MM2011

Corpo Nazionale di Soccorso Alpino
e Speleologico CNSAS

Epidemiology and treatment of trauma in urban vs. remote areas

Everything You Always Wanted to Know About Trauma*

(*But Were Afraid to Ask)

EURAC
Bolzano, 25 march 2011

Mario Milani
Medical Director
CNSAS - Italy

Questions

- How much remote is a remote area?
- How big the problem is?
- Which sort of accident is more frequent?
- Which standards of treatment: what does it mean “normal” treatment in the Country (region, province) where you are?
- Which protocols are applicable? By who?
- Which devices?

definition

- **ur·ban (ûr’bən)** ˈəːbən ˈɜːbən

adj.

1. Of, relating to, or located in a city.

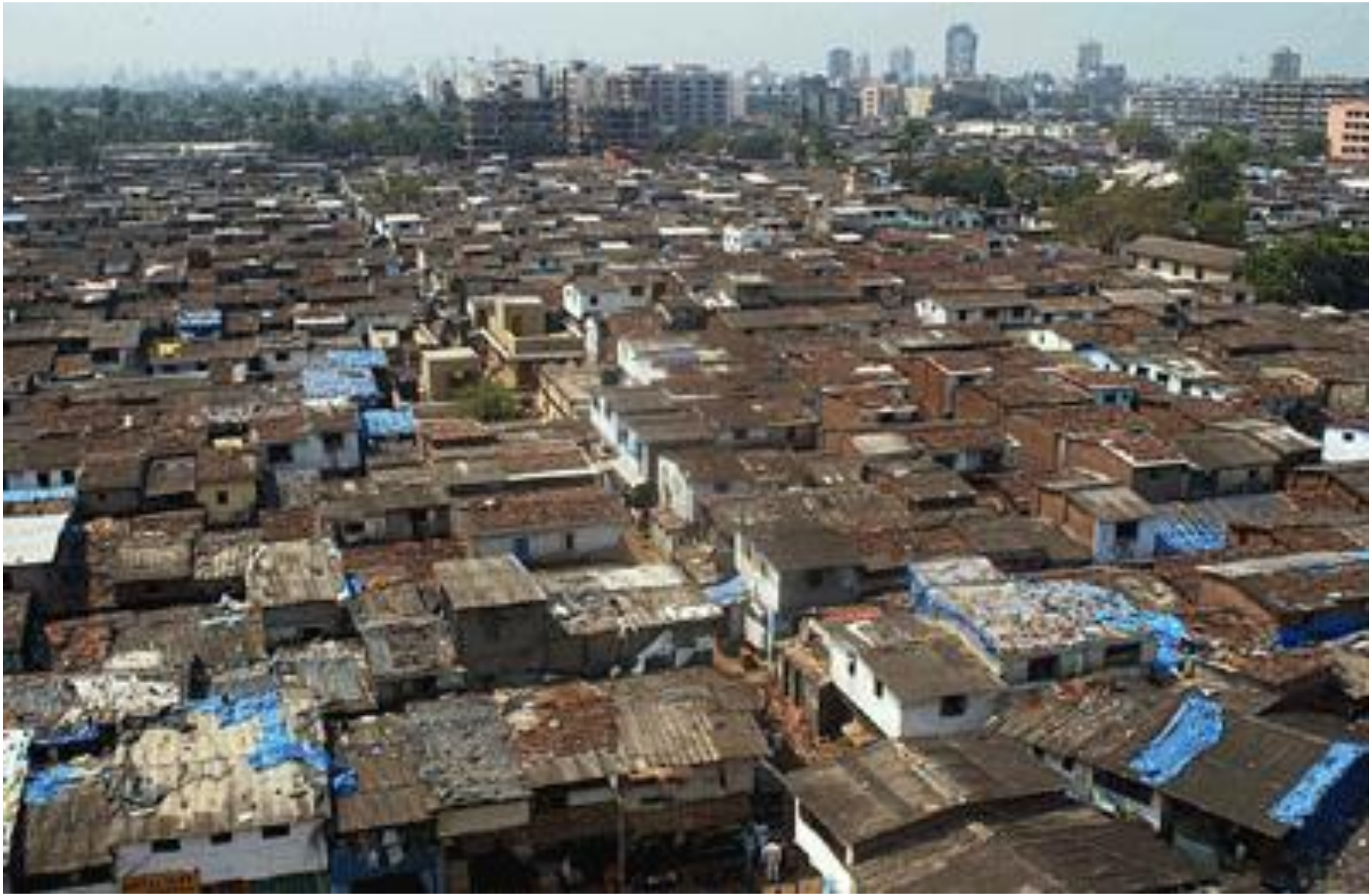
2. Characteristic of the city or city life

- **re·mote** [rɪˈməʊt] [rəˈmout]

adj. **re·mot·er**, **re·mot·est**

a. far away in time or place; far from any (other) village, town etc

http://www.thefreedictionary.com/



ELSEVIER
SAUNDERS

EMERGENCY
MEDICINE
CLINICS OF
NORTH AMERICA

Emerg Med Clin N Am 22 (2004) 265–279

An introduction to wilderness medicine

J. Matthew Sholl, MD[a,*], Edward P. Curcio III, MD[b]

Defining wilderness and wilderness medicine

Perhaps the natural place to begin when defining wilderness medicine is to first examine the definition of wilderness. The term "wilderness" might have different meanings for different people. A traditional definition of wilderness includes "(a) a tract or region uncultivated and uninhabited by human beings, and (b) an area essentially undisturbed by human activity

backcountry skiing). In an attempt to draw together these varying descriptions, this article borrows from the wilderness EMS arena and begins by defining wilderness in terms of time from definitive care, typically 1 to 2 hours from hospital-based care. While not focusing on the

descriptions, this article borrows from the wilderness EMS arena and begins by defining wilderness in terms of time from definitive care, typically 1 to 2 hours from hospital-based care. While not focusing on the

Answer 1

A remote area

is

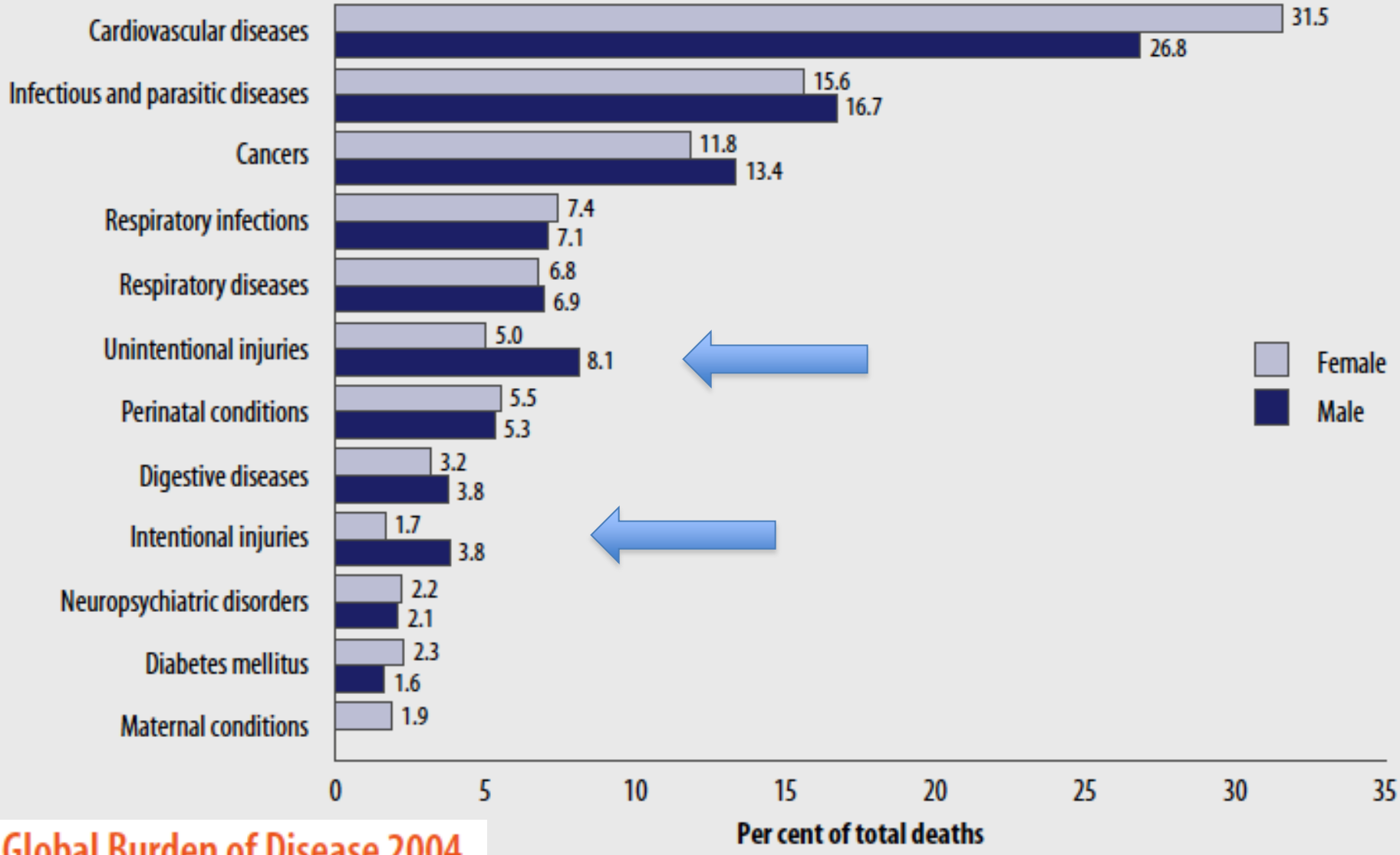
A place far away in TIME

From definitive care

Questions

- How much remote is a remote area?
- How big the problem is?
- Which sort of accident is more frequent?
- Which standards of treatment: what does it mean “normal” treatment in the Country (region, province) where you are?
- Which protocols are applicable? By who?
- Which devices?

