

2004 West Marine Pacific Cup Race Medical Preparation

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Someone has to be in charge of getting the medical act of the boat together. Usually it's the most medically qualified on-board, but ultimately it's the skipper who's responsible for the overall well-being of the vessel and crew. Realistically, the chances of your crew experiencing any serious medical emergency are slim. Most people cruise successfully for years without a single mishap. Sailing is a safe sport and exposes you to little risk. Hell, I'd much rather take my chances cruising to Central America than driving over Highway 17 from Santa Cruz to San Jose. Some could even argue its probably riskier staying home. The twenty-year Framingham heart study recently found that women who seldom took vacations or never traveled at all were twice as likely to suffer a heart attack or die from heart disease as women who went on a vacation at least twice each year.

How to prepare

Think PREVENTION. Just like everything else about your boat, it's far better to avoid a problem than deal with it under less than ideal circumstances. Some pointers:

1) Anticipate potential problems by knowing the medical history of everyone on board. Obvious concerns such as heart conditions, diabetes, ulcers, seizures must be discussed openly and honestly. I personally know of a boat where a Transpac skipper had not informed his crew of his peptic ulcer condition and ended up being airlifted(too late) back to land where he died of a perforated ulcer. In another case, a boat was forced to quit the 1994 Pacific Cup race early because of the skipper's chest pain(he was known to have coronary artery disease) resulting in another dramatic Coast Guard rescue. At least in this case the crew was aware of the victim's problem and didn't delay evacuation.

2) Personal medications should be the responsibility of the person taking

them, but consider splitting the supply in two; half to be under the control of the person taking them and the other half in the vessel's medical kit. That way there will be less chance of the medication getting lost.

3) Physical conditioning should be considered important, especially for any of your crew clearly out of shape. Although sailing/cruising is not in the same league as running marathons, there is no question that being in good physical condition gives that extra energy, strength, and mental edge to handle emergencies. Think of some program of daily aerobic exercise as well as some way to keep your joints flexible. A big problem on long cruises/races are the hours of doing not much more than sitting/sleeping and then expecting your stiff joints and muscles to propel you into and out of foulies, to respond to sudden sail changes, or to compensate for unexpected motions of the boat. It's those stiff joints and muscles that most often get injured.

4) Having at least one person (preferably two) on-board with CPR/First Aid training should be a priority. And know how to use your radio to obtain medical advice. In any case, remember there's no 911 or AAA service at sea. You are it!

5) Prescription medications can sometimes be difficult to obtain for your medical kit. Especially narcotics. Many physicians are reluctant to write for meds that could end up being abused or taken by persons who could be allergic to them. The best advice I can give is to meet with a physician you know personally (and better yet is a sailor) and explain exactly what your plans are and why you need the medications. If you don't have a personal doc, then the next best thing is to go to one of the local traveler's clinics where they have experience and understand your needs.

The Medical Kit

The medical kit is always a compromise between everything you might want to carry and what you can reasonably afford. With that in mind, consider the following questions as you assemble your kit.

1) Are there specific health problems that must be considered? Diabetes? Heart problems? Arthritis? Old sports' injuries? Epilepsy? Handicaps?

- 2) Will there be children aboard?
- 3) What kind of radio/telecommunications do you have? VHF? SSB? Cellphone? Ham radio? Satellite phone?
- 4) What special skills do you have? First Aid? CPR? Medical? Nursing?
- 5) What is your personal risk tolerance? High, i.e. willing to accept the trade-off between the economy of a simple kit and the risk of not having everything you might need? Or are you a risk-adverse person who would carry a hospital if given the chance?
- 6) Are you an improviser? Could you easily build a traction splint for a broken leg out of lee rails and duct tape?
- 7) Do you have the time, energy, inclination and expertise to custom-make your kit from scratch or are you looking for the most appropriate "off-the-shelf" kit?
- 8) Do you have "inside" access to information, medications and supplies (friends or family in health care) or will you have to spend top dollar for your purchases?
- 9) Do you have access to an experienced sailing physician willing to advise regarding supplies and medications and also prescribe antibiotics and narcotics?
- 10) Planning on snorkeling/diving?
- 11) Is anyone on-board taking prescription medications on a regular basis?

