USNA SAFETY AT SEA

MEDICAL READINESS & RESPONSE

Daniel J. Carlin MD

Docs beat back bacteria

Man survives race against flesh-eater

By Dan Haggerty

Just a month after a Mystic fisherman died from flesh-eating bacteria, his grandson fought off a similar infection.

Three days after he was bitten by a shark, Dennis Carlin ran to the hospital. His arm was "boiling," he says. "It looked like it was going to burst open on any arc...."

When he complained of severe pain and loss of sensation, doctors insisted that he have surgery. Dennis resisted, fearing to open the wound. "They were afraid I would get infected and I wouldn't even want to go to the hospital," he says.

The doctors agreed to wait a day. But on the second day, Dennis couldn't bear the pain. The infection was spreading, so he went to the hospital. The doctors operated on his hand, which was removed two days later.

According to Dr. Jack Wolinski, the infection was caused by a Vibrio cholerae, a bacteria that can cause death. The bacteria is usually found in the water and can be transmitted through contaminated food or water. The bacteria can cause a severe infection, which can be treated with antibiotics. However, if left untreated, the bacteria can cause sepsis, a life-threatening condition.
This lecture is dedicated to the memory of all US and Navy corpsmen.
Medical Readiness

- Your Crew
- Your Vessel
- Your Destination
New Crew
Medical Readiness for The Crew

- Pre-existing medical problems: the most common are hypertension, chronic back pain, heart disease and poor teeth.
- Individual Medications: Who takes what? Do they have an extra supply for the duration?
- Serious Allergies
- Smokers and Drinkers (At sea is not the time to quit)
- Seasickness
- A Summary Medical Record for Each Member
Medical Readiness for the Crew

◆ Men are at risk for:
  1. Back injuries
  2. Heart attacks
  3. Prostate problems
  4. High blood pressure
  5. Kidney stones

◆ Women are at risk for:
  1. Heart attacks
  2. Urinary tract infections
  3. Yeast infections
  4. Pregnancy
Fig. 13-16  Incision and drainage technique. A, Fluctuant abscess. B, Abscess incised with scalpel. D, reluctant drainage removed by suction or caught in gauze sponges. C, Cross-section showing incision.
Summary Medical Record

1. Your medical conditions requiring regular attention
2. Past surgeries and inactive medical problems
3. Medications and allergies
4. How to reach your doctor
5. Who to call in an emergency
6. A copy of an EKG
Medical Readiness for Your Destination

- What immunizations do you need?
- What are the local disease risks?
- Is clean water and fuel available?
- Will they bar your entry if you have not had a yellow fever shot? Attention esp.. if you plan on transiting the Panama Canal.
- Malaria
- Immunizations are not always safe in undeveloped countries. Do it before you go.
Coming Soon to a Marina Near You...

Chickingunya Fever…
…. ChikV

…Chimichanga, Chicken Gumbo
Chickingunya
On the Move
Countries at risk for yellow fever and having reported at least one outbreak, 1985-1997

Map showing countries at risk and reported outbreaks as of 06/04/98.
Medical Readiness for Your Vessel

- Secure Storage: Will anything fly if you suffer a knockdown?
- Do you have a preventer? If not, can you perform neurosurgery underway?
- Screens and repellants to keep the bugs out
- Secure harnesses and jacklines
- A comprehensive medical locker
- Communication Link: Primary and Secondary
A word of thanks to you Dr. Carlin.
A couple of weeks back I attended a safety at sea seminar at Annapolis. I found the entire experience great and tried to learn a little from each of the speakers. What I remembered from your presentation was the importance of preventers in decreasing the possibility of injuries caused by a swinging boom.
The week after the seminar, together with two of my sons, I brought a C&C 25 from Providence, RI to the Bronx, NY. At one point, out at the east end of Long Island Sound, rolling west in one of those short chops kicked up by 20ks from the SE, I looked over the boat and asked myself what was missing. I remembered your reference to a preventer, and quickly rigged one.

