Medical Advisors in Wilderness Risk Management

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Objectives

- Define and describe medical advisor
- Describe benefits to medical advisor role
- Describe medical advisor operational considerations
- Discuss specific models

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- Define and describe medical advisor
- Describe benefits to medical advisor role
- Describe medical advisor operational considerations
- Discuss specific models

- Emphases
  - Expanded role medical advisors
  - Partnership

What is a medical director?

- Medical Director
  - EMS context
  - Protocols
  - On-line direction
  - Off-line direction
- Medical Advisor
- Health Care Providers (HCPs)

What is wilderness medicine?

- Medical care influenced by:
  - Environmental factors
  - Resource deficiencies
    - "austere environment"
  - Prolonged extrication

Austere Medical Care

Each apparently different field of medicine shares in common their austere nature, with overwhelmed resources, threatening environment, and occasional delay to definitive care. The quintessential nature of each lays in the pre-hospital provision of care and at times demands prolonged patient care, expanded care protocols, and integration of medicine and rescue.

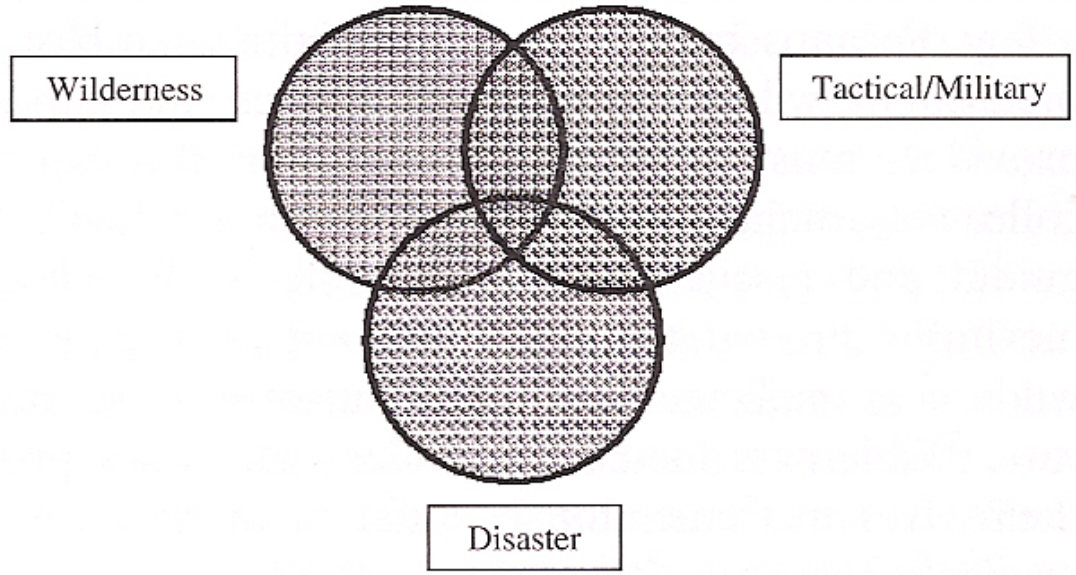


Fig. 1. Overlapping realms of wilderness tactical/military and disaster medicine.

