Racism Related Stress and Preterm Birth

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Presentation Objectives

• Provide descriptive epidemiologic overview of infant mortality trends and disparities in California.

• Describe the impact of prematurity on infant mortality rates.

• Provide an overview of the Maternal and Infant Health Assessment survey methods and data availability.
Vital Statistics Datasets

- The **Birth Statistical Master Files** contain data for all live births that occurred in a calendar year.

- The **Death Statistical Master Files** contain data for all deaths that occurred in a calendar year.

- The **Birth Cohort Files** contain data for all live births that occurred in a calendar year and death information for those infants who were born in that year but subsequently died within 12 months of birth.
Infant Mortality as a Health Indicator

- The infant mortality rate is the number of infant deaths before one year of age for every 1,000 live births.

- Infant mortality is an important indicator of the overall health and well-being of the population. It is influenced by social and economic factors, environmental factors, medical care and is also closely linked to women’s health.

- Healthy People 2020 Goal:
  - 6.0 infant deaths per 1,000 live births

- Let’s Get Healthy California 2022 Goal:
  - 4.0 infant deaths per 1,000 live births

- California 2012 Cohort Infant Mortality Rate:
  - 4.6 infant death per 1,000 live births
Infant Deaths vs. Child/Teen Deaths
California, 2013

2,348 infant deaths
1,924 children & teen deaths due to all causes

More infants died than children and teens 1-19 years of age

Infants accounted for 86% of deaths of children under age five

Data Source: 2013 Death Statistical Master File.
Prepared by the Epidemiology, Assessment and Program Development Branch, Maternal, Child and Adolescent Program, Center for Family Health
Infant Mortality Rate and Number of Deaths
California 2000-2012

Data Sources: California Birth Cohort Files, 2000-2012
Prepared by the Epidemiology, Assessment and Program Development Branch, Maternal, Child and Adolescent Program, Center for Family Health
Infant Mortality Rate by Race/Ethnicity, 2012

Note: Width of bar shows percentage of population in each race/ethnicity group. Data Sources: California Birth Cohort File, 2012.
Prepared by the Epidemiology, Assessment and Program Development Branch, Maternal, Child and Adolescent Program, Center for Family Health
Infant Mortality Rate and Number of Infant Deaths in Counties with High Rates and Deaths, 2010-2012

Note: The 8 selected counties are sorted by descending order of infant mortality rates in combined years 2010-2012.

Red line indicates the 2010-2012 CA state infant mortality rate of 4.8 infant deaths per 1,000 live births. Width of bar shows number of infant deaths in each county.

Data Sources: California Birth Cohort File, 2010-2012.
Prepared by the Epidemiology, Assessment and Program Development Branch, Maternal, Child and Adolescent Program, Center for Family Health
Leading Causes of Infant Death, California 2012

NCHS List of 71 Rankable Causes of Infant Death

- Short gestation and low birth weight: 16.6%
- Congenital anomalies: 31.6%
- SIDS: 8.8%
- All other causes: 29.4%
- Complications of placenta, cord and membranes: 5.4%
- Maternal complications of pregnancy: 8.2%

Callaghan et. al Classification

- Preterm-Related Causes: 33.8%
- All Other Causes: 66.2%


Data Source: California Birth Cohort File, 2012.
Percent of Live Births and Infant Deaths by Gestational Age, California 2012

Births

- 1.3% < 32 weeks
- 1.0% 32-33 weeks
- 6.1% 34-36 weeks
- 91.6% 37+ weeks

Infant deaths

- 52.0% < 32 weeks
- 33.2% 32-33 weeks
- 9.9% 34-36 weeks
- 4.9% 37+ weeks

Gestational age based on obstetric estimate. Valid gestational age range 17-47 weeks, excludes unknown gestational age.

Data Source: California Birth Cohort File, 2012.

