

Enable!

«Survival for All»
- equal chances
using the right tools

Photo: REUTERS/Adnan Abidi



Workshop Disability and Disaster Preparedness-Toolkit Release, Brussels, 21.5.15

The Challenge

- Equal Chances ?





Saving lives by Optimizing Patient Logistics

**- from Stretcher bearing to a holistic
evacuation Strategy»**

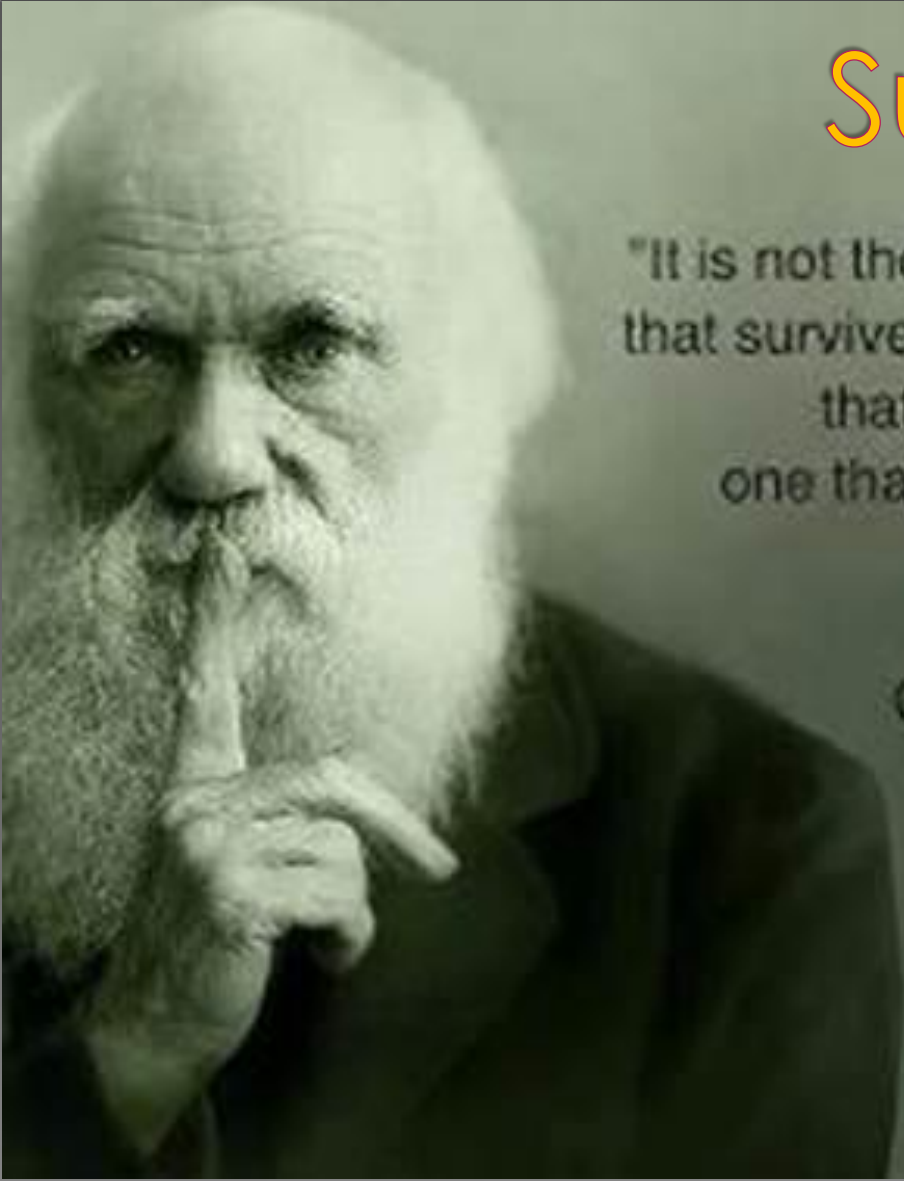
*LESS Ltd
Robert Sunde, Development & Sales
May 2015*

Example:

LESSONS from 2015 Nepal Quakes

- Dr. Meen Chhetri, Disaster Preparedness Network Nepal (DPNet Nepal), 6 May 2015:
- «In a nutshell -- Nepal earthquake has left very important lessons and messages to learn which we can use to save a number of precious human lives and huge amount of physical properties in the days to come.
- The biggest lesson we have learnt is that local communities and people are the major player and very very important factors during such a huge disaster particularly in remote, rural and hilly areas where the government machinery and aid agencies can not reach on time. For this reason we have to make aware, train and equip each and every community to cope with such disasters.»

Survival



"It is not the strongest of the species that survives, nor the most intelligent that survives. It is the one that is most adaptable to change".