About a half hour later, while my son was steering, doing more talking than watching, and as I stood in the cockpit looking forward, I heard the swoosh of the main pulled over as the boat rolled the wrong way down a wave. As I looked back I realized that the talking helmsman steered us into an accidental jibe. To my good luck however, the preventer kept the boom from swinging into me, and me into either never, never land or the 50 degree water of the Sound.
I hope others at the seminar took away insights and tips as useful and life-saving to them as your reference was to me.
Martin Schulman, Woodside, New York

(By the way, the trip, which took three days with anchoring at night, was one of the best of my life. The sea and wind conditions were outstanding, just at the edge of uncomfortable but still exhilarating. The boat, a 25, sailed like a 30 footer, and all of us got along better at the end of the trip than at the beginning.)
Thanks again.
Vessel Readiness: Medical Locker

- Bandages, Splints, Duct Tape, Betadine
- OTC meds
- Prescription and Controlled Meds
- Surgical Equipment
- Dental Kit
- Reference Book
- Crew Medical Records
- A Preventer
Best Book, Best Authors

A Comprehensive Guide to Marine Medicine

Eric A. Weiss, M.D. & Michael Jacobs, M.D.
Vessel Readiness: Medical Locker

Essential prescription meds:
- Levaquin, tetracycline, Flagyl, Azithromycin
- Phenergan supp., Zofran, Transderm Scop
- Sublingual nitroglycerin spray, aspirin
- Narcotic pain reliever: Vicodin, Dilaudid supp.
- ANAKIT, Benadryl, and prednisone
- Diflucan tabs and Clotrimazole creme
Dangerous High Seas Infection: Treated with Cipro and Tetracycline
Diflucan 100mg. tablet
Betadine: The antibacterial equivalent of duct tape
Surgical tools: Use what you know
Jeffrey Isaac, PA-C Ltd.
Phone: 1-970-275-4999
www.wildmed.com

Jeffrey Isaac, PA-C is the curriculum director and a lead instructor for Wilderness Medical Associates, Inc. He is a co-author with Dr. David Johnson of *Wilderness and Rescue Medicine, A Practical Guide for the Basic and Advanced Practitioner*, used as a textbook in WMA courses worldwide. His teaching reflects the experience of 25 years in emergency medicine, outdoor education, and wilderness rescue.
Medical Response: Common Illnesses and Injuries

- Seasickness / Dehydration
- Hypothermia
- Heat Exhaustion / Sun Sickness
- Lacerations and Contaminated Wounds
- Broken bones, injured backs, pulled muscles, wrist tendonitis
- Devastating Injuries: Head Trauma, Heart Attack, Major Burns
from my own career as a ship's medical officer.

In 1986, I met a young man from Detroit who had joined the US Navy. His first assign

- You may never vomit on board of the ship.
- After you have learned to vomit properly you may go change and report to sickbay to see the doctor.
Medical Response: Seasickness

- Mismatch between what your middle ear feels and what your eyes see.
- Steer the boat for awhile. Do something on deck.
- Stabilize your neck with a c-collar or towel wrap.
- Lie down, neck stabilized, head slightly elevated, in the lowest center point.
- Meclizine (Bonine) is good before you go.
- Transderm Scopolamine: Test it’s use first.
- Phenergan suppository is good once symptoms start. Add a decongestant (Sudafed) if you are still queasy.
Seasickness through life:

From: "Motion Sickness Susceptibility And Behavior," C.S. Mirabile Jr., in Motion and Space Sickness, 1990
"He was the most courageous and virtuous man that I have ever known."
Medical Response: Hypothermia

- The symptoms start with shivering, euphoria, irritability, lethargy
- And proceed to stumbling, slurred speech, loss of memory
- Closing with victim looks pale, breathing slow, pulse weak, leading to collapse and unconsciousness
Medical Response: Hypothermia

- Wind and being wet lead to **rapid** heat loss
- Obey the Ocean Dress Code: **Layer upon Layer!**
- Treat it by: Strip him, Dry him, Rack and Sack him, Hot Liquids
- Do **not** rub limbs, give alcohol or quit CPR
- **WARM THE CORE FIRST: THE LIMBS WILL WAIT**
Sun Sickness

- Sunblock: 30 grade, waterproof, twice a day. Apply esp. to the ears and tip of your nose.
- Late stage Melanoma is lethal, so look for it first:
  - irregular speckled border
  - bizarre and inconsistent coloration
  - history of rapid growth
- Fair skinned folks should perform a mole check once a month.
Medical Response: Lacerations and Wounds

- Obey the 3 Rules of Managing Wounds:
  1. Open it till you see or feel the bottom.
  2. Clean the hell out of it.
  3. Make sure the rest of the limb still works.

