

# **CHARACTERISTICS OF SURGERY IN ARMED CONFLICT: HOW IS IT DIFFERENT**

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# Particularities of Surgery for the Victims of War

**War surgery is the management of an epidemic of trauma.**

(Nikolai Ivanovich Pirogov 1810 – 81:

Russian anatomist and surgeon, professor at the Academy of Military Medicine, St Petersburg.)



# Particularities of Surgery for the Victims of War

**All the circumstances of war surgery thus do violence to civilian concepts of traumatic surgery.**

(DeBakey M E. Military surgery in World War II – a backward glance and a forward look.  
NEJM 1947; 236: 341 – 350.)



# Particularities of Surgery for the Victims of War

**War surgery is peacetime surgery with added obstacles.**

**It is a surgery of complications, performed by doctors who are often ill-trained or without surgical training.**

**It is surgery replete with adaptations and improvisations to replace that which is missing, a surgery of surprises that new means and methods of combat reveal.**

(Franz, Swiss Army Manual, 1970)

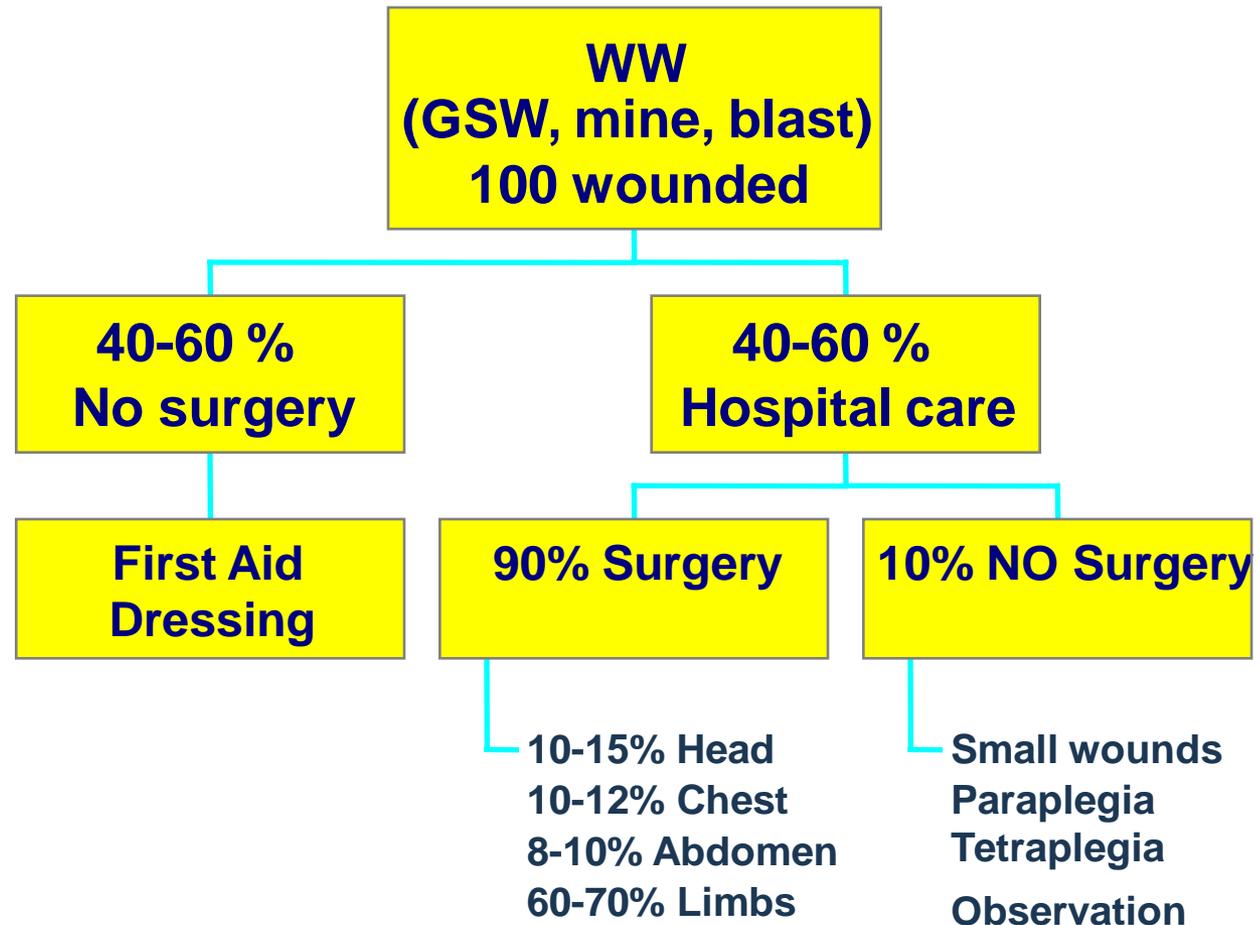


# Legal rights and obligations of medical personnel

- **Oath of Hippocrates**  
**World Medical Association: Declaration of Geneva 1948**
- **WMA: International Code of Medical Ethics: Declaration of London 1949; Pilanesberg, South Africa 2006**
- **Geneva Conventions 1949: International Humanitarian Law**