Figure 4: Distribution of deaths by leading cause groups, males and females, world, 2004



Global Burden of Disease 2004

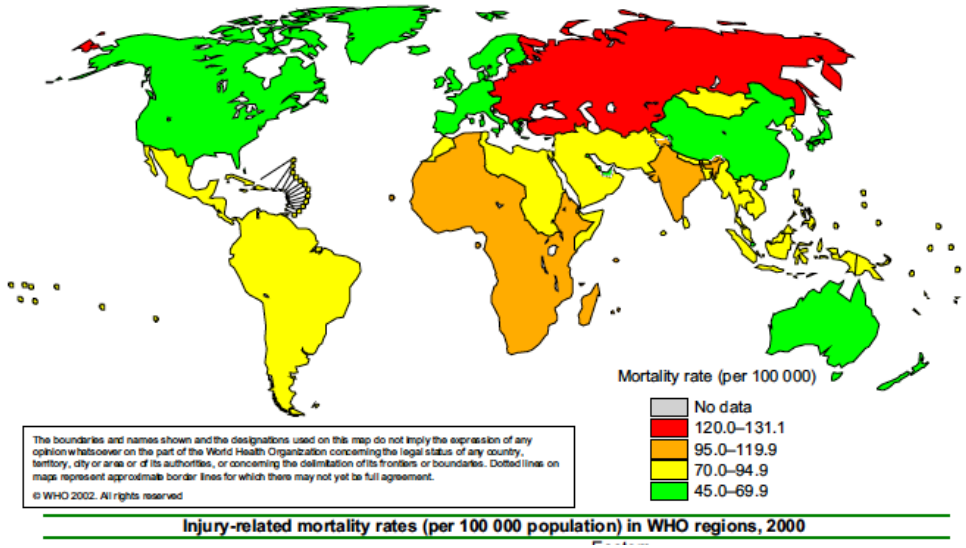
World Health Organization

Preventive Guidance for Travel: Trauma Avoidance and Medical Evacuation

Alan M. Spira, MD, DTM&H, FRSTM

Dis Mon 2006;52:261-288
0011-5029/2006 $32.00 + 0
doi:10.1016/j.disamonth.2006.08.002

DM, July 2006



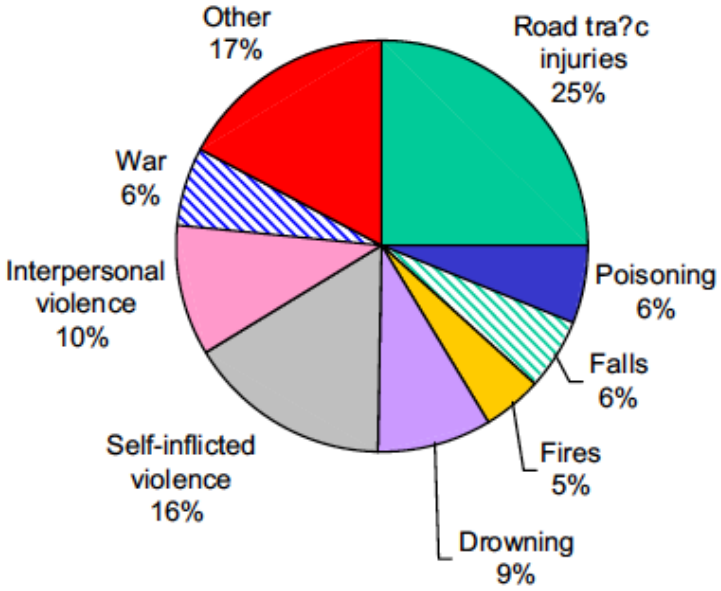


FIGURE 1. *Distribution of global injury mortality by cause, 2000.* (From *Peden M, McGee K, Sharma G. The injury chart book: a graphical overview of the global burden of injuries. Geneva (Switzerland): World Health Organization; 2002; with permission.)*

TRAUMA LINK
IL TRAUMA GRAVE IN EMILIA-ROMAGNA

Regione Emilia-Romagna
SERVIZIO SANITARIO REGIONALE EMILIA-ROMAGNA

ASR

Registro regionale traumi gravi RRTG

Report

dati relativi all'anno 2009

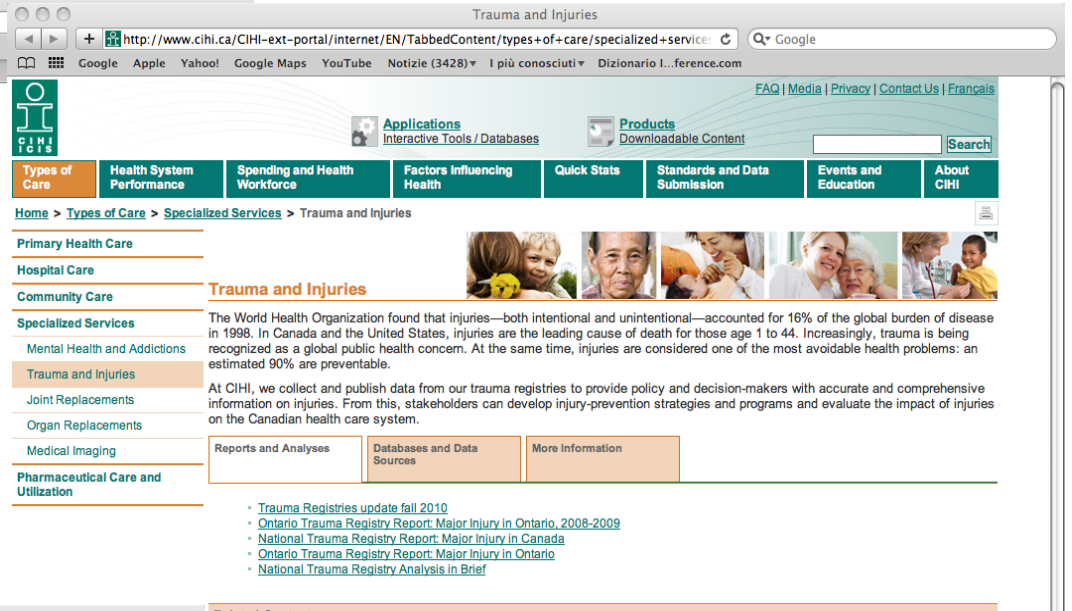
Pubblicazione maggio 2010

Tipo di trauma	N.	%
Chiuso	967	97,0
Penetrante	30	3,0
Totale	**997**	**100**
Mancante = 10 (1%)		

Intenzione del trauma	N.	%
Accidentale	903	91,9
Autolesione	48	4,9
Violenza interpersonale	20	2,0
Dubbia	12	1,2
Totale	**983**	**100**
Mancante = 24 (2,4%)		

Dinamica del trauma	N.	%
Traffico	645	65,0
Caduta	248	25,0
Colpito da persona/oggetto	26	2,6
Schiacciamento	21	2,1
Altro	13	1,3
Calore	12	1,2
Arma bianca	11	1,1
Arma da fuoco	10	1,0
Folgorazione	2	0,2
Asfissia/impiccagione	2	0,2
Annegamento	1	0,1
Sconosciuta	1	0,1
Totale	**992**	**100**
Mancante = 14 (1,3%)		


Traumaregister
http://www.traumaregister.de/de/index.htm
Traumaregister
Deutsche Gesellschaft für Unfallchirurgie
AG Polytrauma
HOME
LOGIN
FEEDBACK
SITEMAP
ATLS®
SPLS®
AUC®
DGU
Aktuelles
Kliniken
Jahresbericht
Teilnahme
Publikationen
AG Polytrauma
Wissenswertes
Willkommen auf den Internetseiten Traumaregister der Deutschen Gesellschaft für Unfallchirurgie e.V.
Die vier Ziele des Traumaregisters sind:
1. Verbesserung der Qualität der Versorgung Schwerverletzter
2. Qualitätssicherung
3. "Leitlinien" zu Behandlungsstrategien und -ergebnissen
4. Aktive Beteiligung möglichst vieler Kliniken
Verbesserung der Qualität der Versorgung Schwerverletzter:
Das Hauptziel des Traumaregisters ist die bessere Versorgung schwerverletzter Patienten. Dabei wird zunächst auf breiter Basis die derzeitige Versorgungsqualität dokumentiert. Durch Analyse der Ergebnisse sollen Schwachstellen identifiziert und Leitlinien erarbeitet und umgesetzt werden. Dies ermöglicht die Einführung eines Qualitätsmanagementsystems.


