

CURRENT STATUS OF MEDICAL TRAINING IN MOUTAIN RESCUE

Evaluation of Medical Training in ICAR Member Organizations by ICAR MEDCOM 2007

Authors:

F.Elsensohn, M. Swangard, T. Niederklapfer, J. Ellerton,
H.Brugger, P.Paal

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MEDICAL EMERGENCIES IN THE MOUNTAINS PRESENT A SEVERE RISK TO PATIENTS HEALTH

- TRAUMA
- SHOCK
- AVALANCHE ACCIDENTS
- COLD INJURIES
- INTERNAL MEDICINE EMERGENCIES
- CANYONIG ACCIDENTS
- HEAT AND LIGHTNING
- NEUROLOGICALDISORDERS
- PSYCHOLOGY
- LEGAL ISSUES
- HYGIENE
- ETHICAL PROBLEMS
- HIGH ALTITUDE SICKNESS
- MASS ACCIDENTS
- HELICOPTER RESCUE



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Special Situations in Mountain Rescue Reduce Outcome

Environment:

snow, cold, rain

Terrain:

Steep terrain, rocks,
forests, canyons

Avalanches

Organization:

Reduced but heavy equipment

Long response time

Limited medical training

Long access and evacuation time



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What improves outcome ?

Advanced Medical Training (Ali et al., 2007)

Basic Life Support (Abella et al. 2005)

- requires short time (Wik et al. 2005)
- inexpensive



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Incidents of Emergencies in the Mountains

Mountaineering accidents in the European Alps: have the numbers increased in recent years?

Lischke et al., 2001

Number of accidents increasing, fatalities stagnating

The Scottish mountain rescue casualty study.

Hearns, 2003

Need for improved training, research, and equipment

No world-wide data



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Activity	injured	dead
Pist and Skiroutes	3925	42
Hiking and Climbing	793	132
Lift-accidents	283	1
Off pist skiing	208	11
Mountain biking	229	3
Rock climbing	164	17
Paragliding/Hangliding	152	18
Back-country skiing	120	17
Sleding	90	1
High Mountain climbing	46	6
Hunting	14	6
Cross country skiing	17	3
Canyoning	16	1
Adventure parks	9	0
Ice climbing	6	1
Cave accidents	2	0
Atypical mountain accidents	316	70
Summary	6390	329

Medical Emergencies in the Mountains Austria 2007

(Kuratorium f. Alpine Sicherheit 2008)



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Survey about Medical Training in Mountain Rescue in America and Europe

33 Organizations from 18 countries

17 chapters with about 90 questions

Main topics:

Contents of medical training and retraining

Duration of training and retraining

Qualification of instructors, methods of training

Payments and funding

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Country	Mountain Rescue Services			
Argentina	Club Andino Bariloche			
Austria	Österreichischer Bergrettungsdienst		Christophorus Flugrettung	
Bosnia Herzegovina	Gorska Sluzba Spasavawja			
Bulgaria	Bulgarian Mountain Rescue Service			
Canada	Parks Canada	Ski Patrol- Atlantic West Division	Ski Patrol- Prince George Zone	North Shore Rescue
Czech Republic	Horska Sluzba Ceske Republiky			
Germany	Bergwacht Bayern			
Greece	Hellenic Rescue Team			
Italy	Bergrettungsdienst im AVS	CNSAS	CNSAS Alto Adige	
Liechtenstein	Bergrettung Liechtenstein			
Norway	Norsk Folkjehelp	SuolvaerAlpine Redningsruppe	Norske Redningshunder	
Poland	Polish Mountain Rescue			
Slovenia	Gorska Rezevalna Zveza Slovenije			
Spain	Guardia Civil	Servei de Rescat a Pistes		
Sweden	Swedish Mountain Rescue	Swedish Police	Swedish Ski Lift Areas Organization	
Switzerland	Air Zermatt	Alpine Rettung Schweiz	KWRO	REGA
United Kingdom	MRC (England/Wales)	Mountain Rescue Council Scotland		
USA	United States Mountain Rescue			

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Who is training the rescuer?

