

Proposed Outline
WILDERNESS MEDICAL TECHNICIAN COURSE

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This is a proposal. The materials have been tested with some rescue units in Colorado and seen adequate. However, it is NOT final in any way. It is presented here as a supplemented outline to provide a starting point. Evaluate, add subtract, rearrange as you see the need. It is developed primarily for a back country high altitude environment and other modules can be added for other environments. It is designed primarily for use by the mountain search and rescue team.

There is still discussion as to whether individuals taking this course should have completed EMT training or whether they must have had advanced Red Cross First Aid or some special course in Emergency Care. No decision has been reached and it may derive that several approaches to this course could be accepted,

At the "Medical Side of Rescue" symposium in Colorado Springs in 1978 a set of general medical criteria for Rescue Teams Here established. They are included here for study and analysis.

Rescue Team Medical Criteria

1. Each team must have an identifiable physician advisor.
2. Members of the team must be adequately trained in basic life support skills,
3. The team must have fluid replacement capability.
4. When needed, the team must be able to manage the hypothermic victim.
5. They must be able to maintain core temperature, control pain, control allergic reactions and monitor basic vital signs.
6. They must be capable of openings establishing and maintaining an adequate airway.
7. There must be a continuing medical education program with emphasis on practical stress situational medical problem training.
8. There must be awareness and training for proper patient packaging and continuing patient care during evacuation.
9. The physiological changes inherent in the victim's environment during transport should be noted, understood and provided for.
10. The rescuers must be in condition to be able to perform effectively when they reach the victim.
11. The rescuers must understand how the environment will affect the patient.
12. The rescuers must be aware of the legal implications of their work.
13. The rescuers must record the details of emergency care given to the victim and maintain a continuous record of vital signs.
14. The rescuers must have adequate equipment, gear and medicines to manage the victim.
15. There must be an evaluative system for critiquing the care given by the rescuer - including self-valuation, evaluation by others on the mission and by an outside source.

Introduction

- Review of basic emergency care and traumatic emergency care procedures
- Warning that the rescuer should not try to diagnose his own problems
- Study of Survival Limits' relating to terrain and environment.
- Review of Topographic Anatomy
- one person in charge of the patient (3rd man on the wall, 7th man on the litter)
- Need for continuous communication between all team members
- The legal aspects of the activities being conducted
- Need for tact, diplomacy and calm

- Regardless of what program is developed it will be of little use unless it is disseminated with the ultimate goal that the 'first-in' rescuer to ANY victim has this knowledge. This will be our biggest problem - to prepare the materials, AND get theca to the field rescuer - considering his problems of the tine he has far training, how much he can afford to pap, etc. Through colleges, weekend seminars, field training teams, etc. it MUST be disseminated.
- We need much more interface with the medical profession. We have the support of the American College of Emergency Physicians and of many individual physicians cm the local level, but direct advisory support and involvement is still quite weak. We hope to have a nation-wide advisory panel of doctors in the near future, but no one has been willing to organize it yet. Any takers??
- We must realize that we cannot be all things to all people. If we try to put out an emergency care program that will be for the scout leader, hiker, rescuer and expedition leader all in one package it will be too complex for some and too elementary for others. We test limit ourselves to the EMT-W concept and avoid the other areas, (Incidentally, these other areas are already being well managed by red cross, survival education and mountain medicine books courses and seminars.) We must concentrate an training the rescuer.
- All of us - even your chairman .- often believe we are 'experts' in this field. We can't afford that luxury! We mast presume the reverse and keep an open mind to what we learn from others as well as be willing to change as we find something better.
- We can't presume that just because someone is a doctor, or nurse, or holds as EMT card that they are able to manage wilderness care. Particularly with the wide variety of EMT programs abounding mere course completion is not enough. We need review and reteaching is many areas as part of our program and some evaluative criteria - eventually certification.
- We have four problems an any major wilderness victim management mission and they will vary from mission to missions so out program must be flexible enough to consider them, The are: (1) Terrain and access. (2) Environment and conditions of nature (blizzards high wind etc.). (3) Time - to reach the victims, to manage him, to evacuate him. (4) Communications - and how to manage if we are unable to establish them.
- Lastly, in the outline to follow, we were unable to establish a time frame for each section of the course outline. That will have to be developed later, If the briefest time far as EMT-W course were used it would be about 80 hours. The longest recommended was over 250!

