

SAFETY AT SEA



MEDICAL READINESS & RESPONSE



Daniel J. Carlin MD

Docs beat back bacteria

Man survives race against flesh-eater

By DAVE WEDGE

Just a month after a Marion fisherman died from a rare flesh-eating bacteria he picked up from his contaminated catch, a Marblehead fishing captain nearly lost his arm after he caught a similar infection.

Doug Drew, a 42-year-old lifelong fisherman, was hauling in a net of flounder Sunday when he was stabbed in the thumb by a jagged fishbone. Doctors say the wound festered for hours and that a form of strep bacteria seeped in.

Feeling intense pain and noticing that his thumb had "ballooned," Drew rushed to Salem Hospital.

"Within a half-hour, I had a trap running up my arm and red lines up to my armpit," Drew, of Marblehead, said yesterday. "It felt like somebody was running a sword up my arm. I can take a lot of pain, but this was too much."

When he complained of severe chest pains, panicked doctors slit open his hand and arm, revealing a fast-moving infection that had morphed into a flesh-eating bacteria.

Doctors worked feverishly to scrape off the bacteria from his muscles and tendons. After several hours, they were able to stop the infection in its tracks and save Drew's arm.



STAFF PHOTO BY MARK GARFINKEL

CLEANED OUT: Marblehead fisherman Doug Drew shows the arm that surgeons cut open to rid it of a rare flesh-eating bacteria he says he contracted when a fishbone stabbed him in the hand. A similar bacteria killed another Massachusetts man recently.

gain use of his hand

killed him by overtaking his vital or-

The bacterial strain is similar to that

Drew's mother, Priscilla, ex-

This lecture is dedicated to the memory all US 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**

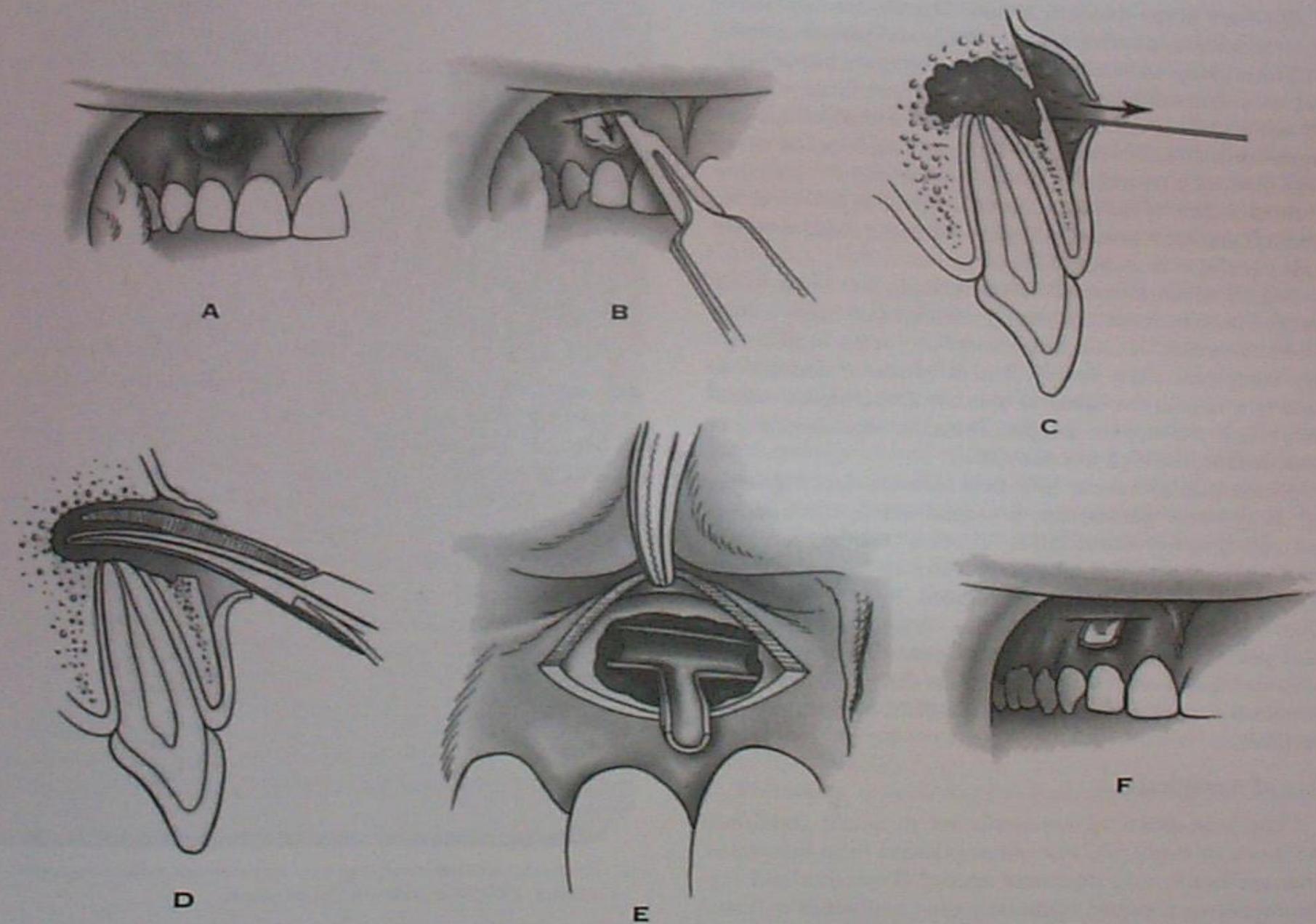
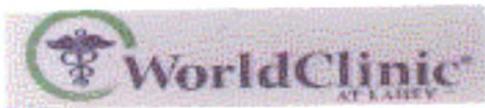


Fig. 13-16 Incision and drainage technique. A, Fluctuant abscess. B, Abscess incised with scalpel. C, Cross section showing incision. D, Pus removed by suction or caught in gauze sponges. E, T-drainage tube. F, Final appearance.