The own organization: 24 (73%)

Augmentation by External instructors: 15 (45%)

BLS 18 (55%)

Trauma 16 (49%)

intern.Med. 12 (36%)

Standardized Medical training: 22 (67%) !!!



Who is training the rescuer?

	Physicians	Nurses	Paramedics
BLS certified	19 (58%)	9 (27%)	10 (33%)
ALS certified	15 (45%)	7 (21%)	6 (18%)
Instructor course req.	9 (27%)	14 (42%)	12 (36%)

Well trained instructors improve training outcome

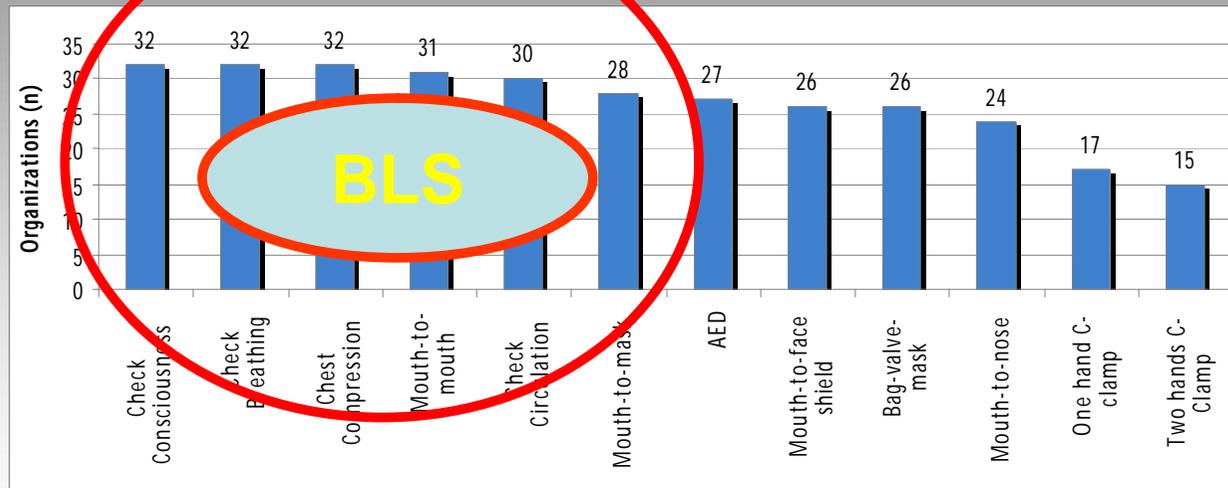
!! 50 % of instructors know ICAR guidelines !!



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What is trained



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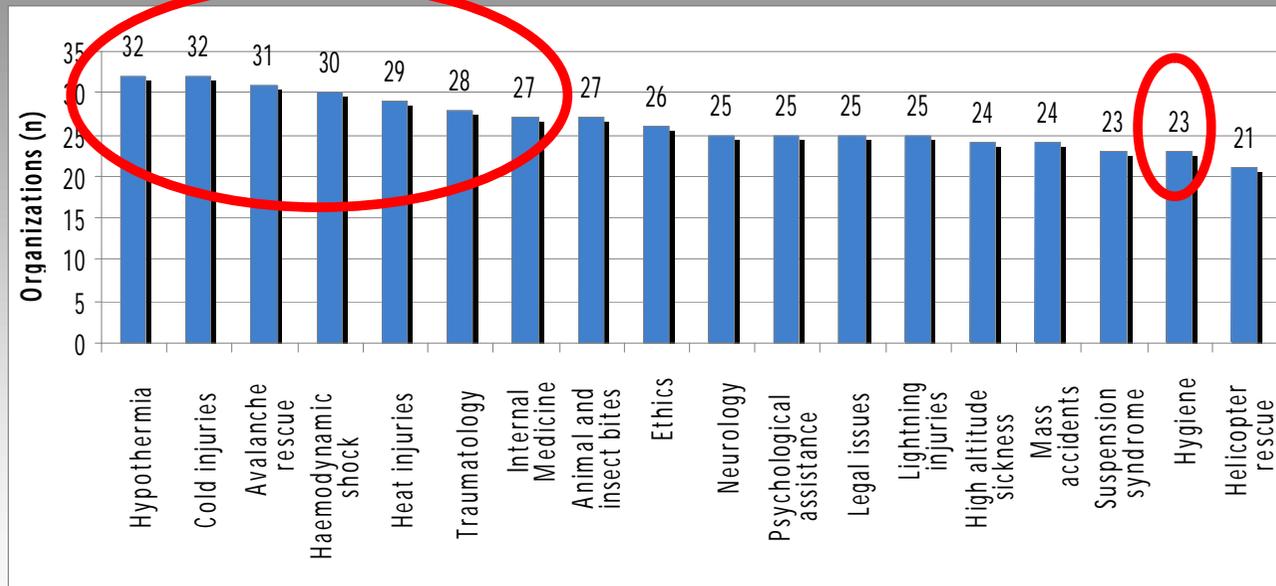
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What is trained



