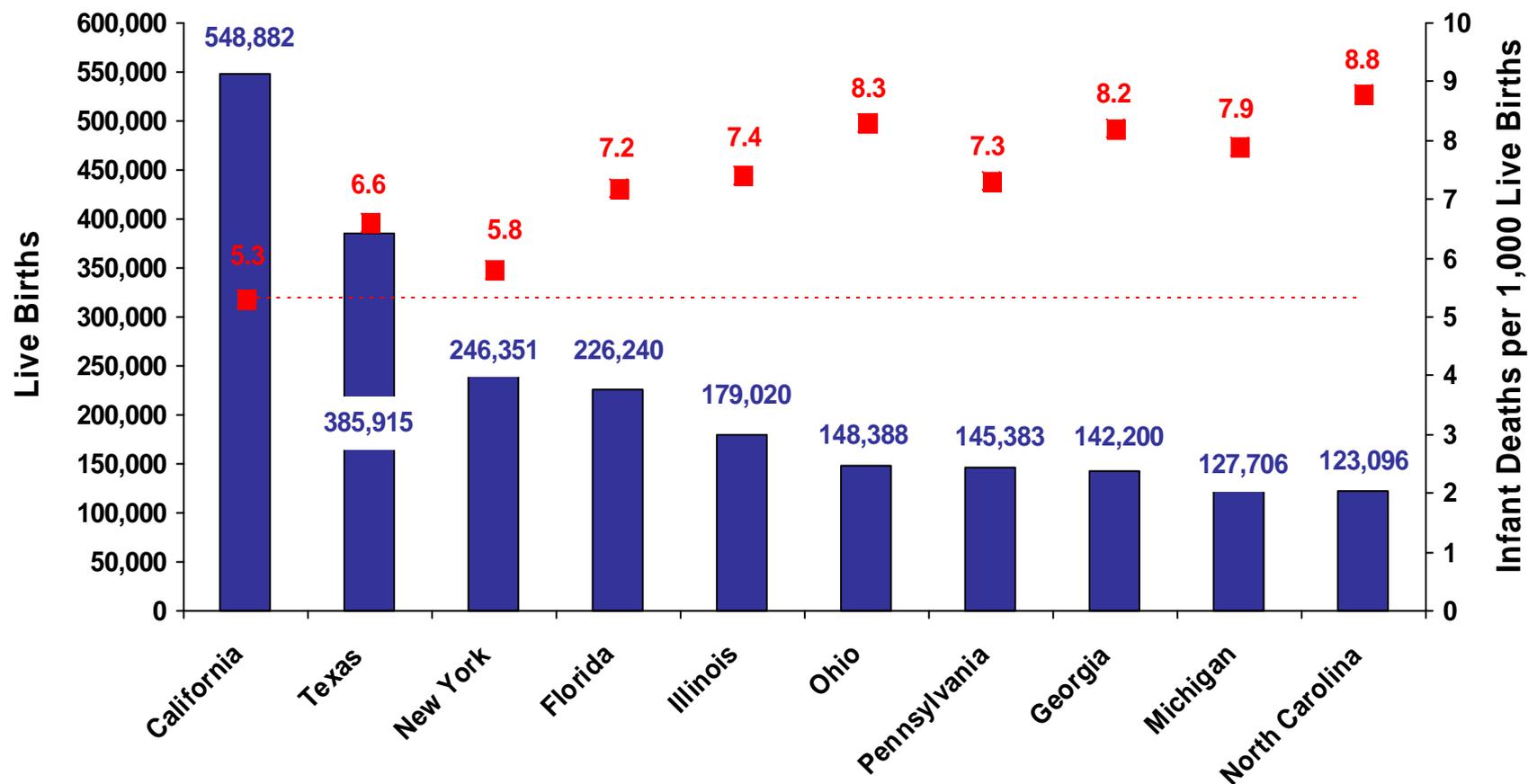
- **Paid by Medi-Cal**
 - **Prenatal Care** **46% of total births**
 - **Delivery** **47% of total births**

