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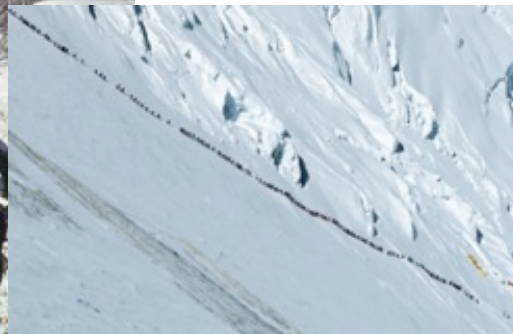


## Medical aspects in disaster management

# Tahoe 2014



# What mou



# MCI in Mountain

- ❑ Around 15 major MCI in France over last 10 years
- ❑ General considerations
  - ❑ few number of victims already MCI in mountain (10 to 15)
  - ❑ MCI = When resources are missing to deal with the situation
  - ❑ Medical management = Medical care + Organization
  - ❑ Each event is unique but principles are the same
  - ❑ In mountain, even non injured people can die because they are exposed to fatal hazards
- ❑ Theoretical aspect of medical management

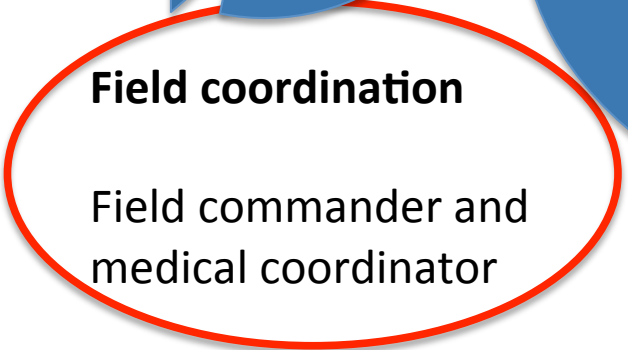


Appropriate Medical facilities



Commanding post

Main commander  
+ Dispatching med co



**Field coordination**

Field commander and  
medical coordinator

Authorities

Medias



**Main Goals in disaster medicine**

**Saving as many lives as possible**

**Focusing on organization instead of medical care**

**Changing spirit: from emergency medicine to disaster medicine**

**General concept**

**Setting up an efficient Rescue Chain**

- *Searching (location)*
- *Rescuing (first aid)*
- *Grouping*
- *Providing ID*
- *Sorting (triage)*
- *Treating*
- *Evacuating*

**First Step**

**Setting up rescue chain**

**Collecting information / Fast analysis / First decisions**

**First medical staff + rescuer on site**

**Second Step**

**Setting up commanding chain**

**Coordination / Direction**

**Medical Coordinator + Operational Commander**

**Third Step**

**Setting up communication system.**

**Collecting and transmitting accurate information**

**Fourth Step**

**Strengthening process**

**Organising additional Human and logistical resource**

**Dispatching Med Coordinator +**

**Fifth Step**

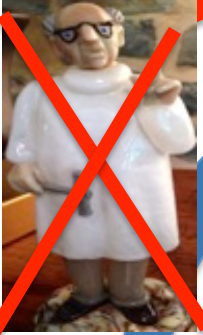
**Inform authorities, Media communication strategy**

**Evacuating people to adapted medical facility**

**Main Commander**



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Collection NORIA



Advanced Medical Post



EVACUATION  
NORIA





Collection NORIA



EVACUATION NORIA



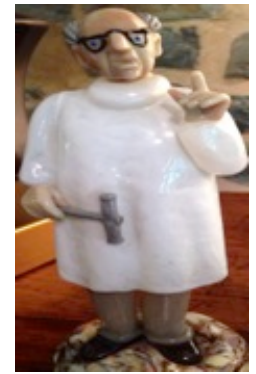


## Search and Rescue

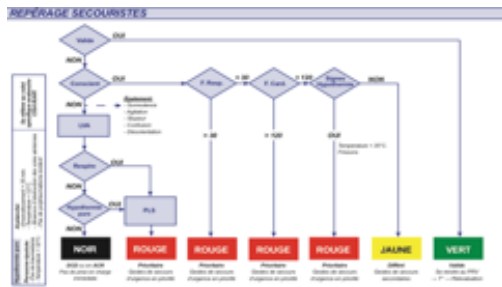


- Define order priority to transfer to AMP
- Survival Basic Life Support:
  - free airway,
  - Haemorrhage control,
  - Cold protection

## Medical Triage



- Assessing medical condition
- Defining priority of patient treatment and evacuation (immediate care, urgent treatment, possible delay, out of resources)