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



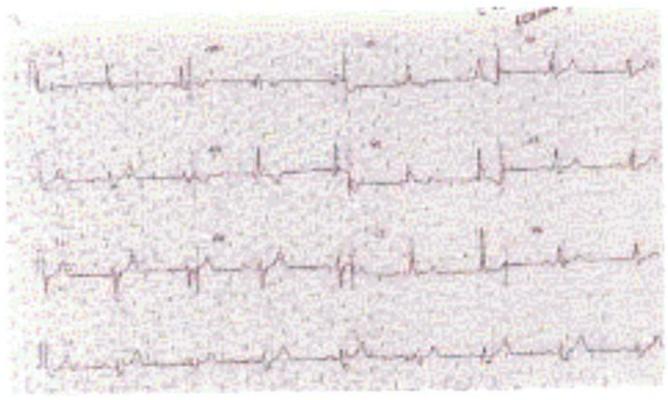
Joseph H. Sample
Date of Birth: 09/27/1947

Medical Conditions:
hypertension, hypercholesterolemia
srp angioplasty (1999)
gout, L hip arthritis, seasonal rhinitis

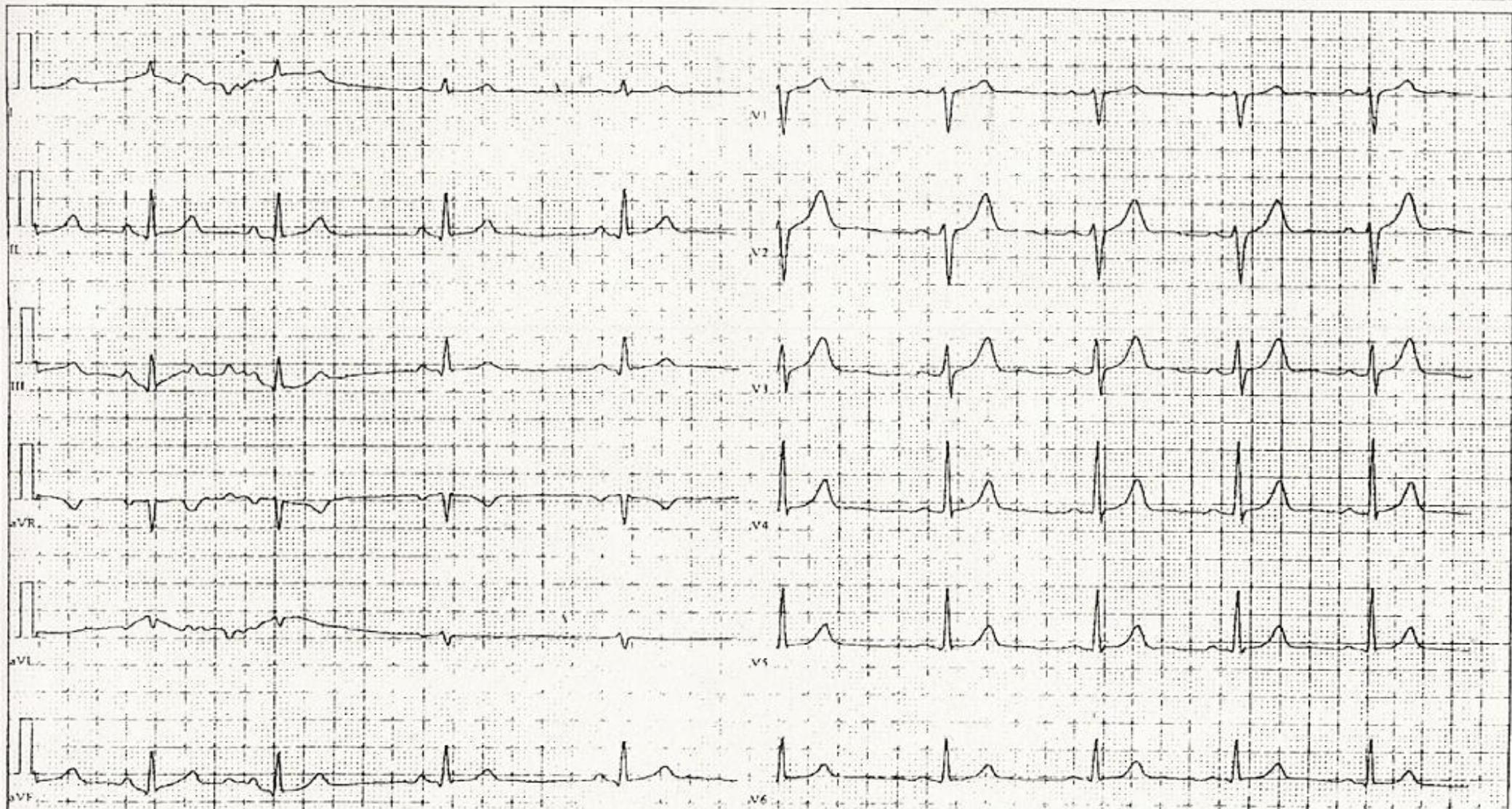
Medications:
Liptor 10mg qd
Atenolol 50mg qd
Feldene 10mg qd