- **Unintended Births to California Women** **43%**

Percent of Live Births Resulting from an Unintended Pregnancy: 2006



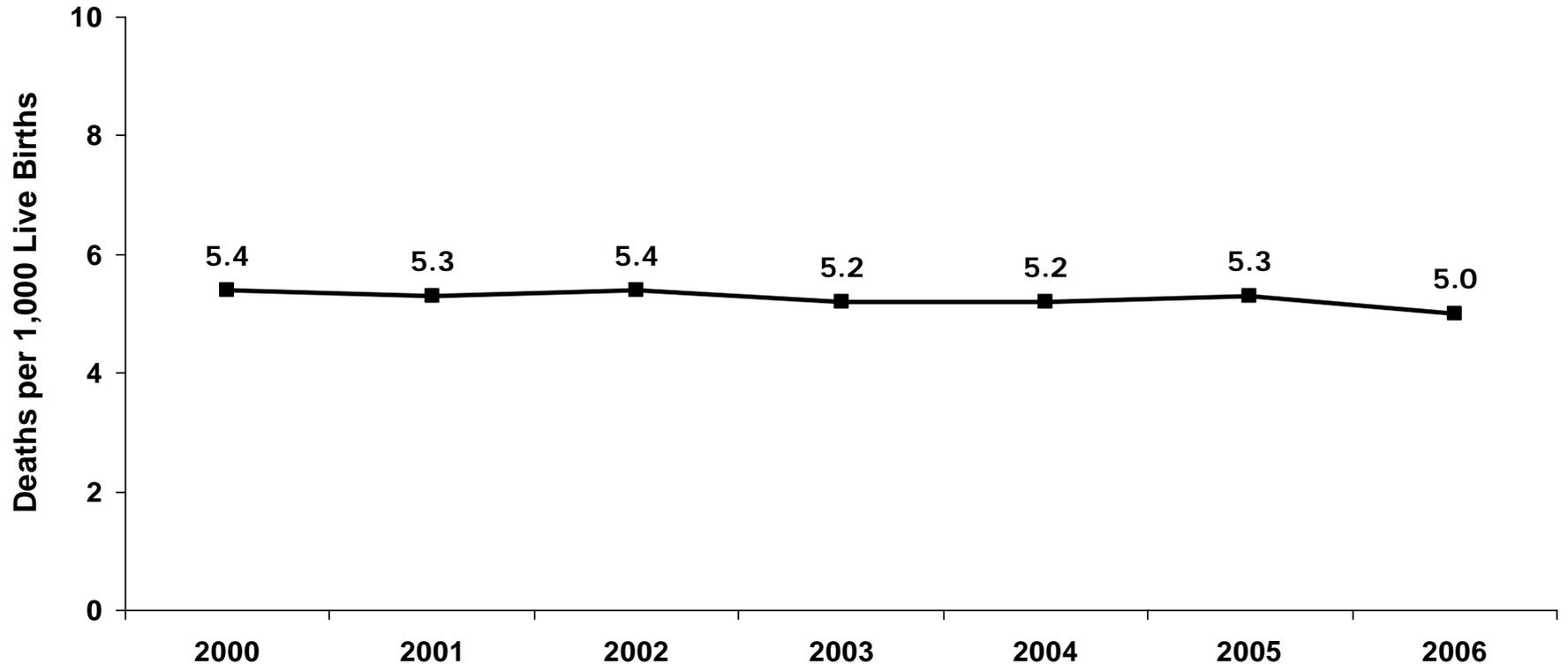
Infant Mortality Rate Among States with the Highest Number of U.S. Births, 2005



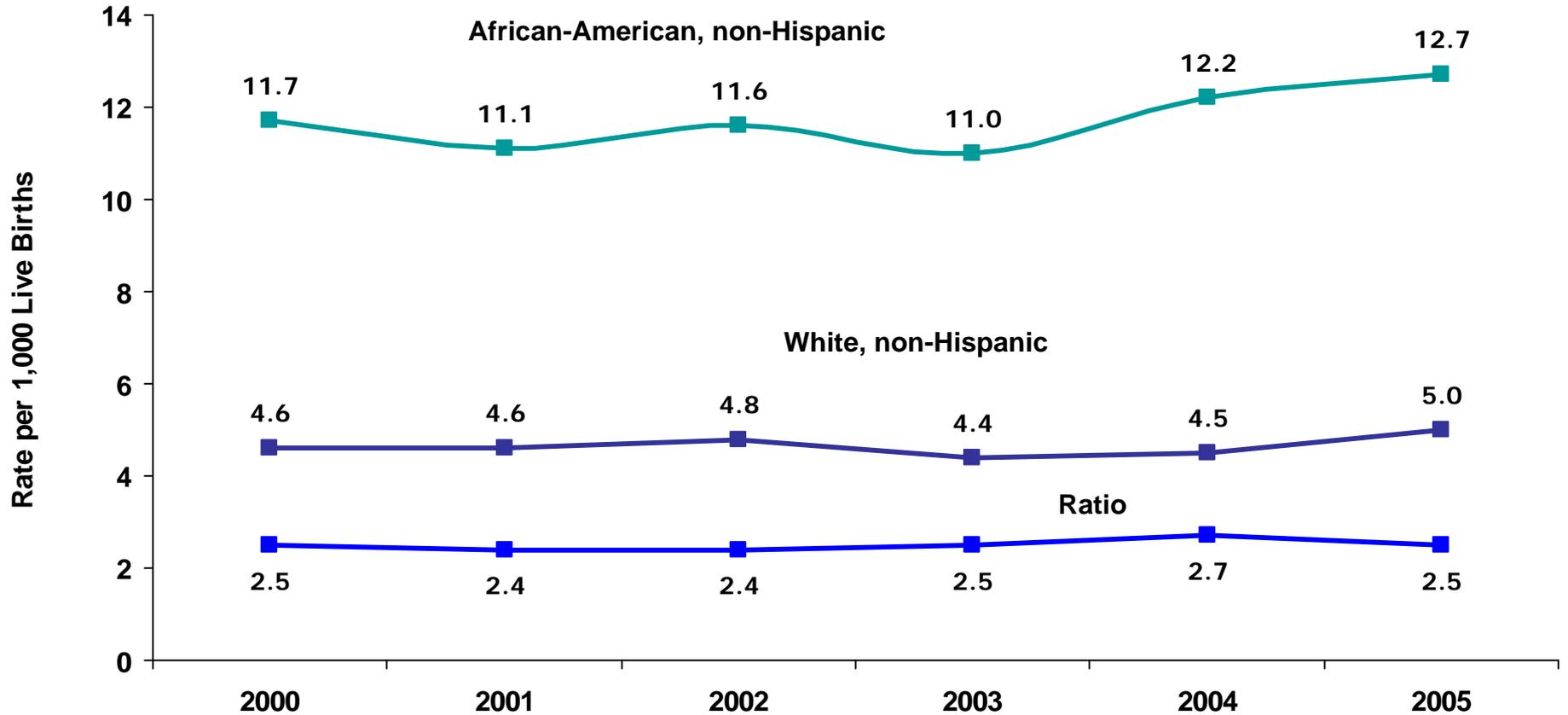
Data Sources: Martin JA, Hamilton BE, Sutton PD, Ventura SJ, Menacker F, Kirmeyer S, Munson ML. Births: Final data for 2005. National vital statistics reports; vol 56 no 6. Hyattsville, MD: National Center for Health Statistics. 2007. ; Kung HC, Hoyert DL, Xu JQ, Murphy SL. Deaths: Final data for 2005. National vital statistics reports; vol 56 no 10. Hyattsville, MD: National Center for Health Statistics. 2008.