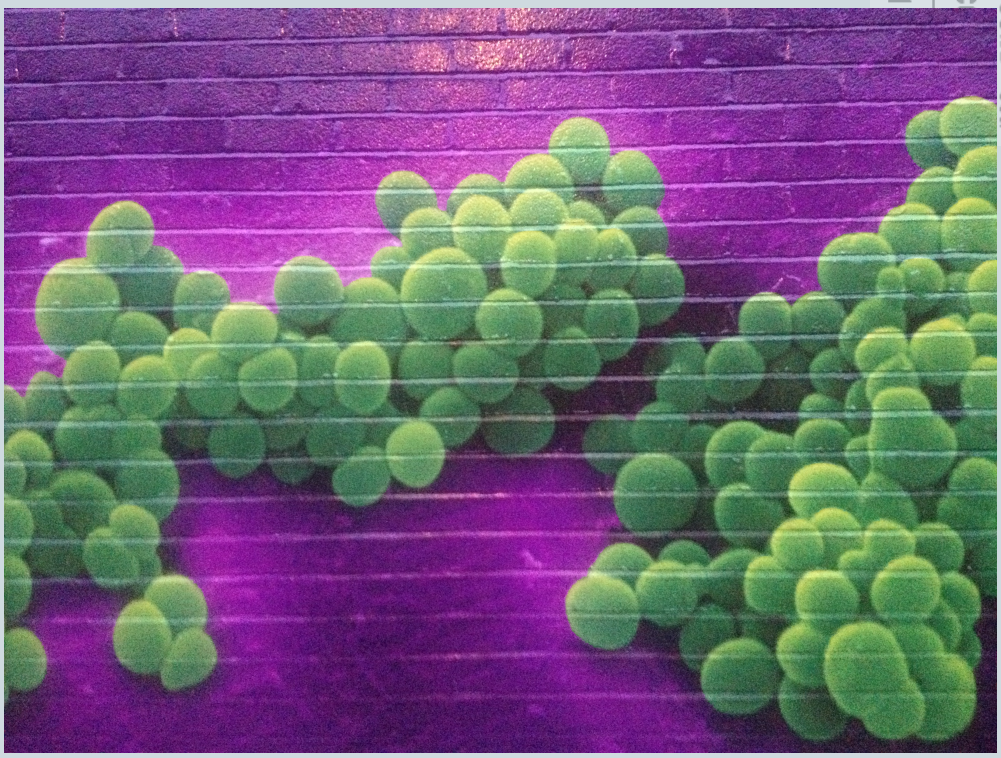
Sholl, *Emergency Medicine Clinics of North America* 2004:22(2),267

Who Should Consider Medical Advisors?

- Camps
- Parks and Recreation Departments
- Colleges and Universities
- Guiding Services
- Conservation Corps
- Expeditionary Programs
- International Trips
- Outdoor Adventure & Education Programs

What are Common Medical Conditions?

- Overuse injuries
- Burns
- Infections
  - GI
  - Skin
  - Appendicitis/Ulcers
- Abdominal Pain
- Sprains and Strains
- Mental Illness