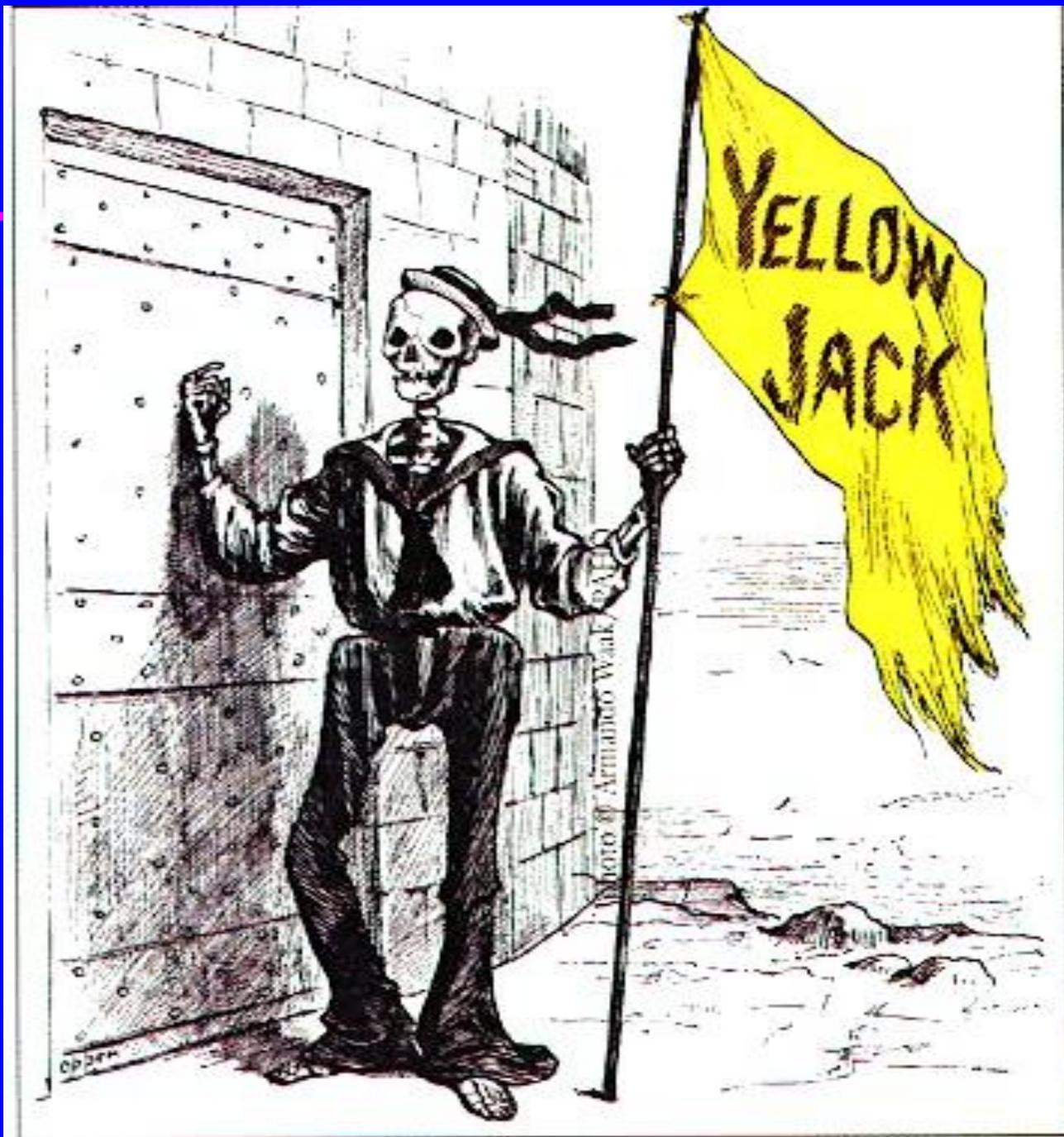
Allergies: Codeine: rash

For any medical problem, contact WorldClinic immediately:
24/7 Hotline: +1-781-993-9111 e-mail: ER@worldclinic.com



Name	William Cravens	Rate	58	BPM	Interpretation	S&W Thermal Plant Clinic
ID	457909336	PR	172	msec	Sinus Bradycardia - With rate variation	
Sex	Male	QT/QTc	400/397	msec	P, QRS - 1.1, Normal P axis, II Rate 58	
BP	148/100 mmHg	QRSD	98	msec	cx = 11	
Weight	160 lbs	P Axis	69		WITHIN NORMAL LIMITS	
Height	72 inches	QRS Axis	70			
Age	46 Years	T Axis	60			
Physician		Date of Report	13/08/98	16 11 02		
Technician	Dornbusch/Lyons/Lacey	Reviewed By				
History	Family history - significant	Review Date	13/08/98	16 12 35	Comments	
Medication	Lariam					



