Race, Health Disparities and Injury Prevention

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Goals of the Presentation

- Briefly describe concepts of culture, race and social economic status
- Discuss injury data and highlight cultural/racial differences in injury rates
- Discuss different approaches to injury prevention
- Explore issues of health disparities and health equity as they relate to injury prevention
- A glimpse at the way forward?
“I am an invisible man....I am a man of substance, of flesh and bone, fiber and liquids-and I might even be said to possess a mind. I am invisible, understand, simply because people refuse to see me.” Ralph Ellison, The Invisible Man
Culture

“A set of shared attitudes, values, goals and practices that characterizes an institution, organization or group”

Culture refers to the cumulative deposit of knowledge, experience, beliefs, values, attitudes, meanings, hierarchies, religion, notions of time, roles, spatial relations, concepts of the universe, and material objects and possessions acquired by a group of people in the course of generations through individual and group striving.
Race

- Race refers to the classification of humans into populations or groups based on various factors such as culture, language, social practice or heritable characteristics.

- Conceptions and groupings of races vary over time and reflect societal customs in defining essential types of individuals based on perceived sets of traits.

- As a biological term, race describes genetically divergent populations of humans that can be marked by common phenotypic and genotypic traits. This sense of race is often used in forensic anthropology analyzing skeletal remains, biomedical research, and race-based medicine.

- Race, however, has no official biological taxonomic significance — all humans belong to the same hominid subspecies, Homo sapiens sapiens. Nor is there scientific basis for any racial or ethnic hierarchy.

www.wikipedia.org
Socioeconomic Status

- Socioeconomic status (SES) is an economic and sociological combined total measure of a person's work experience and of an individual's or family's economic and social position relative to others, based on income, education, and occupation.

- Socioeconomic status is typically broken into three categories, high SES, middle SES, and low SES to describe the three areas a family or an individual may fall into. When placing a family or individual into one of these categories any or all of the three variables (income, education, and occupation) can be assessed.

- A fourth variable, wealth, may also be examined when determining socioeconomic status.
Introduction

- Trauma is the leading cause of death and disability in childhood

- Traumatic injuries are the leading cause of death in children over 1 year of age: 44% of all childhood deaths in children aged 1-19 are due to unintentional injuries, 10% are from assault and 7% from suicide

- About 17% of hospitalizations among 5-14 year-olds were due to injuries

- Approximately 37% of patients with severe injuries die

- Societal health concerns do not match risk to life and limb
Introduction

- On average, 12,175 children 0 to 19 years of age died each year in the U.S. from an unintentional injury.

- Males had higher injury death rates than females.

- Injuries due to transportation were the leading cause of death for children.

- The leading causes of injury death differed by age group. For children less than 1 year of age, two-thirds of injury deaths were due to suffocation. Drowning was the leading cause of injury death for those 1 to 4 years of age. For children 5 to 19 years of age, the most injury deaths were due to being an occupant in a motor vehicle traffic crash.
Introduction

- In terms of premature mortality, over 3 million years of potential life before age 65 lost.
- Almost 10 million ED visits annually
- More than 10 million physician office visits annually
- Approximately 300,000 hospitalizations annually
Introduction

- The economic toll is great; injuries are the leading cause of health care spending for children age 5-14 years.

- Annual lifetime cost of all injuries; $406 billion in 2006.

- The cost to children, their families and society is unmeasurable.
Introduction

The most frequently encountered mechanisms of injury in the PICU patients include MVC’s, falls, bicycle injuries, drownings, burns and child abuse.

The most common fatal organ system injury is traumatic brain injury.
# 10 Leading Causes of Death by Age Group, United States – 2006

