Global Alliance for the Care of the Injured

Manjul Joshipura

World Health Organization
Agenda

- Injury as a Public Health Problem
- Why an Alliance?
- What do we aim to achieve?
The scale of violence and injuries

- 5.8 million people die each year as a result of injuries.
- 10% of the world’s deaths.
- 32% more deaths than from malaria, tuberculosis and HIV/AIDS combined.
• Injuries are a growing problem.

• The three leading causes of injury death: road traffic crashes, homicide and suicide are all predicted to rise in rank compared to other causes of death.
Injuries are a leading killer of youth

<table>
<thead>
<tr>
<th>Age Group</th>
<th>0-4</th>
<th>5-14</th>
<th>15-29</th>
<th>30-44</th>
<th>45-59</th>
<th>60-69</th>
<th>70-79</th>
<th>80+</th>
<th>All ages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Death Cause</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Pennatal causes</td>
<td>3 180 174</td>
<td>Lower respiratory infections</td>
<td>224 276</td>
<td>Road traffic injuries</td>
<td><strong>335 806</strong></td>
<td>HIV/AIDS</td>
<td>1 010 600</td>
<td>Ischaemic heart disease</td>
</tr>
<tr>
<td>2</td>
<td>Lower respiratory infections</td>
<td>1 765 385</td>
<td>Road traffic injuries</td>
<td>109 905</td>
<td>HIV/AIDS</td>
<td><strong>33 953</strong></td>
<td>Tuberculosis</td>
<td>367 937</td>
<td>Cerebrovascular disease</td>
</tr>
<tr>
<td>3</td>
<td>Diarrheal diseases</td>
<td>1 716 410</td>
<td>Malaria</td>
<td>103 738</td>
<td>Tuberculosis</td>
<td>249 023</td>
<td>Road traffic injuries</td>
<td><strong>529 142</strong></td>
<td>HIV/AIDS</td>
</tr>
<tr>
<td>4</td>
<td>Malaria</td>
<td>482 666</td>
<td>Drowning</td>
<td>77 117</td>
<td>Homicide</td>
<td><strong>89 003</strong></td>
<td>Ischaemic heart disease</td>
<td>255 848</td>
<td>Chronic obstructive pulmonary disease</td>
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<tr>
<td>5</td>
<td>Measles</td>
<td>398 072</td>
<td>Meningitis</td>
<td>63 755</td>
<td>Road traffic injuries</td>
<td><strong>230 973</strong></td>
<td>Suicide</td>
<td>19 657</td>
<td>Chronic obstructive pulmonary disease</td>
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<tr>
<td>6</td>
<td>Congenital anomalies</td>
<td>370 785</td>
<td>Diarrheal diseases</td>
<td>57 116</td>
<td>Lower respiratory infections</td>
<td>122 297</td>
<td>Homicide</td>
<td>179 916</td>
<td>Chronic obstructive pulmonary disease</td>
</tr>
<tr>
<td>7</td>
<td>HIV/AIDS</td>
<td>258 861</td>
<td>HIV/AIDS</td>
<td>43 119</td>
<td>Drowning</td>
<td><strong>83 434</strong></td>
<td>Lower respiratory infections</td>
<td>54 950</td>
<td>Cirrhosis of the liver</td>
</tr>
<tr>
<td>8</td>
<td>Whooping cough</td>
<td>254 314</td>
<td>Tuberculosis</td>
<td>38 074</td>
<td>Fire-related burns</td>
<td><strong>84 983</strong></td>
<td>Cerebrovascular disease</td>
<td>147 224</td>
<td>Road traffic injuries</td>
</tr>
<tr>
<td>9</td>
<td>Meningitis</td>
<td>156 304</td>
<td>Protein-energy malnutrition</td>
<td>38 832</td>
<td>War-related injuries</td>
<td><strong>66 315</strong></td>
<td>Cirrhosis of the liver</td>
<td>101 590</td>
<td>Lower respiratory infections</td>
</tr>
<tr>
<td>10</td>
<td>Tetanus</td>
<td>144 325</td>
<td>Fire-related burns</td>
<td>26 703</td>
<td>Maternal haemorrhage</td>
<td><strong>65 077</strong></td>
<td>Poisoning</td>
<td>87 576</td>
<td>Diabetes mellitus</td>
</tr>
<tr>
<td>11</td>
<td>Protein-energy malnutrition</td>
<td>195 517</td>
<td>Measles</td>
<td>24 502</td>
<td>Ischaemic heart disease</td>
<td>59 102</td>
<td>Maternal haemorrhage</td>
<td>71 774</td>
<td>Suicide</td>
</tr>
<tr>
<td>12</td>
<td>Syphilis</td>
<td>63 875</td>
<td>Leukaemia</td>
<td>20 861</td>
<td>Poisoning</td>
<td><strong>55 139</strong></td>
<td>Fire-related burns</td>
<td><strong>67 338</strong></td>
<td>Stomach cancer</td>
</tr>
<tr>
<td>13</td>
<td>Drowning</td>
<td>59 467</td>
<td>Congenital anomalies</td>
<td>195 242</td>
<td>Abortion</td>
<td>46 335</td>
<td>Nephritis and nephrosis</td>
<td>65 145</td>
<td>Liver cancer</td>
</tr>
<tr>
<td>14</td>
<td>Road traffic injuries</td>
<td>56 778</td>
<td>Trypanosomiasis</td>
<td>18 583</td>
<td>Leukaemia</td>
<td>44 398</td>
<td>Drowning</td>
<td>62 683</td>
<td>Breast cancer</td>
</tr>
<tr>
<td>15</td>
<td>Fire-related burns</td>
<td>46 860</td>
<td>Falls</td>
<td>17 862</td>
<td>Cerebrovascular disease</td>
<td>40 827</td>
<td>Breast cancer</td>
<td><strong>57 370</strong></td>
<td>Hypertensive heart disease</td>
</tr>
</tbody>
</table>

