Oklahoma Infant Mortality
Preparing for a Lifetime, It’s Everyone’s Responsibility
September 14, 2017

Objectives

• Define infant mortality

• Review infant mortality rates

• Describe racial/ethnic disparities

• Review top causes of infant death
Definitions

- Infant death = death of a child at less than 365 days
- Neonatal death = death occurring <28 days of life
- Postneonatal death = death between 28 and 364 days of life
- Infant mortality rate (IMR) = number of infant deaths per 1,000 live births

Infant mortality rate

- Overall 2016 IMR = 7.4 infant deaths per 1,000 live births
- Racial and ethnic disparities persist
  - White, 6.1
  - Black/African American, 13.9
  - American Indian, 9.7
  - Asian/Pacific Islander, 7.7
  - Hispanic, 7.4

Trend in infant mortality rate


Trend in infant mortality, 3-year rate

Infant mortality rate by state

Source: CDC Wonder, 2015
Infant mortality rate: US vs. OK

Source: CDC Wonder, 2000-2015

Infant mortality: age at death

Neonatal & postneonatal mortality rates

Deaths per 1,000 live births


Infant mortality rate: race and Hispanic origin

Infant deaths per 1,000 live births

Source: Oklahoma Vital Statistics, 2000-2016, 3-year rolling rates
Infant mortality: race & ethnic disparity

<table>
<thead>
<tr>
<th>Race / ethnicity</th>
<th>Pop²</th>
<th>Birth³</th>
<th>Infant death³</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>77.9</td>
<td>74.2</td>
<td>61.4</td>
</tr>
<tr>
<td>Black</td>
<td>8.9</td>
<td>10.5</td>
<td>19.7</td>
</tr>
<tr>
<td>Am. Indian</td>
<td>10.6</td>
<td>11.8</td>
<td>15.3</td>
</tr>
<tr>
<td>Asian/PI</td>
<td>2.7</td>
<td>3.5</td>
<td>3.6</td>
</tr>
<tr>
<td>Hispanic</td>
<td>10.3</td>
<td>14.4</td>
<td>14.4</td>
</tr>
</tbody>
</table>

Infant mortality rate by select maternal characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>IMR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
</tr>
<tr>
<td>15-19</td>
<td>10.0</td>
</tr>
<tr>
<td>20-24</td>
<td>7.6</td>
</tr>
<tr>
<td>25-29</td>
<td>6.4</td>
</tr>
<tr>
<td>30-34</td>
<td>6.3</td>
</tr>
<tr>
<td>≥35</td>
<td>7.9</td>
</tr>
<tr>
<td>Education</td>
<td></td>
</tr>
<tr>
<td>&lt;HS</td>
<td>9.6</td>
</tr>
<tr>
<td>HS</td>
<td>8.5</td>
</tr>
<tr>
<td>&gt;HS</td>
<td>5.4</td>
</tr>
<tr>
<td>Marital Status</td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>5.7</td>
</tr>
<tr>
<td>Not Married</td>
<td>9.6</td>
</tr>
</tbody>
</table>

Top causes* of infant death

<table>
<thead>
<tr>
<th>Cause</th>
<th>2007-2009†</th>
<th>2014-2016†</th>
<th>% change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Congenital malformations (Q00-Q99)</td>
<td>180.85</td>
<td>164.75</td>
<td>-9%</td>
</tr>
<tr>
<td>Disorders related to short gestation and low birth weight (P07)</td>
<td>119.96</td>
<td>154.06</td>
<td>28%</td>
</tr>
<tr>
<td>Sudden infant death syndrome (SIDS, R95)</td>
<td>43.23</td>
<td>92.44</td>
<td>114%</td>
</tr>
<tr>
<td>Newborn affected by maternal complications of pregnancy (P01)</td>
<td>32.27</td>
<td>54.08</td>
<td>68%</td>
</tr>
<tr>
<td>Accidents (unintentional injuries, V01-X59)</td>
<td>24.36</td>
<td>39.62</td>
<td>63%</td>
</tr>
</tbody>
</table>

* Based on International Classification of Diseases, 10th Revision
† Rates are per 100,000 live births
Source: Oklahoma Vital Statistics