- NEVER, EVER, CLOSE A DIRTY WOUND. Infection and death may ensue.

- If in doubt, clean it, pack it with clean gauze, and leave it open.
Stingray spine to the thigh. Venom, salt water, spine sheath.
Boom to the back of the head. Shearing laceration. Low risk
You must see the bottom of the wound
Rinse, Rinse, Rinse.
Staple/tape it together. Keep the edges up.
That’s No Way to Accessorize…
Figure 2-2. Fishhook removal: the “push-and-snip” technique.
Medical Response: Muscles, Bones, and Backs

- The foredeck is where most injuries occur.
- An injured back is the complete loss of one able bodied sailor for the duration.
- For all of the above: RICE IT
  1. Rest it
  2. Immobilize it with a splint.
  3. Cold and Compress it.
  4. Elevate it.
- Check and recheck the blood flow, strength, and sensation downstream from the injury.
Fractured toes. Buddy tape it.
The most common traumatic death at sea is a head injury from a swinging boom.

Anything more than a minor burn should be evacuated as soon as possible. Force fluids, cleanse gently, antibiotic ointment, cover.

A heart attack is a failure to prepare adequately. If you are over 45, test your own pump before heading offshore.
Categorically state that a coronary artery disease is the single most important preventable and treatable disease in men. You are notorious for avoiding preventable heart attacks, as Ethel in the picture can be a lifesaver—literally!

**What Feels Like**

When your heart is in distress, it is a dull pressure location. It can radiate down to your neck, jaw, and sometimes other parts, including your arm. You can describe it as a feeling of sitting on their chest. This is associated with nausea, sometimes the onset of chest pain after exertion. It is also a common feeling of tightness.

Cardiac Chest Pain
- dull ache, pressure sensation
- substernal, radiates to arms, neck
- not worsened by movement or respiration
- not affected by pressing on it
- not relieved by antacids
- lasts more than 3 minutes

Non-Cardiac Chest Pain
- sharp, stabbing
- localized, non-radiating
- provoked with movement or respiration
- worse with pressing on it
- relieved by antacids
- short-lived, less than 30 seconds

**Other Things To Do**
1. Take a baby aspirin each day to prevent blood clots on the thin side. A glass of wine will also help. Six glasses will not.
2. Take your blood pressure medication once a week. Take your blood pressure once a week, mornings before your medicines are best.
3. Put down the cigarette! You will not be able if your crew does not.
4. Be attentive to chest pain. If you have a funny noise in your engine room, it is ignored.

**Bon Voyage**
Head out and have a safe voyage. Just remember what your doctor says: the center of your chest is the world's most important engine. Protect it, maintain it, and it will give you a trouble-free life.
(because what you can’t see or feel, can kill you)
Medical Response: Preventive Medicine on the High Seas

- Stretch out your back every time you leave your rack. Knee to chest and twist, switch legs
- Obey the Ocean Dress Code
- Did I mention the part about a preventer?
- Drink lots of fluids to help stabilize your core temperature and prevent dehydration
- If you are over 35… take a baby aspirin, take your meds, and look after your crew/spouse.
Medical Response: What to Do in an Emergency

- Stay calm. People rarely die suddenly.
- Move the patient to a secure bunk.
- Splint and immobilize the neck of anyone complaining of neck pain before you move.
- Find out exactly what happened.
- Call your medical resource: Report the situation clearly and calmly. Use a form.
- Clarify all advice you receive.
Medical Response: Radio Medical Advice Resources

- The US Coast Guard
- DH MEDICO on the SSB
- Passing ships
- Commercial Medical Advisory Services
  1. Medical Advisory Systems Inc. 301-855-8070
  3. Maritime Health Services 206-340-6006
How to Die Underway

- **Drown**: after falling overboard while urinating
- **Roast**: hyperthermia
- **Freeze**: hypothermia
- **Seasickness**: leading to impairment of judgement
- **Injury**: leading to loss of skipper at a bad time
- **Bad Heart**: too far from land
- **Drive, esp. at night, in a developing country**
This is not a Rehearsal.

Don’t Walk.

Don’t Even Run.

Sail. And sail as far as you possibly can.

- Lt. Carlin (54N, 277W)