And the list could go on, but you get the idea — there is no such thing as the "standard" medical kit for every boat. But there is probably a good one for your boat based on your assessment of the above questions.

So let's start with the most basic item in your kit, the medical manual. I will only mention four books, although there are plenty of others you could choose from:

Advanced First Aid Afloat, 5th Edition
by Peter F. Eastman, MD
Cornell Maritime Press, 232 pages, 2000

For twenty-five years this has been the standard First Aid text carried aboard most sailing vessels. (First Edition, 1972). Dr. Eastman, a retired surgeon, writes in a folksy anecdotal manner and tells good sea stories. Describes procedures in a step-by-step manner, such as how to suture, how to give an injection, etc. This is a very readable book.

The Onboard Medical Handbook: First Aid and Emergency Medicine Afloat
by Paul G. Gill, MD
International Marine Pub., 230 pages, 1996

A relatively new addition to the shipboard medical library. Dr. Gill is an experienced Emergency Physician who has written a regular column for Outdoor Life and is an occasional contributor to Cruising World as well as other magazines.

Wilderness Medicine: Management of Wilderness and Environmental Emergencies
Edited by Paul S. Auerbach, MD
C.V. Mosby Company, 1506 pages, 1995

This is the text for medical professionals, highly recommended. It details the diagnosis, treatment and pathophysiology of virtually all emergencies encountered in remote/wilderness environments. The list of the contributing authors reads like a Who's Who of Emergency and Environmental Medicine.

The Merck Manual of Diagnosis and Therapy, 17th Edition
Edited by Robert Berkow, MD
Published by Merck & Co, 2833 pages, 1999

This is serious stuff. "The Merck" has the lowdown on the vast expanse of human diseases, disorders and injuries, as well as their symptoms and recommended therapy. It's intended for physicians and medical students, but though the type is tiny and the language technical, the Merck's a valuable volume for anyone with more than a passing interest in bodily ills.

The "Problem Oriented Medical Kit"

Items for your medical kit. I've organized the kit around "problems", meaning the medications and supplies are arranged in a more-or-less logical order depending upon their likely use. The items listed here are not meant to be all-inclusive or even necessary for every vessel, but rather this list is meant to serve as a starting point that will be modified according to the needs of the crew and the skills and training of those providing on-board medical care. There will be a repetition in naming some items because their use is not limited to the single problem in question.

Problems i.e. Things That Can Go Wrong

- Motion sickness
- Diarrhea
- Constipation
- Dental
- Choking/obstructed airway
- Cardiopulmonary arrest
- Shock
- Hypothermia
- Heat illness(heat stroke/exhaustion)
- Drowning
- Wound management
- Burns
- Blister prevention/care
- Nosebleeds
- Bites/stings
- Embedded foreign objects(e.g. fishhooks, splinters)
- Sprains and strains
- Fractures
- Dislocations
- Head injuries
- Allergic emergencies
- Seizures
- Diabetic coma/insulin reaction
- Heart attack
- Chest trauma
- Bronchitis /pneumonia
- Abdominal pain
- Eye problems
- Genito-urinary problems

- **General supplies and medications** Paramedic or EMT Scissors (1), Pill Vials — small (2), Pill Vials — large (2), latex surgical gloves (2), antiseptic towelettes (6), acetaminophen tabs (10), decongestant/cold tabs (10), ibuprofen (10), hydrocortisone cream(1%)(15 gms), antifungal cream (Tinactin or Lotrimin Cream) (15gms), hydrogen peroxide (4oz), isopropyl alcohol (40-70%)

- **Prescription Items** Augmentin 500mg (30), Cipro 500mg (20), Bactrim DS (20), Flagyl 250mg (30), injectable xylocaine (1% plain) (1 vial), injectable ceftriaxol, injectable Stadol or morphine or meperidine, promethazine 25-50mg suppositories (6), scopolamine patch (3), Cortisporin otic solution (10ml)

- **Motion sickness** Meclizine 25mg tabs (20), promethazine 25-50mg suppositories (6), scopolamine patch (3), Sea-Bands, ginger