TRIAGE MEDICAL		Medecin:	Heure:	Site:	Chantier	PMA
<b>URGENCES ABSOLUES</b>		<b>URGENCES RELATIVES</b>		<b>IMPLIQUE</b>		
<input type="checkbox"/> <b>EXTRÊME URGENCE</b> - Détresse vitale potentielle - Gestes de sauvetage immédiats	<input type="checkbox"/> <b>U1</b> - Risque vital potentiel - Risque fonctionnel - Gestes de stabilisation sur place - Traitement chirurgical < 6 heures	<input type="checkbox"/> <b>U2</b> - Pas de risque vital - Gestes d'attente - Traitement chirurgical < 12 heures	<input type="checkbox"/> <b>U3</b> - Blessure légère - Surveillance / Réévaluation - Traitement différé < 36 heures	<input type="checkbox"/> <b>UD</b>		
<input type="checkbox"/> Détresse circulatoire aiguë	<input type="checkbox"/> Traumatisme haute énergie cinétique	<input type="checkbox"/> Fracture de membre	<input type="checkbox"/> Traumatisme de membre simple	<input type="checkbox"/> UD		
<input type="checkbox"/> Détresse respiratoire aiguë	<input type="checkbox"/> Polytraumatisme	<input type="checkbox"/> Plaies superficielles	<input type="checkbox"/> Contusion	<input type="checkbox"/> DCD		
<input type="checkbox"/> Resuscitation (avariation)	<input type="checkbox"/> Hypothermie < 32°	<input type="checkbox"/> Brûlures < 30%	<input type="checkbox"/> Brûlures < 15%	Observation médicale:		
	<input type="checkbox"/> Trauma crânien comateux	<input type="checkbox"/> Trauma crânien concussif				
	<input type="checkbox"/> Trauma grave abdomen	<input type="checkbox"/> Trauma grave thorax				
	<input type="checkbox"/> Trauma grave bassin	<input type="checkbox"/> Trauma vertébro-médullaire				
	<input type="checkbox"/> Trauma de membre grave / ostéotomie	<input type="checkbox"/> Trauma de membre grave / ostéotomie				
	<input type="checkbox"/> Brûlure > 30%	<input type="checkbox"/> Brûlure > 30%				
	<input type="checkbox"/> Plaie ouverte	<input type="checkbox"/> Plaie ouverte				
	<input type="checkbox"/> Trouble psychique grave	<input type="checkbox"/> Trouble psychique grave				





## Advanced Medical Post

Stabilisation

Evacuation to adapted medical facility



Appropriate Medical facilities



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# Tools



N°fiche de l'avant	horaire triage couleur	PMA	
		bilan	médicalisation
3408		fracture poignet	vitalin/ morphine PO
3414	12H00	TRAUMA PSY	CLIMP
3421	12H00	TRAUMA PSY	CLIMP
3406	12H02	TRAUMA PSY	CLIMP
3429		douleur respiratoire sans détresse	morphine PO
F730509	12H05	MULTISME	CLIMP
F730507	12H30	TRAUMA PSY	CLIMP
3412	14H30	THORAX DYSPNEE	O2
3444		ACR	
3420			
3411	14H00	TC GCS 15 NON FOC	
3407	14H00	TRAUMA MEDULAIRE	
3437			
3414	14H40	TRAUMA RACHIS NON NEURO	
3436	14H40	SCALP SUTURE	
3427		ABDOMEN AIGU INSTABLE	REMPUSAGE
3441	13H50	COMA NON FOCALISE INTUBE	
3430	14H00	FRACTURE JAMBRE	IMMOBILISATION VIP MORPHINE SUPENTA
3440	14H05	LUXATION EPAULE	REDUCTION
3428	13H15	BASSIN HYPOTENDU	IMMOBILISATIONS/ REMPLISSAGE/SUPENTA
3418		TC GCS 14	IMMOBILISATION
3405			
3417	14H15	FRACTURE BIMALLEOLAIRE	IMMOBILISATION ANALGESIE

N° Ordre	Secouriste	Équipe / Fonction	Heure d'entrée	Heure de sortie	Destination	DVA / Matériel	Divers





Aussois 2012

# Simulations



Valloire 2014

La Grave 2014



Valfréjus 2013

# What we have learned from simulations (1)

- ❑ Communication and Language : the key issue

- ❑ Who's the boss ? Leadership !

  - ❑ Decision making

  - ❑ Coordination

- ❑ Be prepared

  - ❑ Training

  - ❑ Adaptability to different situations , flexibility



## What we have learned from simulations (2)

- Available **logistical** items already prepared and adapted to wilderness Environment
- Medical Chart** adapted to mountain MCI (hypothermia, avalanche...)
- Field **organization check-lists** adapted to mountain
- Available **Communication tools** and strategy

# What we have learned from simulations (3)

- ❑ Impact point and Field Management = Mountain rescue job !



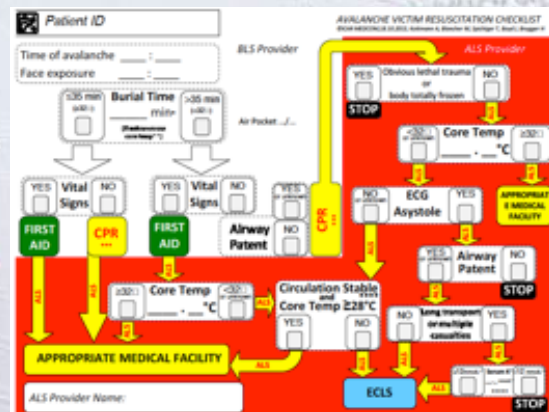
## INTER AGENCY COORDINATION

- ❑ Evacuation = classical rescue department



# Specific issue : Avalanche MCI

- ❑ **Double « triage »**: Searching and extrication strategy before medical triage
- ❑ **Accidental hypothermia and Rescue collapse** : Not Black but Red ! Good survival chance
- ❑ **Add Avalanche Icar Med com check -list to MCI Chart**







# Training

- ❑ « Disaster medicine » skills to be added to advanced mountain medicine diploma.

- ❑ Principles of MCI management needs to be set up on every day base.

When resources < rescue needs

- ❑ Regular training

- ❑ Regular debriefing and experience sharing

- ❑ Do not forget psychological aspects



# Conclusion

- ❑ Multi-casualty incidents happen in Mountain!
- ❑ Few people but big organization and a lot of rescuer.
- ❑ Difficult access and evacuation in wilderness environment.
  
- ❑ Adapting right resource to right person in order to save as many lives as possible. Good triage and organisation
  
- ❑ MCI in mountain : Mountain rescue job !
- ❑ Mountain Rescue Teams (Medical staff, rescuers, pilots) has to be familiar with Disaster management principles.

Thank you for your attention