General Concepts

These were recommended by the majority of contributors. Some are redundant, and some have been mentioned before. They are included here - as is much of this material - for consideration and discussion. They are not in any order of priority.

- The EMT-W MUST have a very high proficiency in the BASICS. In the words o!
Dr. Norman H. Mellor, M.D., Corona, California, "Most important is to save the victim's life. If you can't save his life after you get to him - why go? You should have sent the coroner instead. In other words, the three things that are going to kill him are: (1) Cardiac arrest, (2) Respiratory arrest, (3) Shock. And these three are potentially involved in all of the subjects is this course."

- We must work closely with physicians and DHEW to set up pilot programs in selected areas to test our concepts, the amount and type of training needed gear requirements etc. We'll need this practical experience to revise our outline.
- The need to gather data on existing techniques and research is critical and this data needs wide dissemination as it becomes available.

- The need for new equipment for our special area - and applications of present equipment - is still great. Research in this area could be included in some pilot programs,
- The program must present a basic body of information in modular sections and be so designed that each mod has its own extensive practical training, evaluative tools and testing program. Trainees may have to take all modules of the basic program or, if they can meet the practical and testing requirements they might skip one or more of them, This way the program can be flexible to account for variations in basic training and experience of the individual.
- Beyond the basic course will be additional modules for special rescue and special conditions as noted in the outline included. They would be taken by those involved in a particular field or by those wishing cross-training.
- In ALL cases both the basic and special rescue modules must be tailored to fit the parameters of the physicians who will be specifically advising the SAR unit taking the training and the hospitals with which they interface. At this time this will mean a wide variety of freedom and limitations on field care because of the wide gap in what is approved by doctors and hospitals throughout the country (in Denver alone some emergency physicians never want a 4-poster applied for neck injury while others say the patient should always come in with one on!) Hopefully this will be solved nationally by some group (HEW, AAOS, AMA, ??) but for now we must be realistic and accept it.
- The course must be readily available to the field SAR team member.
- The course must be developed by first as outline (included here), then concept acceptances then testing, then presentation, then reevaluation and restructuring. This must be continuous. This course will NEVER be completely written for it must be updated continuously,
- Its orientation should be so that the rescuer be both proficient in the rescue techniques of his unit AND in the EMT-W material. Though there will be exceptions (good) it is based on the main idea of making the rescuer capable of emergency care rather than making the doctor or nurse a rescuer.

- There must be very heavy emphasis on practicals - both in house and in field, They should be regular parts of training as well as part of all testing.

THE OUTLINE

With all of that 'introduction' wot's to be taught?? The Outline that follows is set up as a series of modules designed to cover the material suggested by the many letters and guides received. Again, it is 'suggested'. It is a base from which we can develop the EMT-W program. It is NOT engraved in stone! In cases where an item is listed that is also taught in the Basic EMT program the listing does not imply that this will be the same material, but will build on the basic material and present advanced training specific to the wilderness environment (i.e., "Chest Injury" - for this course that might also include management of the open or tension pneumothorax for extended periods of time - say 72 hours) The proposed modules:

General Management

- Medical terminology, topography of anatomical structures definitions -
- Total review of basic body systems - encapsulating EMT-A
- Cardiac Arrest and the American Heart CPR in review
- Respiratory arrest and airway management
- Legal Aspects of emergency care and physician/hospital interfaces

- Shock management over long term management periods (16 basic types)
- Management of fatalities in the wilderness environment
- Records and reporting procedures

