A Portrait of Child Health in the United States

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Grand Rounds
Children’s of Alabama
Birmingham, AL
July 9, 2015
Policies to Promote Child Health
The Future of Children

• Journal headquartered at Princeton University that includes synthesis articles by experts on theme topics
Objectives of this Talk

• Overview of child health in the U.S.
  – Trends over time
  – Current concerns
  – Variations within U.S.
  – International comparisons

• Themes from the volume overall and key issues going forward
Source Materials

• Lead chapter of volume
  – “How Healthy are Our Children?”
  – Sara Rosenbaum & Robert Blum

• My own data compilation, synthesis, research

• Intro chapter of volume
  – “Introducing the Issue”
  – Janet Currie & Nancy Reichman
Volume on “Policies to Promote Child Health”

• Covers the policy landscape in the U.S. vis-à-vis child health
• In the process, it discusses the major health issues and threats to health facing U.S. children today
• What policies/programs work
• Implications for research and policy
The Case for Prevention

• Unhealthy children grow up to be unhealthy adults
• Poor health and low income go hand in hand
• Poverty and poor health → demands on public coffers

Therefore:
• Promoting children’s health is essential for improving population health
• Policies to prevent children’s health problems can be wise investments
• Policy makers should implement carefully designed policies and programs to promote child health
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Infant and child mortality
A Success Story

• In 1910, the infant mortality rate in the US was 127.6 per 1000 live births; by 2012, the rate dropped to 6 deaths per 1,000 live births.

• In 1910, mortality among children under age 5 stood at 403.6 deaths per 100,000 children; by 2012, this figure fell to 7.1.

Source: Rosenbaum, S., Blum, R. How Healthy Are Our Children? Future of Children 2015
Table 1. Causes of Mortality in Children and Adolescents: A Century of Change

<table>
<thead>
<tr>
<th>Age</th>
<th>1910–12</th>
<th>2010–12</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 1 year</td>
<td>Diarrhea and enteritis, Prematurity, “Congenital debility”</td>
<td>Congenital anomalies, Prematurity, SIDS</td>
</tr>
<tr>
<td>1–4 years</td>
<td>Diarrhea and enteritis, Prematurity, Pneumonia</td>
<td>Unintentional injury, Congenital anomalies, Homicide, Cancer, Heart disease</td>
</tr>
<tr>
<td>5–9 years</td>
<td>Diphtheria and croup, Scarlet fever, Injuries</td>
<td>Unintentional injury, Cancer, Congenital anomalies, Suicide, Homicide</td>
</tr>
<tr>
<td>10+ years</td>
<td>Tuberculosis, Injuries, Typhoid fever</td>
<td>Unintentional injury, Homicide, Suicide, Cancer, Heart disease</td>
</tr>
</tbody>
</table>

Source: Rosenbaum, S., Blum, R. How Healthy Are Our Children? *Future of Children* 2015
Conditions in each cell are listed are in order of prevalence
Reasons for Success Story

• Advances in neonatal technology
• Vaccines
• Antibiotics
• Improved living standards
Different child morbidities have come to the fore
Child Obesity Has Become Epidemic

Source: Health, United States, 2011

Prevalence of Specific Conditions

• 8% of children age 3-17 have been identified by a school official or health professional as having a learning disability (2013)
• 8.8% have been diagnosed with ADHD (2013)
• 1.8% have an ASD diagnosis (2011-12)
• 30% of students in grades 9-12 reported feeling sad or hopeless almost every day for 2+ weeks in a row in past year

Source: Childtrends databank: http://www.childtrends.org/databank/
Asthma Has Become Key Child Health Concern

![Graph showing asthma prevalence over time](http://www.cdc.gov/nchs/data/ad/ad381.pdf)
Another Success Story

But Injuries Still Key Child Health Issue

- **Nonfatal** unintentional injuries: 11.0 per 100 children (constant from 2001 to 2012)
- 1 in 9 children seen in an emergency department for non-fatal unintentional injuries
Disparities
Table 2: U.S. Infant and Child Mortality 2010, by Race/Ethnicity and Age (per 100,000 live births)