Trauma and Injuries
http://www.cihi.ca/CIHI-ext-portal/internet/EN/TabbedContent/types+of+care/specialized+service
FAQ | Media | Privacy | Contact Us | Français
Applications
Interactive Tools / Databases
Products
Downloadable Content
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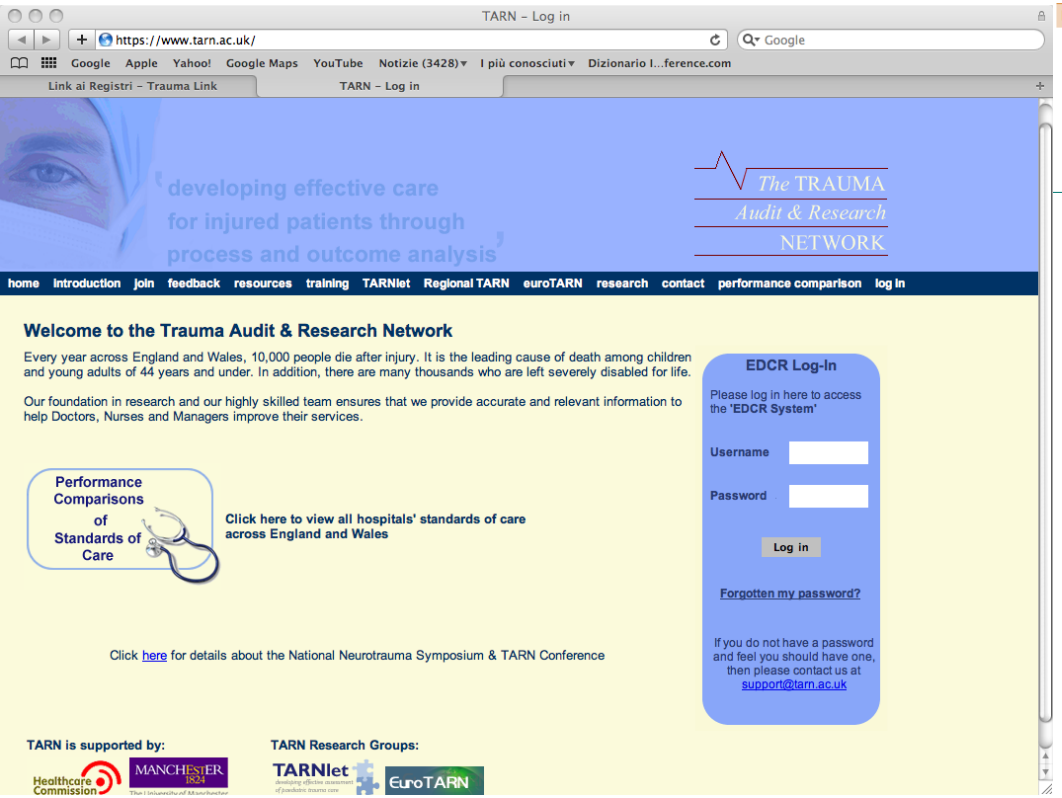
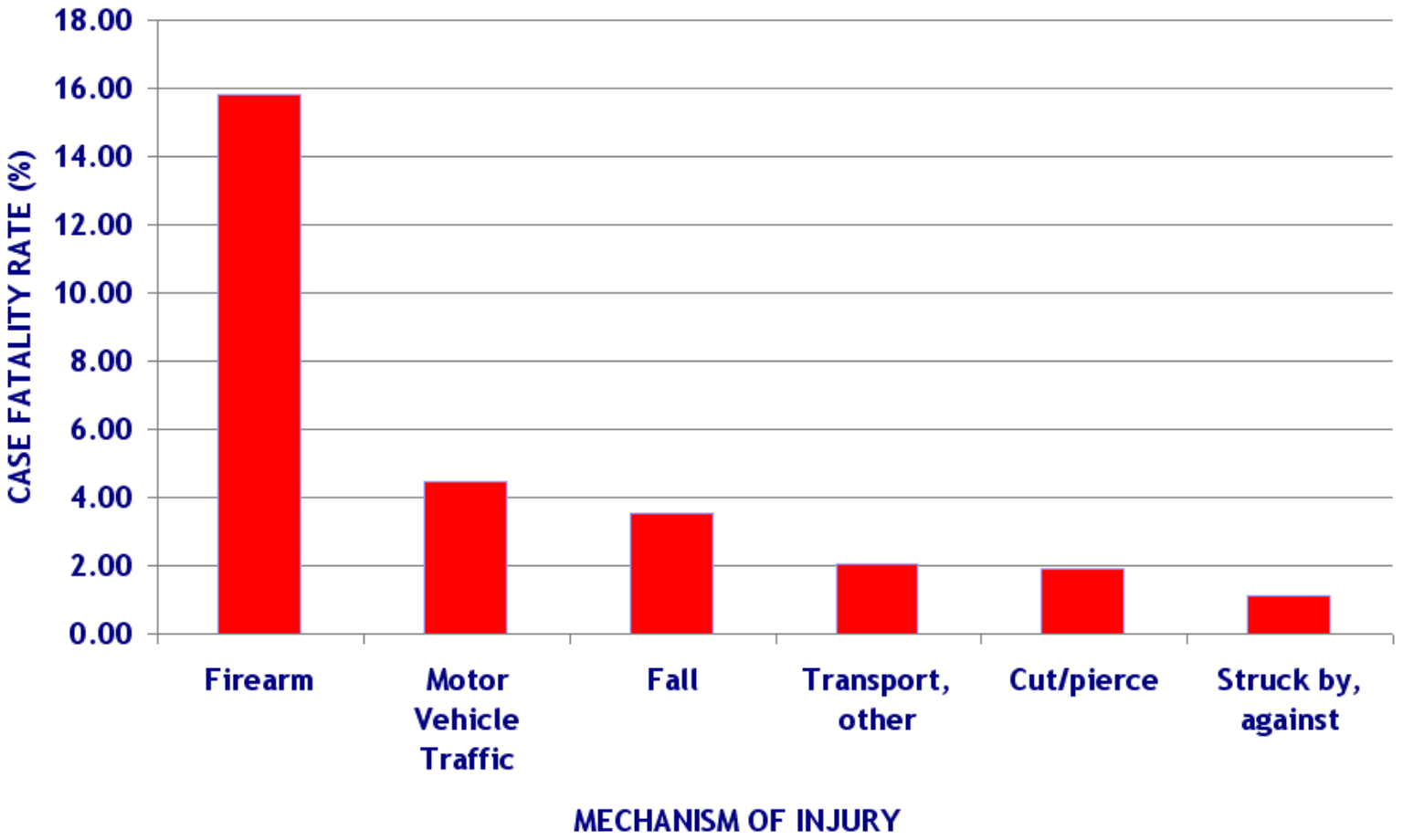
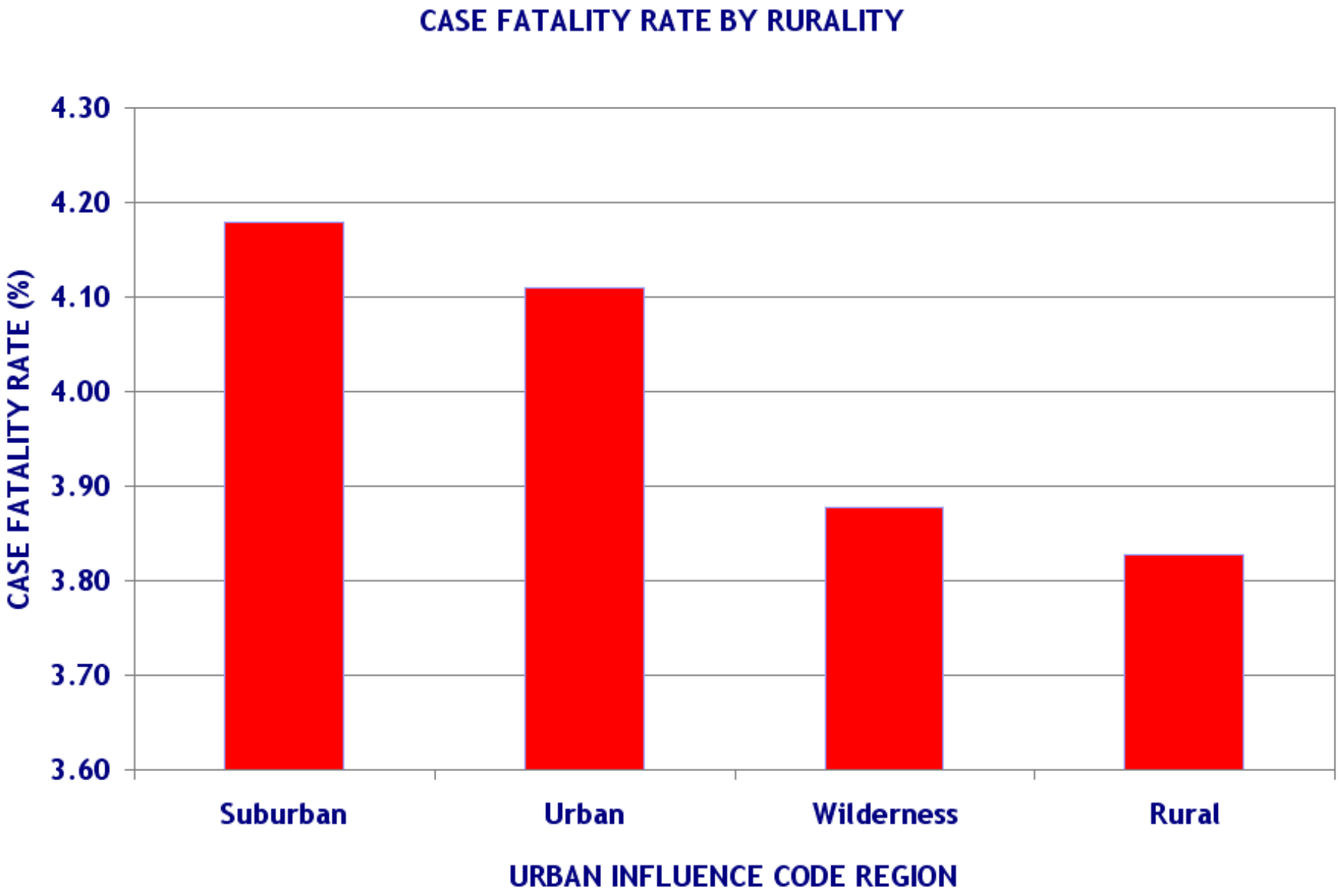
Types of Care
Health System Performance
Spending and Health Workforce
Factors Influencing Health
Quick Stats
Standards and Data Submission
Events and Education
About CIHI
Home > Types of Care > Specialized Services > Trauma and Injuries
Primary Health Care
Hospital Care
Community Care
Specialized Services
Mental Health and Addictions
Trauma and Injuries
Joint Replacements
Organ Replacements
Medical Imaging
Pharmaceutical Care and Utilization
Trauma and Injuries
The World Health Organization found that injuries—both intentional and unintentional—accounted for 16% of the global burden of disease in 1998. In Canada and the United States, injuries are the leading cause of death for those age 1 to 44. Increasingly, trauma is being recognized as a global public health concern. At the same time, injuries are considered one of the most avoidable health problems: an estimated 90% are preventable.
At CIHI, we collect and publish data from our trauma registries to provide policy and decision-makers with accurate and comprehensive information on injuries. From this, stakeholders can develop injury-prevention strategies and programs and evaluate the impact of injuries on the Canadian health care system.
Reports and Analyses
Databases and Data Sources
More Information
Trauma Registries update fall 2010
Ontario Trauma Registry Report: Major Injury in Ontario, 2008-2009
National Trauma Registry Report: Major Injury in Canada
Ontario Trauma Registry Report: Major Injury in Ontario
National Trauma Registry Analysis in Brief
Related Content
News
More than 1 in 10 major injuries in Ontario involve high blood alcohol levels
Hospital stays for injuries among children and youth decrease over five years
Quick Stats
NTR Cause of Injury by Province/Territory for fiscal year 2008-2009
Injury Hospitalization by Sex and Province for fiscal year 2008-2009
Applications
National Trauma Registry Restricted Access
OTR CDS – Data Dictionary


TARN – Log in
https://www.tarn.ac.uk/
developing effective care for injured patients through process and outcome analysis
The TRAUMA Audit & Research NETWORK
home
introduction
join
feedback
resources
training
TARNIet
Regional TARN
euroTARN
research
contact
performance comparison
log in
Welcome to the Trauma Audit & Research Network
Every year across England and Wales, 10,000 people die after injury. It is the leading cause of death among children and young adults of 44 years and under. In addition, there are many thousands who are left severely disabled for life.
Our foundation in research and our highly skilled team ensures that we provide accurate and relevant information to help Doctors, Nurses and Managers improve their services.
Performance Comparisons of Standards of Care
Click here to view all hospitals' standards of care across England and Wales
Click here for details about the National Neurotrauma Symposium & TARN Conference
EDCR Log-In
Please log in here to access the 'EDCR System'
Username
Password
Log in
Forgotten my password?
If you do not have a password and feel you should have one, then please contact us at support@tarn.ac.uk
TARN is supported by:
TARN Research Groups:
TARNIet
EuroTARN

CASE FATALITY RATE BY SELECTED MECHANISMS OF INJURY




CASE FATALITY RATE BY RURALITY
4.30
4.20
4.10
4.00
3.90
3.80
3.70
3.60
CASE FATALITY RATE (%)
Suburban
Urban
Wilderness
Rural
URBAN INFLUENCE CODE REGION

World J Surg
DOI 10.1007/s00268-010-0434-3

World Journal of Surgery

Epidemiology of Trauma Deaths: Location, Location, Location!

Kjetil Søreide

Kjetil Søreide

WORLD JOURNAL OF SURGERY
Volume 34, Number 7, 1720-1721; 2010

Surviving Cardiac Arrest: Location, Location, Location

Arthur B. Sanders; Karl B. Kern

JAMA. 2008;300(12):1462-1463 (doi:10.1001/jama.300.12.1462)

http://jama.ama-assn.org/cgi/content/full/300/12/1462

World J Surg (2007) 31:2092–2103
DOI 10.1007/s00268-007-9226-9

World Journal of Surgery

Epidemiology and Contemporary Patterns of Trauma Deaths: Changing Place, Similar Pace, Older Face