Victim Evaluation

- Use of diagnostic equipment (stethoscope, BP cuff, etc.)
- Managing the unconscious patient
- Total body evaluation
- Triage
- Vital Signs
- The rescuer's attitude toward and management of the victim
- Data acquisition from the immediate area and from others with the victim
- Illness indicators and identification management
- Synergism and Masking as related to long term management

Victim Management

- Elimination of external problem factors (heat, cold, water)
- Introduction to temperature, fluid, electrolyte management
- Importance of four-stage approach: evaluate, manage, treat, evacuate
- When to expand management (i.e., reduction of dislocation if arm blue)
- Time frames - to stabilize or evacuate immediately
- Patient packaging - for the type and duration of the evacuation

Management Techniques

- As approved by a physician and including, but not limited to, suction, reduction of tension pneumothorax, cricothyroidotomy, catheters, etc.
- Intravenous techniques and injection techniques
- Improvisations based on limited equipment

Trauma Management

- Chest injury - internal, external
- Abdominal injury - internal, external (i.e. management of ruptured bladder)
- Head injury - including depressions subdural hematoma etc.
- Fractures and bone damage - including cervical and spinal injury
- Skin damage and soft tissue injury
- Long term open wound management

System Malfunctions

- Cardiac problems - MI, CVA, etc.
- Respiratory problems - including hyperventilation, oxygen deficiency, etc.
- Abdominal Disorders - including illness as well as rupture
- Dyspnea
- Illness - preexisting or environmentally induced
- Circulatory problems
- Infection
- Muscle management - pains cramps etc.

Neurological/Psychological

- | | |
|----------------------------|-----------------------------|
| - Neuroses and psychoses | - Pain and response to pain |
| - Epilepsy and convulsions | - Levels of consciousness |
| - Stress management | - Hypertension |

Specific care

- Management of victims of lightning strike
- Long term burn management
- Poisoning - food poisoning - snakebite - self-induced drug poisoning
- Chemical/Radiological management (i.e., victims of plane crash in back country where aircraft had these items on board)
 - Allergy Management
 - Diabetic Management
 - Communicable Diseases
 - Gun shot wound management

Special Management

- Medications-Drugs-Injectable - administration, dosage, effects, side-effects, indicators, contraindicators, legal considerations, physician approval
- Field improvisations
- Elaboration of fluid management for long-term operations
- Survival physiology
- Contests of "bash" (first in) and "support" medical packs

SPECIAL MODULES

The above gives the outline of the general EMT-W course. The material below is to be considered as a start toward special modules of training for particular situations. Many items may be interchanged in the final outline. Remember, this is only preliminary.

Long Term Evacuation

(Over 48 Hours)

- | | |
|-----------------------------|-------------------------------|
| - Infection management | - Wound Management |
| - Medication | - Illness |
| - Fluid Management | - Extended techniques for CPR |
| - Extended Rescue Breathing | - Extended use of IV's |

Limited Access

(Cave, Rock, Disaster Environment Rescue)

- | | |
|--|---|
| - Victim packaging | - Management while moving |
| - <u>Very</u> restricted gear management (minimal emergency care gear) | - Victim manipulation (cave or loading into liter on cliff) |

Water

- | | |
|----------------|-----------------|
| - Immersion | - Resuscitation |
| - Drowning | - Decompression |
| - Hydrothermia | |

Heat

- | | |
|-----------------------------|-------------------------------|
| - Dehydration | - Exhaustion |
| - Heat Stroke | - Cramps |
| - Syncope | - Fatigue |
| - Poisonous snakes, animals | - Solar radiation - eye burns |

Cold

- Hypothermia
- Frostbite
- Chill factors and environment
- How to manage medication and IVs in extreme cold (chill factors of -90° F.)
- Freezing
- Dehydration

High Altitude

- Pulmonary Edema
- Cerebral Edema
- Environmental - wind - temperature
- Mountain Sickness
- Solar Radiation
- Illness
- Anoxia
- Nutrition management