| | <u>United States</u> | <u>California</u> | <u>Rank</u> |
|--------------------------------------------|----------------------|-------------------|-------------|
| Infant Mortality Rate | 6.9 | 5.3 | 7 |
| Percent Low Birthweight Births | 8.2 | 6.9 | 13 |
| Percent Very Low Birthweight Births | 1.5 | 1.2 | 9 |
| Percent Preterm Deliveries | 12.7 | 10.7 | 7 |

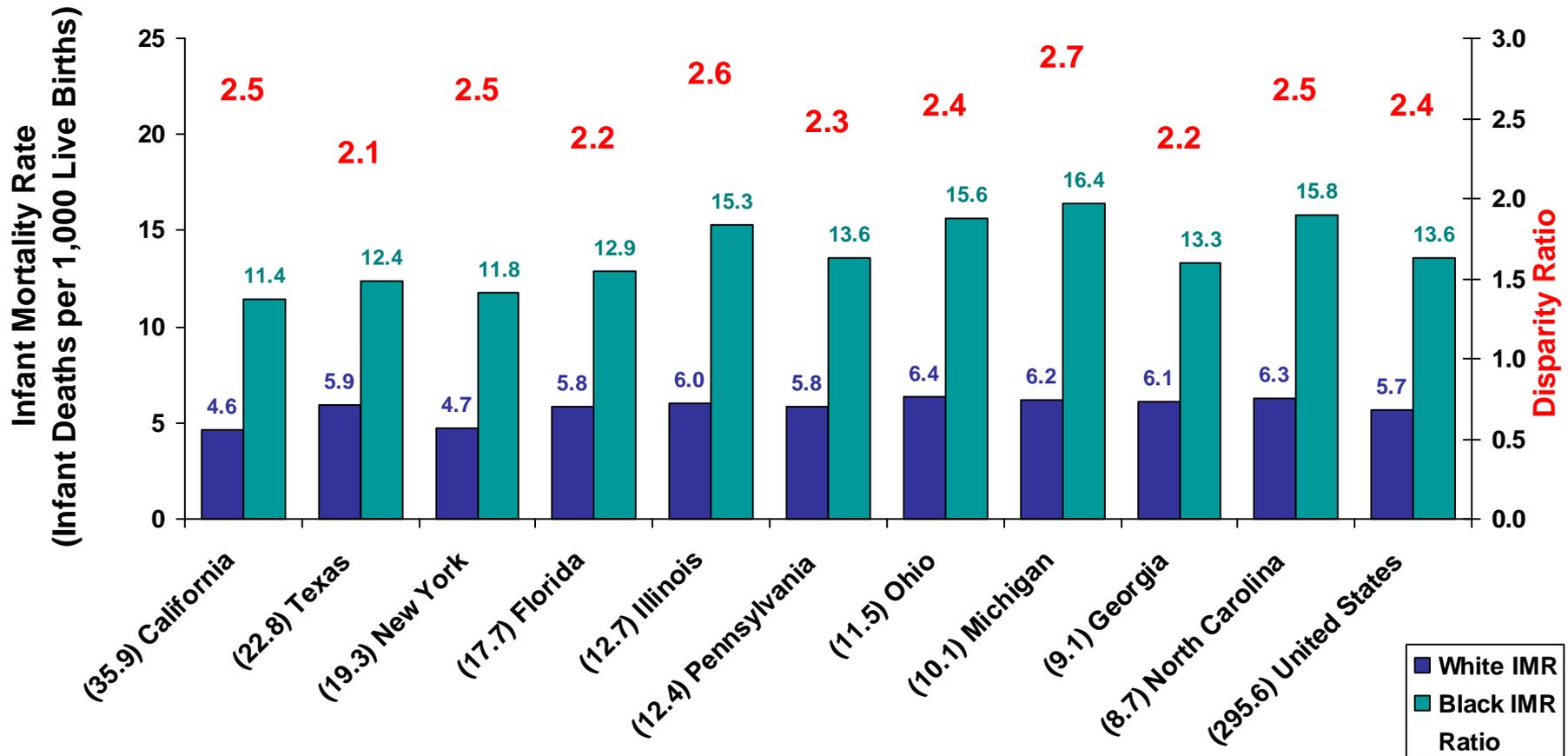
California Infant Mortality Rates per 1,000 Live Births, 2000-2006