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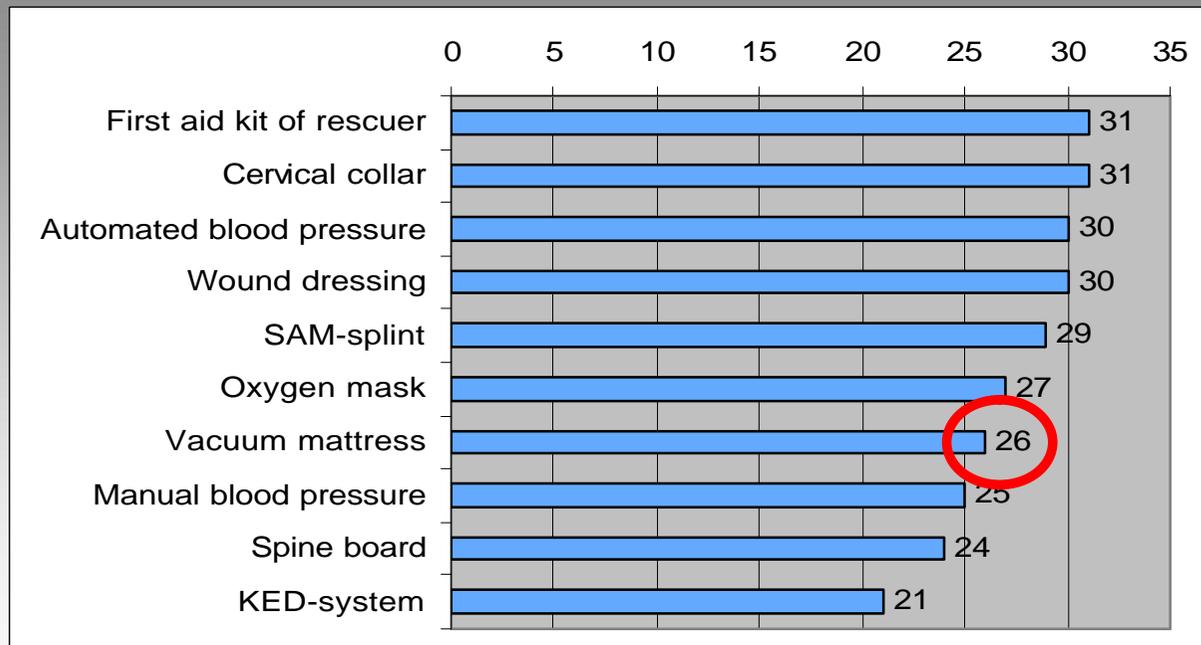
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What is trained