<table>
<thead>
<tr>
<th>Rank</th>
<th>&lt;1</th>
<th>1-4</th>
<th>5-9</th>
<th>10-14</th>
<th>15-24</th>
<th>25-34</th>
<th>35-44</th>
<th>45-54</th>
<th>55-64</th>
<th>65+</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Congenital Anomalies 8,819</td>
<td>Unintentional Injury 1,616</td>
<td>Unintentional Injury 1,344</td>
<td>Unintentional Injury 1,511</td>
<td>Unintentional Injury 1,488</td>
<td>Unintentional Injury 1,630</td>
<td>Malignant Neoplasms 50,334</td>
<td>Malignant Neoplasms 101,484</td>
<td>Heart Disease 575,462</td>
<td>Heart Disease 631,636</td>
<td>Heart Disease 831,636</td>
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<tr>
<td>2</td>
<td>Short Gestation 4,841</td>
<td>Congenital Anomalies 515</td>
<td>Malignant Neoplasms 459</td>
<td>Malignant Neoplasms 445</td>
<td>SIDS 5,717</td>
<td>Suicide 4,666</td>
<td>Malignant Neoplasms 13,917</td>
<td>Heart Disease 30,005</td>
<td>Heart Disease 65,477</td>
<td>Malignant Neoplasms 367,515</td>
<td>Malignant Neoplasms 560,888</td>
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<tr>
<td>3</td>
<td>SIDS 2,323</td>
<td>Malignant Neoplasms 377</td>
<td>Congenital Anomalies 182</td>
<td>Unintentional Injury 4,169</td>
<td>Suicide 4,785</td>
<td>Heart Disease 12,339</td>
<td>Unintentional Injury 19,875</td>
<td>Chronic Low Respiratory Disease 12,375</td>
<td>Cerebrovascular 117,119</td>
<td>Cerebrovascular 137,119</td>
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</tr>
<tr>
<td>4</td>
<td>Maternal Complications 913</td>
<td>SIDS 346</td>
<td>Unintentional Injury 149</td>
<td>Suicide 4,169</td>
<td>Heart Disease 12,339</td>
<td>Heart Disease 12,339</td>
<td>Unintentional Injury 19,875</td>
<td>Chronic Low Respiratory Disease 12,375</td>
<td>Cerebrovascular 117,119</td>
<td>Cerebrovascular 137,119</td>
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</tr>
<tr>
<td>5</td>
<td>Unintentional Injury 3,415</td>
<td>Heart Disease 147</td>
<td>Heart Disease 90</td>
<td>Heart Disease 147</td>
<td>Heart Disease 1,076</td>
<td>Heart Disease 1,076</td>
<td>Heart Disease 1,076</td>
<td>Unintentional Injury 19,875</td>
<td>Chronic Low Respiratory Disease 12,375</td>
<td>Chronic Low Respiratory Disease 154,203</td>
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</tr>
<tr>
<td>6</td>
<td>Pneumonia &amp; Influenza 1,463</td>
<td>Influenza &amp; Pneumonia 125</td>
<td>Chronic Low Respiratory Disease 52</td>
<td>Congenital Anomalies 162</td>
<td>Congenital Anomalies 460</td>
<td>HIV 1,182</td>
<td>Heart Disease 1,076</td>
<td>Unintentional Injury 4,407</td>
<td>Diabetes Mellitus 52,391</td>
<td>Diabetes Mellitus 72,449</td>
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</tr>
<tr>
<td>7</td>
<td>Respiratory Disease 829</td>
<td>Septicemia 88</td>
<td>Septicemia 45</td>
<td>Congenital Anomalies 210</td>
<td>Congenital Anomalies 460</td>
<td>HIV 1,182</td>
<td>Heart Disease 1,076</td>
<td>Unintentional Injury 4,407</td>
<td>Diabetes Mellitus 52,391</td>
<td>Diabetes Mellitus 72,449</td>
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<td>Septicemia 88</td>
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<td>Septicemia 45</td>
<td>Congenital Anomalies 210</td>
<td>Congenital Anomalies 460</td>
<td>HIV 1,182</td>
<td>Heart Disease 1,076</td>
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<td>Septicemia 45</td>
<td>Septicemia 45</td>
<td>Septicemia 45</td>
<td>Congenital Anomalies 210</td>
<td>Congenital Anomalies 460</td>
<td>HIV 1,182</td>
<td>Heart Disease 1,076</td>
<td>Unintentional Injury 4,407</td>
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<td>Diabetes Mellitus 72,449</td>
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<td>Septicemia 45</td>
<td>Septicemia 45</td>
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<td>Congenital Anomalies 210</td>
<td>Congenital Anomalies 460</td>
<td>HIV 1,182</td>
<td>Heart Disease 1,076</td>
<td>Unintentional Injury 4,407</td>
<td>Diabetes Mellitus 52,391</td>
<td>Diabetes Mellitus 72,449</td>
<td></td>
</tr>
</tbody>
</table>

Source: National Vital Statistics System, National Center for Health Statistics, CDC.
Produced by: Office of Statistics and Programming, National Center for Injury Prevention and Control, CDC.
Figure 6: Unintentional Injury Death Rates among Children 0 to 19 Years, by Cause, United States, 2000 - 2005

Data Source: CDC/NCHS, National Vital Statistics System
Figure 7: Unintentional Injury Death Rates among Children 0 to 19 Years, by Cause, United States, 2000 - 2005
Figure 9: Unintentional Injury Death Rates among Children 0 to 19 Years, by Age Group and Cause, United States, 2000 - 2005

Data Source: CDC/NCHS, National Vital Statistics System
Figure 10: Unintentional Injury Death Rates among Children 0 to 19 Years, by Age Group and Selected Causes, United States, 2000 - 2005

Data Source: CDC/NCHS, National Vital Statistics System
Figure 12: Unintentional Injury Death Rates among Children 0 to 19 Years, by State, United States, 2000 - 2005

Overall Rate 15.0 per 100,000

Data Source: CDC/NCHS, National Vital Statistics System
### Ten Leading Causes of Injury Mortality by Age Group, Minnesota Residents, 2000 - 2004