California African American and White Infant Mortality Rates & Ratio for Births: 2000-2005



Infant Mortality Rates and Black-White Disparity Ratio, Ten Most Populous States, 2005



State populations in millions. Infant mortality rates are for Non-Hispanic White and Non-Hispanic Black infants. Data Sources: National Center for Health Statistics (2008), Infant Mortality Statistics from the 2005 Period Linked Birth/Infant Death Data Set, National Vital Statistics Reports, Volume 57, Number 2 (Table 3). US Census Bureau, Annual Estimates of the Resident Population for the United States, Regions, States, and Puerto Rico: April 1, 2000 to July 1, 2008 (NST-EST2008-01).

Leading Causes of Infant Death and Rates in California, 2006

| Group Cause of Infant Death and ICD-10 Codes | California | | |
|--------------------------------------------------------------------------------------------------|------------|--------------------|--------------|
| | Rank | Number (%) | Rate |
| All Causes (A00-Y89) | | 2829 (100%) | 503.2 |
| Congenital malformations, deformations and chromosomal abnormalities (Q00-Q99) | 1 | 722 (25.5%) | 128.4 |
| Disorders related to short gestation and low birth weight, not elsewhere classified (P07) | 2 | 428 (15.1%) | 76.1 |
| Newborn affected by maternal complications of pregnancy (P01) | 3 | 156 (5.5%) | 27.7 |
| Sudden Infant Death Syndrome (R95) | 4 | 134 (4.7%) | 23.8 |
| Newborn affected by complications of placenta, cord and membranes (P02) | 5 | 109 (3.8%) | 19.4 |
| Neonatal hemorrhage (P50-52, 54) | 6 | 70 (2.5%) | 12.4 |
| Bacterial sepsis of newborn (P36) | 7 | 68 (2.4%) | 12.1 |
| Accidents (unintentional injuries) (V01-X59) | 8 | 63 (2.2%) | 11.2 |
| Respiratory distress of newborn (P22) | 9 | 62 (2.2%) | 11.0 |
| Diseases of the circulatory system (I00-I99) | 10 | 51 (1.8%) | 9.1 |
| All other causes | | 966 (34.1%) | |

Rates are per 100,000 live births.

Source: California Birth and Death Statistical Master Files, 2006. Causes ranked based on methodology described in: Centers for Disease Control and Prevention (CDC)/National Center for Health Statistics (NCHS) Instruction Manual for tabulating causes of death

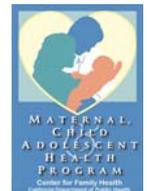
(http://www.cdc.gov/nchs/data/dvs/im9_2002.pdf)