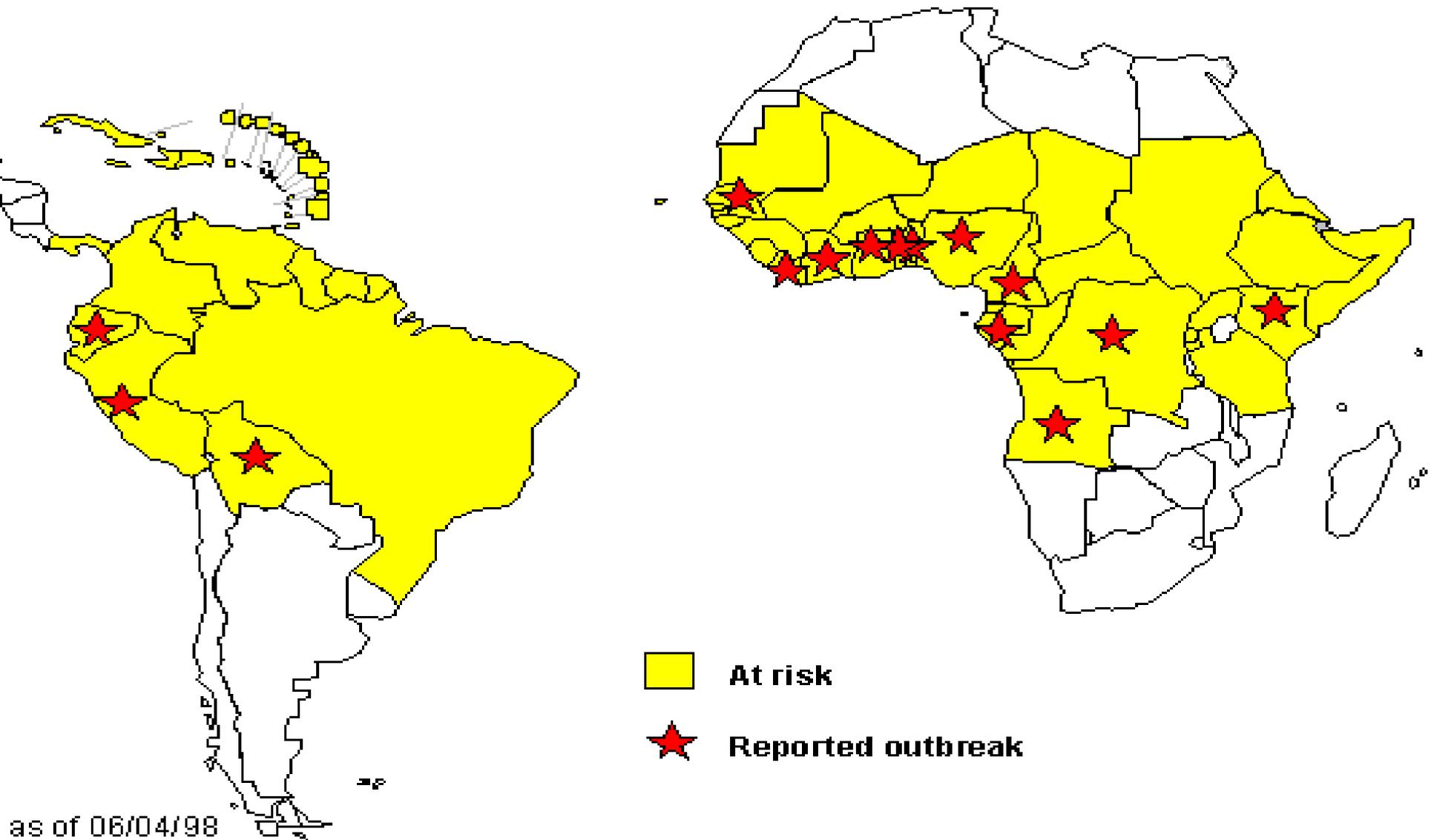




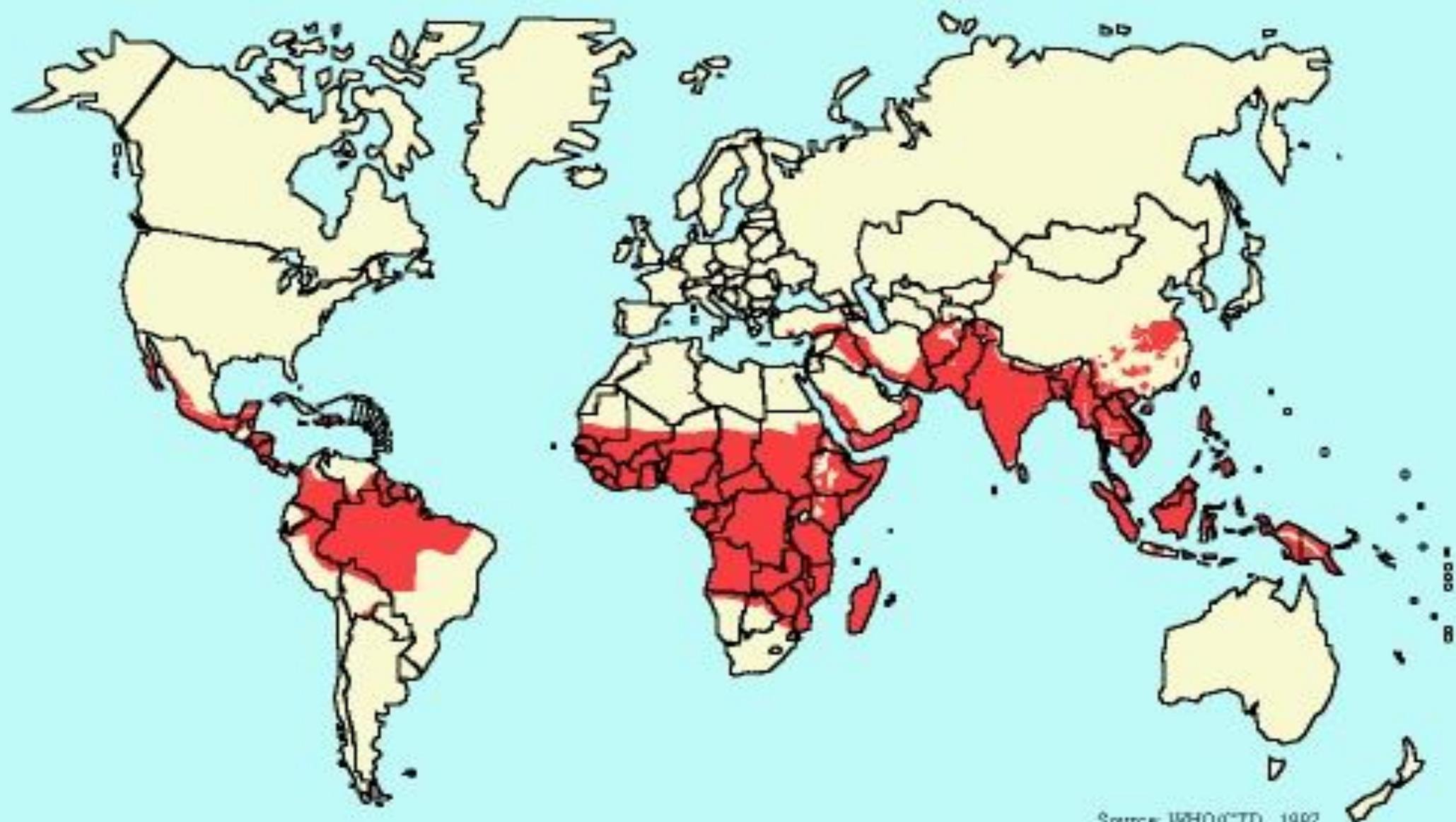
Medical Readiness for Your Destination

- ◆ 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.

Countries at risk for yellow fever and having reported at least one outbreak, 1985-1997



MALARIA SITUATION



Source: WHO/CTD, 1997



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



From: SCHULMAN6 [schulman6@worldnet.att.net]