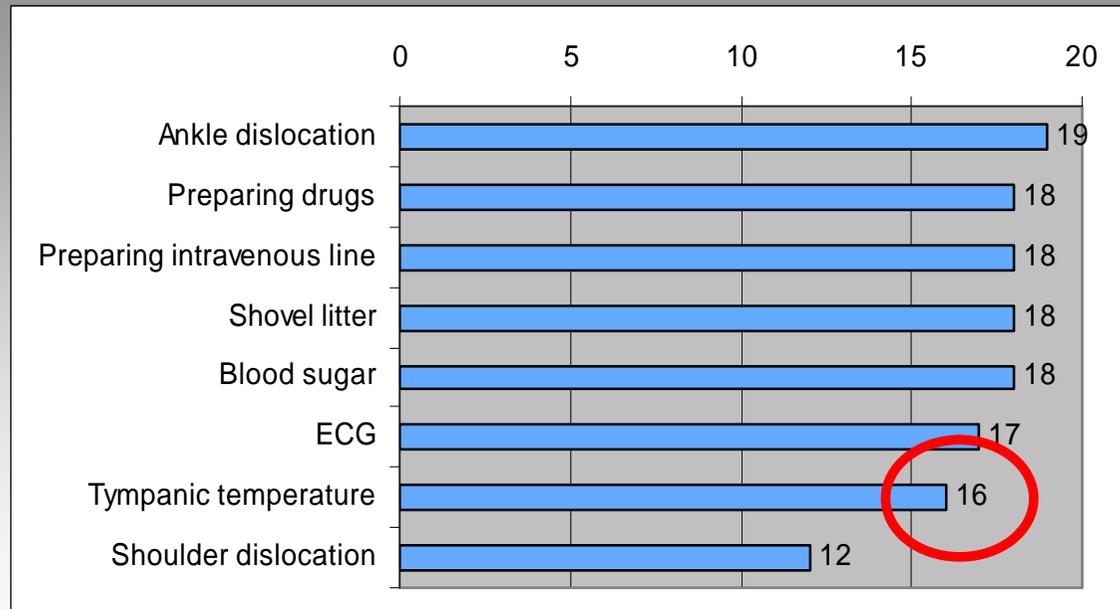
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What is trained



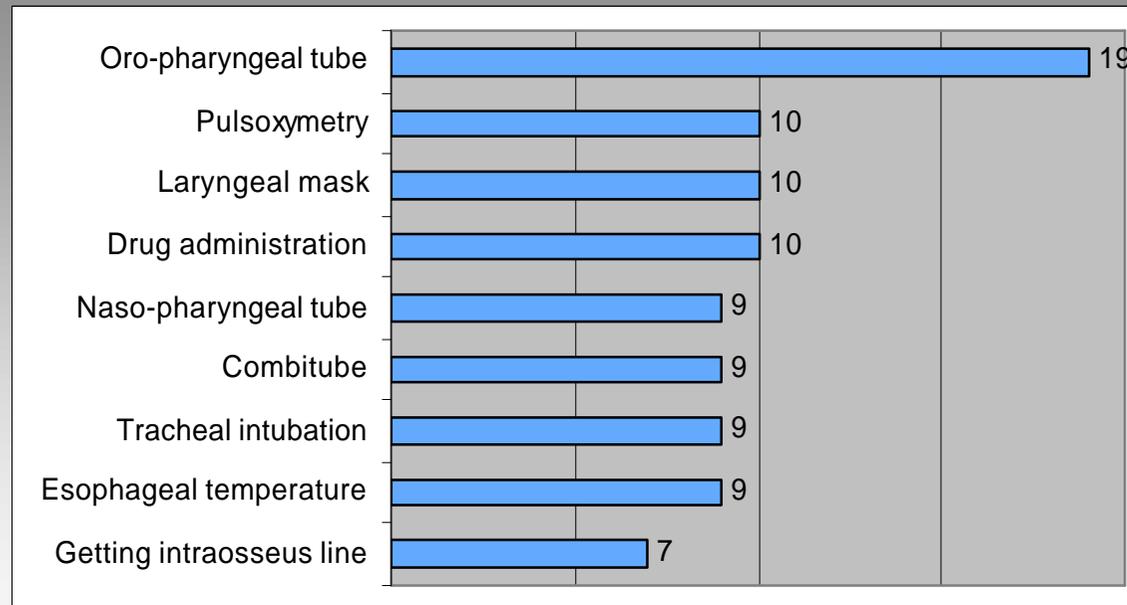
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What is trained