Charles Darwin

Survival with the fittest = Survival with the most versatile

Multi-Hazard Emergency Stretcher



less.no

**World's Most Versatile
Stretcher for Preparedness**

Integrated part of LESS - patient evacuation system

The LESS concept:

During **DISASTERS**,
more lives can be saved
by overall focus on
optimizing the patient evacuation chain
- Not only through individual patient treatment

Because we never know:
when-where-what type of disaster



Standardized Disaster Approach

Natural
Disaster

Industrial
Accident

Maritime
Accident

Urban
Rescue

CBRN
Incident

MAN-MADE
Disaster

Large
Traffic
Accident

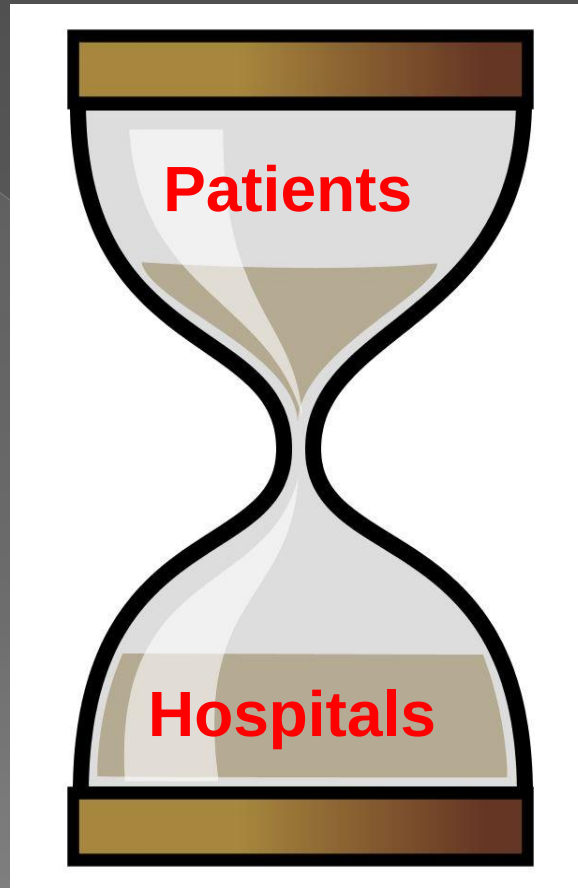
Humanitaria
n Disaster

Unknow
n
?



Define the **bottlenecks** within
the **patient evacuation chain** !

Remove the Bottlenecks



-> Efficient Patient Logistics

Strategy for optimizing patient evacuation

- Define the bottlenecks
- Early request of resources.
- Secure enough stretchers on the scene
- Simple and effective first triage
- Effective stabilizing treatment
- *Prevent* hypothermia.
- Effective patient evacuation through the whole logistic chain.
- Optimize use of resources

LESS Emergency Patient Logistics



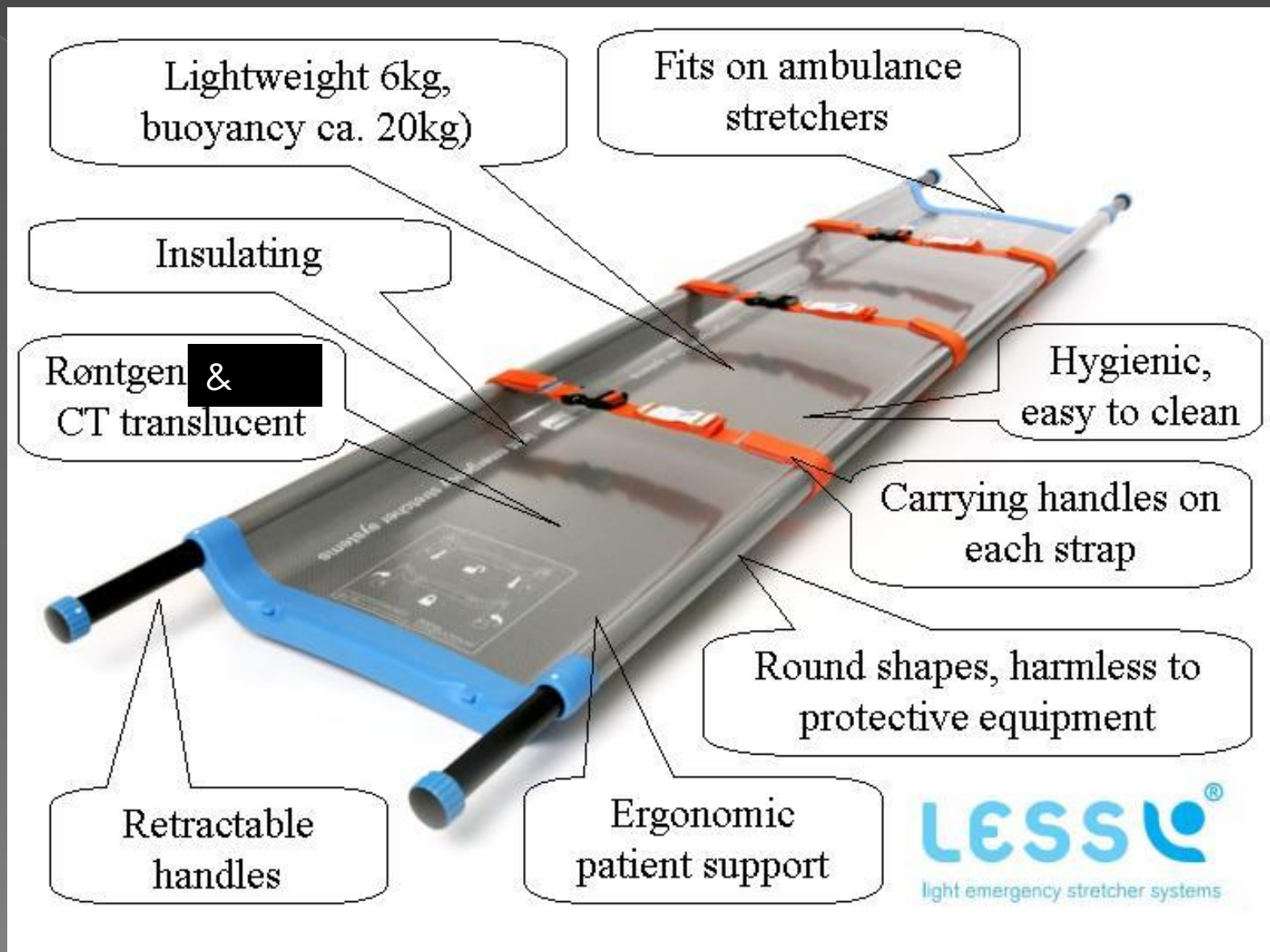
Key Features:

- Lightweight
- Multi-purpose
- Life-saving
- Simple Triage
- Training friendly





Versatile Tool for optimizing patient evacuation



Functionality for optimizing patient evacuation

Multi-Hazard Emergency Stretcher



less.no

**World's Most Versatile
Stretcher for Preparedness**

Integrated part of LESS patient evacuation system

Organizing Stretcher preparedness



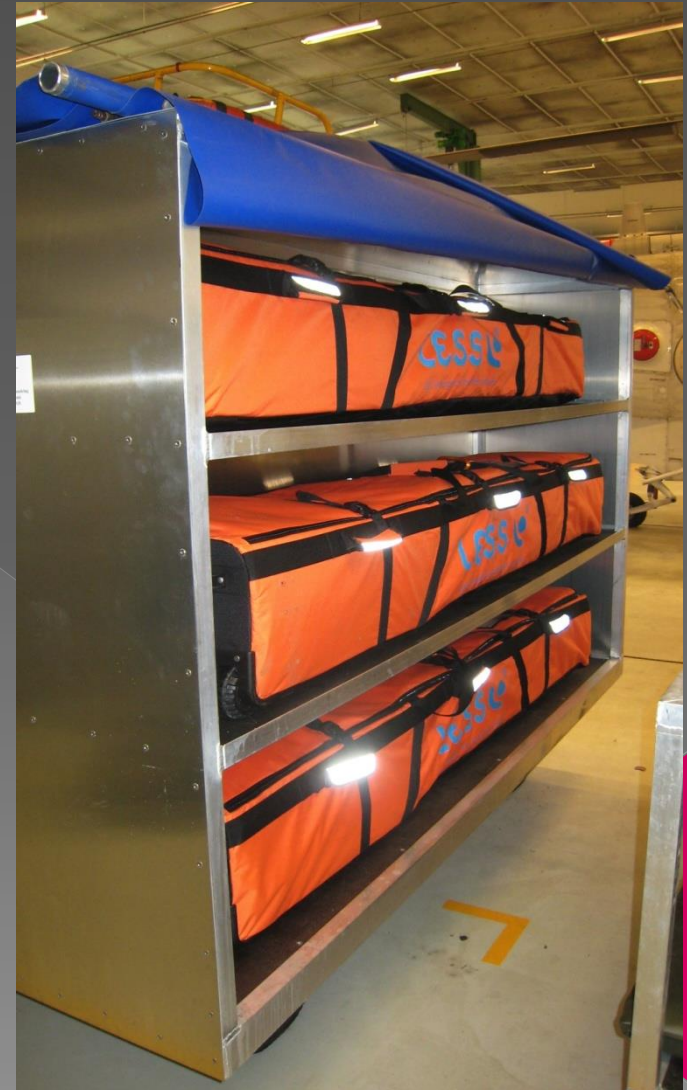
Remote Disaster Response Unit



Tunnel preparedness



Norwegian Military, 330 Sq. Rescue helicopters



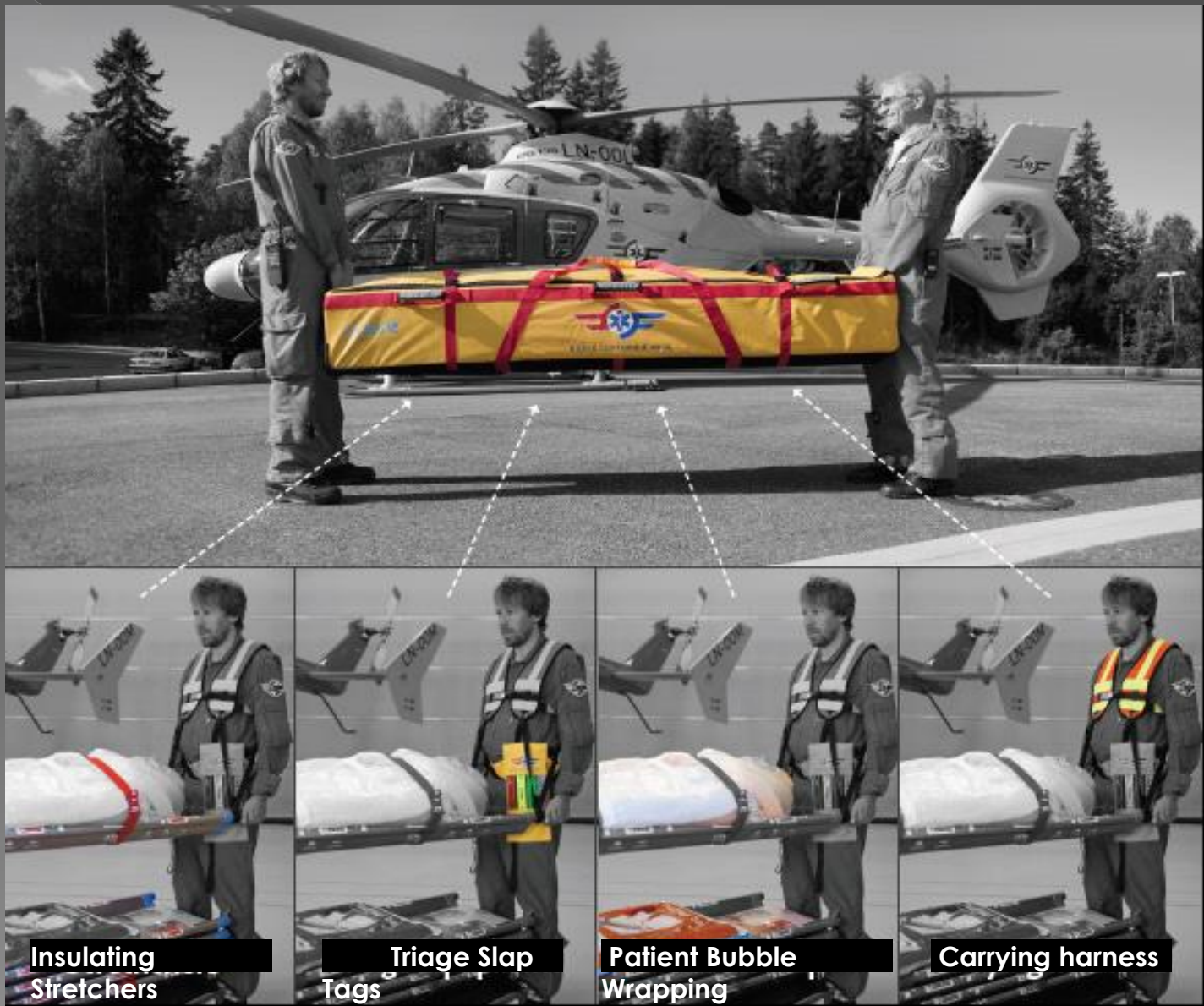
Norwegian Air Ambulance



*Strategic stocks in hangar:
Mass casualty Emergency Stretcher Packs.*



Norwegian Air Ambulance





Rapid Response Unit



**LESS stretchers
Patient Triage
and wrapping**



Rescue tent w/lighting



Multifunctional stand

-Stretcher Stand
-Bench
-Emergency
Ladder



**Portable
& mobile
heating**



Norway 22-7-2011: LESS stretchers were key tools

Emergency equipment

The overall impression is that sufficient medical equipment was available at both scenes and that little equipment was actually used because the focus was on rapid triage and evacuation. The LESS stretchers [10] were probably the most useful rescue equipment. At both casualty-clearing stations in the Utøya island incident, LESS stretchers were laid out in the patient arrival/triage zone and stayed with the patients throughout the evacuation, as intended. We believe that this process helped to reduce patient discomfort and improved logistics. The availability of LESS stretchers was limited, however, because they are not available in all EMS systems.