<table>
<thead>
<tr>
<th></th>
<th>Non-Hispanic White</th>
<th>Non-Hispanic Black</th>
<th>Hispanic</th>
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</thead>
<tbody>
<tr>
<td>Infant</td>
<td>528</td>
<td>1,051</td>
<td>458</td>
</tr>
<tr>
<td>Early Child Ages 1–4</td>
<td>24</td>
<td>38</td>
<td>24</td>
</tr>
<tr>
<td>Child/Early Adolescent Ages 5–14</td>
<td>13</td>
<td>18</td>
<td>11</td>
</tr>
<tr>
<td>Adolescent Ages 15–19</td>
<td>58.0</td>
<td>85.7</td>
<td>57.9</td>
</tr>
</tbody>
</table>

Source: Rosenbaum, S., Blum, R. How Healthy Are Our Children? Future of Children 2015
### Percentages of Children in U.S. with Select Health Conditions by Household Income Tercile, NHANES 1999-2006

<table>
<thead>
<tr>
<th>Condition</th>
<th>Low</th>
<th>Mid</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Diabetes</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12-17 years</td>
<td>0.7</td>
<td>0.5</td>
<td>0.6</td>
</tr>
<tr>
<td><strong>Obese</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-11 years</td>
<td>14.2</td>
<td>10.3</td>
<td>7.5</td>
</tr>
<tr>
<td>12-17 years</td>
<td>17.9</td>
<td>15.1</td>
<td>11.5</td>
</tr>
<tr>
<td><strong>Low HDL</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12-17 years</td>
<td>17.2</td>
<td>15.9</td>
<td>15.9</td>
</tr>
<tr>
<td><strong>High Cholesterol Ratio</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12-17 years</td>
<td>6.6</td>
<td>6.4</td>
<td>4.7</td>
</tr>
<tr>
<td><strong>Hypertension</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12-17 years</td>
<td>0.8</td>
<td>0.6</td>
<td>&lt;0.1</td>
</tr>
<tr>
<td><strong>Asthma - Ever Diagnosed</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-3 years</td>
<td>12.4</td>
<td>6.4</td>
<td>7.2</td>
</tr>
<tr>
<td>4-11 years</td>
<td>15.6</td>
<td>15.1</td>
<td>11.8</td>
</tr>
<tr>
<td>12-17 years</td>
<td>18.7</td>
<td>16.8</td>
<td>19.5</td>
</tr>
</tbody>
</table>

State Variation
Infant Mortality

Year(s): 2011 | Data Type: Rate per 1,000

Data Provided by: National KIDS COUNT

U.S. = 6.1
Infant Mortality

Year(s): 2011 | Race: Non-Hispanic White | Data Type: Rate per 1,000

Data Provided by: National KIDS COUNT

U.S. = 5.1
Children In Poverty (100 Percent Poverty)
Year(s): 2012 | Data Type: Percent
Data Provided by: National KIDS COUNT

U.S. = 23%
Children Who Have One Or More Emotional, Behavioral, Or Developmental Conditions

Year(s): 2011-2012 | Data Type: Percent

Data Provided by: National KIDS COUNT

U.S. = 17%
Children With Special Health Care Needs

Year(s): 2011-2012 | Data Type: Percent

Data Provided by: National KIDS COUNT

U.S. = 20%
Percent Of Children With Asthma Problems
Year(s): 2011-2012 | Data Type: Percent
Data Provided by: National KIDS COUNT

U.S. = 9%
Children 18 And Below Without Health Insurance
Year(s): 2011 | Data Type: Percent

Data Provided by: National KIDS COUNT

U.S. = 10%
Children Who Have Received Preventive Dental Care In The Past Year

Year(s): 2011-2012 | Data Type: Percent

Data Provided by: National KIDS COUNT

U.S. = 77%
International context
### Health Indicators by Age, Children in the United States and England, by Gender