Sent: Tuesday, May 14, 2002 9:40 PM

To: consults@worldclinic.com

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

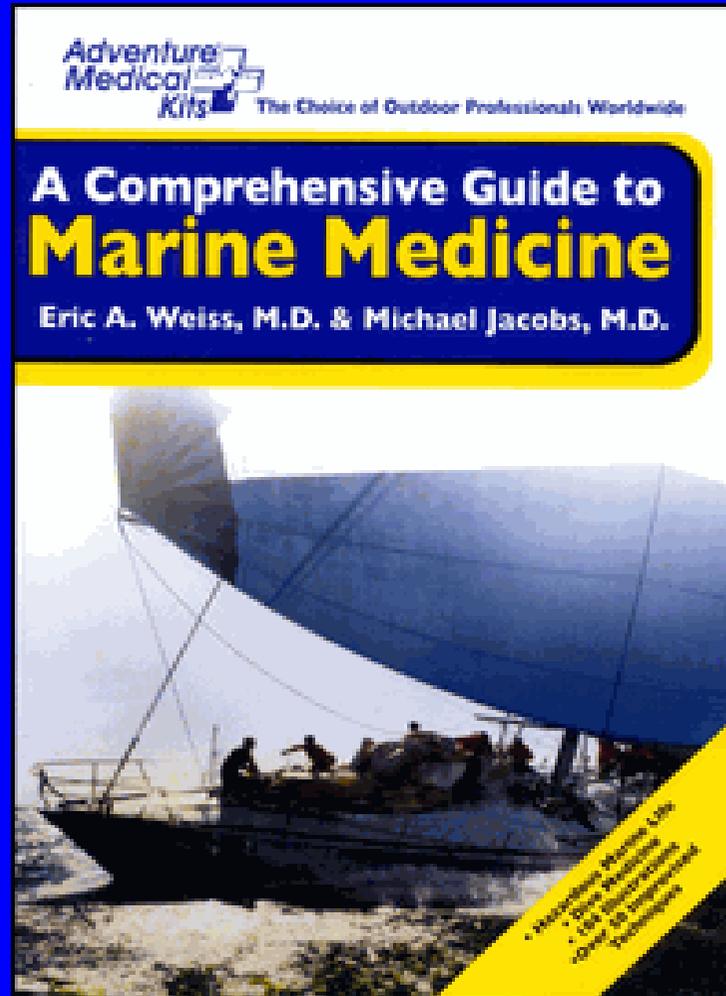
(By the way, the trip, which took three days with anchoring at night, was one of the best of my life. The sea and wind conditions were outstanding, just at the edge of uncomfortable but still exhilarating. The boat, a 25, sailed like a 30 footer, and all of us got along better at the end of the trip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



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



Diffucan 100mg. tablet



Betadine: The antibacterial equivalent of duct tape



Random & Useful Stuff



Surgical tools: Use what you know



Training Resource: The Man

Jeffrey Isaac, PA-C Ltd.
Phone: 1-970-275-4999
www.medicalofficer.net



Jeffrey Isaac, PA-C 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.

Vessel Readiness: Communications

- ◆ Single Side Band: Voice / e-mail (Seawave LLC)
- ◆ SATPHONE: Globalstar, Iridium, Inmarsat-C
- ◆ Marine VHF: Fixed and Handheld
- ◆ Cellular Phone: effective to 20 miles offshore
- ◆ Worldwide e-mail: SailMail, MarineNet Radio
- ◆ SKYPE: indispensable

*Log a Voyage Plan, preferably on-line

The Internet is almost everywhere.



Medical Response: Common Illnesses and Injuries

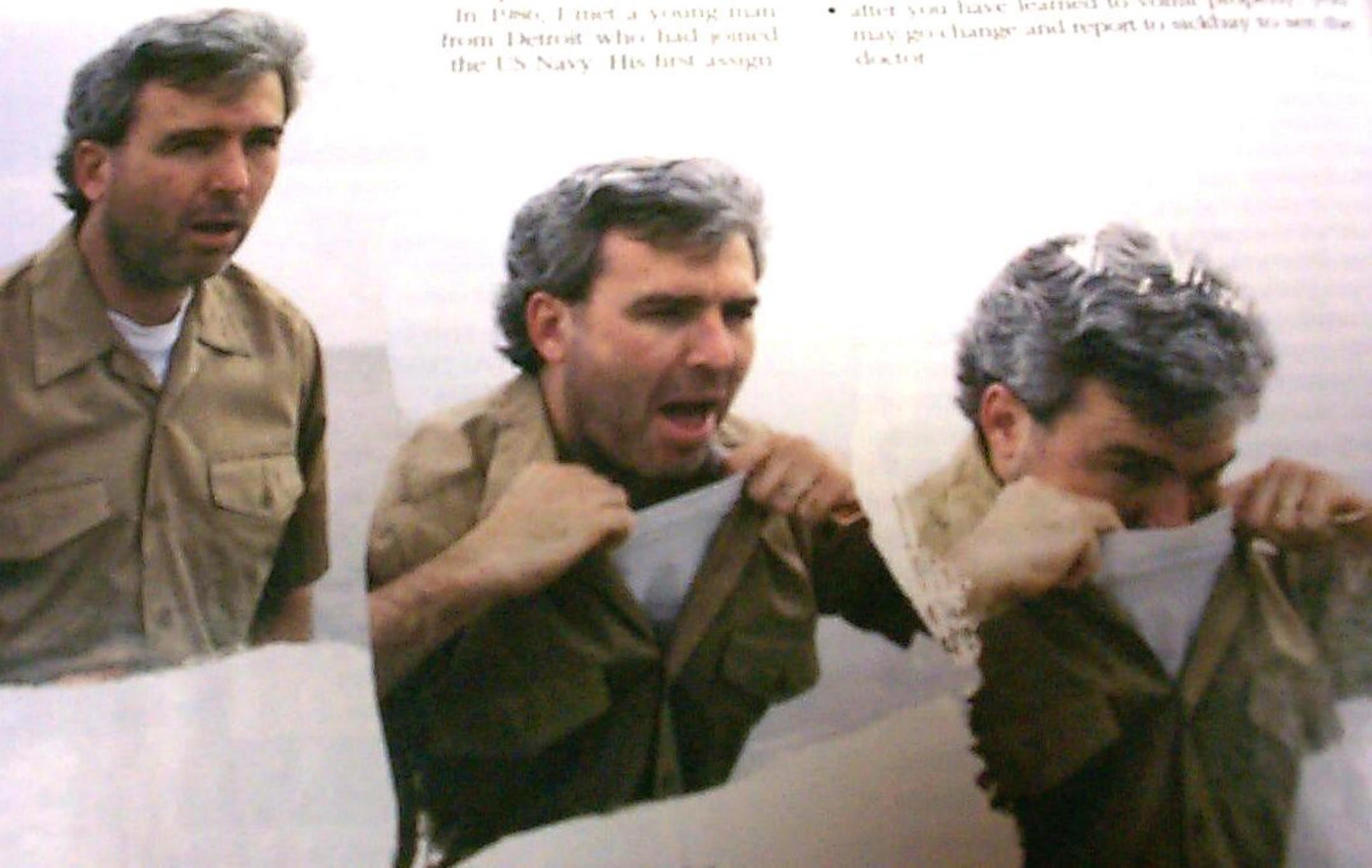
- ◆ Seasickness / Dehydration
- ◆ Hypothermia
- ◆ Heat Exhaustion / Sun Sickness
- ◆ Lacerations and Contaminated Wounds
- ◆ Broken bones, injured backs, pulled muscles, wrist tendonitis
- ◆ Devastating Injuries: Head Trauma, Heart Attack, Major Burns

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 come out of the ship.