<table>
<thead>
<tr>
<th>Rank</th>
<th>Under 1</th>
<th>1 to 4</th>
<th>5 to 9</th>
<th>10 to 14</th>
<th>15 to 19</th>
<th>20 to 24</th>
<th>25 to 34</th>
<th>35 to 44</th>
<th>45 to 64</th>
<th>65 to 74</th>
<th>75 to 84</th>
<th>85 and older</th>
<th>All ages</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Suckoxion</td>
<td>68</td>
<td>22</td>
<td>28</td>
<td>43</td>
<td>28</td>
<td>26</td>
<td>29</td>
<td>25</td>
<td>23</td>
<td>26</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>2</td>
<td>Drowning</td>
<td>12</td>
<td>14</td>
<td>14</td>
<td>21</td>
<td>14</td>
<td>14</td>
<td>14</td>
<td>14</td>
<td>14</td>
<td>14</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>3</td>
<td>MV-occupant</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
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</tr>
<tr>
<td>5</td>
<td>Injury/illness</td>
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<td>10</td>
<td>10</td>
<td>10</td>
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<td>10</td>
<td>10</td>
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<td>10</td>
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<td>10</td>
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<tr>
<td>6</td>
<td>Suicide</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
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<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>Suicide</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>Suicidal</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>MV-occupant</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>MV-non occupant</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

**Unintentional**

- Rate per 100,000: 53, 104, 78, 126, 561, 527, 747, 1000, 1043, 567, 581, 1196, 1559, 8114

**Suicide**

- Rate per 100,000: 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0

**Homicide**

- Rate per 100,000: 20, 20, 20, 20, 20, 20, 20, 20, 20, 20, 20, 20, 20, 20

**Total injury deaths**

- Rate per 100,000: 112, 129, 83, 179, 754, 878, 1299, 1651, 1648, 860, 780, 1353, 1621, 11289

**Rate per 100,000**

- 34, 10, 5, 10, 40, 48, 38, 41, 46, 37, 49, 126, 340, 43
Figure 43: Nonfatal Unintentional Injury Rates among Children 0 to 19 years, by Cause, United States, 2001 - 2006

Data Source: NEISS-AIP
<table>
<thead>
<tr>
<th>Rank</th>
<th>Under 1 year</th>
<th>1-4 years</th>
<th>5-9 years</th>
<th>10-14 years</th>
<th>15-19 years</th>
<th>Under 20</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Perinatal causes</td>
<td>Lower respiratory infections</td>
<td>Lower respiratory infections</td>
<td>Lower respiratory infections</td>
<td>Road traffic injuries</td>
<td>Perinatal causes</td>
</tr>
<tr>
<td>2</td>
<td>Diarrhoeal diseases</td>
<td>Diarrhoeal diseases</td>
<td>Road traffic injuries</td>
<td>Road traffic injuries</td>
<td>Self-inflicted injuries</td>
<td>Lower respiratory infections</td>
</tr>
<tr>
<td>3</td>
<td>Lower respiratory infections</td>
<td>Measles</td>
<td>Malaria</td>
<td>Drowning</td>
<td>Violence</td>
<td>Diarrhoeal diseases</td>
</tr>
<tr>
<td>4</td>
<td>Malaria</td>
<td>Malaria</td>
<td>Diarrhoeal diseases</td>
<td>Malaria</td>
<td>Lower respiratory infections</td>
<td>Malaria</td>
</tr>
<tr>
<td>5</td>
<td>Congenital anomalies</td>
<td>HIV/AIDS</td>
<td>Meningitis</td>
<td>Meningitis</td>
<td>Drowning</td>
<td>Measles</td>
</tr>
<tr>
<td>6</td>
<td>Pertussis</td>
<td>Congenital anomalies</td>
<td>Drowning</td>
<td>HIV/AIDS</td>
<td>Tuberculosis</td>
<td>Congenital anomalies</td>
</tr>
<tr>
<td>7</td>
<td>HIV/AIDS</td>
<td>Protein-energy malnutrition</td>
<td>Protein-energy malnutrition</td>
<td>Tuberculosis</td>
<td>Fire-related burns</td>
<td>HIV/AIDS</td>
</tr>
<tr>
<td>8</td>
<td>Tetanus</td>
<td>Drowning</td>
<td>Measles</td>
<td>Diarrhoeal diseases</td>
<td>HIV/AIDS</td>
<td>Road traffic injuries</td>
</tr>
<tr>
<td>9</td>
<td>Meningitis</td>
<td>Road traffic injuries</td>
<td>Tuberculosis</td>
<td>Protein-energy malnutrition</td>
<td>Leukaemia</td>
<td>Pertussis</td>
</tr>
<tr>
<td>10</td>
<td>Measles</td>
<td>Meningitis</td>
<td>HIV/AIDS</td>
<td>Self-inflicted injuries</td>
<td>Meningitis</td>
<td>Meningitis</td>
</tr>
<tr>
<td>11</td>
<td>Protein-energy malnutrition</td>
<td>Fire-related burns</td>
<td>Fire-related burns</td>
<td>Leukaemia</td>
<td>Maternal haemorrhage</td>
<td>Drowning</td>
</tr>
<tr>
<td>12</td>
<td>Syphilis</td>
<td>Pertussis</td>
<td>Falls</td>
<td>Fire-related burns</td>
<td>Falls</td>
<td>Protein-energy malnutrition</td>
</tr>
<tr>
<td>13</td>
<td>Endocrine disorders</td>
<td>Tuberculosis</td>
<td>Congenital anomalies</td>
<td>War</td>
<td>Poisonings</td>
<td>Tetanus</td>
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<tr>
<td>14</td>
<td>Tuberculosis</td>
<td>Upper respiratory infections</td>
<td>Epilepsy</td>
<td>Violence</td>
<td>Abortion</td>
<td>Tuberculosis</td>
</tr>
<tr>
<td>15</td>
<td>Upper respiratory infections</td>
<td>Syphilis</td>
<td>Leukaemia</td>
<td>Trypanosomiasis</td>
<td>Epilepsy</td>
<td>Fire-related burns</td>
</tr>
</tbody>
</table>