<table>
<thead>
<tr>
<th></th>
<th>Females</th>
<th></th>
<th>Males</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>US</td>
<td>England</td>
<td>US</td>
<td>England</td>
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<tr>
<td><strong>Obesity</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>4–11 years</td>
<td>12.1</td>
<td>7.3*</td>
<td>11.1</td>
<td>7.1*</td>
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<tr>
<td>12–17 years</td>
<td>15.3</td>
<td>9.3*</td>
<td>15.3</td>
<td>6.0*</td>
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<tr>
<td><strong>Low HDL Cholesterol</strong></td>
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<tr>
<td>12–19 years</td>
<td>11.0</td>
<td>6.8*</td>
<td>23.0</td>
<td>19.6</td>
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<tr>
<td><strong>High Cholesterol Ratio</strong></td>
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<td>4.6</td>
<td>3.4</td>
<td>9.3</td>
<td>5.8</td>
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<td><strong>Hypertension</strong></td>
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<tr>
<td>12–19 years</td>
<td>0.6</td>
<td>0.8</td>
<td>1.5</td>
<td>2.8*</td>
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</tbody>
</table>

*Difference between England and US is statistically significant at $P<.05$

All estimates are weighted based on the complex sampling designs in the NHANES and HSE

Source: Martinson, Teitler, & Reichman (2011)
<table>
<thead>
<tr>
<th></th>
<th>Females</th>
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<th></th>
<th>Males</th>
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<tbody>
<tr>
<td></td>
<td>United States</td>
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<td>United States</td>
<td>England</td>
<td></td>
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<td>Diabetes</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12–19 years</td>
<td>0.4</td>
<td>0.0</td>
<td>0.5</td>
<td>1.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asthma</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0–3 years</td>
<td>7.5</td>
<td>1.8*</td>
<td>10.8</td>
<td>5.5*</td>
<td></td>
<td></td>
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<tr>
<td>4–11 years</td>
<td>10.7</td>
<td>6.4*</td>
<td>18.2</td>
<td>10.6*</td>
<td></td>
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<td>6.9*</td>
<td>17.4</td>
<td>9.0*</td>
<td></td>
<td></td>
</tr>
</tbody>
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All estimates are weighted based on the complex sampling designs in the NHANES and HSE

% Low Birthweight by Country

Figures are weighted to be nationally representative of each country.
Themes of the Issue

• Wide range of policies important for promoting child health
• Responsibility for promoting child health is fragmented; lack of consensus about government’s appropriate role
• “Crisis response” mentality
  – Doesn’t focus on prevention
  – Often precludes implementing policies in ways that would let us thoughtfully evaluate efficacy
• Information about cost-effectiveness severely lacking
• Poor and minority children typically face greatest health risks
What works?

• Health at birth and early childhood
  – WIC
  – Center-based early childhood care and education

• Food
  – SNAP

• Housing
  – Specific measures such as window bars on high rises

• Health care
  – Insurance expansions

• Families
  – Income augmentation (EITC)
  – Home visiting programs
  – Large-scale community-level primary prevention programs

• Mental health
  – A few specific programs
Implications for Research and Policy

• Must view health and health policy broadly
• Fragmented nature of responsibility for child health has produced a chronic lack of coordination
  – Coordination would be helpful!
• Little attention paid to rigorous evaluation
  – But we know of many programs that work
  – Older children are important too
• Poor and minority children deserve special attention
• Investments in child health have the potential to repay current expenditures many times over
Thank you!

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http://futureofchildren.org/
EXTRA SLIDES
Low-Birthweight Babies By Race
Year(s): 2012 | Race: Total | Data Type: Percent
Data Provided by: National KIDS COUNT
Low-Birthweight Babies By Race

Year(s): 2012 | Race: Non-Hispanic White | Data Type: Percent

Data Provided by: National KIDS COUNT