Strengthening Care of the Injured Globally
Spectrum of Injury Control

Surveillance

Prevention

Pre-Hospital Care

Hospital Care

Acute care
Rehabilitation
PERCENT OF THOSE WITH LIFE-THREATENING, BUT SALVAGEABLE, INJURIES (ISS 15-24) WHO DIE

Percent of injured patients who expire

Seattle, USA: 6
Ghana: 36

Source: Trauma Outcomes in the Rural Developing World: Comparison with an Urban Level I Trauma Center J Trauma, 35:518, 1993
90% of injury deaths are in developing countries

<table>
<thead>
<tr>
<th></th>
<th>GNP</th>
<th>Health $</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Per capita</td>
<td>Per capita</td>
</tr>
<tr>
<td>High income (e.g. USA)</td>
<td>$40,000</td>
<td>$5,000</td>
</tr>
<tr>
<td>Middle income (Latin America)</td>
<td>$4,000</td>
<td>$100-400</td>
</tr>
<tr>
<td>Low income (Africa, Asia)</td>
<td>$300</td>
<td>$8</td>
</tr>
</tbody>
</table>
Options for optimizing prehospital care

• Strengthen basic ambulance services.

• Starting new ambulance services where they would be cost-effective.

• Strengthening prehospital care when not feasible to start an ambulance services:
  • Build on existing informal systems (e.g. commercial drivers).
Working Group for Essential Trauma Care

International Society of Surgery (ISS-SIC)

WHO

Input from:

• 40 persons
• 20 countries
11 essential services:
Brief examples

• Assure that obstructed airways are opened

• Assure that bleeding (external or internal) is stopped

• Assure that potentially disabling orthopedic injuries are corrected
## Essential Trauma Care: Sample Resource Tables

<table>
<thead>
<tr>
<th>AIRWAY SKILLS</th>
<th>Basic #</th>
<th>GP#</th>
<th>Specialist#</th>
<th>Tertiary#</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment of airway compromise</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td>E</td>
</tr>
<tr>
<td>Manual manoeuvres (chin lift, jaw thrust, recovery position, etc)</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td>E</td>
</tr>
<tr>
<td>Use of suction</td>
<td>D</td>
<td>E</td>
<td>E</td>
<td>E</td>
</tr>
<tr>
<td>Use of bag valve mask</td>
<td>D</td>
<td>E</td>
<td>E</td>
<td>E</td>
</tr>
<tr>
<td>Endotracheal intubation</td>
<td>D</td>
<td>D</td>
<td>E</td>
<td>E</td>
</tr>
<tr>
<td>Cricothyroidotomy</td>
<td>D</td>
<td>D</td>
<td>E</td>
<td>E</td>
</tr>
<tr>
<td>AIRWAY EQUIPMENT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oral airway</td>
<td>D</td>
<td>E</td>
<td>E</td>
<td>E</td>
</tr>
<tr>
<td>Suction device (foot pump powered at least) and associated tubing and catheters</td>
<td>D</td>
<td>E</td>
<td>E</td>
<td>E</td>
</tr>
<tr>
<td>Bag valve mask</td>
<td>D</td>
<td>E</td>
<td>E</td>
<td>E</td>
</tr>
<tr>
<td>Laryngoscope</td>
<td>D</td>
<td>D</td>
<td>E</td>
<td>E</td>
</tr>
<tr>
<td>Endotracheal tubes</td>
<td>D</td>
<td>D</td>
<td>E</td>
<td>E</td>
</tr>
<tr>
<td>Magill forceps</td>
<td>D</td>
<td>D</td>
<td>E</td>
<td>E</td>
</tr>
<tr>
<td>Other advanced airway equipment</td>
<td>D</td>
<td>D</td>
<td>D</td>
<td>D</td>
</tr>
</tbody>
</table>
Inputs needed: Low income settings

- All rural clinics caring for injured persons:
  - Capabilities (training and equipment) for: rapid basic first aid

At least one third of rural injured cared for at such facilities.
Inputs needed: Low income settings

District Hospitals

• Capabilities for chest tubes and airway maintenance

• Minimum blood transfusion capabilities
Inputs needed: Low income settings

Tertiary care hospitals

- Endotracheal intubation in casualty ward (emergency basis)
- Basic quality assurance (medical audit) programs
Middle income setting

• Similar recommendations: but including Desirable items that increase probability of successful outcome, but also increase cost.
Guidelines for essential trauma care

Part planning guide: MOHs, facilities
Part advocacy document
EsTC Stakeholders Meetings

India, April 2003 & February 2005

Mexico, March 2004

Ghana, June 2005

Vietnam, March 2005
What Next?

• **Technical input / guidelines**
  – Options for locations with no formal EMS
  – QI guidelines for trauma care.

• **World Health Assembly resolution.**
  – Health Systems: Emergency-care systems.

• **Major thing: work on ground in individual countries!!!**
  – Strengthen capacity for organization and planning for trauma care services.

• **Importance of collaborations.**
  – Ministries of Health; Professional Societies; WHO country and regional offices.