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Early Childhood: Survival, Growth, and Development

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Defining Terms

- Neonatal period: first 27 days of life
- Perinatal period: under 42 days of age
- Infancy: first year of life
- Early childhood: first five years of life
Section A

Infant Mortality
Infant Mortality: Six Leading Causes

- Prematurity/low birth weight (LBW)
- Respiratory distress syndrome (RDS)
- Congenital anomalies
- Sudden infant death syndrome (SIDS)
- Accidents
- Pneumonia (influenza)

LBW and Preterm Birth Over the Life Course

- Increased perinatal, neonatal, and postneonatal mortality
- Increased neonatal morbidity
- Increased developmental delays and neurological complications
- Decreased cognitive scores
- Increased learning disabilities
LBW and Preterm Birth Over the Life Course

- Increase in adult chronic diseases
- Increased risk of LBW offspring among women
- Social outcomes associated with cognitive functioning
## Infant Mortality around the World: Select Countries

**Infant mortality per 100 live births**

<table>
<thead>
<tr>
<th>Infant mortality range</th>
<th>Countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 to 180</td>
<td>Angola, Somalia, Sierra Leone, Zambia, Liberia, Niger</td>
</tr>
<tr>
<td>50 to 75</td>
<td>Tanzania, Senegal, Ivory Coast, Gambia, Cambodia, Pakistan, Kenya, Uganda, North Korea, Haiti, Ghana, Bangladesh</td>
</tr>
<tr>
<td>10 to 25</td>
<td>Honduras, Gaza Strip, Bahamas, Thailand, Vietnam, Malaysia, Brazil, Jordan, Ecuador, Barbados, China, Fiji, Cambodia, Saudi Arabia, Mexico</td>
</tr>
<tr>
<td>75 to 100</td>
<td>Chad, Rwanda, Nigeria, Ethiopia, Malawi, Congo, Sudan, Laos</td>
</tr>
<tr>
<td>25 to 50</td>
<td>Bhutan, Mongolia, Burma, Iran, Nepal, Zimbabwe, PNG, Indonesia, Bolivia, India, South Africa, Guatemala, Iraq, Egypt</td>
</tr>
<tr>
<td>≥2</td>
<td>Hong Kong, Japan, Singapore, Sweden</td>
</tr>
</tbody>
</table>

Infant Mortality in the U.S.

- At an infant mortality rate of 6.26, the U.S. ranks higher than ...
  - Cuba
  - Taiwan
  - Greece
  - Ireland
  - Canada
  - South Korea
  - Slovenia
  - Czech Republic
  - France
  - And 36 other countries

With an infant mortality rate of 11.3 per 1000 in Baltimore City, there are 75 countries in the world with better infant survival.

## Infant Mortality by Race (U.S., 2002)

<table>
<thead>
<tr>
<th>Race</th>
<th>Per 1000 live births</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Asian Pacific Islander</td>
<td>4.8</td>
</tr>
<tr>
<td>2. Non-Hispanic White</td>
<td>5.8</td>
</tr>
<tr>
<td>3. Hispanic</td>
<td>5.6</td>
</tr>
<tr>
<td>4. American Indian/Alaskan Native</td>
<td>8.6</td>
</tr>
<tr>
<td>5. Non-Hispanic Black</td>
<td>13.9</td>
</tr>
</tbody>
</table>
Federal Initiatives to Reduce Infant Mortality

- Healthy Start
- SCHIP/Medicaid
Federal Initiatives to Reduce Infant Mortality

- Healthy Start
- SCHIP/Medicaid
- Back-to-Sleep Campaign
- Reducing mother-to-child HIV transmission
- Reducing teen pregnancy
Known Solutions Suggested by Researchers

- Reductions in teen births likely to have only a modest effect on differences
- Changes in health behaviors are likely to have some impact, although, again, probably modest on differences
- A reduction in unwanted pregnancies likely to have no effect
Known Solutions Suggested by Researchers

- Improved access to prenatal care likely to have only a modest effect on LBW rates—in fact, use of prenatal care has increased among black and Hispanic women, with no reduction in LBW.

- Improved quality of care may have a larger effect, but its effect is difficult to predict.
Known Solutions Suggested by Researchers

- Reduction of infections has not directly been tested with regard to racial differences in preterm births.

- Antibiotic treatment for preterm membrane rupture may prolong the interval between rupture and delivery, but there is limited evidence that it significantly affects birth weight or preterm birth.

- Studies of antibiotic treatment of preterm labor with intact membranes have equivocal results.

- Studies of antibiotic treatment for group B strep and for asymptomatic bacterial vaginosis have equivocal results.
Known Solutions Suggested by Researchers

- Solutions may need to address health status deficits among black children long before the reproductive period, when improvements in health may be possible, including notions of transgenerational and gene-environment effects.
A Conceptual Framework for Child Survival in Developing Countries

Socioeconomic determinants

Maternal factors
Environmental contamination
Nutritional deficiency
Injury

Healthy

Prevention

Personal illness control

Treatment

Sick

Growth faltering

Mortality

Adapted by CTLT from Mosley and Chen. (2003).