Expedition Management

- (easy, just take a doctor along!) However otherwise emphasis on:
- Stress-psychological and psychological
- Wilderness skin diseases
- Infection management - medications, etc.
- Illness - including, but not limited to: headaches, stomach ache, diarrhea, respiratory, heart and blood vessels, gastrointestinal, abdominal, urinary, nervous system, eye-ear-nose-throats allergies,

Support Training

Nat directly involved in the course, but considered important for the rescuer and twist be included somewhere in his training if ha is to be effective:

- communications - radio, air--ground, non verbal., codes and terminology
- transportation helicopter uses litter management other evacuation modes
- equipment - both for the medical packs and for the individual rescuer
- map and compass - for orientation, to reach the victim and report position
- law enforcement coordination far operational permission
- preplanned means of interfact with hospitals and physicians

Those are the modules proposed by the committee, Now, we need to see what we can do to evaluates modify AND implement the concept and the outline.

Resources

There are a number of outstanding references and resources and more are being developed daily. Particular mention should be wads of the work of Dr. James A, Wilkinson, MD, for his "Medicine for Mountaineering", the work of Gene Fear in training people to survive in the wilderness the work of Ben Klausner, R. J. Burle and Don Best in developing advanced training programs and the work of Dick Mitchell in setting up effective mountain medicine institutes. These are but a few. Don't feel bad if you were left out. The point is that materials are available and will be a great help if we can bring them together and work them into this outline. But let's not forget that our work is for a special training coarse for the rescuer and is not intended to be all things for all people.

Action

Now, you tell me -- what do you think of the materials here? Haw can we get the program started' How can we learn what's new is this field? How can we get the needed equipment? Haw can we teat this concept? Where do we go from here?

The Future

Most of our work o date has been on this outline for an EMT-W course. That is not the sole function of this committee. We want to continue getting answers to the questions just asked, but were also interested in all aspects of emergency medicine and some long range plans include equipment research a central data bank of information, coordination of the efforts of miry groups - such as CAP, ski patrol, etc. in the care field and study of proper identification and certification of emergency care personnel. red cross is recognized. Blue has become paramedic. Were looking at an orange cross for EMT-W superimposed over a blue compass).

But the greatest plans and hardest work will be useless unless YOU become involved by supporting the committees plans, providing information and making yourself heard. How about it?

Stan G. Bush • Chairman

So you'll know them

Kurt F. Kircher - Team Captain of Ouray, Colorado Mountain Rescue Team. Swedish Army from 1939-1945 with mountain troops. Argentina from '46-'49 with high altitude climbs in Andes. Colorado since 1951. Ski tour instructor and guide. Over 50 SAR missions in rugged terrain. Vice-Chairman of Region Ten Emergency Medical Systems Council - studying medical aspects of mountain rescue operations. Registered EMT. Special training in survival, avalanche rescues, rock work.

Pauline B. Saunders, R.N. Member of a mountain (rock) rescue team SAR-3-Simi she is a mountaineer/nurse who goes to the victim. Living in Ventura, California she is also certified in Health and Physical Care Services and Related Technologies, American Association of Trauma Specialists in EMS, Coronary Care Nursing, The Nurse in the Emergency Department and advanced training in mobile intensive care nursing.

Judy and Ted Waddell - Park Rangers in the Visitor Protection Program of the NPS C & TO Canal near Potomac, Maryland. Stationed in the Palisades District. They both have extensive training in SAR including: State EMT National Registry EMT, whitewater kayaking, crisis intervention suicide prevention traumas water and whitewater rescue) high angle vertical rock rescues the NPS school on managing the ,arch functions cave rescues survival and preventative education land search river search boar recovery., technical rock rescue, field medical care, Meanwhile Judy is a First Aid and CPR instructor while Ted has special training in narcotics and drug control.

These are the types of people on our Committee. With an active roster of aver 50 members it blends many types of experience and interest - hopefully in the best interest of potential victims NASAR and the Search and Rescue Community.