Figure 1.1
Distribution of global child injury deaths by cause, 0–17 years, World, 2004

Other unintentional 31.1%
Road traffic injuries 22.3%
Drowning 16.8%
Fire-related burns 9.1%
Falls 4.2%
Poisoning 3.9%
Homicide 5.8%
Self-inflicted injuries 4.4%
War 2.3%

\(^3\) “Other unintentional” includes categories such as smothering, asphyxiation, choking, animal and venomous bites, hypothermia and hyperthermia as well as natural disasters.

### TABLE 1.2
Unintentional Injury death rates per 100 000 children* by cause and country income level, World, 2004

<table>
<thead>
<tr>
<th>UNINTENTIONAL INJURIES</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road traffic</td>
<td></td>
</tr>
<tr>
<td>Drowning</td>
<td></td>
</tr>
<tr>
<td>Fire burns</td>
<td></td>
</tr>
<tr>
<td>Falls</td>
<td></td>
</tr>
<tr>
<td>Poisons</td>
<td></td>
</tr>
<tr>
<td>Otherb</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>HIC</th>
<th>LMIC</th>
<th>World</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road traffic</td>
<td>7.0</td>
<td>11.1</td>
<td>10.7</td>
</tr>
<tr>
<td>Drowning</td>
<td>1.2</td>
<td>7.8</td>
<td>7.2</td>
</tr>
<tr>
<td>Fire burns</td>
<td>0.4</td>
<td>4.3</td>
<td>3.9</td>
</tr>
<tr>
<td>Falls</td>
<td>0.4</td>
<td>2.1</td>
<td>1.9</td>
</tr>
<tr>
<td>Poisons</td>
<td>0.5</td>
<td>2.0</td>
<td>1.8</td>
</tr>
<tr>
<td>Otherb</td>
<td>2.6</td>
<td>14.4</td>
<td>13.3</td>
</tr>
<tr>
<td>TOTAL</td>
<td>12.2</td>
<td>41.7</td>
<td>38.8</td>
</tr>
</tbody>
</table>

### TABLE 1.3
Unintentional Injury death rates per 100 000 children by age and country income level, World, 2004

<table>
<thead>
<tr>
<th>AGE (in years)</th>
<th>HIC</th>
<th>LMIC</th>
<th>World</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 1</td>
<td>28.0</td>
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<td>96.1</td>
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<tr>
<td>1–4</td>
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<td>5.6</td>
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<td>34.4</td>
</tr>
<tr>
<td>10–14</td>
<td>6.1</td>
<td>25.8</td>
<td>23.8</td>
</tr>
<tr>
<td>15–19</td>
<td>23.9</td>
<td>42.6</td>
<td>40.6</td>
</tr>
<tr>
<td>Under 20</td>
<td>12.2</td>
<td>41.7</td>
<td>38.8</td>
</tr>
</tbody>
</table>

WHO Data
America the Melting Pot

Distribution of US Population by Race/Ethnicity 2005 (millions)

- Caucasian
- African American
- Asian
- American Indian/Alaska Native
- Hawaiian/Pacific Islander
- Hispanic
- Other

The Henry J. Kaiser Family Foundation: Key Facts Race, Ethnicity & Medical Care, 2007
America the Melting Pot

Distribution of U.S. Population by Race/Ethnicity, 2000 and 2050

- Total 282.1 million (2005)
- Total 419.9 million (2050)

- Other
- Asian
- African American
- Hispanic
- White

The Henry J. Kaiser Family Foundation: Key Facts Race, Ethnicity & Medical Care, 2007
America the Melting Pot

- US Census Bureau estimates that by 2020, 45% of US children 0-19 will belong to a racial/ethnic minority group.

