Child injuries around the world

What do we know?

Dr Margie Peden
Coordinator : Unintentional Injury Prevention
Dept of Injuries & Violence Prevention
WHO
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Overview

• What do we know about
  – child deaths?
  – injuries and disabilities?
  – global risk factors?
  – prevention in LMICs?
• Where are the gaps?

Child deaths : What do we know globally?

• In 2002
  – 5,168,315 injury deaths worldwide
  – 709,528 children <15 years killed by injury
  – Accounts for about 6% of BoD in children
  – 93% of fatal injuries = unintentional causes

Child deaths rates <15 years

• Poor children disproportionately affected
  – 98% unintentional injuries in LMICs
  – ++ in Africa, EMRO, S-E Asia and Western Pacific

Global injury death rates, by age, 2002

• Injury rate for < 5 years
  – Boys : 48.9
  – Girls: 49.0
• Injury rate for 5-14 years
  – Boys: 39.1
  – Girls: 27.8

Child injuries and disabilities <15 years

• Morbidity huge, but data scant
  – Few LMICs report injury morbidity to WHO
  – In 2002,
    • 181685451 DALYs lost to injuries (12.2% of GBD)
    • 48343768 DALYs lost among children <15 years (26.6%)
  – Unknown number of non-fatally injured globally
  – For each death there are several thousand children left with permanent disabilities
  – In OECD countries there are approx 50 million ER visits and 4 million admissions annually

Appendix 5
Child Injury Prevention meeting, WHO, Geneva, 31 March - 1 April 2005
Risk factors for children <15

- No global data
- Some work in HICs
- Issues different in LMICs

Different RF require different solutions

- Death data
  - Few developing countries report data to WHO
  - Drowning excludes floods, etc
  - Burns only fire
  - Poisoning under-reported generally
- Injury and disability data
  - V poor, particularly from LMICs
- No global risk factor data
- Cost and cost effectiveness
- Not sure what works in LMICs
- Don’t know access to health care

What are the gaps?

WHO response to childhood injuries

The regional burden of childhood injuries: data and lack of data

Adnan A. Hyder, MD MPH PhD
Johns Hopkins University & International Society for Child and Adolescent Injury Prevention (ISCAIP)

Review of Regional Information for 0-4 years
Based on Accessible and Published Literature (Funded by USAID)

Community Based Studies on Burns in Sub-Saharan Africa

<table>
<thead>
<tr>
<th>Country</th>
<th>Reference</th>
<th>Time period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zimbabwe</td>
<td>MacDonald (1988)</td>
<td>2 months</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>Courtright et al (1993)</td>
<td></td>
</tr>
</tbody>
</table>

Childhood Burns in Sub-Saharan Africa (SSA)
- 7 community based studies till end of 2003
- Incidence ranged from 0.28 to 16.3% per year for 0-4 age group
- This means that in 2002 there were between 300,000 to 17 million cases of burns in SSA
- Where are these captured?

Unintentional Injuries in South Asia
- Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, Sri Lanka
- Papers between 1980 and 2003
- Road traffic, burns, drowning, poisoning, falls and unspecified
- Diverse methods, time frames, locations – pooling not possible
- Simple ranges, means and weighted means established
Drowning Mortality in Children 1yr to 4yr in Bangladesh (Hyder et al. ICSP, 2003)

Preliminary Estimates

- Unintentional injuries estimated to result in 161,000 to 500,000 deaths in children < 5 years in South Asia
- Loss of nearly 11.7 million Healthy Life Years (or 74 healthy life years per 1000 population)

WHO Child Health Reference Epidemiology Group
(The Lancet 2005;365:1147-52)

Estimates for Mortality and Causes for Children less than 5 years old

<table>
<thead>
<tr>
<th>Region</th>
<th>Deaths (milln.)</th>
<th>% Injuries</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMR</td>
<td>0.439</td>
<td>5</td>
</tr>
<tr>
<td>AFR</td>
<td>4.396</td>
<td>2</td>
</tr>
<tr>
<td>EMR</td>
<td>1.409</td>
<td>3</td>
</tr>
<tr>
<td>SEAR</td>
<td>3.070</td>
<td>2</td>
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<tr>
<td>WPR</td>
<td>1.020</td>
<td>7</td>
</tr>
<tr>
<td>EUR</td>
<td>0.263</td>
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</tbody>
</table>

Review of Information for 0-19 year age group

Road Traffic Injuries 0-19 years in South Asia

- 0-19 represent 13-15% of all traffic deaths (on average)
- Average incidence 883 per 100,000 population 0-19 years
- Average mortality rate of 17 per 100,000 pop 0-19 years
- 116 HeaLYs per 1000 pop per year lost

Funded by Volvo Research and Educational Foundations
Review of New Information on All Ages

African Region

Tanzania: Moshiro et al (2005;5:11)

- Overall injury incidence of 32.7 per 1000 per year (29.9-35.7)
- Severe: 8.1 per 1000 per year
- Average age 27.6 years, 62% male, 96% unintentional
- No association with socioeconomic status
- Incidence declined with length of recall (72/1000/y at 1 month to 32/1000/y at 12 month recall – 55% decline)

Reflections...

