

What's in a Good Medical Kit?

Howard Donner, MD

Organizing medical equipment for an expedition requires an enormous amount of planning and forethought. No matter how much equipment is hauled in, one cannot possibly prepare for every eventuality.

What should one take? There is a wide range of opinions, from "nothing but a triangular bandage and Swiss army knife" to a collection that would stagger local porters. Surgeons inevitably anticipate trauma, while medical people favor pills and shots. Remember, overly bulky kits are often left behind.

The contents of a kit depend on many on many factors:

- Environmental extremes of trips
- Endemic diseases
- Medical expertise of medical officer
- Medical expertise of expedition members
- Number of people on trip
- Responsibility for local health care
- Length of trip
- Distance from definitive medical care
- Availability of rescue (i.e. helicopter)

Personal Medical Kits

Personal kits should be carried by each expedition member and include these commonly used items:

- Non-narcotic analgesics
- Anti-inflammatories
- Throat lozenges
- Sunscreen and lip protection · water disinfection · blister care
- Minor wound care
- Insect repellent
- Malaria prophylaxis (if risk exists)
- Vitamins
- Personal medications (for pre-existing problems)

Main Medical Kit

The following should be considered for the main medical kit:

Antibiotics

Physicians seldom agree on the optimum antibiotic for treating a given disease. Prepare for the common problems:

- Upper and lower respiratory infections. (Your choice.)
- Skin and soft tissue infections. Consider a first-generation oral cephalosporin. Duricef (cefadroxil) is preferable because of the q12-24 hr dosing schedule (i.e. less bulk).
- Bacterial diarrheas – many enteric pathogens are currently resistant to the old standby, Septra. Include a quinolone, i.e., Cipro.
- Giardia – Tinidazole or metronidazole.
- Rickettsial illness (rare) – Tetracycline
- Helminthic infections (hookworm, roundworm and tapeworm) – Mebendazole.
- Malaria for prophylaxis or presumptive treatment - mefloquine or chloroquine and Fansidar.

Analgesics

- Percocet (or other strong p.o. narcotic).
- NSAIDs (non-steroidal anti-inflammatories), e.g., Naprosyn 500. Carry in a large "bucket." Many aches and pains develop on the trail.

Respiratory Treatments

- Albuterol-metered dose inhaler or spinhaler are essential for cold or exercise-induced broncho-constriction, a common malady at higher altitudes. It also serves as an important adjunct in treating lower respiratory tract infections.

Ear, Nose and Throat Treatments

- Rhinorockets - lightweight, simple method for anterior nasal packing.
- Afrin or other topical nasal decongestant - a coveted item on mountaineering expeditions; essential for upper airway congestion, which often occurs. Also helpful for eustachian-tube dysfunction during altitude changes.
- Corticosporin otic or other topical anti-infective.
- Seldane or other non-sedating antihistamines have myriad uses for allergic symptoms.
- Throat lozenges or hard candy for omnipresent "altitude throat." (Bring a lot.)
- Sudafed or other oral decongestant.

Eye Treatments

- Tobrex or other potent topical antibiotic.
- Cyclogyl (cyclopentolate HCl) or other intermediate-acting cycloplegic for relieving the ciliary spasm of photokeratitis or uveitis.
- Tetracaine is essential for corneal examination; also useful in extreme conditions for allowing a climber with disabling photokeratitis to get off the mountain (suboptimal treatment!).
- Fluorescein strips for staining corneal defects.
- Eye patches for corneal abrasions, photokeratitis.

Central Nervous System Treatments

- Valium
- Haldol - Psychotic breaks can occur under the extremes of expedition life. (Imagine seven days in a snow cave with someone you dislike!)
- Caffeine - Useful for a little extra "get-up-and-go," or to relieve caffeine, withdrawal headaches.
- Dexedrine - Controversial, although it may be lifesaving under extreme conditions, such as having to get off the mountain under your own power or die. (Not normally recommended.)
- Transderm Scopolamine for motion sickness.

Cardiovascular Treatments

- Inderal LA for chest pain or MI.
- Nitrostat/Transderm Nitro for chest pain or MI.
- Nifedipine for HAPE, angina, hypertension, and uniquely effective for Raynaud's phenomena.

Gynecological Treatments

- Monistat suppositories.
- Urine pregnancy test for ruling out ectopic pregnancy in the reproductive-age female with pelvic pain and/or vaginal bleeding.

Gastrointestinal/Proctological Treatments

- Pepto Bismol tablets for symptomatic treatment of non-dysenteric diarrhea.
- Imodium is irreplaceable for long bus rides or summit bids.
- Colace and Metamucil for "freeze-dried megacolon."
- Compazine suppositories (melt at high temperatures) and tablets (added benefit of respiratory stimulant at altitude).
- Antacid tablets - Reflux is common at altitude.
- Oral rehydration solution (dehydrated packets), e.g. Jeevan jal or Infalyte. (Homemade ORS can also be prepared.)

- Anusol HC and Tucks pads (containing 50 percent witch hazel) - hemorrhoids are extremely common on expeditions.

Altitude Sickness Treatments

- Diamox - Usual dose 250 mg bid or one 500 mg spansule; smaller doses are effective for improved sleep, i.e. 125mg. qhs.
- Decadron 4 mg tablets for treatment of cerebral edema.
- Lasix 40 mg tablets for treatment of peripheral edema.