Top causes† of infant death by race/ethnicity

- **White & Hispanic**
  1. Congenital anomalies (Q00-Q99)
  2. Disorders related to short gestation and low birth weight (P07)
  3. Sudden Infant Death Syndrome (SIDS, R95)

- **Black & American Indian**
  1. Disorders related to short gestation and low birth weight (P07)
  2. Congenital anomalies (Q00-Q99)
  3. Sudden Infant Death Syndrome (SIDS, R95)

- **Asian/Pacific Islander**
  1. Disorders related to short gestation and low birth weight (P07)
  2. Congenital anomalies (Q00-Q99)
  3. Newborn affected by maternal complications of pregnancy (P01)

† Based on International Classification of Diseases, 10th Revision
Infant mortality - priority areas

- Prematurity
- Infant safe sleep
- Breastfeeding
- Infant injury
- Maternal mood disorder
- Preconception/interconception care
- Tobacco cessation

Percent of births delivered preterm (< 37 weeks)

Preterm-related* infant mortality

* ICD-10 Codes: E550, P000, P010, P011, P015, P020, P021, P027, P102, P280, P281, P300-P313, P314-P316, P320-P323, P51, P73, P77

Infant mortality rate by gestational age – singleton births


Infant mortality rates among preterm* births, by race/ethnicity – singleton births

*Birth prior to 37 weeks gestation
Infant mortality rate by birthweight – singleton births

![Graph showing infant mortality rate by birthweight. The graph depicts a downward trend in infant deaths per 1,000 live births as birthweight increases. The rates are as follows: 240.8 for <1,500 gms, 21.1 for 1,500-2,499 gms, 2.9 for 2,500-3,999 gms, and 1.9 for >=4,000 gms. Source: Oklahoma Vital Statistics, linked infant death/birth, 2011-2015.]

Infant mortality rate among low birth weight* infants, by race/ethnicity – singleton births

![Graph showing infant mortality rate among low birth weight infants by race/ethnicity. The rates are as follows: 57.8 for White, 68.2 for Black, 52.0 for Am. Indian, 65.4 for Asian/PI, and 65.6 for Hispanic. Source: Oklahoma Vital Statistics, linked infant death/birth, 2011-2015.]

*Birthweight <2,500 grams
Percent of infants laid on back to sleep

Percent of infants most often laid on back to sleep, by race/Hispanic origin

Source: PRAMS, 2000-2014
Infant sleep practices

<table>
<thead>
<tr>
<th>Practice</th>
<th>White, NH</th>
<th>Black, NH</th>
<th>Am. Indian, NH</th>
<th>Hispanic</th>
</tr>
</thead>
<tbody>
<tr>
<td>My baby sleeps in a crib or portable crib (Pack-N-Play)</td>
<td>89.4</td>
<td>74.4</td>
<td>79.1</td>
<td>81.5</td>
</tr>
<tr>
<td>My baby sleeps on a firm or hard mattress</td>
<td>83.3</td>
<td>69.2</td>
<td>73.9</td>
<td>76.3</td>
</tr>
<tr>
<td>My baby sleeps with a pillow and/or stuffed toys</td>
<td>7.1</td>
<td>12.4</td>
<td>8.0</td>
<td>14.2</td>
</tr>
<tr>
<td>My baby sleeps with bumper pads</td>
<td>27.1</td>
<td>21.1</td>
<td>29.6</td>
<td>36.5</td>
</tr>
<tr>
<td>My baby sleeps with a loose blanket or sheet</td>
<td>65.8</td>
<td>69.8</td>
<td>76.9</td>
<td>64.2</td>
</tr>
<tr>
<td>My baby sleeps with me or another person</td>
<td>24.5</td>
<td>47.5</td>
<td>31.1</td>
<td>27.4</td>
</tr>
</tbody>
</table>

Source: PRAMS, 2012-2014

SIDS and SUID infant mortality

SIDS = ICD-10 code R95
SUID = ICD-10 codes R95, R99, W75

PRAMS Briefs – Preconception & Breastfeeding

Preconception

Becoming Baby Friendly

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