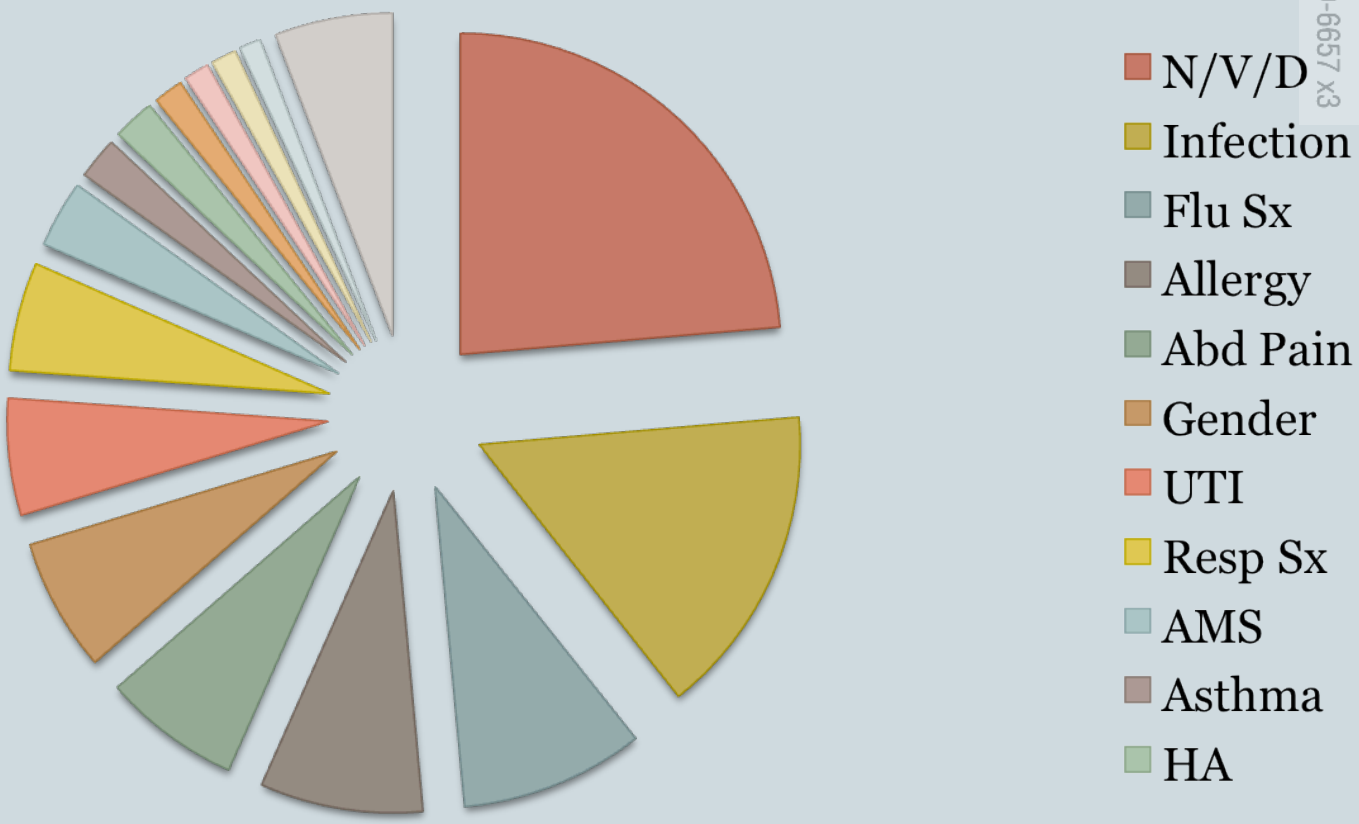


NOLS Incident Reporting

- Database initiated 1984
- 3.5 million+ person days experience
  - 15000 incidents
- Data Publication
  - Gentile DA, Morris JA, Schimelpfenig T, Auerbach PS: Wilderness Injuries and Illness. *Ann Emerg Med* 1992;21:853-861
  - Leemon D, Schimelpfenig T: Wilderness Injury, Illness and Evacuation: NOLS Incident Profiles 1999-2002. *Wilderness & Environmental Medicine* 2003; 14: 174-182
  - McIntosh SE, Leemon D, Schimelpfenig T, Visitacion J, Fosnocht D: Medical Incidents and Evacuations on Wilderness Expeditions. *Wilderness & Environmental Medicine* 2007; 18: 298-304

