Basic and cheap trauma care (by local health workers)

or

Advanced and expensive trauma care (by external experts)

What makes mine victims survive?

Hans Husum MD PhD, trauma surgeon, University Hospital Northern Norway
Assaddullah Reha MD, director, Mobile Emergency Medical Center (MMC), Jalalabad, Afghanistan
This is not the typical mine injury

These are the typical mine injuries
– most of them dying on the way to hospital

Our responsibility: Prevent avoidable deaths

What makes him survive?
Somebody to keep his airway open
What makes her survive?

Somebody to stop the bleeding

Who is “somebody”?

Where are they
– those who are willing?
– and able?
Avoidable rural trauma deaths:
Incorrect airway management in 15 – 20 % of cases.

Job no. 1: Open airway!

Endo-tracheal intubation ? No
Crico-thyrotomy ? No
Recovery position ? Yes
Job no. 2: Stop the bleeding!

– like this ?

– or like this ?

Improvised tourniquets

Do not stop the bleeding.

Causes infection and loss of extra limb length.

Causes organ complications which are life-threatening.

Are very painful for the patients.

Ban improvised tourniquets! Pack the wounds!
Who should stop the bleeding – by packing the wounds?

The villagers
= Mine Victim First Helpers

Cold blood bleeds more: Keep patient warm!

Controlled clinical study
Long evacuations (4 – 8 hours) in warm countries, no prevention:
20% hypothermia
Simple in-field prevention (dry clothes, blankets, IV fluids 40°C):
< 5% hypothermia

Husum et al. Prehosp Disast Med, 2002
Village First Helpers:

- Recovery position
- Pack bleeding wounds immediately
- Keep patients warm

Fact or fiction?

Rural prehospital trauma systems in North Iraq and Cambodia

- 1,060 patients
- 135 paramedics
- 5,200 village first helpers

Mine Victim Emergency Assistance

There are two ways:

Training the insiders basic airway and bleeding control
(insideers are on-site when the mines strike)

Or, building city hospitals of European standards
(letting mine victims keep dying on the road)
Since 2004: MMC builds rural trauma systems in Afghanistan

Eastern Sector: Nangarhar, Laghman, Kunar, Nuristan
Western Sector: Herat, Baghdis, Ghor
Target population: 5 million

In cooperation with the Ministry of Health
In cooperation with local Public Health Directors

MMC: Afghan trauma experts

What is the history of MMC?
MMC was born by the anti-Soviet resistance

In the name of “democracy” and “development”

150, 000 persons killed in air raids and massacres

4 million refugees

Soviet occupation of Afghanistan

Main target: civilians

Air raids on villages

Clinics and hospitals destroyed

Transport to hospitals (Pakistan): 1 – 4 days
Soviet occupation of Afghanistan

- Systematic bombing of water canals
- Drought and starvation
- Uncontrolled endemic diseases
- Patients with poor physiologic capacity

The Battle of Jalalabad
1989 - 1992

- 3,800 severely injured patients
- Forward, mobile paramedic teams
- $\Delta t$ (in-field) = 20 minutes

In-field life support: mostly basic and simple – few advanced procedures

A: Head tilt – chin lift, recovery position
B: IV ketamine analgesia
C: Gauze packs + compression. No tourniquets!
MMC’s experience at Jalalabad

Important:

Teams of skilled, dedicated, local paramedics

Important:

Mass casualties are common
Train many first helpers
**Important:**

Don’t wait for high-tech equipment

**Simple and early = life-saving**

---

**MMC’s experience at Jalalabad**

![Image](image1.jpg)

**The killing goes on**

**Year 2004**

Mine and war injured admitted alive:
- Jalalabad University Hospital: 1,400
- Herat Regional Hospital: 850

Estimated deaths outside hospital:
- Eastern Sector: 550 persons
- Western Sector: 350 persons

Conclusion: around 400 victims died avoidable deaths in 7 Afghan provinces in 2004
Step 1: Training instructors

Doctors from the local hospital

Not shiny shoes
– but caring for the village people

Step 2:
The instructors train doctors and nurses at the rural clinics

Training technical skills on animal models
(live animals injured under anesthesia)
To save lives:
Most important are the **simple** things

To be sustainable:
Simple, low-tech, and cheap

---

This backpack contains all you need for 3 severely injured patients

= mobile rural clinic

Produced in Afghanistan/Pakistan.

---

**Step 3:**
Rural nurses and doctors train thousands of village first helpers

Medical kit for village first helpers:
5 rolls of elastic bandage
(which is all you need to stop any limb bleeding)
# Lessons to learn (for ministers, doctors, and funders)

<table>
<thead>
<tr>
<th>If like to “burn” US$ and break the local infrastructure</th>
<th>If you like to assist mine victims and build sustainable local capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pass around the local authorities</td>
<td>Work closely with central and local health authorities</td>
</tr>
<tr>
<td>Give project contracts to Western NGOs only</td>
<td>Don’t forget them, but with them:</td>
</tr>
<tr>
<td>(and don’t ask about project efficacy)</td>
<td>Only Afghans know Afghanistan</td>
</tr>
<tr>
<td>Build nice-looking hospitals in the cities</td>
<td>Get out of the cities:</td>
</tr>
<tr>
<td>(the TV crews seldom go countryside)</td>
<td>The Land Mine Epidemic is a rural problem</td>
</tr>
<tr>
<td>Don’t trust locals – they are ignorant,</td>
<td>Life-saving: simple things are crucial.</td>
</tr>
<tr>
<td>and maybe dangerous</td>
<td>Train and equip rural clinics and an army of villagers</td>
</tr>
<tr>
<td>Try to forget all those villagers dying under way to hospital</td>
<td>The single and only indicator of success:</td>
</tr>
<tr>
<td></td>
<td>Reducing death rates outside hospital from 40% to 10%</td>
</tr>
</tbody>
</table>

Now you can choose which way to go.

Thank you!