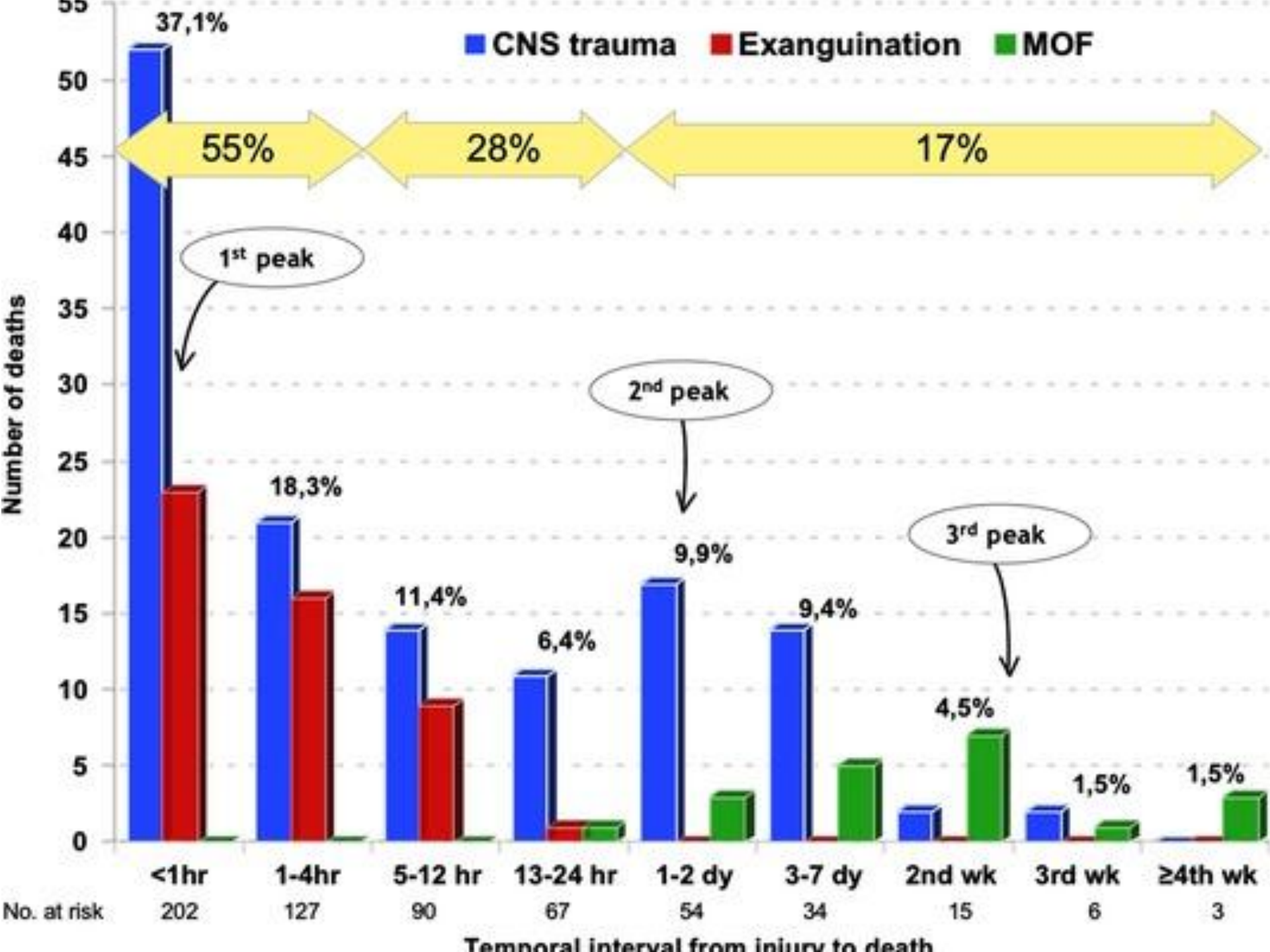
Kjetil Søreide · Andreas J. Krüger · Anne Line Vårdal · Christian Lycke Ellingsen · Eldar Søreide · Hans Morten Lossius

World J Surg (2010) 34:158–163
DOI 10.1007/s00268-009-0266-1

World Journal of Surgery

Epidemiology of Traumatic Deaths: Comprehensive Population-Based Assessment

Julie A. Evans · Karlijn J. P. van Wessem · Debra McDougall · Kevin A. Lee · Timothy Lyons · Zsolt J. Balogh


CNS trauma
Exanguination
MOF
55%
28%
17%
1st peak
2nd peak
3rd peak
37,1%
18,3%
11,4%
6,4%
9,9%
9,4%
4,5%
1,5%
1,5%
Number of deaths
0
5
10
15
20
25
30
35
40
45
50
55
<1hr
1-4hr
5-12 hr
13-24 hr
1-2 dy
3-7 dy
2nd wk
3rd wk
≥4th wk
No. at risk
202
127
90
67
54
34
15
6
3
Temporal interval from injury to death

Eur J Trauma Emerg Surg 2009;35:26–30
DOI 10.1007/s00068-008-8080-2

Hemorrhage is More Prevalent than Brain Injury in Early Trauma Deaths: The Golden Six Hours

Vishal Bansal, Dale Fortlage, Jeanne G. Lee, Todd Costantini, Bruce Potenza, Raul Coimbra[1]

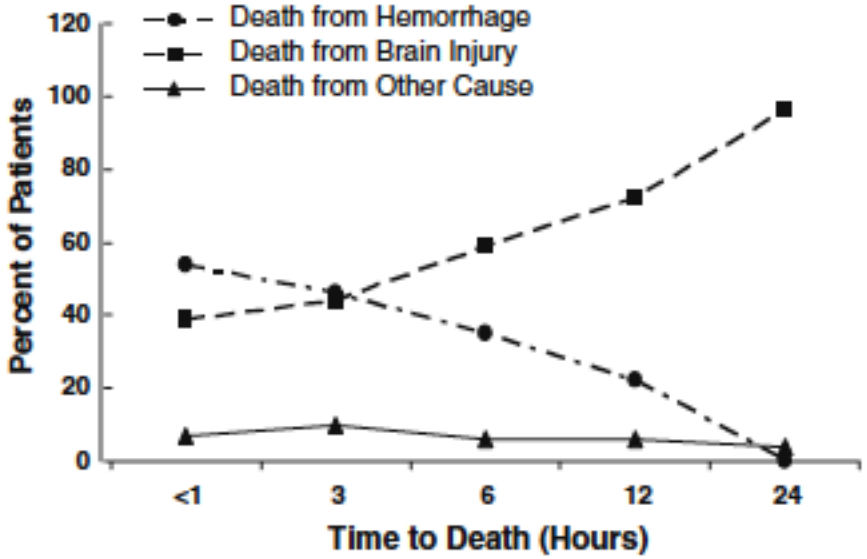


Figure 2. The temporal distribution of autopsy-determined cause of early trauma death, after categorization into brain injury, hemorrhage or other (n = 167).

Patients that die from trauma within 24 h have a very different cause of death depending on the hour they expire. Those expiring within the first 3 h die mostly from brain injury; however, hemorrhage, and its physiologic consequences, continue to be an important cause of death up to 6 h. Brain injury is the sole cause of death following 12 h. This knowledge may help in

Injury, Int. J. Care Injured (2004) 35, 391–400

ELSEVIER

INJURY
INTERNATIONAL JOURNAL OF THE CARE OF THE INJURED

www.elsevier.com/locate/injury

Epidemiology of major injury in the population of Friuli Venezia Giulia—Italy

Stefano Di Bartolomeo[a,*], Gianfranco Sanson[b], Vanni Michelutto[a], Giuseppe Nardi[c], Ivana Burba[d], Carlo Francescutti[d], Luca Lattuada[d], Franca Scian[e]
The Regional Study-Group on Major Injury

Table 9 Interval from call to arrival at definitive hospital for each type of rescue facility and overall (hh:mm)

Rescue facility	Minimum	Maximum	Mean	S.D.[a]
Helicopter	0:20	3:01	1:03	0:24
Ambulance with nurse	0:11	10:20	1:46	2:03
Ambulance with physician	0:14	14:08	1:19	1:49
Average regional interval	0:11	14:08	1:23	1:34

Note: Cases requiring mountain rescue operations have been excluded.

[a] S.D.: standard deviation.

International Alpine Trauma Registry

Description

The web-based registry will be installed at EURAC in Bozen/Bolzano. Austria, Switzerland, Canada and the United Kingdom will participate in the multi centre study. Patient inclusion criteria are trauma patients with a) NACA score >IV or b) ISS >16 or c) systolic blood pressure <90 mmHg or d) respiratory rate >30/min, who in addition are rescued from difficult terrain not accessible by motor vehicles. Patient are excluded if already in cardiac arrest upon arrival of the rescue team at the scene, or presenting extensive burn injury. Patients or their relatives give a written consent unless they do not survive. After a pilot phase of one year the data collection procedure will be evaluated and adapted if necessary.

Institute of Mountain Emergency Medicine

« Back to the Institute's projects

International Alpine Trauma Registry

- Objectives
- Description
- Background
- Staff
- Partner

Action & Statistic data collection

Answer 2

- Trauma (unintentional & intentional) is one of the top ten leading causes of death, so really is a big problem
- The incidence is higher in urban areas but the mortality (in proportion) is higher in suburban and remote areas
- road traffic accident, fall and violence are the leading mechanisms of trauma

Answer 3

- The trimodal distribution of death exists and CNS trauma, Haemorrhage & MOF are the killers;
- Trauma is a time-dependent disease

- All data are from urban/suburban area
- We need an international trauma register

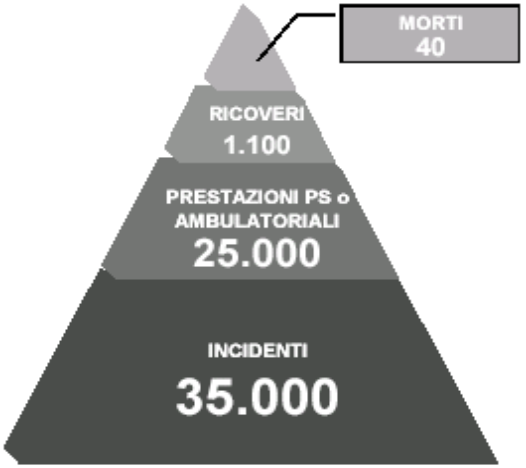
ISTITUTO SUPERIORE DI SANITÀ

SIMON 03-06
Sorveglianza Incidenti in MONtagna

Il sistema SIMON per la sorveglianza degli incidenti in montagna (2003-2006)

Marco Giustini, Gianni Fondi, Alessio Pitidis, Cinzia Cedri, Antonella Crenca, Franco Taggi

Dipartimento di Ambiente e Connessa Prevenzione Primaria



FONTE: elaborazione ISS su dati Centro Addestramento Alpino Polizia e Osservatorio Epidemiologico Provincia di Trento

Figura 29. Piramide dei traumi da incidente sciistico

Google: SIMON ISS

http://www.iss.it/publ/rapp/cont.php?id=2062&lang=1&tipo=5

PMJ

Mountain mortality: a review of deaths that occur during recreational activities in the mountains

J S Windsor, P G Firth, M P Grocott, et al.

Postgrad Med J 2009 85: 316-321
doi: 10.1136/pgmj.2009.078824

- The reported mortality rate among skiers and snowboarders is 0.11 and 2.46 deaths for every million days of exposure, while the mortality rate among mountaineers is 2.3 to 1870 deaths for every million days of exposure.
- Deaths in the mountains are most commonly due to trauma, high altitude illness, cold injury, avalanche burial, and sudden cardiac death.