NOLS Incident Reporting

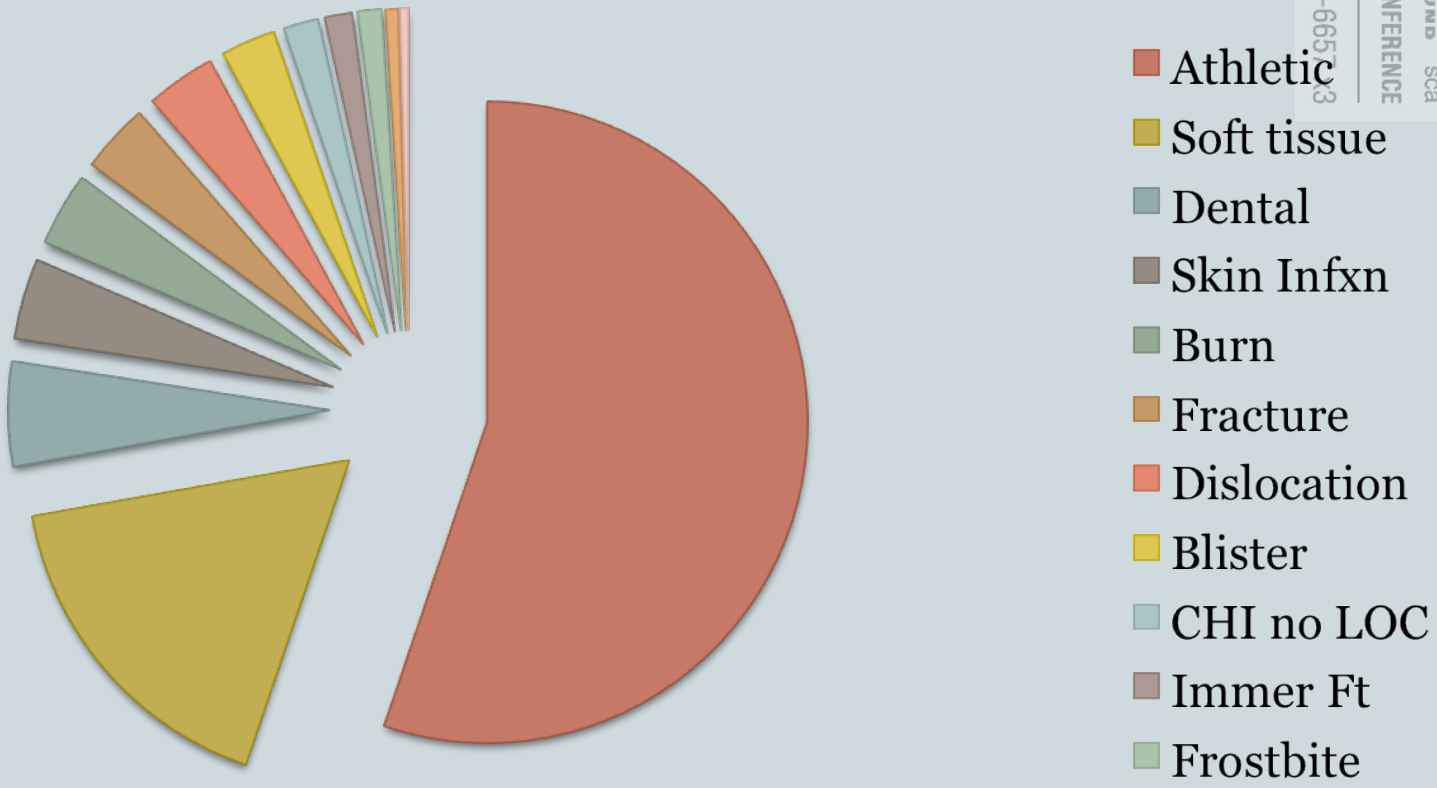
Wilderness & Environmental Medicine 2007



NOLS Incident Reporting

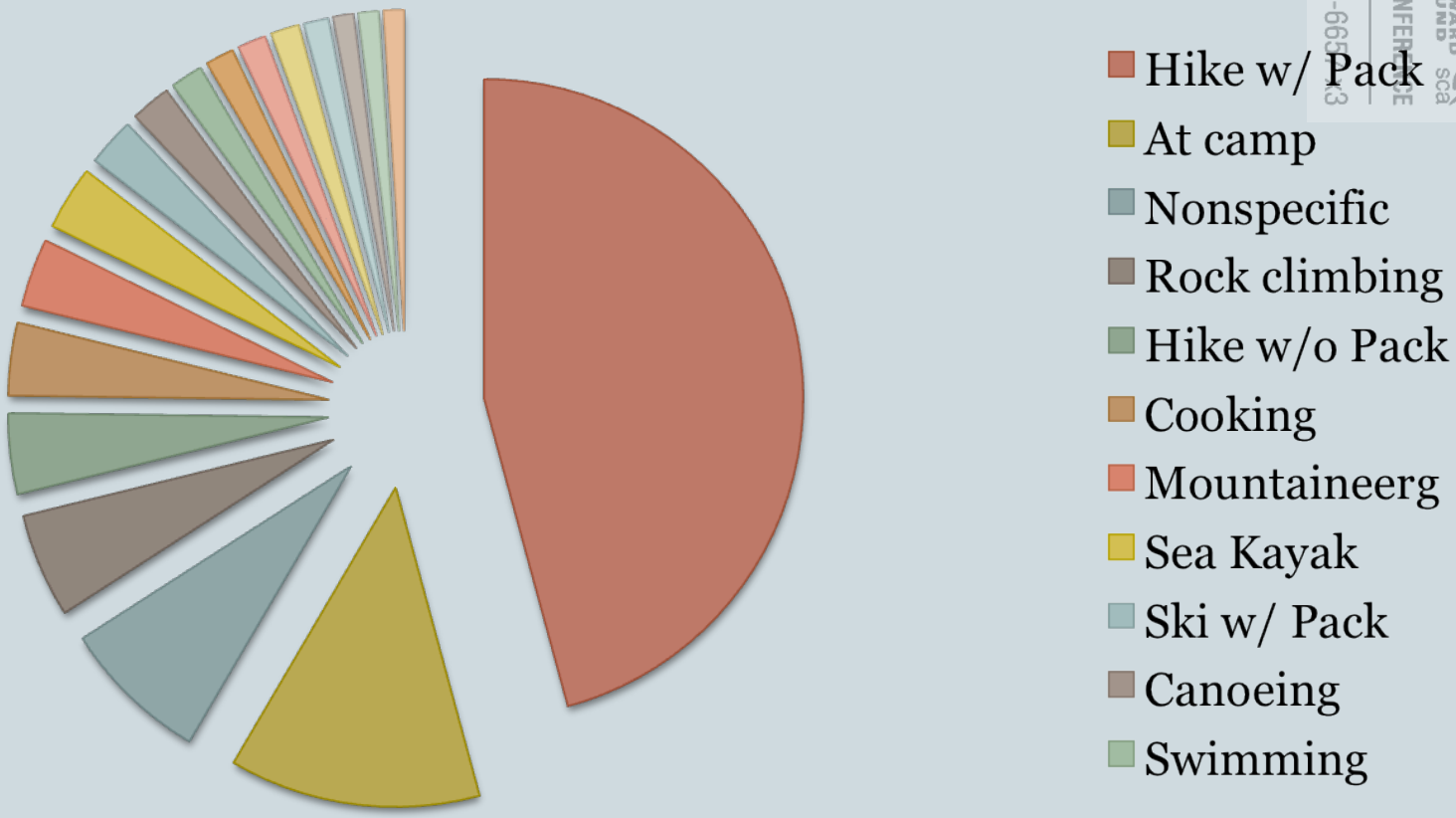
Wilderness & Environmental Medicine 2007