- The increasing population growth of racial and ethnic communities and linguistic groups, each with its own cultural traits and health profiles, presents a challenge to the health care delivery service industry in this country.

- The provider and the patient each bring their individual learned patterns of language and culture to the health care experience which must be transcended to achieve equal access and quality health care.

- Disparity in cultural attributes between health care and other professionals and their patients/clients require training to ensure culturally effective care.
America the Melting Pot

Culture and language may influence:

- health, healing, and wellness belief systems;
- how illness, disease, and their causes are perceived; both by the patient/consumer and
- the behaviors of patients/consumers who are seeking health care and their attitudes toward health care providers;
- the delivery of services by the provider who looks at the world through his or her own limited set of values, which can compromise access for patients from other cultures.
Health Disparities

- Health disparities are the persistent gaps between the health status of minorities and non-minorities in the United States.

- Despite continued advances in health care and technology, racial and ethnic minorities continue to have higher rates of disease, disability and premature death than non-minorities.

- African Americans, Hispanics/Latinos, American Indians and Alaska Natives, Asian Americans, Native Hawaiians and Pacific Islanders, have higher rates of infant mortality, cardiovascular disease, diabetes, HIV infection/AIDS, cancer and lower rates of immunizations and cancer screening.
Health Disparities

- The causes are complex, but two major factors are:

- Inadequate Access to Care:
  - Barriers to care can result from economic, geographic, linguistic, cultural and health care financing issues. Even when minorities have similar levels of access to care, health insurance and education, the quality and intensity of health care they receive are often poor.

- Substandard Quality of Care:
  - Lower quality care has many causes, including patient-provider miscommunication, provider discrimination, stereotyping or prejudice. Quality of care is usually rated on the four measures of effectiveness, patient safety, timeliness and patient centeredness.
The Scope of the Problem

- For most core quality measures, Blacks (73%), Hispanics (77%), and poor people (71%) received worse quality care than their reference groups.

- For most measures for poor people (67%), disparities were increasing; for most measures for minorities, significant changes in disparities were not observed.

- Increasing disparities were especially prevalent in chronic disease management.
The Scope of the Problem

- Compared to their reference groups—
  - Blacks had 90% more lower extremity amputations for diabetes.
  - Asians were restrained in nursing homes 46% more often.
  - American Indians and Alaska Natives were hospitalized from home health care 15% more often.
  - Hispanics had 63% more pediatric asthma hospitalizations.
  - Poor people were 37% less likely to receive recommended diabetes care.
The Scope of the Problem

- For most core access measures, Hispanics (83%) and poor people (100%) had worse access to care than their reference groups.
- Disparities were increasing for most measures for Hispanics (80%) and poor people (60%).
- Better access was only observed for Asians compared with Whites.
- All of these disparities were increasing over time. However, better and improving quality was also observed for at least 1 measure for every population.
Health Disparities Minnesota

Age Specific Disparity Ratio of Non-White to White Mortality Rates: Minnesota Five-Year Average, Minnesota 2003-2007

Source: Minnesota Department of Health, Center for Health Statistics
Health Disparities Minnesota

Years of Potential Life Lost by Race/Ethnicity

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>3329.6</td>
<td>2960.5</td>
</tr>
<tr>
<td>African American</td>
<td>8001.3</td>
<td>5806.6</td>
</tr>
<tr>
<td>American Indian</td>
<td>9021.5</td>
<td>8975.7</td>
</tr>
<tr>
<td>Asian</td>
<td>2749.5</td>
<td>2427.8</td>
</tr>
<tr>
<td>Hispanic</td>
<td>3397.3</td>
<td>3068.7</td>
</tr>
</tbody>
</table>

Source: Center for Health Statistics, Minnesota Department of Health
Health Disparities Minnesota

Low Birthweight Births by Race/Ethnicity:
(Percents of Singleton Births under 2500 grams)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>African American</td>
<td>11.5</td>
<td>8.7</td>
</tr>
<tr>
<td>American Indian</td>
<td>5.6</td>
<td>5.7</td>
</tr>
<tr>
<td>Asian</td>
<td>5.6</td>
<td>6.5</td>
</tr>
<tr>
<td>Hispanic/Latino</td>
<td>4.9</td>
<td>4.8</td>
</tr>
<tr>
<td>White</td>
<td>3.8</td>
<td>4.3</td>
</tr>
</tbody>
</table>

Source: Center for Health Statistics, Minnesota Department of Health
Health Disparities Minnesota

**Infant Mortality by Race/Ethnicity**

**Minnesota (Selected Years)**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>African American</td>
<td>16.5</td>
<td>9.4</td>
</tr>
<tr>
<td>American Indian</td>
<td>16.2</td>
<td>9.3</td>
</tr>
<tr>
<td>Asian</td>
<td>6.2</td>
<td>4.3</td>
</tr>
<tr>
<td>Hispanic</td>
<td>7.3</td>
<td>4.6</td>
</tr>
<tr>
<td>White</td>
<td>6.5</td>
<td>4.4</td>
</tr>
</tbody>
</table>

Note: Infant mortality rate is the number of infant deaths per 1,000 births.

