



**Basic and cheap** trauma care (by local health workers)

or

**Advanced and expensive** trauma care (by external experts)

**What makes mine victims survive ?**

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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**





Avoidable rural trauma deaths:  
Incorrect airway management  
in 15 – 20 % of cases.

Esposito. J Trauma 1995

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

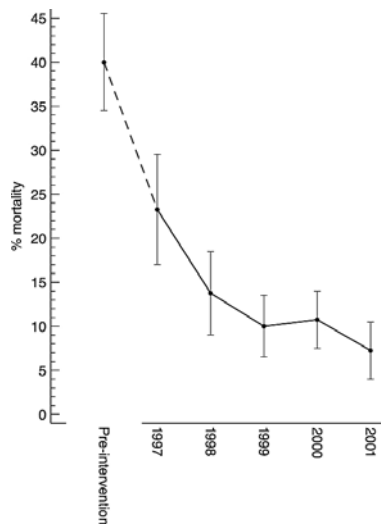
Husum et al. Prehosp Disast Med, 2002



### Village First Helpers:

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

### Fact or fiction?



Rural prehospital trauma systems  
in  
North Iraq and Cambodia

1, 060 patients

135 paramedics  
5,200 village first helpers

Husum, Gilbert, Wisborg. J Trauma, 2003



Village first helpers (n = 343)

$\Delta t$  0.9 hours

Trauma mortality 7%



Without first helpers (n = 845)

$\Delta t$  2 hours

Trauma mortality 19%

95% CI difference: 8%  
- 15%

Husum, Gilbert, Wisborg. J Trauma, 2003



## Mine Victim Emergency Assistance

There are two ways:

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

Or, building city hospitals of European standards  
(letting mine victims keep dying on the road)



بِسْمِ اللّٰهِ الرَّحْمٰنِ الرَّحِیْمِ



Since 2004: MMC builds rural trauma systems In Afghanistan

Eastern Sector: Nangarhar, Laghman, Kunar, Nuristan

Western Sector: Herat, Baghdis, Ghor

Target population: 5 million

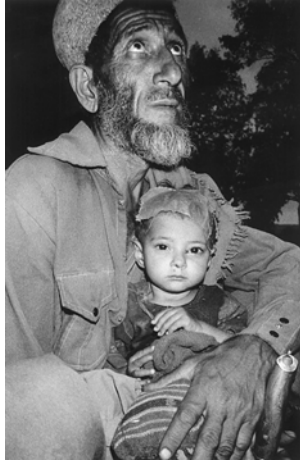
In cooperation with the Ministry of Health

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

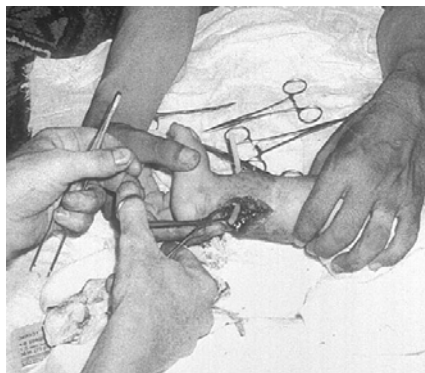


In the name of “democracy” and  
“development”

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



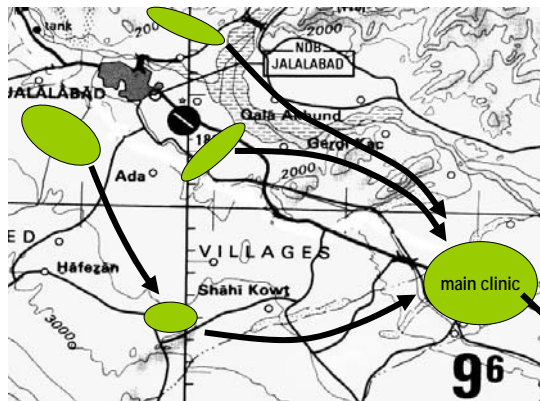
Systematic bombing of water canals

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-infield) = 20 minutes

Peshawar

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

## MMC's experience at Jalalabad



Important:

Mass casualties are common

Train many first helpers

## MMC's experience at Jalalabad



Important:

Don't wait for high-tech equipment

Simple and early = life-saving



Jalalabad University Hospital, October 2004:  
Mine accident survivor from Khogiani

## 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

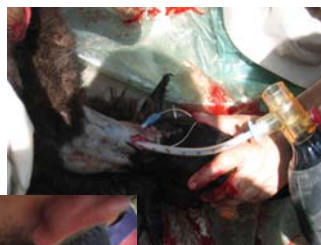


MMC master training, Jalalabad 2004

### 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)

MMC master training, Jalalabad 2004



This backpack contains all you need  
for 3 severely injured patients

= mobile rural clinic

Produced in Afghanistan/Pakistan.

To save lives:  
Most important are the simple things

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



Medical kit for village first helpers:  
5 rolls of elastic bandage  
(which is all you need to stop any limb bleeding)

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

Lessons to learn (for ministers, doctors, and funders)

If like to "burn" US\$  
and break the local infrastructure

Pass around the local authorities

Give project contracts to Western NGOs only  
(and don't ask about project efficacy)

Build nice-looking hospitals in the cities  
(the TV crews seldom go countryside)

Don't trust locals – they are ignorant,  
and maybe dangerous

Try to forget all those villagers  
dying under way to hospital

If you like to assist mine victims  
and build sustainable local capacity

Work closely with central and local health authorities

Don't for them, but with them:  
Only Afghans know Afghanistan

Get out of the cities:  
The Land Mine Epidemic is a rural problem

Life-saving: simple things are crucial.  
Train and equip rural clinics and an army of villagers

The single and only indicator of success:  
Reducing death rates outside hospital from 40% to 10%

Now you can choose which way to go.

Thank you !