Injury Profile 2002-2005



What Activities Were Involved with Injury?

Wilderness & Environmental Medicine 2007



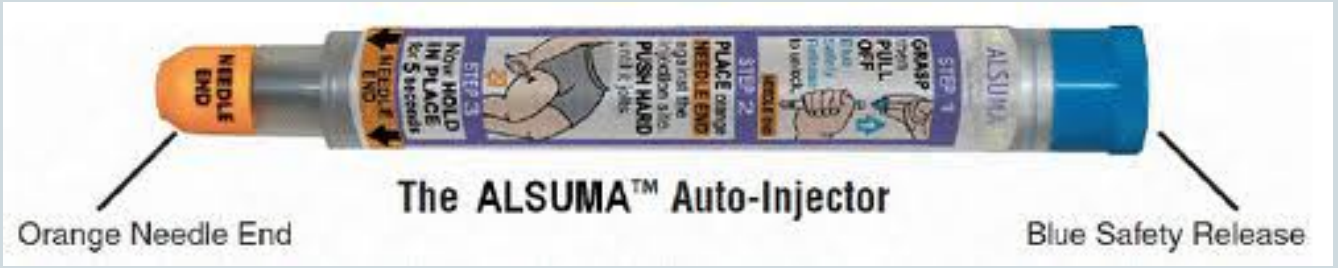
Increasingly High Stakes to Manage Situations

- Market is increasingly competitive

Increasingly High Stakes to Manage Situations

- Different markets have different cultures
  - Epinephrine
    - Adventure Travel vs Adventure Education
    - Different Vehicles

Clinical Tidbit 1: EpiPen vs Sumatriptan



Hawkins SC, Weil C, Fitpatrick D. Epinephrine Autoinjector Warning. *Wilderness Environ Med* 2012;Jul 24: Epub ahead of print.