Source: Minnesota Department of Health, Center for Health Statistics
# Health Disparities Minnesota


<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>African American</td>
<td>47.0</td>
<td>64.4</td>
<td>20.1</td>
<td>8.1</td>
</tr>
<tr>
<td>American Indian</td>
<td>37.3</td>
<td>48.8</td>
<td>27.2</td>
<td>16.0</td>
</tr>
<tr>
<td>Asian</td>
<td>43.1</td>
<td>71.6</td>
<td>20.6</td>
<td>5.1</td>
</tr>
<tr>
<td>Hispanic</td>
<td>51.8</td>
<td>62.3</td>
<td>14.7</td>
<td>7.0</td>
</tr>
<tr>
<td>White</td>
<td>78.4</td>
<td>83.1</td>
<td>3.3</td>
<td>2.3</td>
</tr>
</tbody>
</table>

Source: Minnesota Department of Health, Center for Health Statistics
The Cliff Analogy

Risk for injury death varied by race. Injury death rates were highest for American Indian and Alaska Natives and were lowest for Asian or Pacific Islanders.

Overall death rates for whites and African-Americans were approximately the same.

Injury death rates varied by state depending upon the cause of death.
Figure 11: Unintentional Injury Death Rates among Children 0 to 19 Years, by Race and Sex, United States, 2000 - 2005

Death Rate Per 100,000 Population

- White Male: 19.7
- White Female: 10.6
- Black Male: 19.2
- Black Female: 10.4
- American Indian or Alaska Native Male: 29.8
- American Indian or Alaska Native Female: 18.1
- Asian or Pacific Islander Male: 9.9
- Asian or Pacific Islander Female: 5.4

Overall Rate 15.0 per 100,000

Data Source: CDC/NCHS, National Vital Statistics System
Potential Causes of Injury Disparities

- Lack of education
- Lack of resources-community and personal
- Inadequate laws
- Poor engineering/substandard equipment, toys, cribs etc.
- Inadequate community facilities-playgrounds, swimming pools
- Poor, substandard housing
Potential Causes of Injury Disparities

- Cultural factors affecting delivery of healthcare:
  - Race/ethnicity
  - Socioeconomic status
  - Religion
  - Gender
  - Sexual orientation
  - Level of education
Potential Causes of Injury Disparities

- Communication and Language
  - Cultural variations in verbal and nonverbal communication a barrier to effective care
  - Language barriers including sign language
  - Problems in translation and inadequate numbers of interpreters
Potential Causes of Injury Disparities

- Absent trust-community and healthcare/safety experts
- Differences in cultural/personal priorities
- POVERTY-choice between safety equipment vs. other needs
- Community/personal apathy
Children Under Age 18 Living in Households with Incomes Below 100 Percent of Poverty Threshold,* by Race/Ethnicity,** 1976–2006

Source: U.S. Census Bureau, Current Population Survey

*The U.S. Census Bureau poverty threshold for a family of four was $20,614 in 2006.
**The Current Population Survey currently allows respondents to choose more than one race; however, prior to 2002, only one race was reported. For consistency, figures reported here are only for respondents who chose one race.
Poverty

- Is safety a luxury?
- Costs associated with safety equipment
- Logistics-Car seats in vehicles with large families
- Different priorities
What Can Be Done?
A Native American Story

Leading Causes of Death
Native Americans, Aged 1-19 years

2006

- Heart disease: 1.5%
- Pneumonia/Flu: 1.5%
- Congential anomalies: 4%
- Cancer: 4%

Injuries: 71%

All Other:

A Native American Story

Table 1
Ranking and percentage of leading cause of injury death, by age group, AI/AN, 2003–2006

<table>
<thead>
<tr>
<th>Rank</th>
<th>Infant (%)</th>
<th>Age 1–9 Years (%)</th>
<th>Age 10–19 Years (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Unintentional suffocation (44.6)</td>
<td>Motor vehicle traffic (36.8)</td>
<td>Motor vehicle traffic (44.1)</td>
</tr>
<tr>
<td>2</td>
<td>Homicide (20.1)</td>
<td>Homicide (14.2)</td>
<td>Suicide (24.6)</td>
</tr>
<tr>
<td>3</td>
<td>Motor vehicle traffic (18.0)</td>
<td>Drowning (11.6)</td>
<td>Homicide (11.0)</td>
</tr>
<tr>
<td>4</td>
<td>Falls (2.9)</td>
<td>Fires/burns (9.3)</td>
<td>Unintentional poisoning (4.2)</td>
</tr>
<tr>
<td>5</td>
<td>Drowning (2.2)</td>
<td>Pedestrian, nontraffic (6.3)</td>
<td>Drowning (2.8)</td>
</tr>
</tbody>
</table>
A Native American Story

