Comparing Infant Mortality in the United States and Europe

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This presentation is based in part on a recent report from the U.S. National Center for Health Statistics:

Macdorman MF, Mathews TJ, Mohangoo AD, Zeitlin J. *International Comparisons of Infant Mortality and Related Factors: United States and Europe, 2010*
Infant Mortality Rates, United States 1960-2010

per 1,000 live births

Source: Mortality data, NCHS/CDC.
Infant Mortality Rates, United States and Sweden 1960-2010

per 1,000 live births


Source: Health United States, various years, NCHS/CDC.
## Infant Mortality Rates, United States and Sweden 1960-2010

<table>
<thead>
<tr>
<th>Year</th>
<th>USA</th>
<th>Sweden</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960</td>
<td>26.0</td>
<td>16.6</td>
<td>1.6</td>
</tr>
<tr>
<td>1970</td>
<td>20.0</td>
<td>11.0</td>
<td>1.8</td>
</tr>
<tr>
<td>1980</td>
<td>12.6</td>
<td>6.9</td>
<td>1.8</td>
</tr>
<tr>
<td>1990</td>
<td>9.2</td>
<td>6.0</td>
<td>1.5</td>
</tr>
<tr>
<td>2000</td>
<td>6.9</td>
<td>3.4</td>
<td>2.0</td>
</tr>
<tr>
<td>2010</td>
<td>6.1</td>
<td>2.5</td>
<td>2.4</td>
</tr>
</tbody>
</table>

Source: Health United States, various years, NCHS/CDC.
Infant Mortality Rates, United States 1960-2010

Source: Mortality data, NCHS/CDC.
Infant Mortality and OECD Country Ranking, US 1960-2010

Source: Health United States, various years, NCHS/CDC.
What Could Explain the Change in US Ranking on Infant Mortality?

• Statistical artifact
  • US accurately reports very preterm births and subsequent infant deaths, other countries do not

• Higher levels of preterm births in US as compared to other countries

• Higher infant mortality rates by GA in US as compared to other countries
International Comparisons of Infant Mortality and Related Factors: United States and Europe, 2010

Data:

- USA: Linked birth-infant death data
- 11 European countries: Euro-Peristat study

To improve international comparability:

- Used obstetric estimate of gestational age
- Eliminated births with gestational age <24 weeks
Birthweight distributions for GA 28-31 weeks (LMP based), Hispanics and Non-Hispanic Whites, 2002-04

Source: Linked birth-infant death files, various years, NCHS/CDC.
Figure 4. Percent of singleton live births, by birth weight: Black births in California and all births in Japan and Norway, 1981
International Comparisons of Infant Mortality and Related Factors: United States and Europe, 2010

Methods:
- Compared national IMRs for all live births (except those < 24 weeks gestational age)
- Compared gestational age-specific IMRs
- Estimated contribution of various factors to excess US infant mortality rate versus Sweden
Infant Mortality Rates excluding births <24 weeks GA: USA & selected countries, 2010

- Finland: 2.1
- Sweden: 2.1
- Denmark: 2.2
- Norway: 2.5
- Switzerland: 2.5
- Czech Republic: 2.7
- Austria: 2.8
- England and Wales (UK): 3.2
- Scotland (UK): 3.3
- United States: 4.2
- Poland: 4.5
- Northern Ireland (UK): 4.5
International Comparisons of Infant Mortality and Related Factors: United States and Europe, 2010

Findings:

- US IMR was highest of 12 OECD countries for births $\geq 37$ weeks, and second-highest for births 32-36 weeks GA

- Contribution of preterm births and GA-specific IMR to excess US mortality versus Sweden:
  - Preterm births = 39%
  - Excess IMR at GA $\geq 37$ weeks = 47%

- Reducing both factors to the Swedish levels would reduce US Infant mortality rate by 43%
What Else Could Be Examined as Part of This Analysis?

• Analysis by subgroup
• Comparison of cause of death distribution
Conclusion

• Excess preterm births and/or superior reporting of same cannot account for the higher infant mortality rates in the US

• Although infant mortality rates in the US and Europe have declined over time, the US excess in infant mortality rates for term births has existed for at least 30 years
Thank You

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