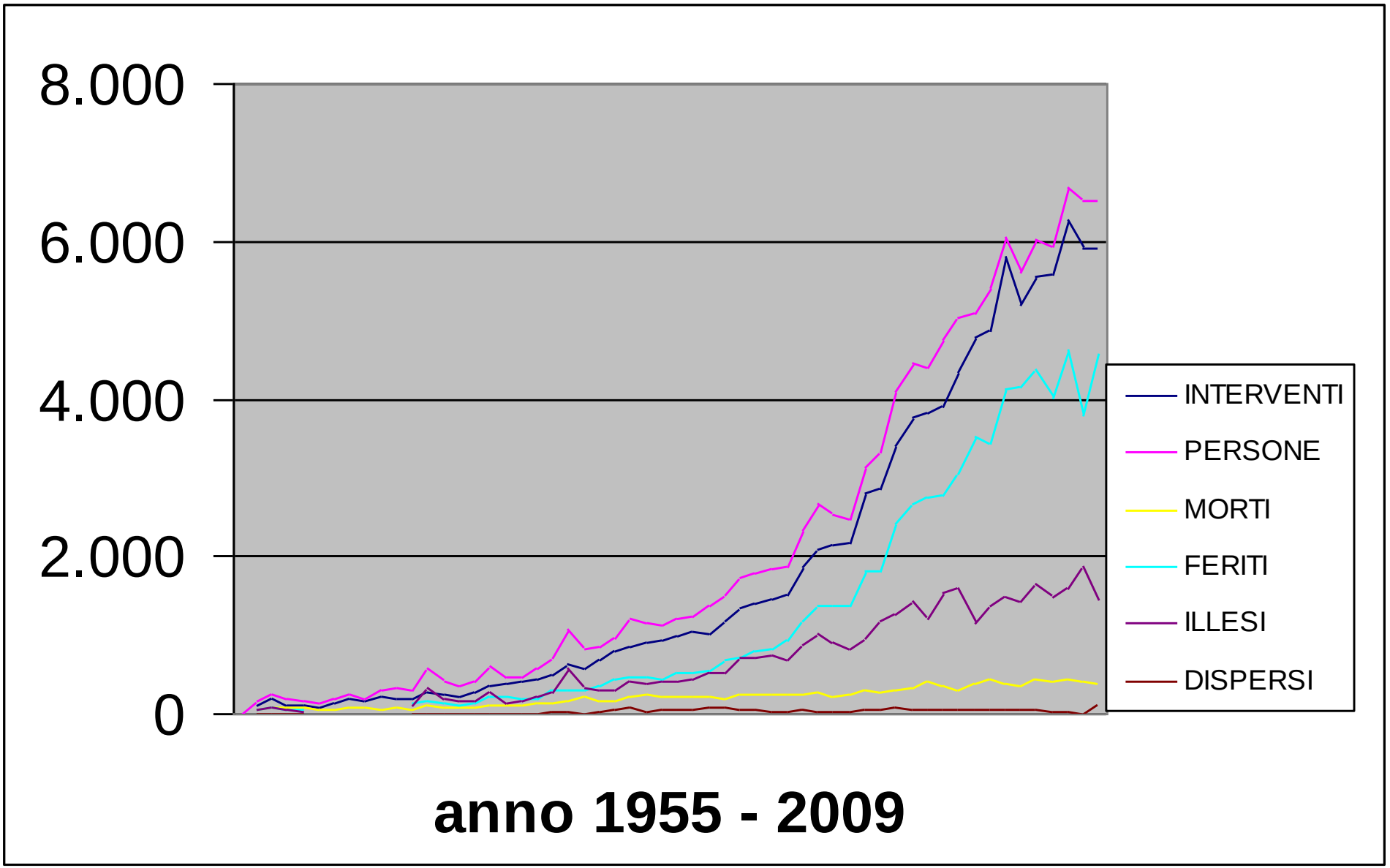
Preventive Guidance for Travel: Trauma Avoidance and Medical Evacuation

Alan M. Spira, MD, DTM&H, FRSTM

Dis Mon 2006;52:261-288
0011-5029/2006 $32.00 + 0
doi:10.1016/j.disamonth.2006.08.002

DM, July 2006

Mountaineering is more dangerous than rock climbing or trekking, and the risk increases with the presence of snow or ice. The rate of mountaineering accidents worldwide is increasing; while the injury rate is rising, the death rate is not (most likely due to advanced evacuation with helicopters).[57] Injuries in the mountains can be rather more serious than if suffered in an urban environment. At Mount Blanc, a popular tourist


8.000
6.000
4.000
2.000
0
INTERVENTI
PERSONE
MORTI
FERITI
ILLESI
DISPERSI
anno 1955 - 2009

Anno 2008

Archivio CNSAS

ETA' INFORTUNATI

ETA'	M	F	T	%
<10	90	41	131	2%
11 - 20	390	218	608	9%
21 - 30	499	216	715	11%
31 - 40	587	243	830	13%
41 - 50	634	269	903	14%
51 - 60	576	260	836	13%
61 - 70	470	177	647	10%
71 - 80	275	93	368	6%
>80	80	35	115	2%
NN			1.368	21%

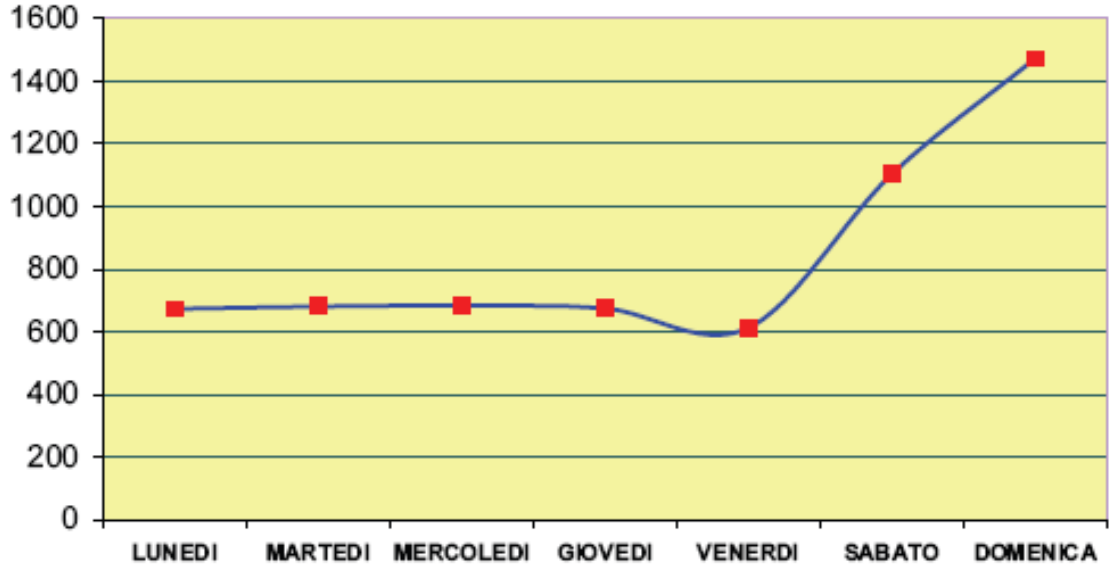
TOTALE	6.521

SUDDIVISIONE PER SESSO

FEMMINE	1884	28,9%
MASCHI	4637	71,1%

TOTALE	6521

Suddivisione settimanale 2008



DURATA INTERVENTI

ore	n°	%
0 - 0,30	728	12,34%
0,30 - 1	1457	24,70%
1 - 1,30	1093	18,53%
1,30 - 2	692	11,73%
2 - 2,30	400	6,78%
2,30 - 3	355	6,02%
3 - 3,30	179	3,03%
3,30 - 4	156	2,64%
4 - 4,30	123	2,09%
4,30 - 5	109	1,85%
5 - 6	123	2,09%
6 - 7	63	1,07%
7- 8	64	1,09%
8 - 9	45	0,76%
9 - 10	40	0,68%
10 - 11	39	0,66%
11 - 12	19	0,32%
> 12	213	3,61%

TOTALE	5898	

Wilderness and Environmental Medicine, **10**, 152–156 (1999)

CONCEPTS

Medical mountain rescue in the Mont-Blanc massif

BERNARD MARSIGNY, MD; FRANÇOIS LECOQ-JAMMES, MD; EMMANUEL CAUCHY, MD

From the Emergency Unit, Chamonix Hospital, Chamonix, France.

Pathology

Traumatic injuries accounted for 90% of all rescues. They affected especially the limbs (50% of cases) (Fig 3).

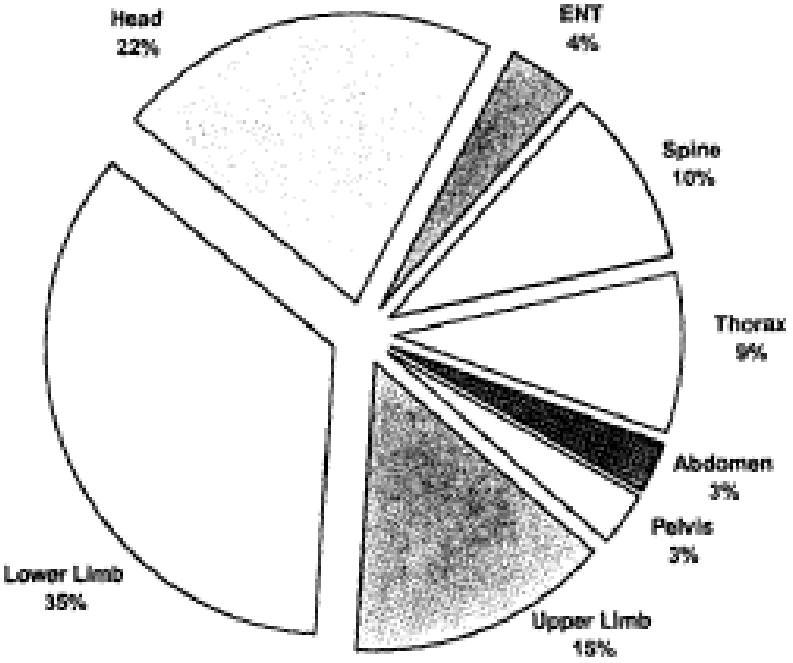
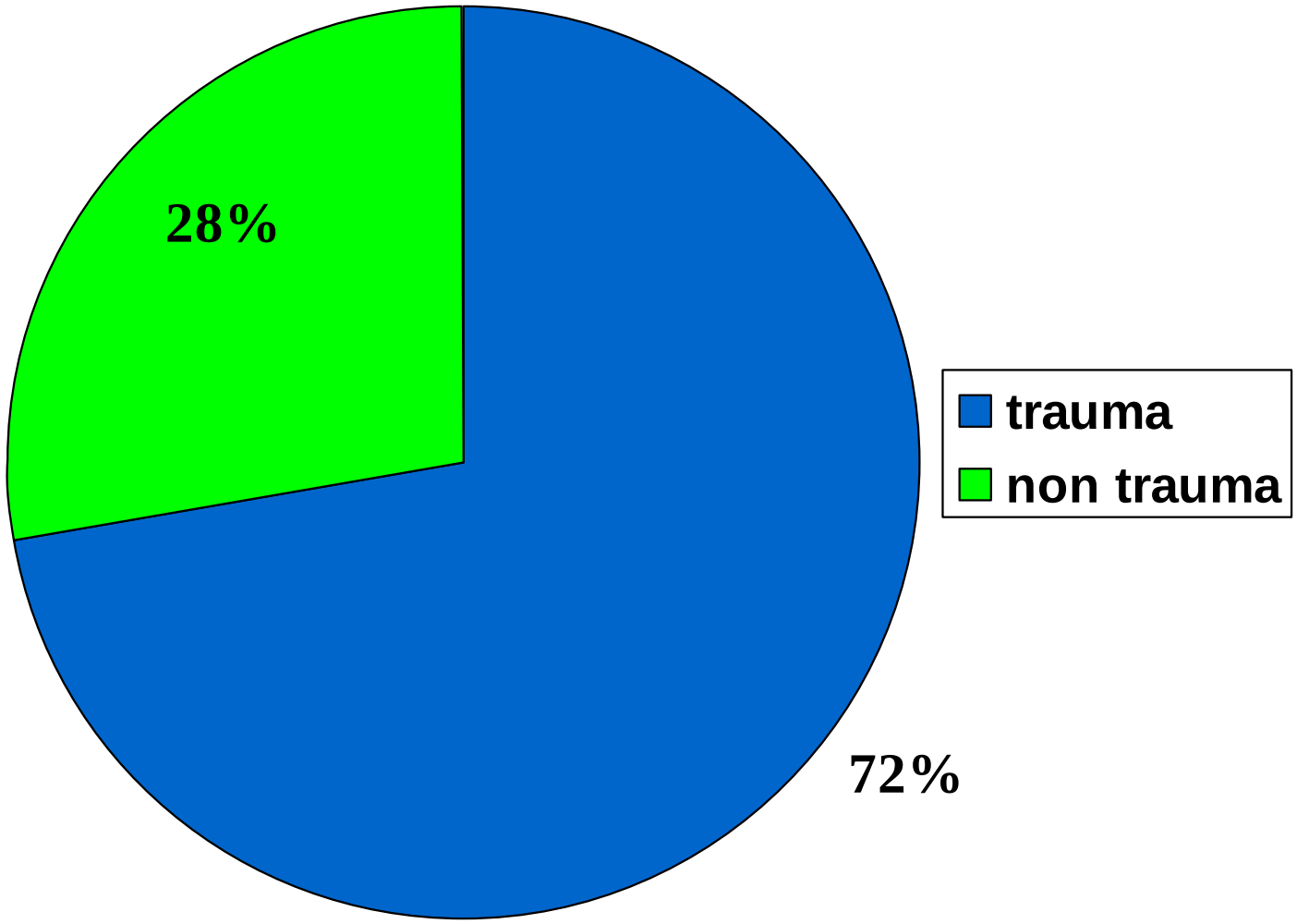