Motor Vehicle Related Injury Hospitalization Rates and Percent of Safety Belt Use
Navajo Nation, 1983-1991

Discharge Rates

% Safety-belt Use

The Case of Drowning

Figure 23: Unintentional Injury Death Rates due to Drowning among Children 0 to 19 Years, by Age Group, United States, 2000 - 2005

Data Source: CDC/NCHS, National Vital Statistics System
Figure 24: Unintentional Injury Death Rates due to Drowning among Children 0 to 19 Years, by State, United States, 2000 - 2005

Overall Rate
1.4 per 100,000

[Bar chart showing death rates by state]

Data Source: CDC/NCHS, National Vital Statistics System

* The injury death rate is suppressed if fewer than 20 deaths were reported
Minority youth drowning fatality rates in the USA are notably high compared with those of white peers.

Minority adults report low swimming participation rates, which may be a result of historical segregation for these groups from municipal swimming facilities.

There is a deficiency in the literature on youth swimming ability rates.
The Case of Drowning

- Drowning is second greatest cause of accidental death in children under 14
- CDC recorded 3,443 fatal accidental drownings in 2007
- African-American children aged 5 to 14, 3.1 times more likely to drown than white children
- USA Swimming/University of Memphis study found ethnic differences:
  - 68.9% of African-American children with no or low ability to swim
  - 57.9% of Hispanic children with no or low ability to swim
  - 41.8% of white children with no or low ability to swim
- Study quizzed 2,000 children and parents in six US cities
The Case of Drowning

Table 4  Swimming ability by significant demographic variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age group</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-11 years</td>
<td>709</td>
<td>2.4</td>
<td>1.2</td>
</tr>
<tr>
<td>12-17 years</td>
<td>756</td>
<td>3.0</td>
<td>1.3</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>764</td>
<td>2.7</td>
<td>1.3</td>
</tr>
<tr>
<td>Female</td>
<td>749</td>
<td>2.6</td>
<td>1.3</td>
</tr>
<tr>
<td>Lunch programme</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Free lunch</td>
<td>681</td>
<td>2.6</td>
<td>1.3</td>
</tr>
<tr>
<td>Reduced lunch</td>
<td>198</td>
<td>2.6</td>
<td>1.3</td>
</tr>
<tr>
<td>No lunch programme</td>
<td>491</td>
<td>2.8</td>
<td>1.2</td>
</tr>
<tr>
<td>Parent’s education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some high school</td>
<td>213</td>
<td>2.7</td>
<td>1.3</td>
</tr>
<tr>
<td>High school diploma/GED</td>
<td>270</td>
<td>2.3</td>
<td>1.2</td>
</tr>
<tr>
<td>College/technical school degree</td>
<td>399</td>
<td>2.4</td>
<td>1.2</td>
</tr>
<tr>
<td>Advanced degree (Master/PhD)</td>
<td>244</td>
<td>3.0</td>
<td>1.3</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>African-American</td>
<td>784</td>
<td>2.5</td>
<td>1.3</td>
</tr>
<tr>
<td>Hispanic/Latino</td>
<td>347</td>
<td>2.6</td>
<td>1.3</td>
</tr>
<tr>
<td>White</td>
<td>223</td>
<td>2.1</td>
<td>1.2</td>
</tr>
<tr>
<td>Multiracial</td>
<td>108</td>
<td>2.8</td>
<td>1.3</td>
</tr>
<tr>
<td>Asian</td>
<td>56</td>
<td>3.1</td>
<td>1.3</td>
</tr>
<tr>
<td>Other</td>
<td>47</td>
<td>2.8</td>
<td>1.2</td>
</tr>
</tbody>
</table>

Swimming ability was measured as: 1 = unable to swim; 2 = can swim a little, but not comfortable in deep water; 3 = comfortable in deep water, but cannot swim for very long; 4 = can swim for an extended period of time; 5 = can swim competitively (or could) and for an extended period of time.
The Case of Drowning

- Propagation of incorrect scientific theories such as black people being much less buoyant.

- Historic factors going as far back as slaves not being allowed to learn to swim and denial of access to pools in 1920s and 30s causing ripple effect to present day.

- Lack of municipal pools in predominantly black neighborhoods in 1960s onwards.

- Perception of swimming as elitist or white sport.
The Case of Drowning

- Add swimming ability questions to other injury prevention questions on the Youth Risk Behavior Survey, the CDC national surveillance system that measures youth health indices.

- Offer free/low-cost swimming lessons especially for communities that have high drowning rates. Program costs may be off-set by corporate sponsorship and grant funding through Swim USA.

- Swimming initiatives should take place at convenient locations such as apartment building pools and community facilities.

- School collaboration with community facilities to schedule swimming classes.
The Case of Drowning

- Mandate swimming lessons. The UK mandates swimming instruction for all school-aged children and details this in their National Curriculum. The drowning fatality rate for the UK is 0.6 per 100,000, half that of the USA (1.3 per 100,000).