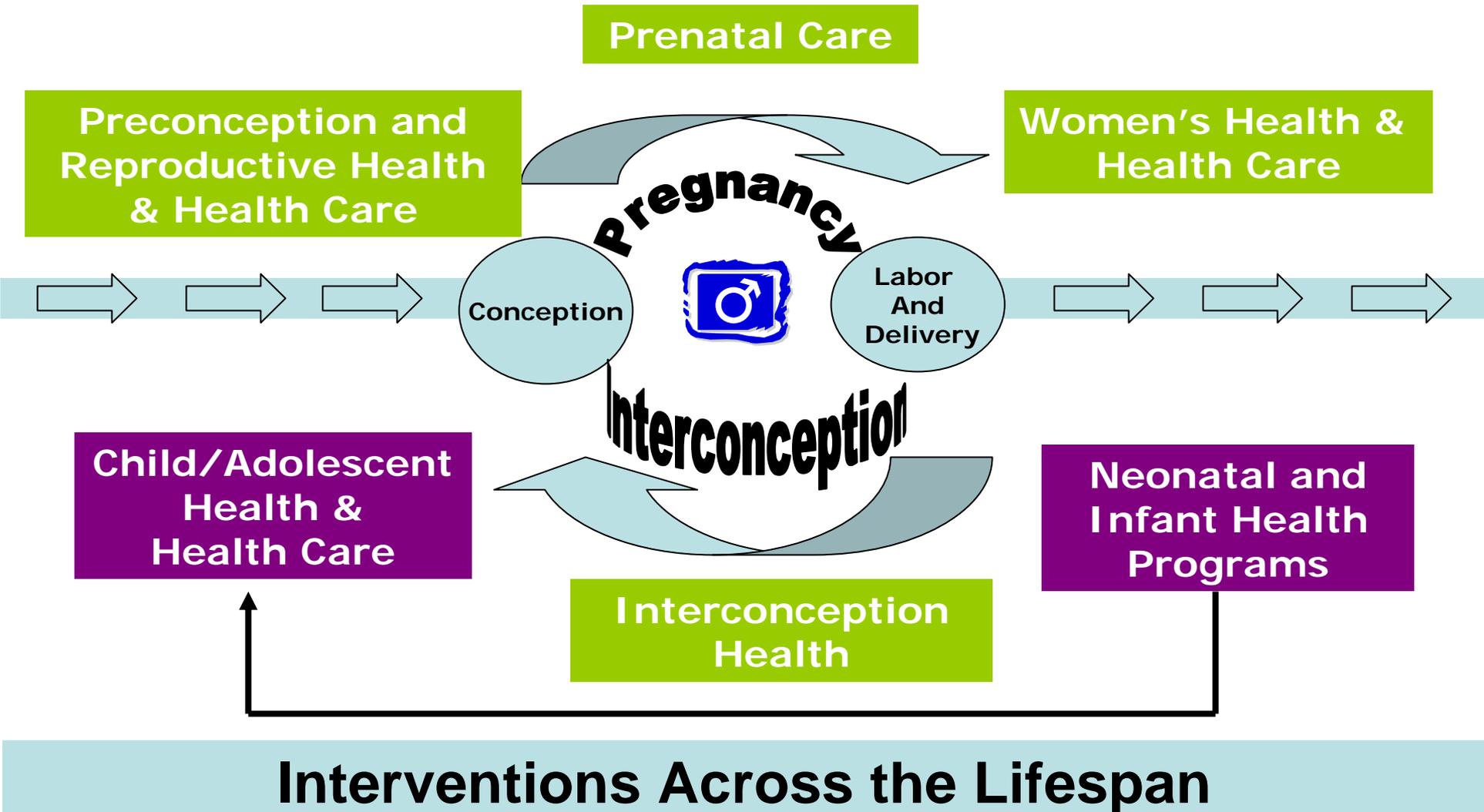
Risk Factors for Infant Mortality

- Low Birthweight/Prematurity
- Sudden Infant Death Syndrome
- Maternal Behaviors/Lifestyles
 - **Substance use (Tobacco, Alcohol, Drugs)**
 - **Poor nutrition**
 - **Lack of prenatal care**
 - **Chronic illnesses/Medical problems**
 - **Unplanned pregnancy**
- Lack of access to medical care
- Socioeconomic status
- Race - many of the racial/ethnic differences in infant mortality remain unexplained

Center for Family Health: MCAH Programs

California Department of
Public Health





Preconception Period

- **MCAH is partnering with organizations and stakeholders to**
 - provide direction for the integration of preconception care into public health practice
 - develop policies to support preconception health as a strategy to address health disparities
 - promote preconception health messages to women of reproductive age
- **Preconception Health Council of California**
 - composed of representatives from organizations and programs that are stakeholders in the development of preconception care services in California
- **Current Major Activities:**
 - Folic Acid Campaign
 - Preconception Care Website
 - Social Marketing Campaign for preconception messaging specific to African Americans and Youth

Black Infant Health (BIH) Program

- To address the persistence of poor birth outcomes (high infant mortality, high LBW/prematurity rates) in African Americans, MCAH commissioned UCSF to conduct a detailed assessment of current BIH program services
- Assessment recommendation:
Develop a single core model for all 17 BIH jurisdictions
- A local/state/academic collaborative workgroup was formed to develop a new BIH model based on the assessment findings, expert input, available evidence

- **Comprehensive Perinatal Services Program (CPSP)**
 - provides enhanced prenatal care services for Medi-Cal eligible women
- **Adolescent Family Life Program (AFLP)**
 - addresses health risks and need of resources related to birth outcomes for adolescents
- **CA Diabetes and Pregnancy Program (CDAPP)**
 - improves pregnancy outcomes for high-risk pregnant women who develop/have diabetes during pregnancy

Regional Perinatal Programs of California (RPPC)