Increasingly High Stakes to Manage Situations

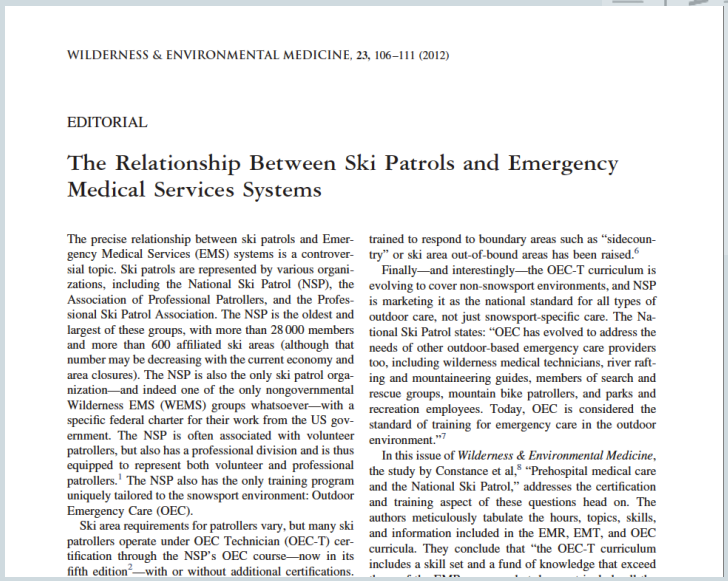
- Societal expectations
  - Unrealistic?
  - Disaster model
  - Staff has high quality medical education
  - Physician-level resources?

Traditional HCP Role

- Informal or Part-time Relationships
- Organized Training
- Medical Screening
- Medical Advisory Role
- Convenience Consultations

Evolving Drivers

- Insurance requirements
  - Insurer requirements
  - HCP requirements
  - Insurance benefits?
- Consumer expectations
- Sophistication of wilderness medical care



WILDERNESS & ENVIRONMENTAL MEDICINE, 23, 106–111 (2012)

EDITORIAL

The Relationship Between Ski Patrols and Emergency Medical Services Systems

The precise relationship between ski patrols and Emergency Medical Services (EMS) systems is a controversial topic. Ski patrols are represented by various organizations, including the National Ski Patrol (NSP), the Association of Professional Patrollers, and the Professional Ski Patrol Association. The NSP is the oldest and largest of these groups, with more than 28 000 members and more than 600 affiliated ski areas (although that number may be decreasing with the current economy and area closures). The NSP is also the only ski patrol organization—and indeed one of the only nongovernmental Wilderness EMS (WEMS) groups whatsoever—with a specific federal charter for their work from the US government. The NSP is often associated with volunteer patrollers, but also has a professional division and is thus equipped to represent both volunteer and professional patrollers.[1] The NSP also has the only training program uniquely tailored to the snowsport environment: Outdoor Emergency Care (OEC).

Ski area requirements for patrollers vary, but many ski patrollers operate under OEC Technician (OEC-T) certification through the NSP's OEC course—now in its fifth edition[2]—with or without additional certifications.

ticality of various providers and certification types remains to be determined.

Clearly, all agree on the goal of improving the medical care rendered to wilderness area visitors and recreationalists. The study by Constance et al[8] is an important contribution and clarifies the actual content offered by various certification program. Future research and position statements will help further clarify the optimal training and practice configuration for snowsport emergency medical care.

Let me conclude by sharing my own opinion. As in most areas of both EMS and wilderness medicine, the complexity and variety of operational environments confounds any single answer. I find it hard to argue that increased physician involvement, increased medical oversight, increased interoperability with traditional trained to respond to boundary areas such as "sidecountry" or ski area out-of-bound areas has been raised.[6]

Finally—and interestingly—the OEC-T curriculum is evolving to cover non-snowsport environments, and NSP is marketing it as the national standard for all types of outdoor care, not just snowsport-specific care. The National Ski Patrol states: "OEC has evolved to address the needs of other outdoor-based emergency care providers too, including wilderness medical technicians, river rafting and mountaineering guides, members of search and rescue groups, mountain bike patrollers, and parks and recreation employees. Today, OEC is considered the standard of training for emergency care in the outdoor environment."[7]

In this issue of *Wilderness & Environmental Medicine*, the study by Constance et al,[8] "Prehospital medical care and the National Ski Patrol," addresses the certification and training aspect of these questions head on. The authors meticulously tabulate the hours, topics, skills, and information included in the EMR, EMT, and OEC curricula. They conclude that "the OEC-T curriculum includes a skill set and a fund of knowledge that exceed

evolve, this goal is attainable at large and small ski areas across the country? Based on the high respect I hold for all of these communities of providers, I most certainly think it is.