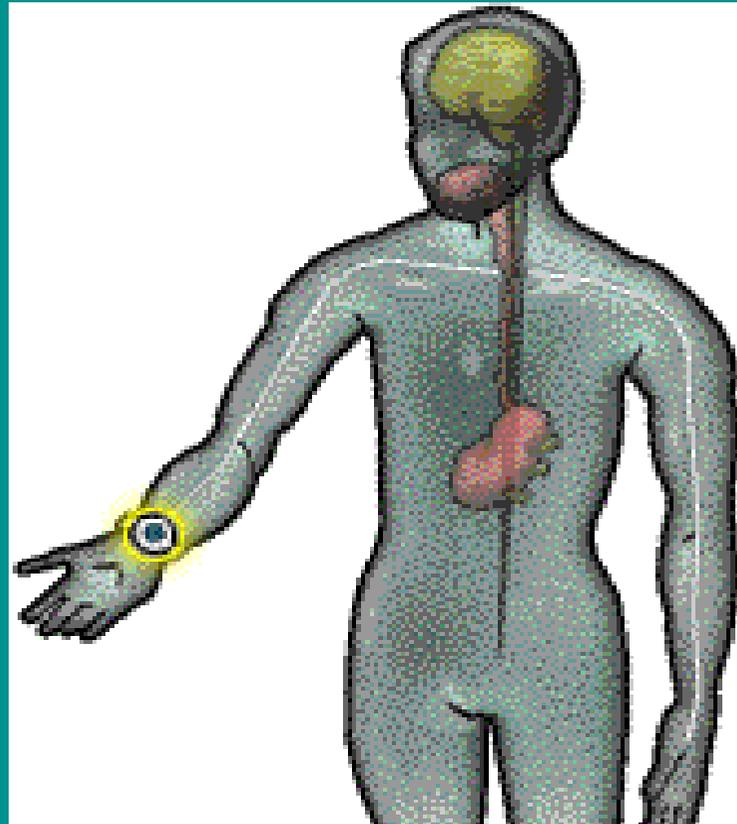
• after you have learned to vomit properly, you may go change and report to sickbay to see the doctor.



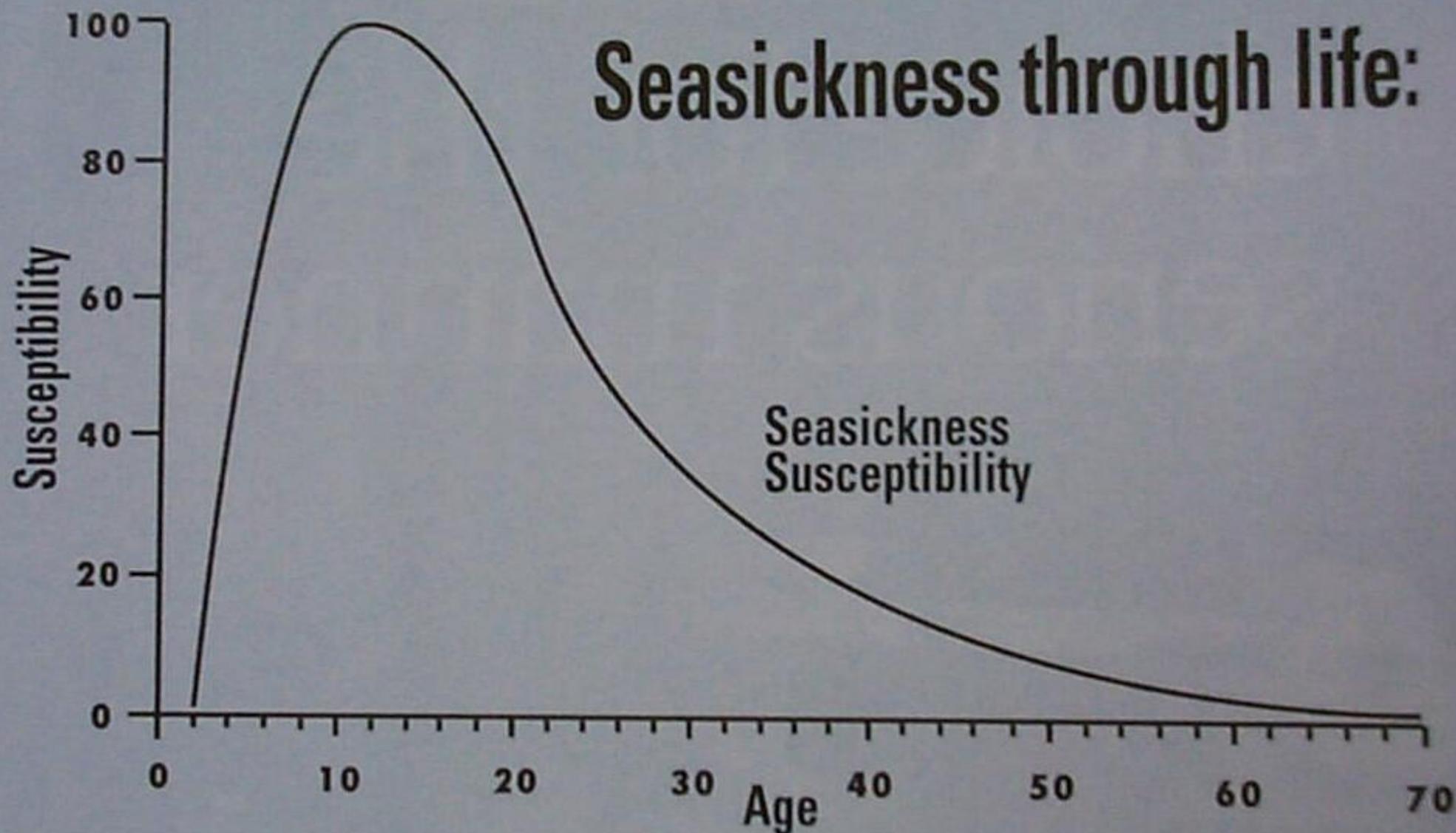
Medical Response: Seasickness

- ◆ 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.