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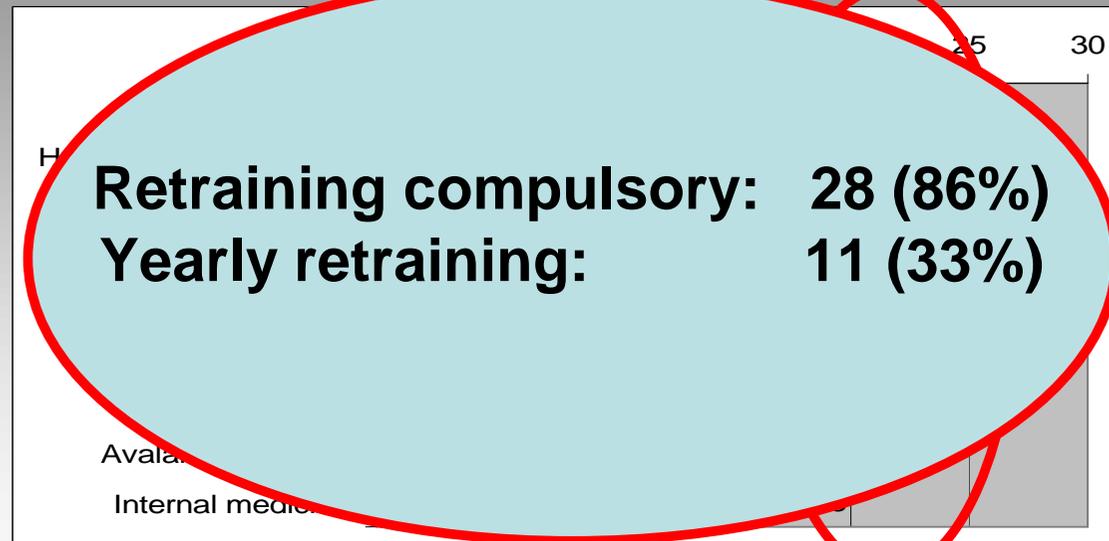
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What is retrained



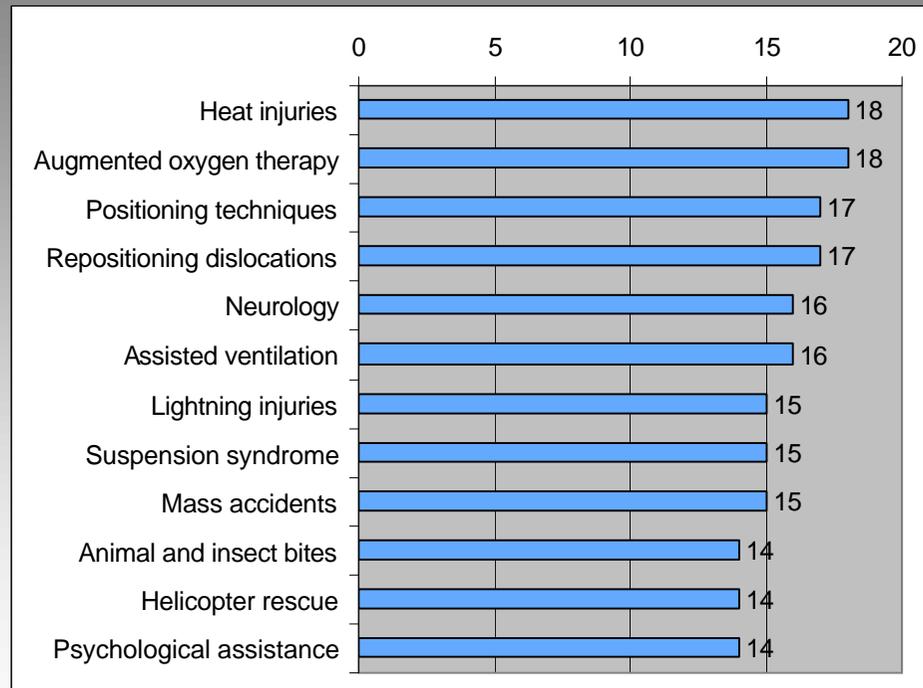
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What is retrained