Oslo, 22.07.2011



Utøya, 22.07.2011



Utøya, 22.07.2011



Interdisciplinary training



Interdisciplinary training



Interdisciplinary training, with patient bubble-wrapping



All-weather patient wrapping Reducing Risk of Hypothermia



All-weather patient wrapping Reducing Risk of Hypothermia



Compatible to all EN1865 Ambulance Stretchers

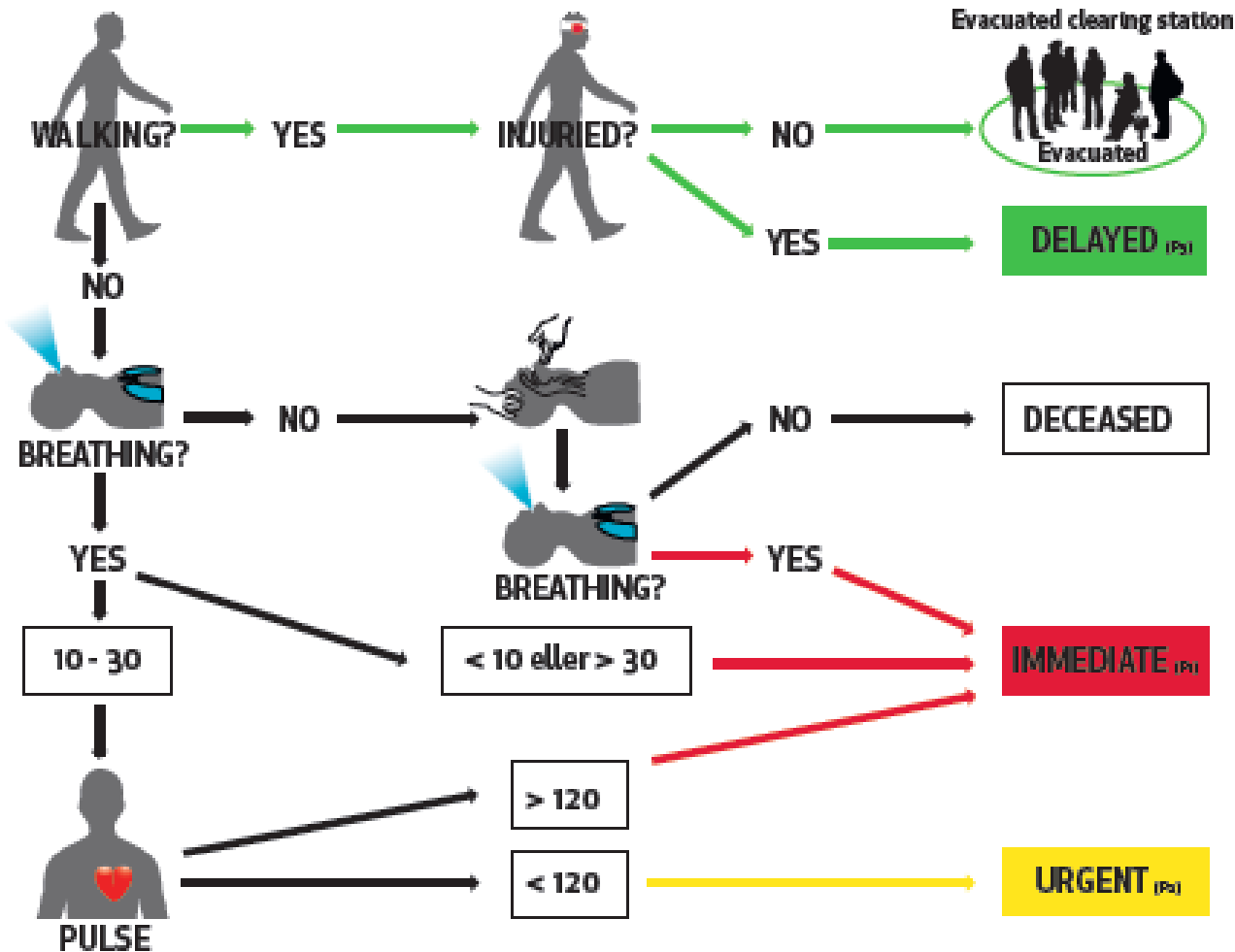


Compatible to all EN1865 Ambulance Stretchers



Basic Principles for Adult Triage

Individuals over 140 cm



Simplified First Triage with Slap tags



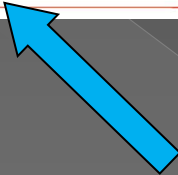
Pediatric Triage



100-140 cm

 **RESP** < 10 or > 30

 **PULSE** < 70 or > 140



TRIAGE: BARN

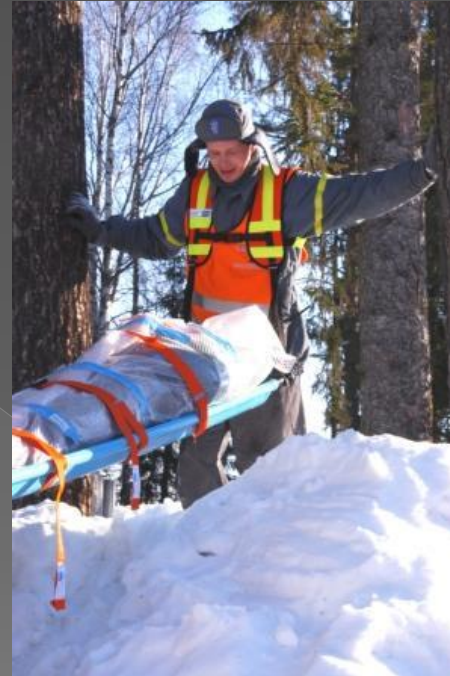
Heyde	Vekt	Vitalverdier	Prioritet
< 50 cm	< 3 kg		AKUTT
50-80 cm	3-10 kg	Resp < 20 eller > 50 Puls < 90 eller > 180	AKUTT
80-100 cm	11-18 kg	Resp < 15 eller > 40 Puls < 80 eller > 160	AKUTT