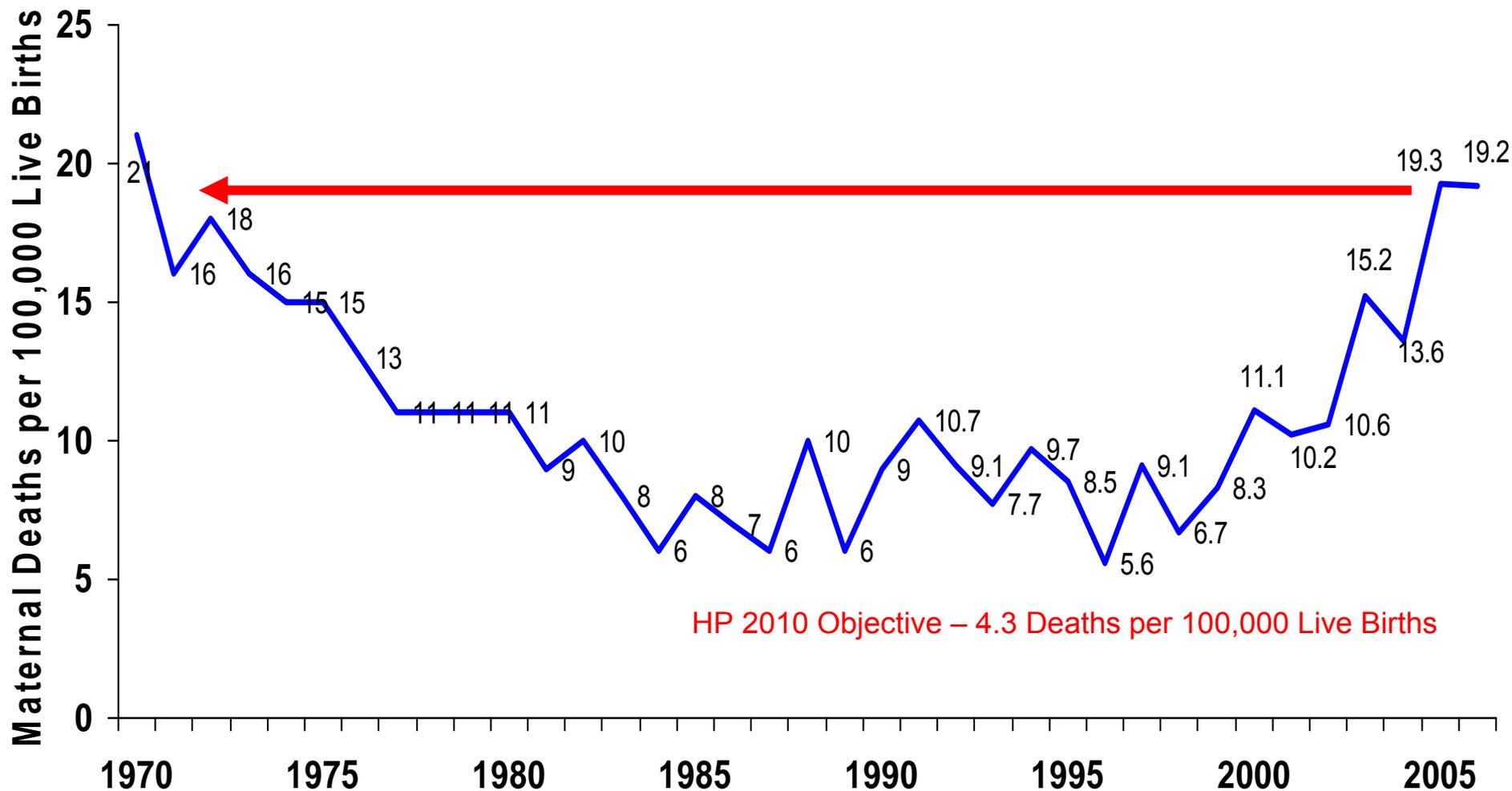
- evolved from the need for a comprehensive, cooperative network of public and private health care providers within regional geographic areas to assure the well-being of pregnant women and their babies
- promote access to risk-appropriate perinatal care to pregnant women and their infants through regional quality improvement activities
- **CA Perinatal Quality Care Collaborative (CPQCC)**
 - a collaborative of public/private partners that develops perinatal outcomes information which allows for data-driven performance improvement and benchmarking throughout CA
 - includes 126 member hospitals, representing over 90% of all neonates cared for in CA neonatal intensive care units (NICUs)
 - have developed several toolkits, e.g.
 - Antenatal steroid therapy
 - Care and management of the late preterm infant
 - Improving initial lung function: surfactant and other means
 - Delivery room management of the VLBW infant
 - Nutritional support of the VLBW infant
 - Severe hyperbilirubinemia prevention
 - Prevention of perinatal HIV
 - Hospital acquired infection prevention
 - Prevention of perinatal group B *Streptococcus* disease

- **Breastfeeding Program**
 - aims to promote breastfeeding as the norm for infant feeding for at least the first year of life
- **Nutrition and Physical Activity Initiative**
 - integrates and coordinates healthy eating and physical activity promotion within MCAH and its local programs
- **RPPC and Breastfeeding Program partnership**
 - **Birth and Beyond California (BBC) Project:**
a collaborative approach with hospitals to improve their exclusive breastfeeding rates by establishing supportive hospital policies and a continuous quality improvement plan
 - **Model Hospital Policy Recommendations Online Toolkit**
Eight hospitals began the project in early 2008, with a goal of adding 12 new hospitals every 6 months through 2011