- Since cultural influences may shape swimming participation, within high-risk communities, water safety information should be delivered to both minority youth and parents/care givers during lessons.

- Research is suggested to uncover specific cultural mores that influence swimming participation and to explore successful programming for “at risk” groups. Until then, minority parent/care givers are encouraged to prioritize swimming lessons for their children.
Injury Prevention: Potential Ways Forward

- The scope of the problem
- Injury data from different cultural and ethnic groups
- Perceptions of injury in different cultural groups
- Perceptions regarding injury prevention
- Injury prevention methodology
- Injury prevention methodologies employed in different cultural settings
The Public Health Approach to Injury Prevention

1. Surveillance
   What is the problem?

2. Risk factor identification
   What are the causes?

3. Development and evaluation of interventions
   What works?

4. Implementation
   How is it done?
# Haddon Principles for Injury Prevention

## TABLE 1.6

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Example related to child injury prevention</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Prevent the creation of the hazard in the first place</td>
<td>Banning the manufacture and sale of inherently unsafe products</td>
</tr>
<tr>
<td>2. Reduce the amount of energy contained in the hazard</td>
<td>Speed reduction</td>
</tr>
<tr>
<td>3. Prevent the release of the hazard</td>
<td>Child-resistant medicine containers</td>
</tr>
<tr>
<td>4. Modify the rate or spatial distribution of the hazard from its source</td>
<td>Use of seat-belts and child restraints</td>
</tr>
<tr>
<td>5. Separate people in time or space from the hazard and its release</td>
<td>Bicycle and pedestrian pathways</td>
</tr>
<tr>
<td>6. Separate people from the hazard by interposing a material barrier</td>
<td>Window bars, pools fencing, covering wells</td>
</tr>
<tr>
<td>7. Modify the relevant basic qualities of the hazard</td>
<td>Softer playground surfaces</td>
</tr>
<tr>
<td>8. Make the person more resistant to damage</td>
<td>Good nutrition for children</td>
</tr>
<tr>
<td>9. Counter the damage already done by the hazard</td>
<td>First aid treatment for scalds – “cool the burn”</td>
</tr>
<tr>
<td>10. Stabilize, repair and rehabilitate the injured person</td>
<td>Burn grafting, reconstructive surgery and physical therapy</td>
</tr>
</tbody>
</table>
Best Process for Community Change and Improvement

1. Analyzing Information about the Problem or Goal
2. Establishing a Vision and Mission
3. Developing an Organizational Structure and Operating Mechanism
4. Developing a Framework or Model of Change
5. Developing and Using Strategic Action Plans
6. Arranging for Community Mobilization
7. Developing Leadership
8. Implementing Effective Interventions
9. Assuring Technical Assistance
10. Documenting Progress and Using Feedback
11. Making Outcomes Matter
12. Sustaining the Work

The Community Toolbox-www.ctb.ku.edu
Ecological Model of Injury Prevention

Based on Krug, E et al. Lancet 2002
Injury Prevention: Potential Ways Forward

- The content and process of community interventions should reflect the unique cultural, political, and historical factors of each community.

- Use as a basis demonstrated needs established through reliable data and community input

- Employ evidence-based strategies and “best practices”

- Employ a combination of approaches, rather than a single approach: social marketing, education, environmental modification, engineering, regulations and enforcement, traditional practices

- Include an evaluation component.
Injury Prevention: Potential Ways Forward

- Community based education
- Social media- Twitter, Facebook,
- PSA via text messaging consider partnerships with AT&T, TMobile, Sprint, Verizon etc
- Use schools, churches
- TV and movie stars to give safety message, BET, Monique, Telemundo, ECHO TV
- Sports stars are potential role models
Injury Prevention: Potential Ways Forward

- Maximizes benefits to the local program staff, such as education and training opportunities, recognition, and awards;

- Creates partnerships at the local, regional, and national levels: within the community (e.g., among the highway department, police, schools, and courts) and with other tribes, nonprofit organizations, the private sector, and government agencies.
Injury Prevention: Potential Ways Forward

- Respects the sovereignty and dignity of tribes by obtaining tribal approvals before conducting an intervention or publishing results;

- Involves the community at all stages of the intervention: planning, implementation and evaluation.

- Maximizes benefits to the community by providing employment, training, empowerment (genuine role in decision-making), equipment, and other permanent resources and addressing other community issues and promotes social and cultural values: e.g., cultural preservation (language, values, history, stories), poverty (offer incentives for participation), literacy (children’s books), social isolation (intergenerational activities)
Injury Prevention: Potential Ways Forward

- Miami/Johns Hopkins mobile injury prevention model
- Injury prevention education at school- IFCK Minneapolis/Head Start health literacy project
- Injury prevention messages at WIC(include injury prevention questions in questionnaire and have information available). Potential to reach multiple racial/ethnic and rural/urban demographics!!
Mobile Injury Prevention
A Universal Case for Prevention