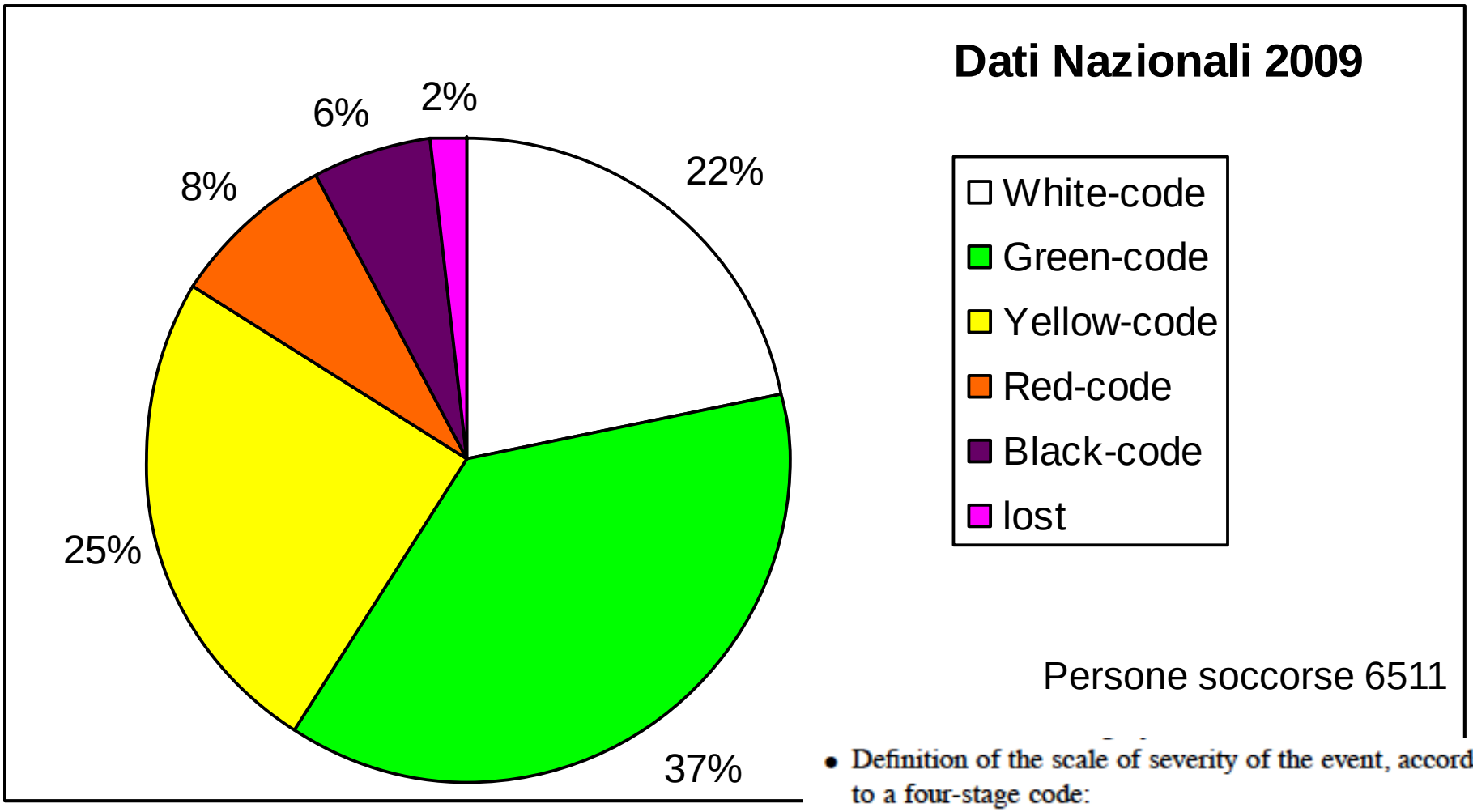
Fig 3. Traumatic injuries (n = 5200).



43309 patients

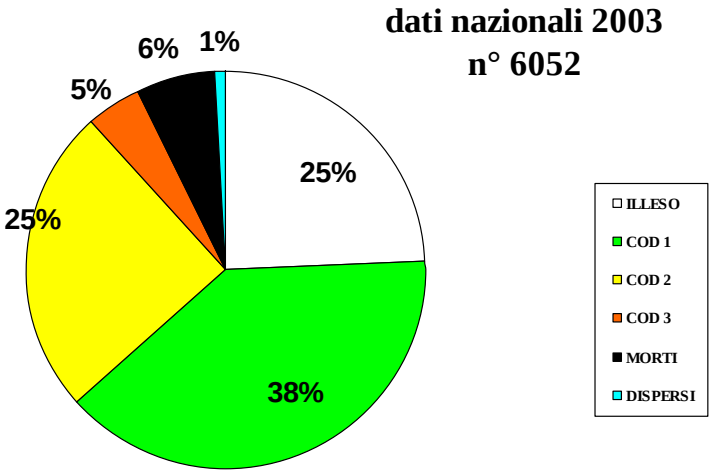
2003-2009

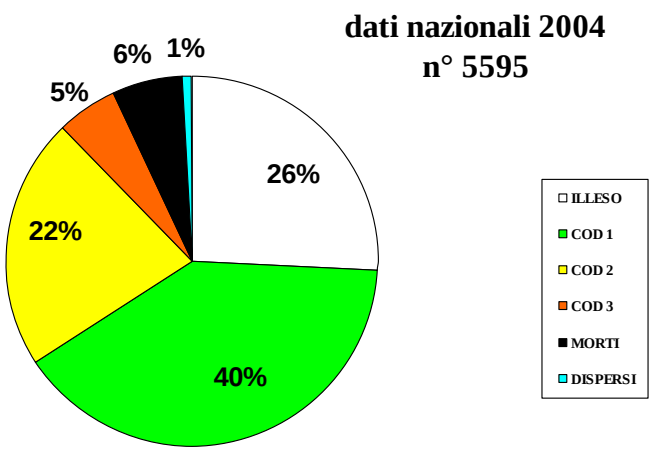
Injury Severity

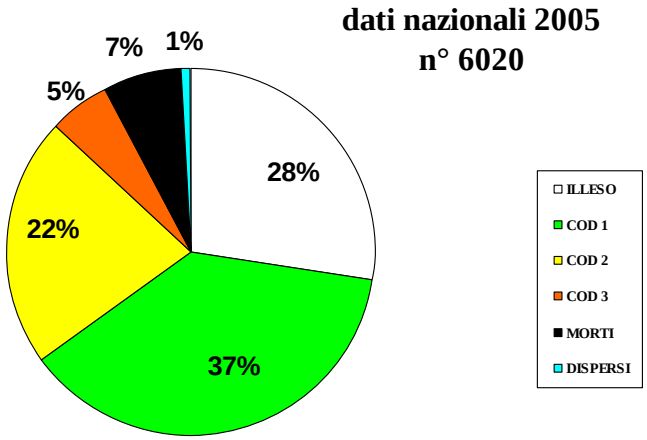


Persone soccorse 6511

- Definition of the scale of severity of the event, according to a four-stage code:
  - white = not critical;
  - green = slightly critical, intervention can be deferred;
  - yellow = critical, intervention cannot be deferred;
  - red = very critical, real emergency.


dati nazionali 2003
n° 6052
25%
38%
25%
5%
6%
1%
ILLESO
COD 1
COD 2
COD 3
MORTI
DISPERSI


dati nazionali 2004
n° 5595
26%
40%
22%
5%
6%
1%
ILLESO
COD 1
COD 2
COD 3
MORTI
DISPERSI


dati nazionali 2005
n° 6020
28%
37%
22%
5%
7%
1%
ILLESO
COD 1
COD 2
COD 3
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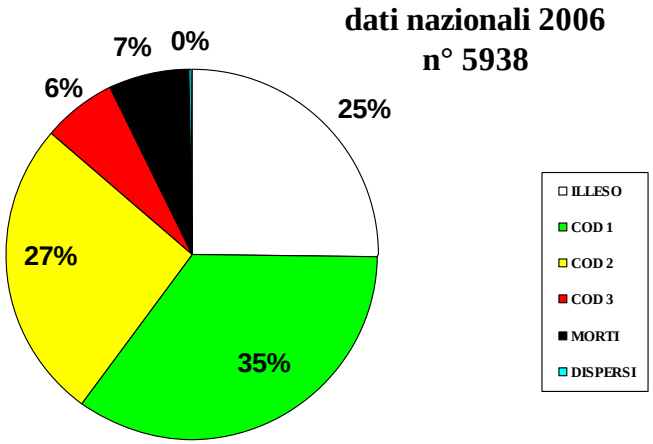
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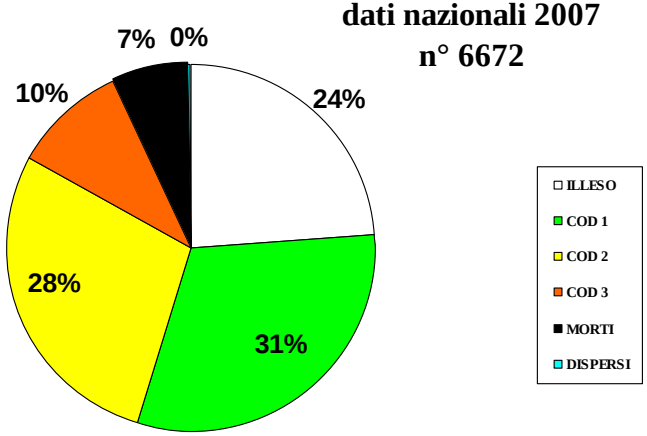
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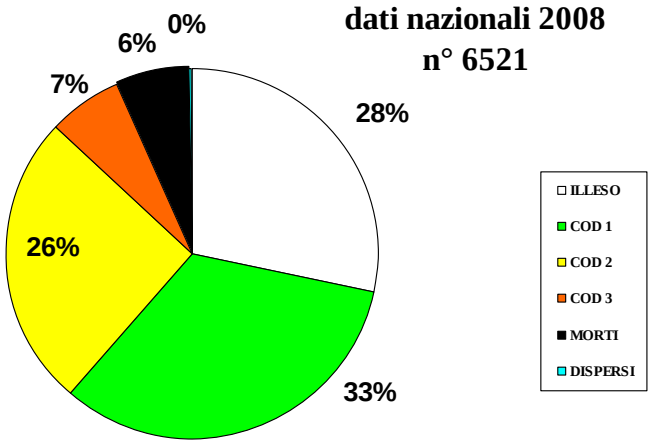
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Wilderness and Environmental Medicine, **19**, 245–251 (2008)

ORIGINAL RESEARCH

Epidemiology of Mountain Search and Rescue Operations in Banff, Yoho, and Kootenay National Parks, 2003–06

Finlay J. Wild, MBChB

From the University of Aberdeen, Scotland.