Sudden Infant Death Syndrome (SIDS) Program

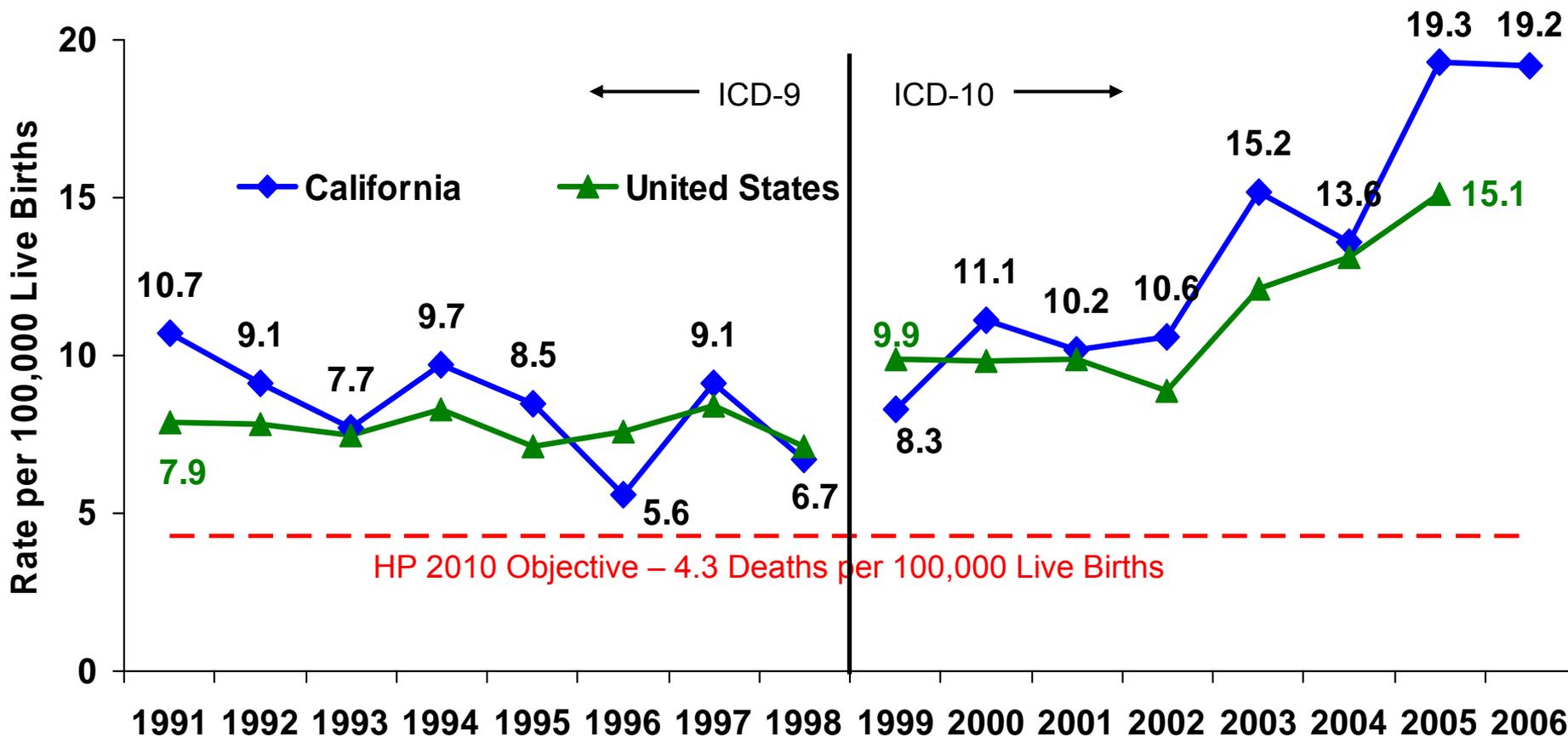
- In 1990, four landmark bills were passed to address the need for public awareness and to provide services to parents who lost infants to SIDS
- Focuses on providing education in SIDS awareness, grief counseling and risk reduction strategies to reduce the number of SIDS deaths
- **Activities:**
 - Targeted outreach campaign for African American families
 - Trainings for SIDS families and health care providers, coroners, emergency responders, general public
 - SIDS risk reduction campaign known as “Back to Sleep” or “Reduce the Risk” has reduced the rate of SIDS deaths in California by 31% percent from 1999 to 2004

Maternal Mortality Rate, California 1970-2006



SOURCE: State of California, Department of Health Services, California Birth and Death Statistical Master Files, 1970-2006.
Produced by California Department of Public Health Services, Maternal, Child and Adolescent Health Program, July, 2008.

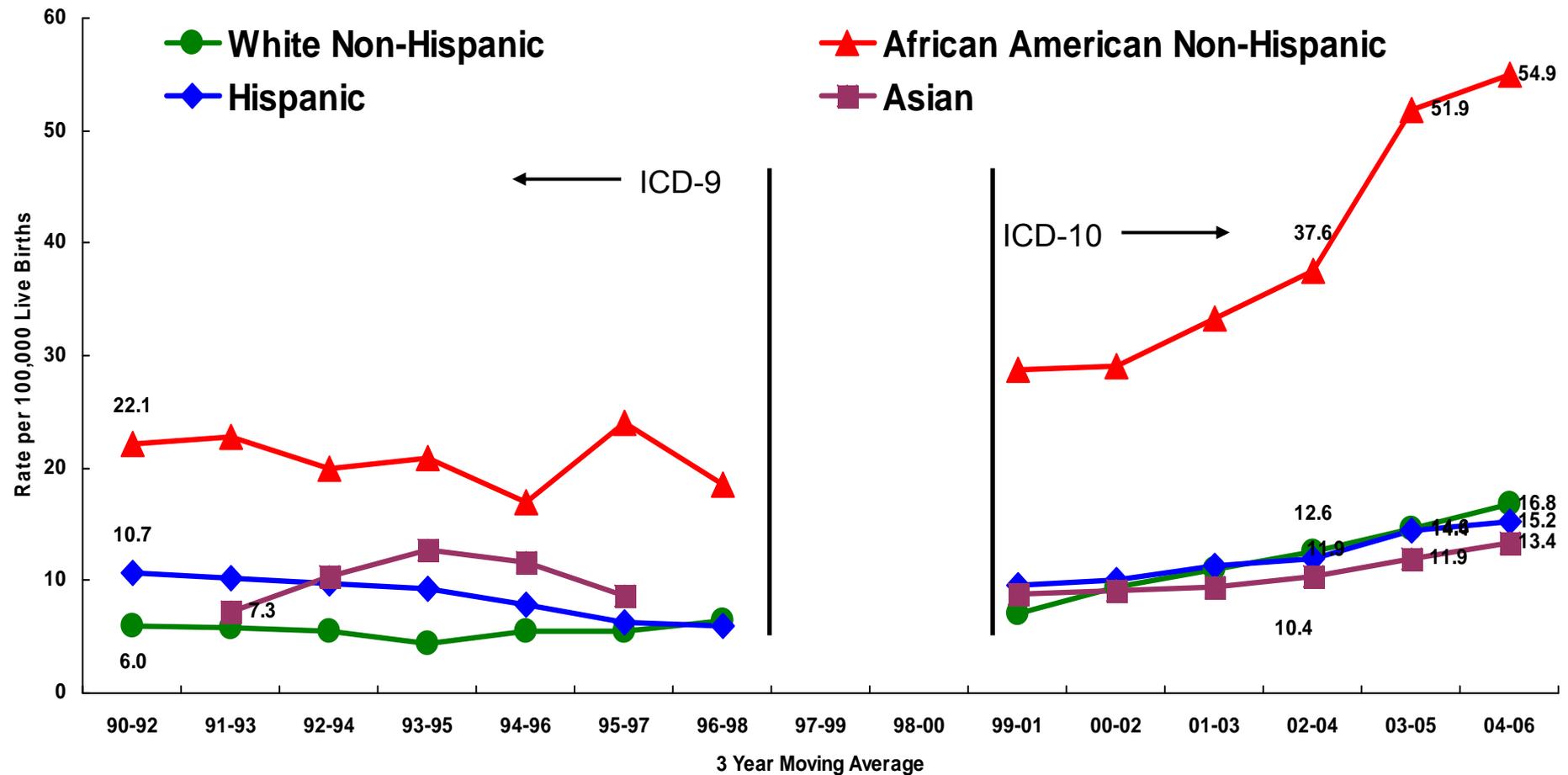
Maternal/Pregnancy-Related Mortality Rate California Residents & United States 1991-2006