Topicals

- Nizoral (or other antifungal).
- Kenalog 0.1% cream (or other intermediate potency steroid).
- Insect repellent with DEET.
- Silvadene cream for burns (optional) or Bactroban, Polysporin for topical antibiotic.
- Vaseline or other ointment such as Aquaphor or Blistex for treatment of chapped lips or fever blisters. (Some include Zovirax ointment for this.)
- Labiosan (or other bomb-proof sun protection for lips).
- Betadine or Hibiclens.
- K-Y Jelly for rectal or vaginal exams.
- Foot powder

Blister Treatments

- Moleskin - Bring tons of it!
- Adhesive foam for fashioning donuts and padding for boots.
- Spenco Second Skin; it's expensive, but indispensable for painful, ulcerated bases of de-roofed blisters.

Wound Supplies

- Steri-Strips (multiple sizes).
- Tegaderm or OpSite for abrasions.
- Sutures in multiple sizes, both nylon and absorbable.
- Superglue for instantaneous treatment of painful skin fissures
- Gauze, Band-Aids, etc.

Surgical Supplies

- 14G. Angiocath - emergency tube thoracostomy.
- Uncle Bill's tweezers for foreign-body removal.
- Disposable skin stapler (Ten Shot Precise, 3M) - especially useful for scalp lacerations.
- #11 scalpels for I&D.

Instruments

- Bandage scissors, tissue scissors, needle drivers, and forceps.
- Ten or 20 ml syringes with 18 G angiocaths for high-pressure.
- TB syringes for administration of lidocaine.
- Paper drapes.
- Sterile gloves.
- Shavers.
- Safety pins have at least 15 uses!

Orthopedic Supplies

- SAM splints, both full-length and finger sizes (great for improvising just about anything).
- Kendrick Traction Device is a very lightweight design for femoral traction.
- Adhesive tape for splinting ankles, fingers, etc.
- Ensolite pads (no, you don't stick these in the medical kit, but they're mentioned here because they make universal knee immobilizers, ankle splints, C-collars, etc.
- Ace wraps are essentially worthless for stabilizing "blown-out" joints; however, they serve an important function by providing compression. There are also useful for holding pressure over taped extremities. (Coban works well, too.)
- Fiberglass splints (e.g. 3M One Step).
- Stiff Neck Extrication Collar, if room permits. (This can be improvised.)
- Air casts or gel casts are lightweight splints for sprained ankles that allow near-normal ambulation and can be used inside of boot.)

Injectable Medications

- Epinephrine 1:1000 is a must!
- Antibiotics – multiples alternatives here; these are included to provide temporizing treatment in the unlikely event of meningitis or an intraperitoneal infection, ie., ruptured appendix or bowel perforation.
- Primaxin (imipenem-cilastatin sodium).
- Rocephin (very expensive and those on a tight budget may consider old-fashioned chloramphenicol).
- Morphine Sulfate.
- Narcan where there's MS, there's Narcan.
- Phenergan.
- Compazine.
- Benadryl.
- Valium (consider rectal administration if difficult IV access).
- Depo-Medrol – trigger-point injection for severe tendonitis.
- Lidocaine 1-2%.
- Toradol IM (ketorolac tromethamine). Note current problems with availability.

IVs

- Multiple sizes of angiocaths (16, 18, & 20 G).
- Intraosseous needle.
- Blood solution administrations sets.
- A Microdrip administration sets.
- Heparin locks.
- Bacteriostatic normal saline or heparin flushes.
- Anticoagulated blood collection bags (if group transfusion is considered).
- IV fluids – crystalloid for volume resuscitation, e.g. normal saline or lactated Ringers; D5W for administration of medications.

Airway Management

- Oral airways.
- Endotracheal tubes (7.5 8.0) for blind nasotracheal intubations. (Some expeditions carry laryngoscopes, but they're heavy and bulky. disposable plastic units may be an alternative.)
- V Vac suction device (optional) – somewhat bulky but very effective.
- Pocket mask.
- Medical oxygen tanks with regulators, nasal cannulas and 100% non-rebreathing mask with reservoir.

Dental Kit

- Minimal kit includes:
 - Cavit (no-mix temporary filling)
 - Eugenol (topical analgesic)
 - Dental floss has multiple uses including reinforcing splint for avulsed teeth.
- More extensive kit to include:
 - Benzocaine in Orabase (topical anesthetic, anti-inflammatory).
 - IRM powder for recementing crowns
 - Dental syringe with Marcaine ampules
 - Mouth mirror and explorer
 - Filling instrument
 - Probe
 - Universal extractor
 - Elevator

Miscellaneous Medical

- Hypothermia thermometer (Zeal subnormal).
- Stethoscope (often ear-to-chest is adequate).
- Snakebite kit (Sawyer extractor works best).
- Condoms for improvising one-way “Heimlich” valve for use with tube thoracostomy or chest tube.
- Paper and pencil is essential for communication.

- Headlamp – essential for any nighttime operations or surgical procedures requiring extra lighting (e.g. dental procedures).
- Urine Chemstrips.
- Tongue blades.
- Sterile applicators.
- Foley catheter (16 French with 30 ml balloon can be used as urinary catheter, improvised chest tube, posterior nasal pack).
- Water disinfection system.
- Fluorescent surveyor's tape for marking helicopter landing zone, or finding your way back to the victim.
- Spare sunglasses (protective eyewear can also be improvised if necessary).

Optional (rarely will these instruments change the initial impression or plan):

- Oto-ophthalmoscope
- Blood pressure cuff

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