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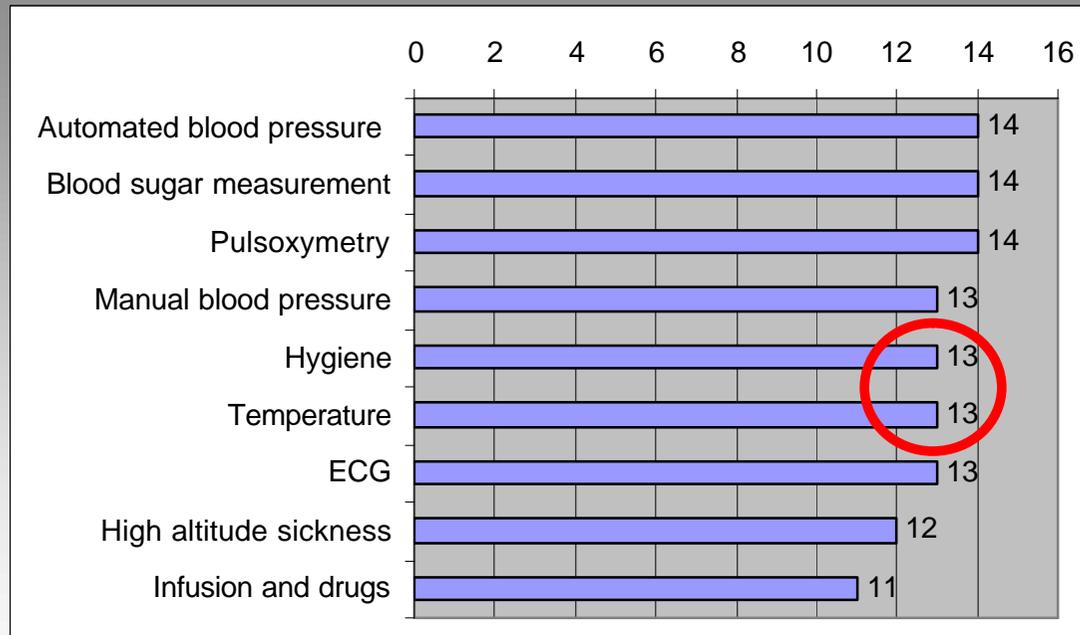
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What is retrained



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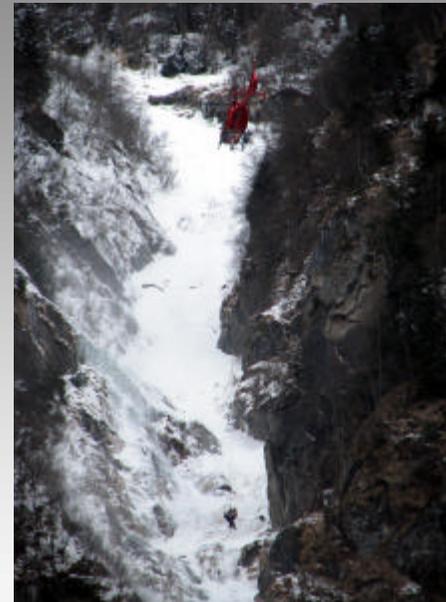


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Are there compulsory requirements in the medical training?

Yes	20 (60%)
No	12 (36%)
Defined by law	6 (18%)
No	18 (54%)
Partially (for higher stages)	6 (18%)



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DURATION OF MEDICAL TRAINING

- ✍ **WIDE VARIETY FROM 10 TO 500 HOURS**
- ✍ **MOST ORGANIZATIONS HAVE DIFFERENT STAGES OF TRAINING**
- ✍ **STAGES HAVE DIFFERENT DUTIES IN MOUNTAIN RESCUE**
- ✍ **STAGES ARE NOT COMPARABLE BETWEEN DIFFERENT ORGANIZATIONS**



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DISCUSSION

- >60% of injuries are trauma¹ → Trauma Management
- BLS and AED improve survival^{2,3} → Training
- Hygiene reduces morbidity → Think and practice it
- cervical collar and vacuum
matress reduce further injuries^{?,?} → Training
- Examinations improve skills⁶ → Motivation
- Basic life support skills are lost
rapidly^{7,8} → Annually Retraining