100-140 cm	19-32 kg	Resp < 10 eller > 30 Puls < 70 eller > 140	AKUTT

Barn over 140 cm prioriteres som voksne.



Paediatric triage tape stretcher. Details: paediatric vital signs reference values.

Free Hands with Carrying Harnesses



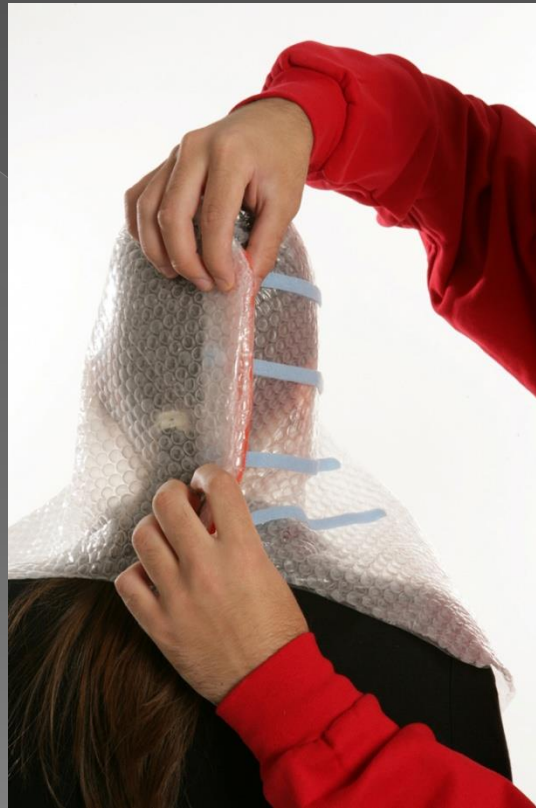
- ✓ Assist patient
- ✓ Support in uneven terrain
- ✓ Open door, make phone call etc.
- ✓ Less fatigue in longer distances

Why protecting against temperature loss?

Some facts on Hypothermia:

- Temp. loss of 1-2 degrees result in shivering and more O₂ usage: 400-600% up.
- At 33°C coagulation reduced to 50% (Johnston et al. 1994).
- Narrowing veins: danger of bloodclots (Keatinge et al. 1984)
- Effect of medication changes. (Menard & Hahn 1991)
- Higher death rate among hypothermia patients than similar trauma patients (Injury Severity Score) (Jurkovich (1987)
- Reduced immunity: danger of infections (Lewin 1981)