World Health Organization
More exposed to risks

Less exposed to prevention

Less access to quality trauma care and rehabilitation
Regional differences in injury death rates

AFRO: 104.33
AMRO: 67.08
EMRO: 93.31
EURO: 89.32
SEARO: 116.58
WPRO: 68.78
World: 89.86
THE INJURY PYRAMID

- Fatal injuries
- Injuries resulting in hospitalizations
- Injuries resulting in visits to emergency departments
- Injuries resulting in visits to primary care facilities
- Injuries treated outside the health system, not treated, or not reported
Extremity injuries account for 75% of all non-fatal injuries from road traffic crashes.

### Table 2.8

The 20 leading non-fatal injuries sustained\(^a\) as a result of road traffic collisions, world, 2002

<table>
<thead>
<tr>
<th>Type of injury sustained</th>
<th>Rate per 100 000 population</th>
<th>Proportion of all traffic injuries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intracranial injury(^b) (short-term(^c))</td>
<td>85.3</td>
<td>24.6</td>
</tr>
<tr>
<td>Open wound</td>
<td>35.6</td>
<td>10.3</td>
</tr>
<tr>
<td>Fractured patella, tibia or fibula</td>
<td>26.9</td>
<td>7.8</td>
</tr>
<tr>
<td>Fractured femur (short-term(^c))</td>
<td>26.1</td>
<td>7.5</td>
</tr>
<tr>
<td>Internal injuries</td>
<td>21.9</td>
<td>6.3</td>
</tr>
<tr>
<td>Fractured ulna or radius</td>
<td>19.2</td>
<td>5.5</td>
</tr>
<tr>
<td>Fractured clavicle, scapula or humerus</td>
<td>16.7</td>
<td>4.8</td>
</tr>
<tr>
<td>Fractured facial bones</td>
<td>11.4</td>
<td>3.3</td>
</tr>
<tr>
<td>Fractured rib or sternum</td>
<td>11.1</td>
<td>3.2</td>
</tr>
<tr>
<td>Fractured ankle</td>
<td>10.8</td>
<td>3.1</td>
</tr>
<tr>
<td>Fractured vertebral column</td>
<td>9.4</td>
<td>2.7</td>
</tr>
<tr>
<td>Fractured pelvis</td>
<td>8.8</td>
<td>2.6</td>
</tr>
<tr>
<td>Sprains</td>
<td>8.3</td>
<td>2.4</td>
</tr>
<tr>
<td>Fractured skull (short-term(^c))</td>
<td>7.9</td>
<td>2.3</td>
</tr>
<tr>
<td>Fractured foot bones</td>
<td>7.2</td>
<td>2.1</td>
</tr>
<tr>
<td>Fractured hand bones</td>
<td>6.8</td>
<td>2.0</td>
</tr>
<tr>
<td>Spinal cord injury (long-term(^d))</td>
<td>4.9</td>
<td>1.4</td>
</tr>
<tr>
<td>Fractured femur (long-term(^d))</td>
<td>4.3</td>
<td>1.3</td>
</tr>
<tr>
<td>Intracranial injury(^b) (long-term(^d))</td>
<td>4.3</td>
<td>1.2</td>
</tr>
<tr>
<td>Other dislocation</td>
<td>3.4</td>
<td>1.0</td>
</tr>
</tbody>
</table>

\(^a\) Requiring admission to a health facility.
\(^b\) Traumatic brain injury.
\(^c\) Short-term = lasts only a matter of weeks.
\(^d\) Long-term = lasts until death, with some complications resulting in reduced life expectancy.