1 Hearn et al. 2005; 2 Gottschalk et al. 2002; 3 Eisensohn et al. 2006 4 Hamilton et al. 1996; 5.Hearn et al. 2006;
6 Margolis et al. 2008; 7 Eisenburger et al.1999, 8 Paal et al. 2007

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PAYMENTS AND FUNDING

RECEIVE PAYMENTS FOR	SELF %	ORGANIZATION %	GOVERNMENT %
instructors course	18	51	12
First responder course	24	70	12
Rescuers equipment	21	76	9
	Yes %	No %	nA %
Rescue time	40	60	0
Training time	24	72	3
Instructors	51	42	6
Funding is adequate	60	40	
Need to change funding	25	60	5
Need to change training	60	35	5
Need to increase training	75	20	5

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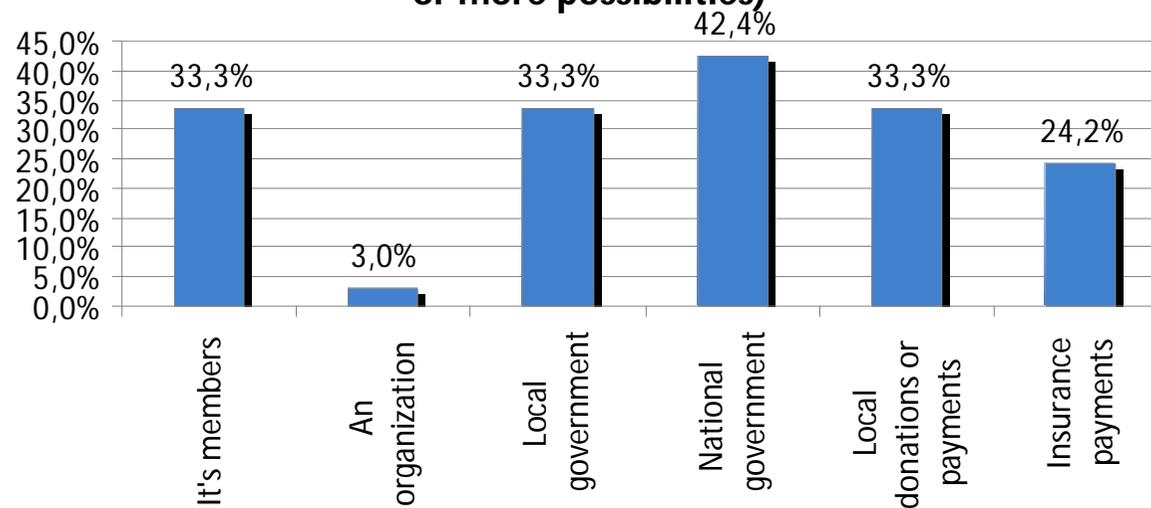


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PAYMENTS AND FUNDING

The organization derive most of it's fundings from (one or more possibilities)



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CONCLUSION

MEDICAL TRAINING

- ✍ **COMPULSORY AND STANDARDIZED**
- ✍ **INCLUDE LIFESAVING TOPICS**
- ✍ **TAILORED TO THE AREA**
- ✍ **PERFORMED BY HIGHLY QUALIFIED INSTRUCTORS**
- ✍ **INCLUDE MEDICAL EQUIPMENT**
- ✍ **SKILLS SHOULD BE EXAMINATED**



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CONCLUSION

MEDICAL RETRAINING

- ✍ **COMPULSORY AND STANDARDIZED**
- ✍ **ON A YEARLY BASIS**
- ✍ **FOCUSED ON LIFESAVING TOPICS**
- ✍ **ADAPTED TO THE DIFFERENT STAGES**
- ✍ **SKILLS SHOULD BE EXAMINATED**



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CONCLUSION

FUNDING SHOULD BE INCREASED TO MEET
HIGHER STANDARDS

TRAINING SHOULD BE STANDARDIZED BY
MOUNTAIN RESCUE ORGANIZATIONS

NATIONAL OR INTERNATIONAL NORMS
SHOULD NOT LIMIT MEDICAL TRAINING



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