relief band



Seasickness through life:

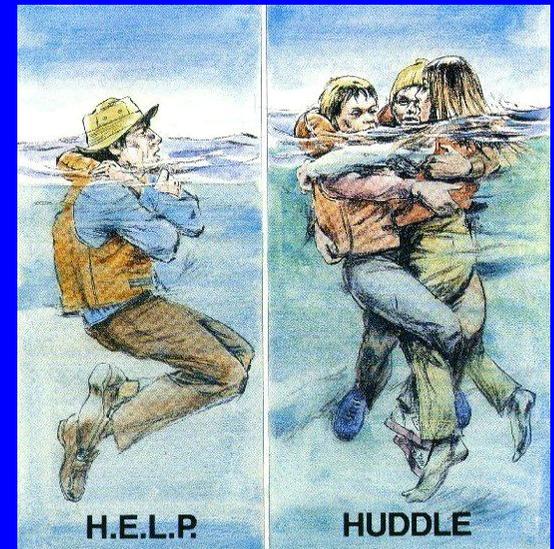




"He was the most courageous and virtuous man that I have ever known."

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



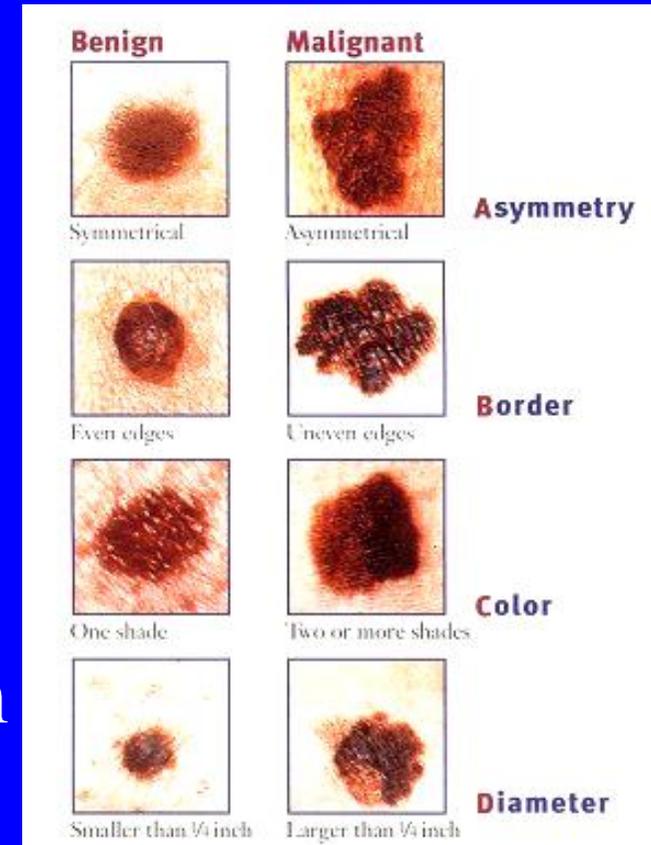
Medical Response: Hypothermia

- ◆ 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





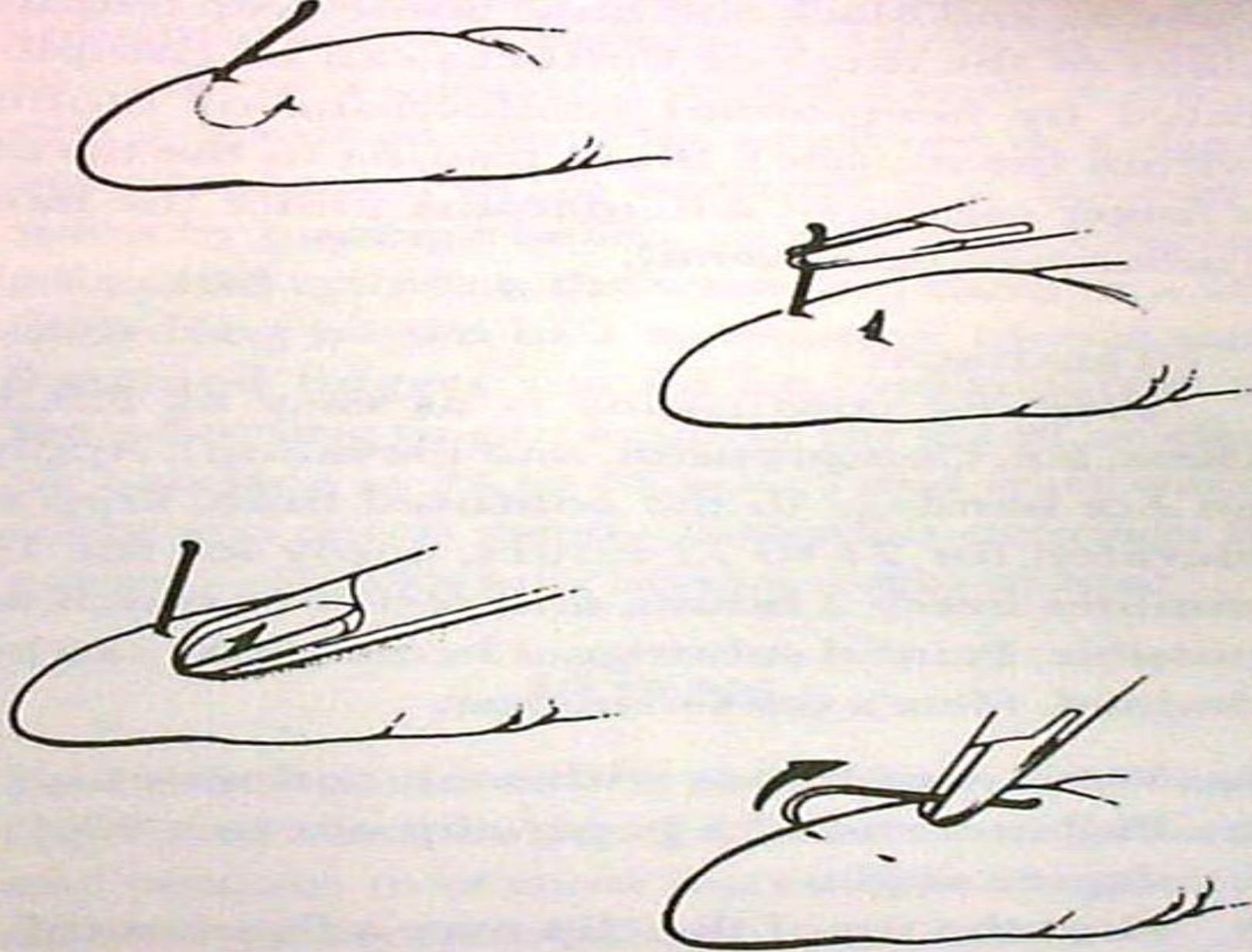


Figure 2-2. Fishhook removal: the "push-and-snip" technique.



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.



Juno e-mail printed Thu, 19 Nov 1998 19:36:17 , page 1

From: 427310272@c-link.net

To: raceop@sac