76% of countries have a formal pre-hospital care system. (< 30 % world population)
Varying quality and coverage.
>90 different telephone emergency access numbers.
Up to 40% of lives can be saved through efficient trauma care

Prehospital trauma systems reduce mortality in developing countries: A systematic review and meta-analysis

Jaymie Ang Henry, MD and Arthur Lawrence Reingold, MD, San Francisco, California

BACKGROUND: The majority of trauma deaths in the developing world occur outside of the hospital. In the mid-1990s, preliminary studies of prehospital trauma systems showed improvements in mortality. However, no empirical data are available to assess the overall benefit of these systems. We undertook a systematic review and meta-analysis to assess the effectiveness of prehospital trauma systems in developing countries.

METHODS: We conducted multiple database and bibliography searches (from inception until December 2010) to identify articles assessing the effectiveness of prehospital trauma systems in developing countries. The primary outcome was mortality. Secondary outcomes were physiologic severity score, Injury Severity Score, and prehospital time. We calculated relative risks (95% confidence intervals [CIs]), performed a sensitivity analysis, and pooled estimates using a fixed effects method.

RESULTS: Fourteen studies met our inclusion criteria for qualitative analysis. Eight studies representing seven countries (n = 5,607) were included in the meta-analysis. Our pooled estimates show a 25% decreased risk of dying from trauma in areas that have prehospital trauma systems (relative risk [RR], 0.75, 95% CI, 0.66-0.85), with no significant heterogeneity (x² = 3.71, df = 6, p = 0.73). Rural counties showed slightly enhanced treatment effect compared with urban counties (RR = 0.71, 95% CI, 0.58-0.87).

An Estimate of the Number of Lives that Could be Saved through Improvements in Trauma Care Globally

Charles Mock · Manjul JoshiPura · Carlos Arreola-Risa · Robert Quansah

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Abstract Background Reducing the global burden of injury requires both injury prevention and improved trauma care. We sought to provide an estimate of the number of lives that could be saved through improvements in trauma care.

Methods The Global Burden of Disease study reported 5.4 million injury deaths that would have occurred in 2010 if case fatality rates in high-income and middle-income countries minus the number of deaths that would have occurred if case fatality rates in these locations were decreased to the case fatality rates seen in low-income countries.
2004 Road traffic safety and health, WHA57.10
2003 Implementing the recommendations of the *World report on violence and health*, WHA56.24
1998 Concerted public health action on anti-personnel mines, WHA51.8
1997 Prevention of violence, WHA50.19
1996 Prevention of violence: a public health priority, WHA 49.25
2007 Emergency trauma care, WHA 60.22.
2004 Road traffic safety and health, WHA57.10
2003 Implementing the recommendations of the *World report on violence and health*, WHA56.24
1998 Concerted public health action on anti-personnel mines, WHA51.8
1997 Prevention of violence, WHA50.19
1996 Prevention of violence: a public health priority, WHA 49.25
Health systems: emergency-care systems

2. URGES Member States:

(6) to identify a core set of trauma and emergency-care services, and to develop methods for assuring and documenting that such services are provided appropriately to all who need them;

(8) to ensure that appropriate core competencies are part of relevant health curricula and to promote continuing education for providers of trauma and emergency care;

3. REQUESTS the Director-General:

(3) to determine standards, mechanisms, and techniques for inspection of facilities, and to provide support to Member States for design of quality-improvement programmes and other methods needed for competent and timely provision of essential trauma and emergency care;
Global Forum on Trauma Care
28 – 29 October, 2009   Rio de Janeiro
WHO Global Alliance for the Care of the Injured

- Professional Societies
- Governments
- Inter-governmental Organizations
- Public Health Agencies

- Advocate for affordable and sustainable improvements,
- Increase priority,
- Increase resource allocation,
- Promote exchange of information.
Formal Launch in 2013
Working Groups

- Trauma System Development
- Trauma Data and Registry
- Advocacy
- Evidence and Research
- Capacity Building
Global Status Report on Trauma Systems
Decade of Action for Road Safety 2011-2020

SAVING MILLIONS OF LIVES
Goal of the Decade

To halt or reverse the predicted increase in road traffic fatalities around the world

Decade of Action for Road Safety 2011-2020: saving millions of lives

- Projected increase without action
- Projected reduction if action taken

5 million lives saved
THANK YOU