- **Diarrhea** Loperamide, Bactrim DS, Cipro, oral rehydration salts

- **Constipation** Senakot, Milk of Magnesia

- **Dental** Dental mirror with plastic handle, double-ended dental explorer, tweezers type cotton forceps, size small spoon excavator, Dent-Temp kit, cotton pellets

- **Choking/obstructed airway** Safety pins, foley catheter

- **CPR** CPR airway shield

- **Shock** IV fluids, IV setup, BP cuff, stethoscope

- **Hypothermia** Hypothermia thermometer

- **Heat illness(heat stroke/exhaustion)** Hyperthermia (standard) thermometer

- **Drowning (see CPR)**

- **Wound management** Wound closure strips (10), butterfly bandages(10), tincture of benzoin (4 disposable vials), povidone iodine (Betadine) (1fl oz), triple antibiotic ointment (polysporin, bacitracin) (15 gm tube), Super-glue (1 tube), 35cc irrigation syringe (1), 19ga needle (1), tissue forceps (1), needle holder (1), iris scissors (1), 4-0, 5-0, 6-0 nylon sutures (4 each), stapling gun and staples (1), staple remover (1), strip Band-aids (10), Knuckle Band-aids (10), 4x4 sterile dressings (8), 3x3 sterile dressings (4), 2x2 sterile dressings (8), Aquaphor moist dressings (2), 8x10 trauma pad (1), 5x9 trauma pad (1), xylocaine local anesthetic, 10cc syringe, needles

- **Burns(see wounds)** Pain meds, sterile or clean solutions, sterile or clean dressings, antibiotic ointments, aloe vera gel(15gms), iris scissors

- **Blister prevention/care** Moleskin (2"x4" strip), Blisterfoam (2"x4" strip), dressings, triple antibiotic ointment, Zeasorb powder

- **Nosebleeds** Epinephrine, Afrin, neosynephrine, cotton gauze, foley catheter
- **Bites/stings** 5% acetic acid(vinegar), Sawyer Extractor, wound management supplies, epinephrine, benadryl
- **Embedded foreign objects** (e.g. fishhooks, splinters) Splinter forceps (1), pliers (1), metal cutters (1), scalpel (2), wound management supplies
- **Sprains and strains** Sam splint (1), elastic wraps (3), athletic tape (1" or 1/2") (10 yards),aluminum finger splints (2), pain meds
- **Fractures** Sam Splint (1), elastic wraps, finger splints, pain meds
- **Dislocations** (see sprains and strains, and fractures)
- **Head injuries** Penlight flashlight, safety pin
- **Allergic emergencies** Epipen, benadryl, or ANA Kit
- **Seizures** Glucose paste (Glucose) (1), Valium injectable, oral airway
- **Diabetic coma/insulin reaction** Glucose paste (Glucose) (1)
- **Heart attack** Aspirin, nitroglycerin
- **Chest trauma** (see lacerations, sprains, strains, fractures) Vaseline gauze
- **Bronchitis/pneumonia** Decongestants, cough suppressants, expectorants, antibiotics
- **Abdominal pain** Antacid tabs (Mylanta, Tums, Maalox)(75), Zantac (20), Donnitol (10), loperamide(Imodium) (10)
- **Eye problems** Eye dressings (patches) (2), antibiotic eye ointment, tetrahydrolazine, Q-tips (10)
- **Other problems** Yeast vaginitis: Gyne-Lotrimin cream or suppositories (14 day supply)

As a final word I would personally like to wish each and every one of you a healthy and enjoyable sail to Hawaii!

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Dr. Benedict is a board-certified emergency physician and USCG Licensed Master. From 1980 to 2002 he was the Chief Medical Officer for the California Maritime Academy's training ship, USTS GOLDEN BEAR. He holds the appointment of Clinical Associate Professor of Medicine at Stanford. He has taught Emergency-Medicine-at Sea courses for years, written articles for *Latitude 38* and authored the medical chapters in the standard US Maritime texts the *American Merchant Seaman's Manual* and the *Merchant Marine Officers' Handbook*. He cruised extensively on his own vessel, the *San Juan*. Currently he is the Medical Director of Emergency Medical Services in Santa Cruz and San Benito Counties. In his spare time he is a Caribbean charter captain.

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