- **Additional Protocol I (1977)**



# Specific Epidemiology of War



## **Limited technical environment: austere**

- **Damaged infrastructure (water, sanitation, electricity)**
- **Lack of experienced human resources: competency, fatigue, fear**
- **Lack of equipment and supplies: appropriate**
- **Lack of blood for transfusion**





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# ICRC Field Surgical Team Darfur



Assure the air-flow: non-laminar



# Understanding the limits of surgery: simplicity of diagnostic means available

- **Lucky if X-ray machine is working!**
- **Laboratory: Hb/Hct + urine + blood grouping & screening for transfusion**
- **Ear, eye, nose and ten-finger whole-body scan**



# **Understanding the limits of surgery: simplicity of therapeutic means available**

- **Anaesthesia (local, regional, ketamine)**
- **Availability of blood (no components)**
- **Patient monitoring (BP, P, O<sub>2</sub> saturation)**
- **Post-operative nursing care**



**Limits of surgery =**

**post-operative nursing care**

**+ anaesthesia**

**+ availability of blood for transfusion**



## Hostile, violent environment



# Hostile, violent environment



# **Old lessons for new surgeons 1**

**It is more important to provide proper first aid  
and render the injured fit for transport,  
than to give early but inadequate treatment,  
with insufficient means,  
and insufficient knowledge.**

