Infant Mortality in California

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Learning Objectives

• Describe the importance of measuring the infant mortality rate (IMR)
• Describe the current status of the IMR in California
• List MCAH/CDPH efforts that address infant mortality reduction

California Infant Mortality Data
Infant Mortality Rate

- Defined as the number of deaths in infants per 1,000 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
  - Public health practices
- Infant mortality rate correlates very strongly with a government’s failure, or ability, to provide public services.[1]


Infant Mortality Trend

1935: Title V
1962-63: Obstetric ultrasonography
1963: Measles vaccine
1998: Folic acid fortification

Notes: by place of occurrence 1920-1944; by place of residence 1945-2009.
Prepared by the Epidemiology, Assessment and Program Development Branch, MCAH Program.

Infant Mortality Rate per 1,000 Live Births, 2000-2009

- Data Sources: California Birth and Death Statistical Master Files, 2000-2009.
- Prepared by the Epidemiology, Assessment and Program Development Branch, MCAH Program.
Infant Mortality Rates per 1,000 Live Births by Race/Ethnicity, 2000-2009

Data Sources: California Birth and Death Statistical Master Files 2000-2009. Prepared by the Epidemiology, Assessment and Program Development Branch, MCAH Program.

Disparity Ratios for Infant Mortality Rates, 2000-2009

Data Sources: California Birth Statistical Master Files, 2000-2009. Prepared by the Epidemiology, Assessment and Program Development Branch, MCAH Program.

Infant Mortality Rate Among States with the Highest Number of U.S. Births, 2007

Infant Mortality Rate Among 50 States, 2007

<table>
<thead>
<tr>
<th>State</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Washington</td>
<td>4.3</td>
</tr>
<tr>
<td>Mississippi</td>
<td>4.9</td>
</tr>
<tr>
<td>Vermont</td>
<td>5.1</td>
</tr>
<tr>
<td>Utah</td>
<td>5.1</td>
</tr>
<tr>
<td>California</td>
<td>5.2</td>
</tr>
<tr>
<td>New Jersey</td>
<td>5.2</td>
</tr>
<tr>
<td>Nev/Ariz</td>
<td>5.4</td>
</tr>
<tr>
<td>Iowa</td>
<td>5.4</td>
</tr>
<tr>
<td>Minnesota</td>
<td>5.4</td>
</tr>
</tbody>
</table>

Note: Due to rounding, some states appear to be tied.


Prepared by the Epidemiology, Assessment and Program Development Branch, MCAH Program

Infant Mortality Rates by Country, 2005 (CDC)

Note: Data is from 2005.

Prepared by the Epidemiology, Assessment and Program Development Branch, MCAH Program

Efforts to Reduce Infant Mortality
Improving Birth Outcomes: A Comprehensive Approach

- Direct services for at-risk populations
- Public health approaches to support improvements in nutrition, physical activity, breastfeeding, and preconception health
- Quality improvement strategies for neonatal and maternity care practices
- Mortality reviews and birth defects surveillance
- Provision of funding and technical assistance to Local Health Jurisdictions (LHJs)

Targeting At-Risk Populations

- Black Infant Health Program
  - Pregnant and parenting African American women
- Adolescent Family Life Program
  - Pregnant and parenting teens
- Comprehensive Perinatal Services Program
  - Medi-Cal pregnant women
- California Diabetes and Pregnancy Program
  - High-risk pregnant women with diabetes

Promoting Health through Public Health Strategies

- Healthy eating, physical activity, breastfeeding promotion
  - Integrated and coordinated within MCAH and its LHJs
- Preconception Health and Health Care Initiative
  - Preconception Health Council of CA
  - Every Woman California website
  - Social media campaigns
Supporting Improvement in Quality of Care

- CA Perinatal Quality Care Collaborative
  - Supports a system of benchmarking and performance improvement activities for perinatal care
- CA Maternal Quality Care Collaborative
  - Aims to advance maternity care through data-driven QI
  - Both collaboratives develop QI Toolkits on a variety of clinical topics
- Regional Perinatal Programs of California
  - Promote access to risk-appropriate perinatal care for pregnant women and their infants through regional QI activities
- Birth and Beyond California Project
  - Uses QI methods to implement evidence-based policies and practices that support breastfeeding in the maternity care setting

Using Data to Drive Interventions

- Mortality reviews
  - Fetal Infant Mortality Review
  - Pregnancy-Associated Mortality Review
  - Sudden Infant Death Syndrome review
- Birth Defects Surveillance
  - CA Birth Defects Monitoring Program

Partnering with Other CDPH Programs

- Women, Infants and Children Nutrition (WIC) Program
- Genetic Disease Screening Program
- Office of Family Planning
- Immunization Branch
- CA Children’s Services Program
Moving Forward

Infant Deaths vs. Child/Teen Deaths
California, 2009

More infants died than children and teens combined for all causes

Infants accounted for 84% of deaths of children under age five

Age (in years)

Number of deaths

Under 1 1-4 5-9 10-14 15-19

2,358 children & teen deaths due to all causes

2,093 infant deaths

2,593 infant deaths

2,318 infant deaths

Data Source: 2009 Death Statistical Master File.
Prepared by the Epidemiology, Assessment and Program Development Branch, MCAH Program.

Leading Causes of Infant Death in California, 1999-2010

Data Sources: Birth and Death Statistical Master Files, 1999-2009. Prepared by the Epidemiology, Assessment and Program Development Branch, MCAH Program. The causes shown were the leading five causes of infant death from 2004-2009, and in 2002. The other years shown differed slightly in the leading five causes: 1999: Respiratory distress of newborn (ranked 4th), effect of maternal complications of pregnancy (7th); 2000: Respiratory distress of newborn (4th), complications of placenta, cord and membrane (6th); 2001: Respiratory distress of newborn (tied for 4th), effect of maternal complications of pregnancy (6th); 2003: Neonatal hemorrhage (5th), complications of placenta, cord and membrane (7th).
Despite California's low infant mortality rate, our work continues!

Infant Health