SOURCE: State of California, Department of Public Health, California Birth and Death Statistical Master Files, 1991-2006. Maternal mortality (deaths \leq 42 days postpartum) calculated 1991-1998 using ICD-9 cause of death classification. Pregnancy-related mortality calculated beginning 1999 using ICD-10 cause of death codes O00-O99 for California. United States data and HP2010 Objective are for maternal mortality (ICD-10 Codes A34, O00-O95, O98-O99). Break in the trend line represents the change from ICD-9 to ICD-10. Produced by California Department of Public Health, Maternal, Child and Adolescent Health Program, June 2008.

Pregnancy-Related Mortality Rates by Race/Ethnicity

California Residents: 1990-2006



SOURCE: State of California, Department of Public Health, California Birth and Death Statistical Master Files, 1991-2006. Maternal mortality (deaths ≤ 42 days postpartum) calculated 1991-1998 using ICD-9 cause of death classification. Pregnancy-related mortality calculated beginning 1999 using ICD-10 cause of death codes O00-O99 for California. Rates not reported for data points that bridge the change from ICD-9 to ICD-10. Maternal single race code used 1990-1999; multirace code used beginning 2000. Asian women had too few deaths during 1996-1998 period to calculate rate. Produced by California Department of Public Health, Maternal, Child and Adolescent Health Program, June 2008.

Fetal-Infant Mortality Rate Map California, 2005

Total State Population



Fetal
(24+wks)

Neonatal
(1-28 Days)

Post neonatal
(29-364 Days)



| | | | |
|------------|------------------------------------|---------------------|----------------------|
| 500-1499 g | Maternal Health/Prematurity | | |
| | 3.2 | | |
| 1500+ g | Maternal Care | Newborn Care | Infant Health |
| | 2.0 | 1.1 | 1.3 |

Total Fetal-Infant Mortality Rate = 7.5
(deaths n=4,120)

African American Population



Fetal
(24+wks)

Neonatal
(1-28 Days)

Post neonatal
(29-364 Days)

| | | | |
|--|------------------------------------|---------------------|----------------------|
| | Maternal Health/Prematurity | | |
| | 7.5 | | |
| | Maternal Care | Newborn Care | Infant Health |
| | 3.0 | 1.0 | 2.9 |

Total Fetal-Infant Mortality Rate = 14.5
(deaths n=443)

California Maternal Quality Care Collaborative (CMQCC)

- a collaborative of private/public partners that aims to advance California maternity care through data-driven quality improvement
- has developed a toolkit for distribution to obstetric hospitals to improve intervention for postpartum hemorrhage
- oversees the *Local Assistance for Maternal Health projects* which address contributing factors to poor outcomes of mothers and infants, such as inappropriate labor induction

- **Pregnancy-Associated Mortality Review (PAMR)**
 - a committee of perinatal medical experts conducts a comprehensive review of pregnancy-related deaths to identify opportunities for quality improvement and prevention of maternal morbidity and mortality
 - has determined that about 70% of maternal deaths reviewed, and thus accompanying fetal/ infant deaths, were possibly preventable
- **Maternal Quality Indicator (MQI) Workgroup**
 - funded by MCAH to compile statewide causes of maternal morbidity and establish risk adjusted rates for major causes of maternal morbidity

Challenges

- **How to reverse the MCAH indicators that reflect our public health system is working sub-optimally (e.g. maternal mortality and morbidity)?**
- **What is causing the health disparities in African American community?**