Prepared by the Epidemiology, Assessment and Program Development Branch, Maternal, Child and Adolescent Program, Center for Family Health.
Infant Mortality Rate by Gestational Age
California, 2012

Infant Mortality Rate per 1,000 Live Births

<table>
<thead>
<tr>
<th>Length of Gestation in Weeks</th>
<th>Infant Mortality Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;32 weeks</td>
<td>178.7</td>
</tr>
<tr>
<td>32-33 weeks</td>
<td>22.1</td>
</tr>
<tr>
<td>34-36 weeks</td>
<td>7.2</td>
</tr>
<tr>
<td>37+ weeks</td>
<td>1.6</td>
</tr>
</tbody>
</table>

Gestational age based on obstetric estimate. Valid gestational age range 17-47 weeks, excludes unknown gestational age
Data Source: California Birth Cohort File, 2012.
Prepared by the Epidemiology, Assessment and Program Development Branch, Maternal, Child and Adolescent Program, Center for Family Health
By place of residence. Preterm is less than 37 completed weeks of gestation based on the obstetric estimate.

Preterm Births by Race/Ethnicity
California 2007-2014

Note: Includes California resident live births with gestational age range 17-47 weeks. PTB <37 weeks gestation.
Gestational age is based on obstetric estimate.
Source: California Department of Public Health, 2007-2014 Birth Statistical Master Files;
Prepared by the Epidemiology, Assessment and Program Development Branch, Maternal, Child and Adolescent Program, Center for Family Health
Maternal and Infant Health Assessment Survey
What is the MIHA survey?

- Population-based survey of women with a recent live birth
- Assesses maternal and infant social and economic conditions, health behaviors, health status and access to care before, during and after pregnancy
- Modeled after the Pregnancy Risk Assessment Monitoring System (PRAMS) conducted by the CDC in over 40 states
- Collaborative effort of:
  - Maternal, Child and Adolescent Health Division
  - Women, Infants and Children Division
  - UC San Francisco (Paula Braveman, MD, MPH – Principal Investigator)
MIHA Data Collection

- Annual stratified random sample from birth certificates of resident women with a live birth in February – May
- Questionnaires sent in English and Spanish, telephone follow-up to non-respondents
- About 1/3 of completed questionnaires conducted by phone
- Most women complete survey 2 – 5 months postpartum
- Annual response rate is approximately 70%
- Sample size
  - ~3,500 women participated each year from 1999-2009
  - ~6,800 women participated each year starting in 2010
MIHA Topic Areas

- Maternal Demographics
- Service Utilization and Health Insurance Coverage
- Pregnancy Intention and Family Planning
- Health Status
- Nutrition and Weight
- Breastfeeding
- Infant Sleep
- Hardships and Support during Pregnancy
- Substance Use
- Intimate Partner Violence
- Depressive Symptoms
Snapshots available for Top 35 Counties and MIHA Regions

### MIHA Data Snapshot, Orange County, 2013-2014
Maternal and Infant Health Assessment (MIHA) Survey

<table>
<thead>
<tr>
<th>Geographic Areas: County or region with California comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symbols indicate statistically better or worse than rest of state</td>
</tr>
<tr>
<td>Statistical Information: Percent (%) Confidence Interval (95% CI) Population Estimate (N)</td>
</tr>
</tbody>
</table>

#### Health Status Before Pregnancy

<table>
<thead>
<tr>
<th>Status</th>
<th>Orange County</th>
<th>California</th>
</tr>
</thead>
<tbody>
<tr>
<td>In good to excellent health</td>
<td>98.8</td>
<td>95.8</td>
</tr>
<tr>
<td>Chronic conditions</td>
<td>1.6</td>
<td>2.0</td>
</tr>
<tr>
<td>Diabetes</td>
<td>1.7</td>
<td>2.0</td>
</tr>
<tr>
<td>Hypertension</td>
<td>8.1</td>
<td>11.5</td>
</tr>
</tbody>
</table>