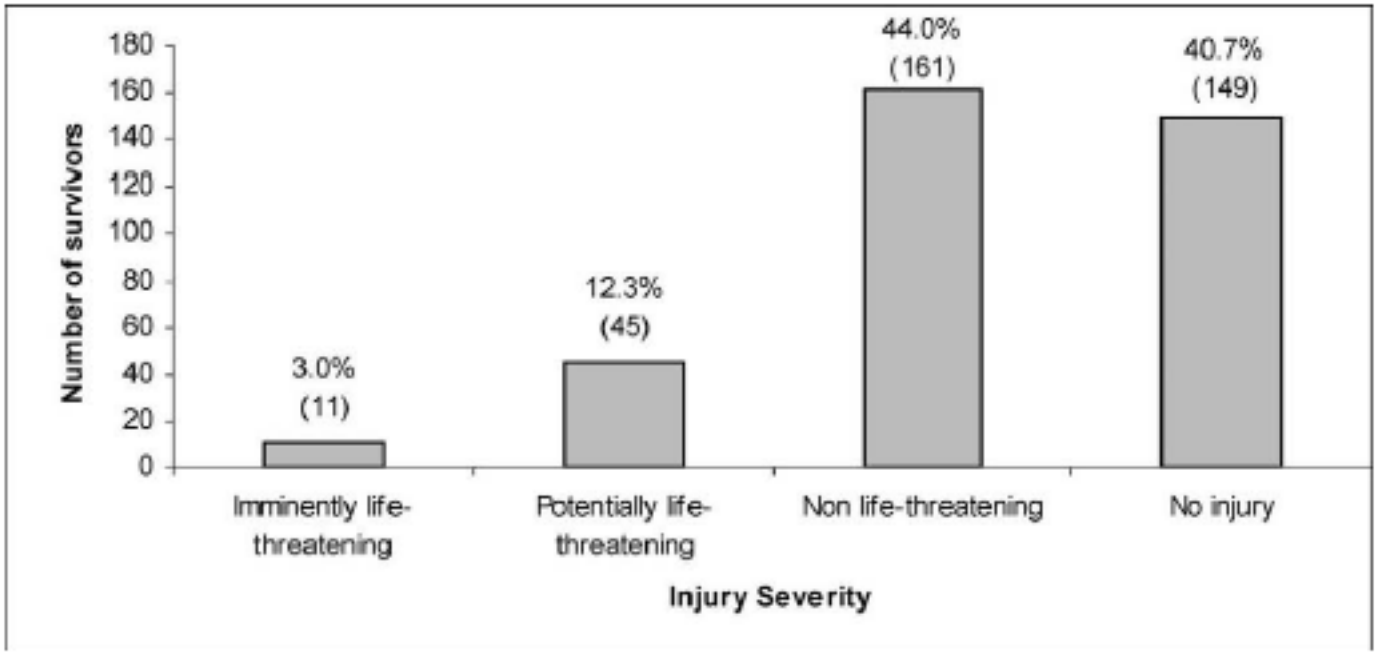

Figure 4. Injury severity in survivors rescued by Parks Canada Rescue in Banff, Yoho, and Kootenay National Parks between January 1, 2003, and December 31, 2006.

Wilderness and Environmental Medicine, 17, 8–14 (2006)

ORIGINAL RESEARCH

Changes in Injury Patterns and Severity in a Helicopter Air-Rescue System Over a 6-Year Period

Marc Kaufmann, MD, HEMS; Berthold Moser, MD; Wolfgang Lederer, Prof, MD, HEMS

From the Department of Anesthesiology and Critical Care Medicine, Innsbruck Medical University, Innsbruck, Austria

Conclusions

Injury pattern and severity have changed during the 6-year period of our investigation. The easy availability of HEMSs and the ability to rapidly access help with mobile phones may be responsible for an increasing utilization of HEMSs for leisure-time injuries with lesser degrees of severity. As the number of life-threatening injuries declines, HEMSs more frequently serve as means of rescue rather than as providers of emergency treatment.

Traumatisés graves pris en charge par le SMUR montagne régional 65-31 de 2005 à 2008

Docteur Laurence Girard
Docteur Stéphane Lère
SAMU 65

- **Principale fonction vitale atteinte:**
  - 1) Neurologique: 40%
  - 2) Hémodynamique: 37%
  - 3) Respiratoire: 13%

- **Lésions prédominantes:**
  1) Lésions multiples (41%)
  2) TC (33%)
  3) Thorax
  4) Abdomen
  5) Rachis

The Impact of Aeromedical Response to Patients With Moderate to Severe Traumatic Brain Injury

Daniel P. Davis, MD
Jeremy Peay, BS
Jennifer A. Serrano, MD
Colleen Buono, MD
Gary M. Vilke, MD
Michael J. Sise, MD
Frank Kennedy, MD
A. Brent Eastman, MD
Thomas Velky, MD
David B. Hoyt, MD

From the UC San Diego Emergency Medicine, San Diego, CA (Davis, Serrano, Buono, Vilke); Mercy Air Medical Services, San Diego, CA (Davis); UC San Diego School of Medicine, La Jolla, CA (Peay); Scripps Mercy Hospital, San Diego, CA (Sise); Sharp Memorial Hospital, San Diego, CA (Kennedy); Scripps La Jolla Hospital, La Jolla, CA (Eastman); Palomar Hospital, Escondido, CA (Velky); and the UC San Diego Department of Surgery, San Diego, CA (Hoyt).

Conclusion: Here we analyze a large database of patients with moderate to severe traumatic brain injury. Aeromedical response appears to result in improved outcomes after adjustment for multiple influential factors in patients with moderate to severe traumatic brain injury. In addition, out-of-hospital intubation among air-transported patients resulted in better outcomes than ED intubation among ground-transported patients. Patients with more severe injuries appeared to derive the greatest benefit from aeromedical transport. [Ann Emerg Med. 2005;46:115-122.]

Answer 3 (mountain)

- Trauma accounts for 70-90% of all rescues
- The number of incidents and injured patients are rising, fortunately the number of deaths do not increase in the same way
- The mortality is higher in mountaineers than in skiers, with CNS trauma & haemorrhage as leading cause of death
- Helicopter turns a major trauma in remote area in a ‘urban’ accident with better outcome

Questions

- How much remote is a remote area?
- How big the problem is?
- Which sort of accident is more frequent?
- Which standards of treatment: what does it mean “normal” treatment in the Country (region, province) where you are?
- Which protocols are applicable? By who?
- Which devices?


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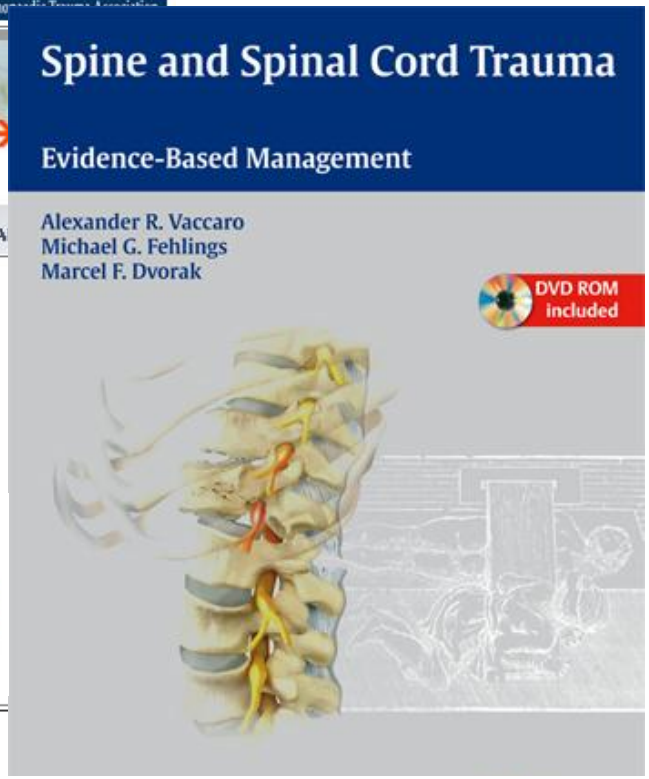
Orthopaedic Trauma
Evidence Based-Medicine Resource List

Compiled and reviewed by the OTA Project Team for Evidence-Based Medicine
Committee Chair: William Obremskey, MD
September 2007



ATLS
ADVANCED TRAUMA LIFE SUPPORT

east

trauma practice guidelines

For more information on Trauma Practice Guidelines, please contact:

William J. Bromberg, M.D., F.A.C.S.
Memorial Health University Medical Center
Savannah Surgical Group
4700 Waters Ave
Savannah, GA 31404
Phone: (912) 350-7412
Email: guidelines@east.org

To see a list of current topics undergoing guideline development, **click here**.

For more information on evidence based medicine and practice guidelines, please visit the following links:
www.guideline.gov
www.medecine.quebec.qc.ca
www.swsahs.nsw.gov.au/livtrauma

Members of the American College of Surgeons can access an Evidence Based Reviews in Surgery (EBRS) module for free. It teaches critical appraisal skills to practicing general surgeons and residents so they can critically evaluate the literature and practice evidence based surgery. Visit the EBRS area at the following link:
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Guideline	Pub Year	Citation	Down-load	Comments
Penetrating Intraperitoneal Injuries	1998	J Trauma. 44(6):941-956, June 1998.	html pdf	
Prophylactic Antibiotics in Tube Thoracostomy for	1998	J Trauma. 48(4): 758-759,	html	Currently being

HIGH ALTITUDE MEDICINE & BIOLOGY
Volume 10, Number 1, 2009

DOI: 10.1089/ham.2008.1067

Fluid Management in Traumatic Shock: A Practical Approach for Mountain Rescue

Official Recommendations of the International Commission for Mountain Emergency Medicine (ICAR MEDCOM)

Günther Sumann,[1,2] Peter Paal,[2] Peter Mair,[2] John Ellerton,[3] Tore Dahlberg,[4] Gregoire Zen-Ruffinen,[5] Ken Zafren,[6] and Hermann Brugger[7]

J Med Pers
DOI 10.1007/s12682-010-0061-7

ORIGINAL ARTICLE

Relevance of trauma team organization in the management of severe injuries: the Niguarda model in Milan

Osvaldo Chiara · Sara Andreani · Stefania Cimbanassi · Fabio Sansonna · Sergio Vesconi · Raffaele Pugliese · the Niguarda Trauma Team

Received: 7 May 2010 / Accepted: 24 August 2010

Organizing a trauma team

Trauma is today the first cause of death in males below 45 years of age. Hence, trauma is not merely an accident, but a real pathological condition. As with all other pathological conditions, trauma management means taking care of the whole patient and not the single parts of his body, with an uninterrupted rescue chain, from the scene of the accident, through the emergency department, to the rehabilitation units. The organization and concept of the trauma team gives an answer to this expectation, comprising resources, such as physicians and nurses specifically devoted to trauma, scheduled protocols, equipments and specific tools. With a great difference from what currently

Injury, Int. J. Care Injured 41 (2010) 444–452

Contents lists available at ScienceDirect

Injury

journal homepage: www.elsevier.com/locate/injury

Review

Trauma systems and early management of severe injuries in Scandinavia: Review of the current state

Thomas Kristiansen [a,e,*], Kjetil Søreide [b,c], Kjetil G. Ringdal [a,e], Marius Rehn [a,e], Andreas J. Krüger [a,f], Andreas Reite [b], Terje Meling [d], Pål Aksel Næss [g], Hans Morten Lossius [a]