**Heroic surgery will never replace good surgery.**



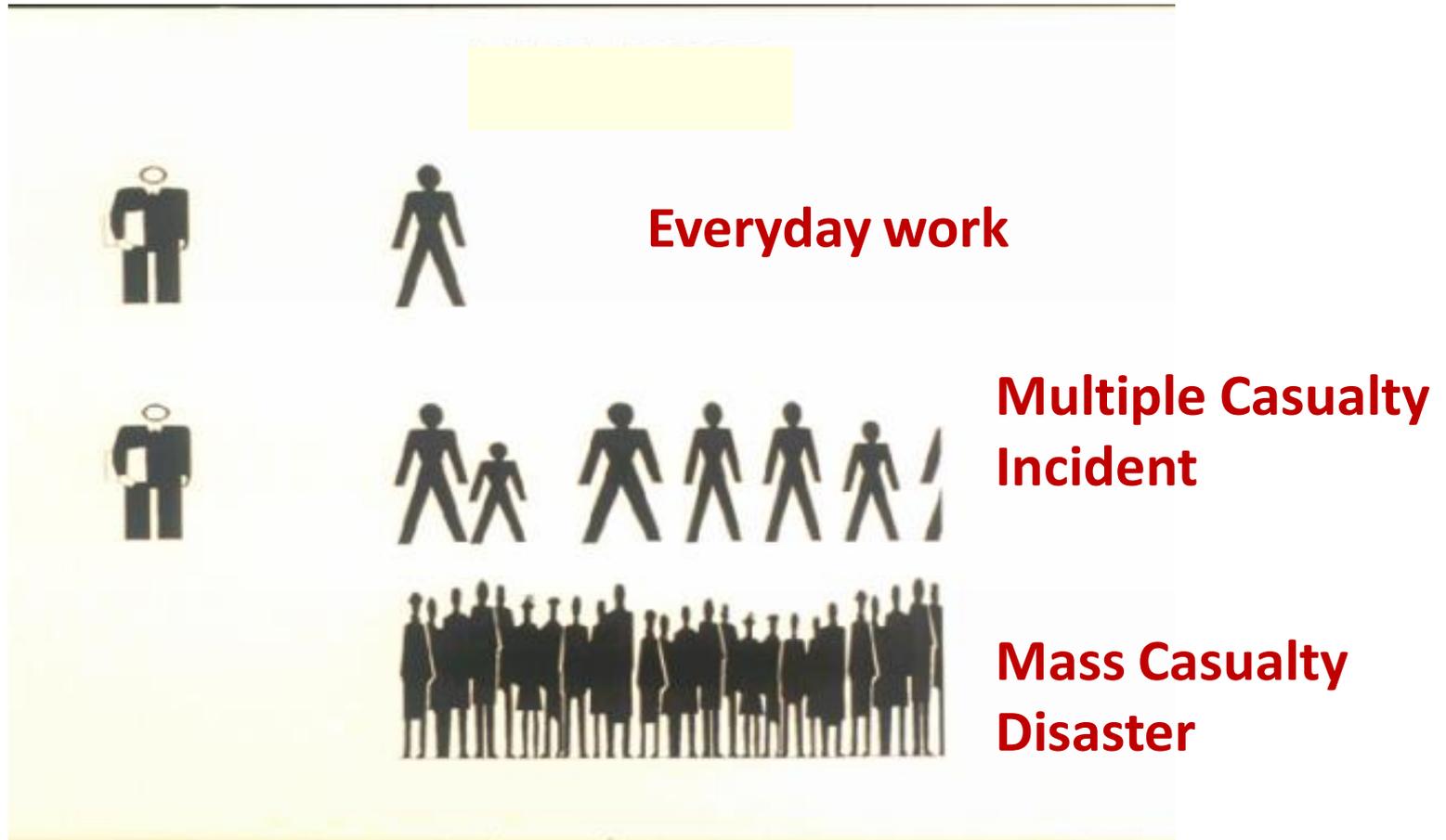
# Evacuation: successive echelons of treatment



# Evacuation: more common



# Triage



# **Difference between MCI and Mass Casualties =**

**Existence of category:**

**leave to die in peace and with dignity.**



## **Old lessons for new surgeons 2**

**War wounds are dirty and contaminated from the moment of injury.**

**The rules of septic surgery apply.**



## **Principles of septic surgery:**

- **Wound debridement / excision**
- **Copious irrigation**
- **Leave the wound open**
- **No unnecessary change of dressings**
- **Delayed primary closure**
- **No implants, internal fixation, osteosynthesis**
- **Early physiotherapy**



# **Old lessons for new surgeons 3**

**The best antibiotic is good surgery.**

**Inadequate surgical debridement cannot be replaced by antibiotics.**





# Importance of disease

- **During WWI more soldiers died due to disease than due to injury. This only changed during WWII.**
- **Disease still accounts for an important loss of military manpower during contemporary conflict: non-availability of personnel for military duty due to non-battle disease, injury and death .**
  - **USA troops in Korea and Vietnam 80%**
  - **Soviet troops in Afghanistan 67%**



# Patient population

- **Indirect effects of social disorganisation cause 2-15 times more civilian deaths than trauma in many modern conflicts, especially amongst internally displaced persons and refugees. Health system as first victim of war.**
- **Previous status (tsunami: Banda Aceh vs. Sri Lanka)**



# Thank You



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