Essential to protect head and neck



Immediate temperature protection saves lives



All-Hazards approach requires versatile tools



Mobile Decontamination Unit

Maritime Rescue

**20 kgs oppdrift i vann.
Meget god flytehjelp.**

**LESS bære i vannredning.
Multifunksjonelt redningsverktøy.**



Maritime Rescue



Maritime Rescue



Maritime Rescue



Unsafe Ice Rescue



Natural Disaster, Technical Rescue



Natural Disaster, Logistical challenges



Natural Disaster, Difficult Patient Logistics



Large Traffic Accident, Difficult Patient Logistics



Large Traffic Accident, Difficult Patient Logistics



Large Traffic Accident, Difficult Patient Logistics

**All 34 pax injured (19 severe)
and admitted to hospital:**

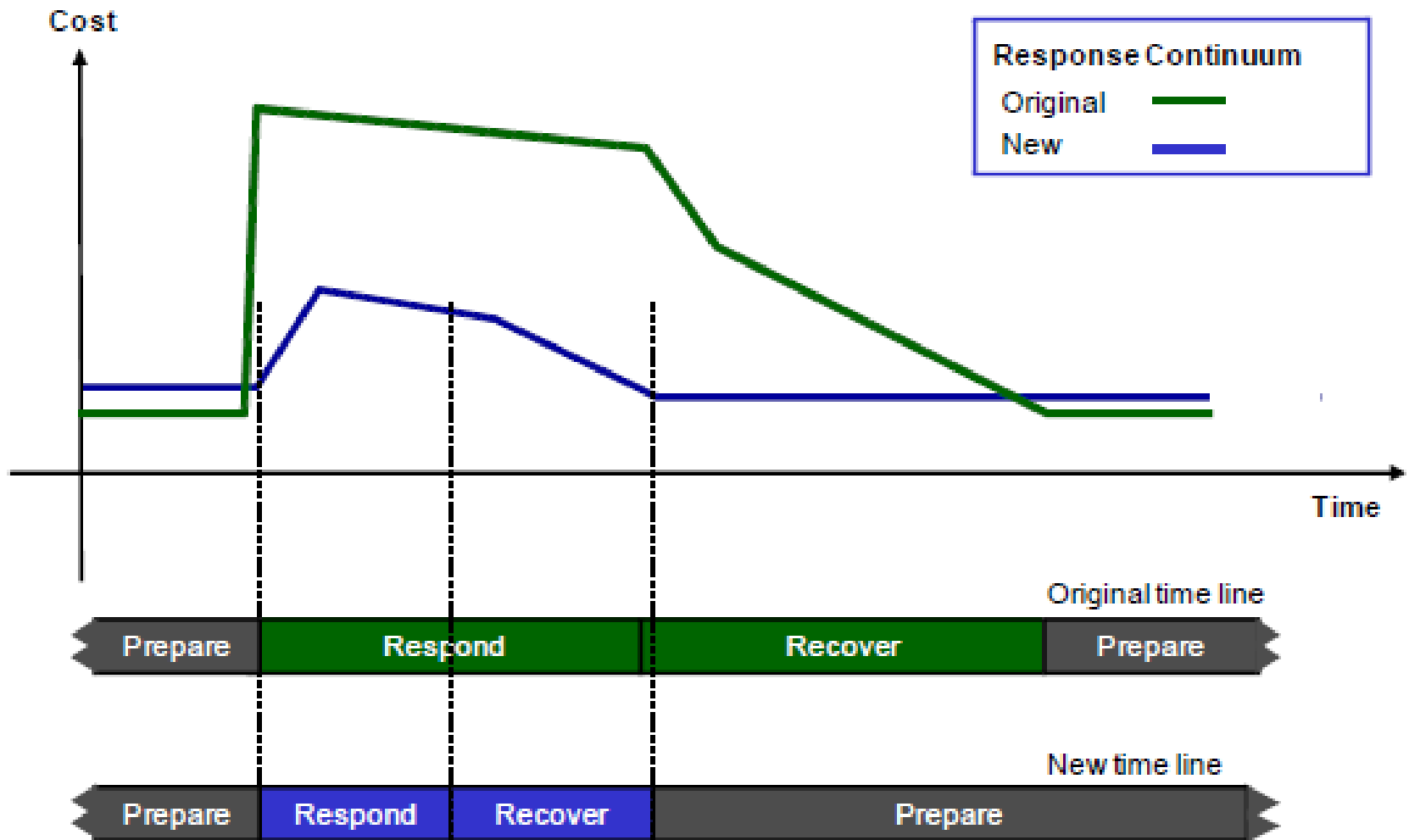
Source: Rädningsverket

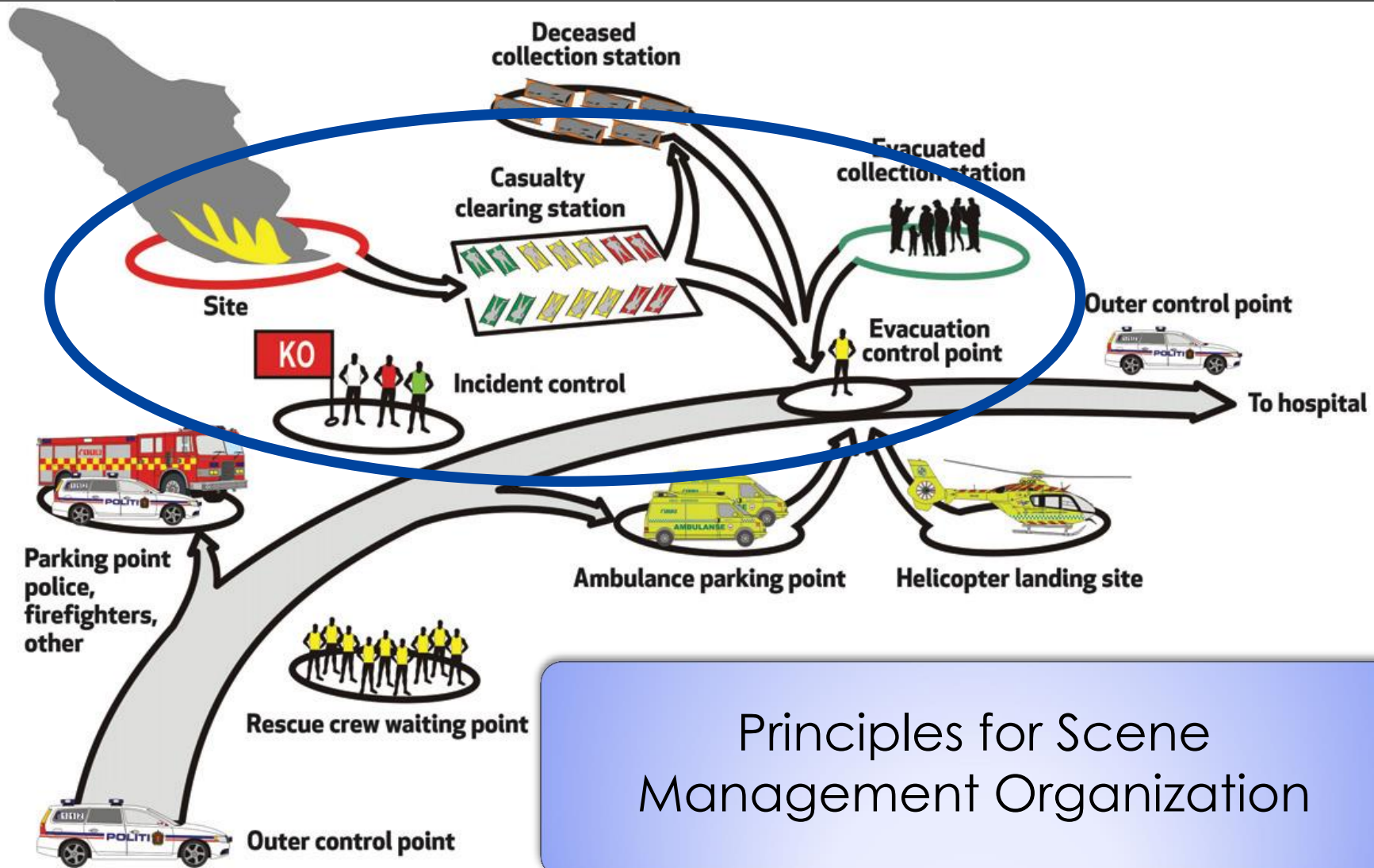
Total hospital time: 2 yrs, 7 mths

Society costs: 5,8 mill. Euro

(Albertsson, 2003)

Preparedness pays...





Principles for Scene Management Organization







Samlingsplass
for døde

Spærre-
post

KO

Evakuering /
kontrollpunkt

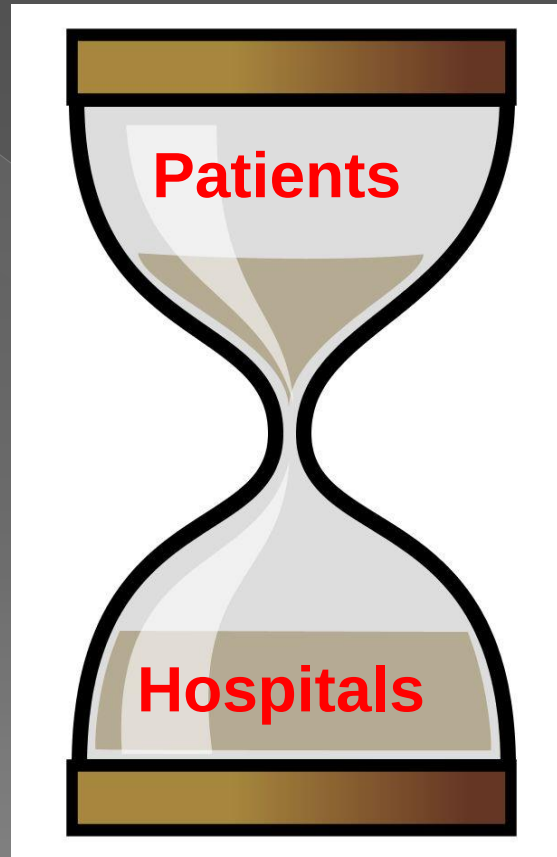
Vente-plass
for evakuerte

Spærre-
post

**Preparedness:
it can be done!**

**A disaster is not the event itself but
the lack of capability to deal with it.**

**Remember: Optimize Patient Evacuation -
Remove the Bottlenecks !**



-> Effective Patient Logistics: Saves Lives!



**Thank you –
Have a safe day!**

LESS Ltd - Our Vision:

*to be a leading supplier within patient logistics,
stretcher equipment with accessories for
a holistic evacuation and rescue strategy
during large incidents and disasters.*



Saving lives is our GOAL !

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www.less.no

[h !\[\]\(e8c13760be80e290331c1bce7c2e6e28_img.jpg\) /www.facebook.com/pages/LESS-Emergency-Equipment/137629009609388](https://www.facebook.com/pages/LESS-Emergency-Equipment/137629009609388)

Blog: www.lesshypothermia.wordpress.com

About LESS as

- Norwegian Company LESS AS (Inc. 2003) is a leading company specialized in training friendly solutions for disaster preparedness and response. Through collaboration with leading rescue services in Norway and abroad, we have developed unique solutions for optimizing patient logistics during major incidents. Among our customers are rescue services, airport and railroad authorities, civil defence units, NGO's, and UN organizations. LESS is member of [TIEMS](#), [ICDO](#) and [NOREPS](#).