#### Nutrition and Weight

<table>
<thead>
<tr>
<th>Nutritional Information</th>
<th>Orange County</th>
<th>California</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily folic acid use, month before pregnancy</td>
<td>33.6</td>
<td>26.9</td>
</tr>
<tr>
<td>Overweight before pregnancy</td>
<td>21.5</td>
<td>16.1</td>
</tr>
<tr>
<td>Obese before pregnancy</td>
<td>15.1</td>
<td>10.3</td>
</tr>
<tr>
<td>Inadequate weight gain during pregnancy</td>
<td>17.1</td>
<td>12.7</td>
</tr>
<tr>
<td>Excessive weight gain during pregnancy</td>
<td>40.0</td>
<td>32.5</td>
</tr>
<tr>
<td>Food insecurity during pregnancy</td>
<td>11.5</td>
<td>7.8</td>
</tr>
</tbody>
</table>

#### Intimate Partner Violence (IPV) and Depressive Symptoms

<table>
<thead>
<tr>
<th>Depressional Symptoms</th>
<th>Orange County</th>
<th>California</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical or psychological IPV</td>
<td>5.5</td>
<td>2.8</td>
</tr>
<tr>
<td>Prenatal depressive symptoms</td>
<td>12.3</td>
<td>8.5</td>
</tr>
<tr>
<td>Postpartum depressive symptoms</td>
<td>8.4</td>
<td>5.2</td>
</tr>
</tbody>
</table>

#### Hardship and Support During Pregnancy

<table>
<thead>
<tr>
<th>Hardship</th>
<th>Orange County</th>
<th>California</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experienced two or more hardships during childhood</td>
<td>25.0</td>
<td>19.2</td>
</tr>
<tr>
<td>Moved due to problems paying rent or mortgage</td>
<td>8.4</td>
<td>4.6</td>
</tr>
<tr>
<td>Woman or partner lost job</td>
<td>10.3</td>
<td>6.9</td>
</tr>
<tr>
<td>Became separated or divorced</td>
<td>5.1</td>
<td>2.8</td>
</tr>
<tr>
<td>Had no practical or emotional support</td>
<td>4.0</td>
<td>1.9</td>
</tr>
</tbody>
</table>

#### Substance Use

<table>
<thead>
<tr>
<th>Smoking</th>
<th>Orange County</th>
<th>California</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any smoking, 3 months before pregnancy</td>
<td>6.1</td>
<td>3.0</td>
</tr>
<tr>
<td>Any smoking, 3rd trimester</td>
<td>2.9</td>
<td>2.5</td>
</tr>
<tr>
<td>Any smoking, postpartum</td>
<td>2.5</td>
<td>0.4</td>
</tr>
</tbody>
</table>

#### Pregnancy Intention and Family Planning

<table>
<thead>
<tr>
<th>Intention</th>
<th>Orange County</th>
<th>California</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maternal or unwanted pregnancy</td>
<td>27.2</td>
<td>21.8</td>
</tr>
<tr>
<td>Unsure of pregnancy intentions</td>
<td>12.2</td>
<td>7.5</td>
</tr>
<tr>
<td>Postpartum birth control</td>
<td>77.8</td>
<td>71.9</td>
</tr>
</tbody>
</table>

#### Infant Sleep and Breastfeeding

<table>
<thead>
<tr>
<th>Sleep or Breastfeeding</th>
<th>Orange County</th>
<th>California</th>
</tr>
</thead>
<tbody>
<tr>
<td>Placed infant on back to sleep</td>
<td>85.4</td>
<td>80.7</td>
</tr>
<tr>
<td>Breastfed, before birth</td>
<td>92.1</td>
<td>87.8</td>
</tr>
<tr>
<td>Intended to breastfeed, before birth</td>
<td>58.6</td>
<td>51.6</td>
</tr>
</tbody>
</table>

Snapshots available for Top 35 Counties and MIHA Regions.
Recent MIHA Surveillance Tables

MIHA Annual Report
Maternal and Infant Health Assessment (MIHA) Survey, 2013-2014
October 2016

www.cdph.ca.gov/MIHA