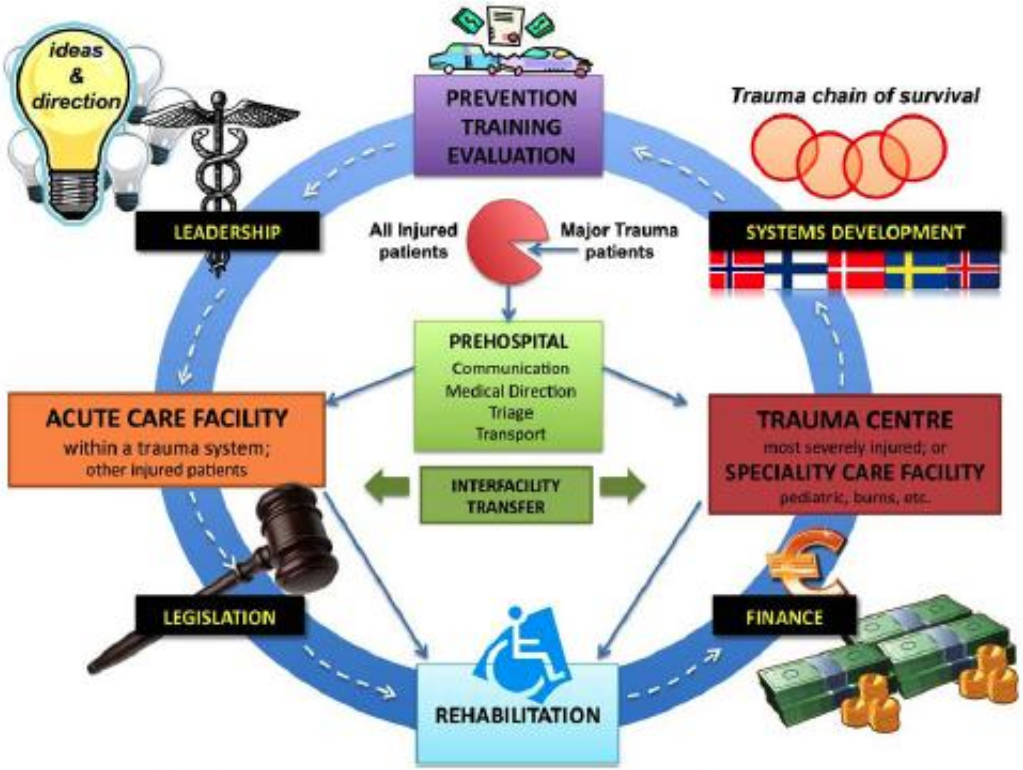


Fig. 1. The inclusive trauma system. The components and their interactions in an inclusive trauma system. The core operational components constitute an organised system from the site of injury to rehabilitation. All levels of resources are employed according to the clinical requirements. The outer administrative framework represents funding, assessment and continual development of the system. Adapted with permission from the Health Resources and Service Administration, US Department of Health and Human Services.[152]

World J Surg
DOI 10.1007/s00268-010-0434-3

World Journal of Surgery

Epidemiology of Trauma Deaths: Location, Location, Location!

Kjetil Søreide

Answer 4

- We know many things about trauma treatment (+/- EBM supported)
- Perhaps the most important thing is a well organized system (EMS) from the scene of the accident to rehabilitation unit

Questions

- How much remote is a remote area?
- How big the problem is?
- Which sort of accident is more frequent?
- Which standards of treatment: what does it mean “normal” treatment in the Country (region, province) where you are?
- Which protocols are applicable? By who?
- Which devices?

Circulation
JOURNAL OF THE AMERICAN HEART ASSOCIATION

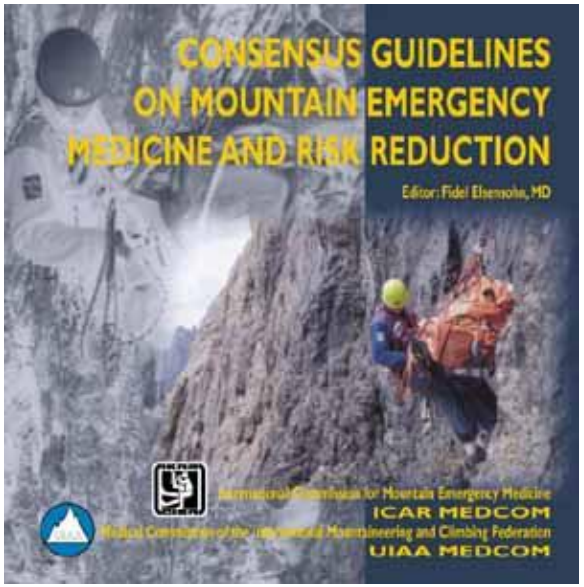
American Heart Association
Learn and Live

Part 8: Adult Advanced Cardiovascular Life Support: 2010 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care

Robert W. Neumar, Charles W. Otto, Mark S. Link, Steven L. Kronick, Michael Shuster, Clifton W. Callaway, Peter J. Kudenchuk, Joseph P. Ornato, Bryan McNally, Scott M. Silvers, Rod S. Passman, Roger D. White, Erik P. Hess, Wanchun Tang, Daniel Davis, Elizabeth Sinz and Laurie J. Morrison

Circulation 2010;122;S729-S767
DOI: 10.1161/CIRCULATIONAHA.110.970988
Circulation is published by the American Heart Association. 7272 Greenville Avenue, Dallas, TX 72514
 Print ISSN: 0009-7322. Online ISSN: 1524-4539

The online version of this article, along with updated information and services, is located on the World Wide Web at:
http://circ.ahajournals.org/cgi/content/full/122/18_suppl_3/S729



Strategies

"Art of the possible" & sometime of the impossible in major trauma

- Scoop & run
- Stay & play
- More often Stay & pray
- Transport!! Itself a problem with medical complications

Depending of situation you are facing, organization, location, weather and so on

Answer 5 protocols

- There is no reason that the treatment in urban & in remote areas should be different, it is the possibility to treat the patient in the same way to be different

Alpine rescue Pathologist


SOCCORSO ALPINO
SOCCORSO ALPINO
FERRINO

Answer 5 by who

Original publication: Brugger H, Elsensohn F, Syme D, Sumann G, Falk M. A survey of emergency medical services in mountain areas of Europe and North America. High Alt Med Biol 2005;6/3:226-237

a survey of emergency medical services in mountain areas of europe and north america

OFFICIAL RECOMMENDATIONS OF THE INTERNATIONAL COMMISSION FOR MOUNTAIN EMERGENCY MEDICINE (ICAR MEDCOM)

Hermann Brugger MD[a*], Fidel Elsensohn MD[b], Dave Syme MBChB[c], Günther Sumann MD[d], Markus Falk MPhil[e]

Questions

- How much remote is a remote area?
- How big the problem is?
- Which sort of accident is more frequent?
- Which standards of treatment: what does it mean “normal” treatment in the Country (region, province) where you are?
- Which protocols are applicable? By who?
- Which devices?

Answer 6
Wath is used usually can be used above-ground & underground as well

Desiderata (Something considered necessary or highly desirable):

- Not heavy
- Not expensive
- Easy-to-use
- Portable
- Robust
- Useful
- Effective / appropriate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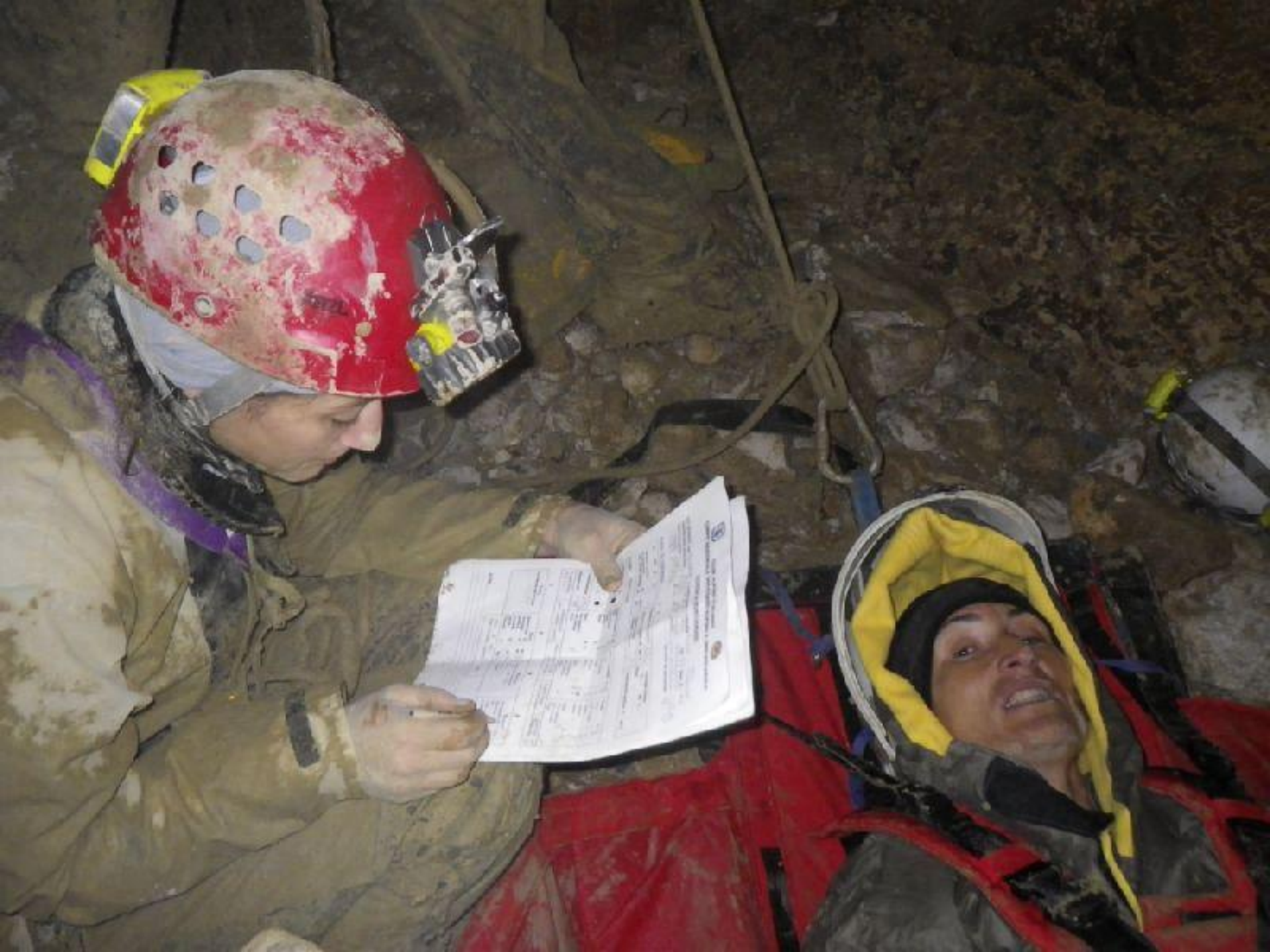
From Tibial Tuberosity:
Go 1 cm toward inner leg
& 1 cm down, toward foot
Penetration site
6-12 yo

Thank you
for
your attention



Parachute use to pr
to gravitational chal
randomised control

Gordon C S Smith, Jill P Pell

What is already known about this topic

Parachutes are widely used to prevent death and major injury after gravitational challenge

Parachute use is associated with adverse effects due to failure of the intervention and iatrogenic injury

Studies of free fall do not show 100% mortality

What this study adds

No randomised controlled trials of parachute use have been undertaken

The basis for parachute use is purely observational, and its apparent efficacy could potentially be explained by a "healthy cohort" effect

Individuals who insist that all interventions need to be validated by a randomised controlled trial need to come down to earth with a bump