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References

1. Ski Patrol Magazine: 2011/2012 media kit. Available at: http://www.nsp.org/press/spm/spm_media_11-12.pdf. Accessed March 13, 2012.
2. McNamara EC. *Outdoor Emergency Care*. 5th ed. Boston: Brady; 2012.

New Technologies

- Miniaturization: availability of medical equipment
  - AEDs, GPS gear, airway devices (BIAD)
- Communications equipment
  - Telephone, Radio
- Telemetry
  - Skype, Tango, FaceTime
  - Internet Accessibility
- Advanced Rescue/Evac Tools
  - Helicopters
  - International Medical Evacuation (eg Global Rescue)
  - Geopolitical awareness

Medical Science & Medicolegal Considerations

- Medications
  - Rx (epinephrine)
  - OTC
- Field clearance/refusal
- Hemostasis
- AEDs
- Infectious Diseases
  - MRSA
  - Influenza
- Selective Spinal Immobilization

Real-world Benefits

- Head injury consultations
  - Hong Kong-NYC/CXR: 0.1 mSv
  - Average US background: 3 mSv
  - CT Head: median 3 mSv (1-6)
  - Average trauma workup: 40.2 mSv
  - Hiroshima survivors: 50-150 mSv
- Futile Rescues
  - Rescue vs Recovery

Clinical Tidbit 2

Selection

- Physician-level HCP
- Mid-level HCP
  - independent or dependent practitioners
- Field HCP
  - EMS model
- Staff trained in wilderness medicine

Terms: Insurance

- Covered by HCP
  - "real job" coverage
  - purchased
  - self-insured ("going bare")
- Covered by Organization
  - rider on standard coverage
  - purchased individually
  - self-insured

Insurance Companies

- Wilderness EMS
  - LapreScali Insurance Services LLC
    - emsmdinsurance.com
- Wilderness Medical Advisors
  - Evolution Insurance Brokers
    - Xinsurance.com
    - “Specializing in Hard-to-Place Risks for Liability, Professional & Property Insurance”

Good Samaritan Protection

- 5 principles must apply for Good Samaritan protection
  - Provider must not have caused emergency
  - Provider must act in "good faith"
  - Provider must not be compensated
  - Provider must not commit gross negligence
  - Provider must not have a preexisting duty to care for patient

Good Samaritan Protection

- 5 principles must apply for Good Samaritan protection
  - Provider must not have caused emergency
  - Provider must act in "good faith"
  - Provider must not be compensated
  - Provider must not commit gross negligence
    - abandonment
  - Provider must not have a preexisting duty to care for patient
    - contract law

Terms: Compensation

Terms: Compensation

- Stipend
- In-Kind Support
  - **partnership**
- Atypical HCPs
  - Resident physicians
  - Retired HCPs
  - Clients
  - EMS physicians

Terms: Availability

- On-site
  - Expeditions, adventure races
- 24/7 coverage
  - How's that working out for you?
  - Professional consultation services
    - WEMSI, WMA
- Call schedule/rotations
- Convenience availability
  - Passive
  - Aggressive

Terms: Role/Activities

- Patient Care
  - On-line (direct)
    - radio, telemetry, on-site (field)
  - Off-line (indirect)
    - medical screening, protocols, training
- Other activities
  - Risk management consultations
  - Employee health

Controversial Roles

- Patient Care
  - On-line (direct)
    - radio, telemetry, on-site (field)
  - Off-line (indirect)
    - medical screening, protocols, training
- Other activities
  - Risk management consultations
  - Employee health

Expectations

- HCP
- Clients
  - disaster model
- Staff
- Administration
- Marketing
  - contractual obligation for specific outcome
    - Guilmet v Campbell 1971
  - “implied contracts”

Case Study

- May 2, 2007
- 15 year old male with MRSA infection dies on a youth adventure program in Colorado

HCP Indictments

- Medical Director
  - felony child abuse resulting in death
  - criminally negligent homicide
- WEMT
  - felony child abuse resulting in death
  - manslaughter