- We have information to understand parts of the injury burden in children
- Lack of more specific data should not be an excuse for inaction
- However, promotion of relevant research and data to assist decision making is important
- Unanswered is the impact of childhood injuries on the health system in LMIC?
CAUSES OF CHILD INJURY

Kayode Oyegbite (MPH;DrPH)

MAJOR CAUSES OF CHILD INJURY

1. Road Traffic Accidents
2. Drowning
3. Violence and Assault
4. Burns Including Electrocuton
5. Poison
6. Falls
7. Animal Bites

Road Traffic Accidents (RTA)

1. Nearly 1.5 m deaths annually, or 25% of the 5.5m
   deaths due to injury only the tip of the iceberg
2. Extrapolating from a US study of U-19 years, one can
   estimate ?54 million
   hospitalizations and
   ?1560
   million
   ?morbidity requiring emergency room visits.
3. Among Bangladeshi children <18 yrs, RTA was
   the second leading cause of fatal injury, sixth
   leading cause of death overall, fourth leading
   cause of permanent disability from injury and the
   eighth leading cause of morbidity.

4. And in the injury study in Beijing, RTA was the
   cause of one-third of the injury deaths or 14.2% of
   total death among children <18 years
5. Running through the figures above are evidence of
   better documentation of RTAs than other types of
   injuries primarily because of:
   • the involvement of law enforcement agents;
   • Places of occurrence i.e. in public, on roads and
   highways

Drowning

1. Estimated 0.5 million accidental deaths i.e.
   excluding cataclysms, floods, water and other
   transport-related accidents, assaults and
   suicides
2. Overwhelming majority of which are children
   1-14 years and the bulk of remaining are young
   adults <30 years.

3. For example, in Bangladesh and Vietnam; by
   far the leading cause of death among children 1-
   4 and 5-9 years.
4. Again, 97% of these unintentional drowning
   occurred in low and middle-income countries
5. Converse to RTA, less documentation for:
   • Reasons stated in point 1 above;
   • Places of occurrence i.e. in homes, rural or slum
   communities
Violence and Assault
1. Some 1.6 million deaths annually, most of these in conflict zones of the world where there is a culture of impunity;
2. In addition, to the millions of injury related disability are the psychological trauma, a complete picture of which would be difficult to document
3. WRVH estimates that 90% of all violence-related deaths occur in low and middle income countries.
4. Domestic violence is a growing global problem, or perhaps now receiving more media attention.
5. Children and women are vulnerable.

Burns Including Electrocution
1. Globally, about 320,000 deaths to fire-related burns, alone.
2. Ranked among the 15 leading causes of death and burden of disease among children and young adults <30 years.
3. These figures, however represent only fire-related burns and thus under-represent the true magnitude of burns (ultra-violet rays, electricity, chemicals, etc.)

Poisoning
1. The true extent of poisoning may never be known as much of it is surreptitious, and many countries lack the resources for accurate diagnosis.
2. Pick age for poisoning are in the 15-29 and 30-44 years;
3. Rural economies may have higher incidence because of availability and common use of agents as herbicides, pesticides, etc.

Falls
1. Notable, more for its morbidity than mortality.
2. The leading cause of morbidity among children <15 years; but also not uncommon in older adults <45 years.

CONCLUSION
1. Injuries are major public health concerns in all societies. About 14% of healthy life years lost, and 10% of estimated 55 million deaths, globally.
2. Specific injuries differ in distribution by space, time and population and gender, sex, race, occupation and other factors.
3. Linkage to poverty. Low and middle-income countries bear the burden of injury (up to 90% of global total).
4. Most relevant to UNICEF involvement in injury is that children <18 years and young adults are disproportionately affected.

RECOMMENDATIONS
1. Focus now on improving policy for prevention and treatment in all countries, esp in LDCs.
2. Focus on development or refinement of simple tools for injury documentation at the levels of the community and multi-sectoral institutions.
3. Work together on advocacy, prevention, and appropriate treatment of those involved.
4. Enlist the support of activists.