Clinical History

- April 23, 2007
  - journal entry: small blister on ankle; “burning up, vomiting and having trouble hiking”
- April 26, 2007
  - examined by WEMT, returned to basecamp

Clinical History

- April 27, 2007
  - no longer able to control bodily functions
  - considered "defiant" group member, separated from others, placed on suicide watch and given diapers
  - "Staff felt Caleb was faking his discomfort" per indictment
- April 29, 2007
  - talking to people who weren't there

Clinical History

- May 1, 2007
  - had not eaten for 24 hours; staffer helped him drink some water
- May 2, 2007
  - found unresponsive; helicopter called; pronounced dead at the scene
  - Cause of death: disseminated MRSA

Father

- Staff "basically said he was whining and trying to get out of the program. Ten minutes later, he was dead."
- Parents "think they're giving their kids some help, and [serious incidents] happen all the time. If we don't speak up against it, it's never going to stop."

Montrose Daily Press 8/26/07

Organization

- "We are at a loss to see how this was preventable.... It was something the staff just could not tell was there."
- "From what we know, the staff acted appropriately, in line with their track record."

Denver Post, 5/11/07

THE DENVER POST
denverpost.com

Medical Director

- indicted by grand jury
- organization shuts down 7/07
- arraigned September 2008 in CO
- 9/7/08: pleads not guilty
- 11/08: Judge dismisses case
- 9/23/09: mother files civil suit
  - wrongful death, gross negligence, batttery, assault, inflicting emotional distress

Medical Director Update

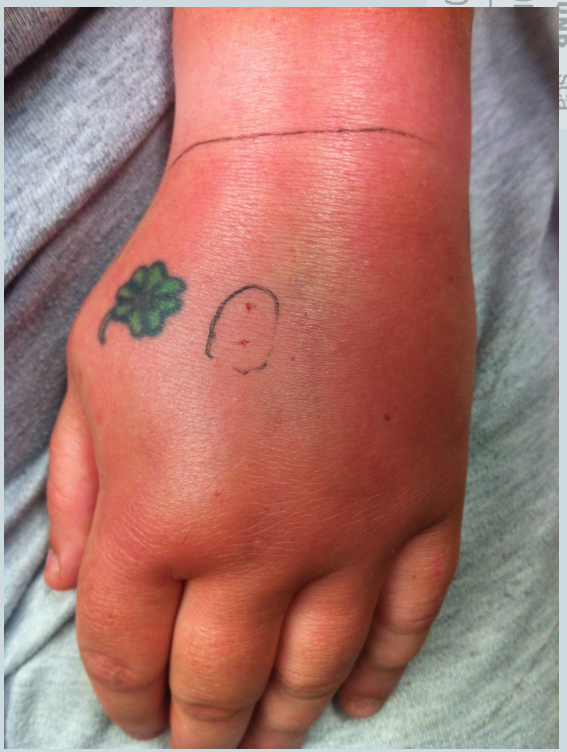
- 2011
  - State of Utah Physician of the Year
- 12/30/11
  - Dismissed from wrongful death lawsuit

Specific Models

- NOLS
  - "Orders", default to evacuate, >20yr medical advisor
  - WMI
- NC Outward Bound
  - Some of the first WM classes in country
- Other Outward Bound programs
  - Alabama OB: Long Leaf Wilderness Medicine
- Military
- Expedition
- Summer camps
- Others

Research

- NOLS
  - Wilderness Incidents and Evacuations
- NCOBS:
  - Screening and Participation of Anticoagulated Participants in Wilderness Activities



Conclusion

- Medical Directors/Advisors may be helpful
- There are many considerations and logistical components that need attention
- Partnership and expanded scope

Resources

- Wilderness EMS Medical Director Course
- Wilderness Medical Society
  - www.wms.org
- Wilderness & Environmental Medicine
  - www.wemjournal.com
- National Association of EMS Physicians
  - www.naemsp.org
- Wilderness Medicine Sections
  - American College of Emergency Physicians
    - www.acep.org
  - Society of Academic Emergency Medicine
    - www.saem.org

Questions, Further Dialogue

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