Date: Wed, 11 Nov 1998 [REDACTED]

001 427310272 1111 3340.343S 00048.148E 08510 2154 G

WELL, THIS IS VIKTOR,

I DID IT, BUT IT WASD SOMETHINGU NEXPEKTED.

I COULD NOT STOP BLEEDING, LOST AT LEAST HALF A LITER.

PLACED TWQ SHOCK KORDS AS TIGHT AS POSSABLE BLEEDNG

THE SAME. AFTER BANDAGE T BECAME EASIER,

BUT NOW THREE HOURS LATER THE HAND CAN NOT GET THE S

IT FEELS HOT AND COLD BUT NO STRANGTH AT ALL.

PLEASE WHAT SHOULD I DO BEFORE TOO LATE.

VIKTOR,

Devastating Injury: Head Trauma, Heart Attacks, Burns

- ◆ 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

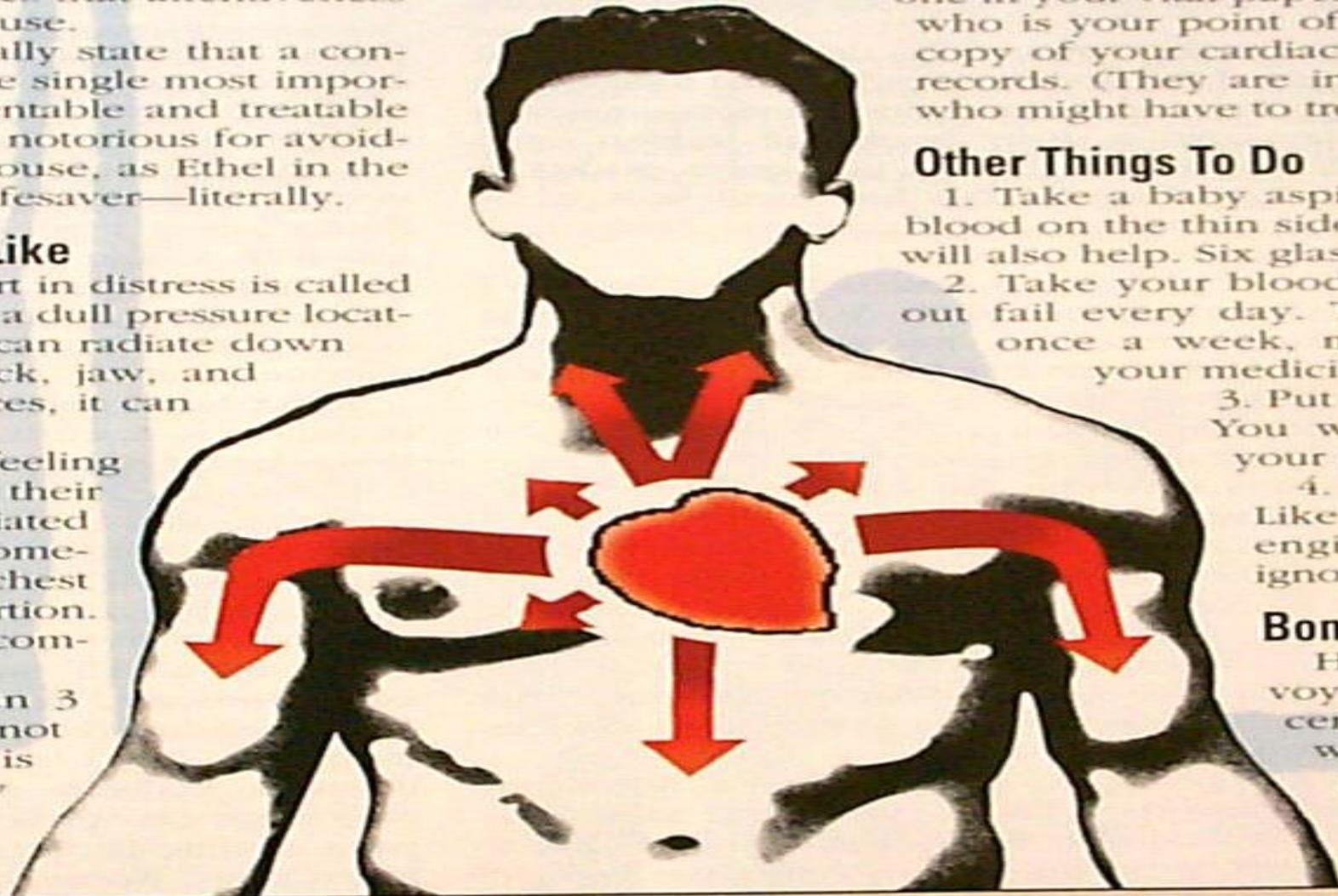
ned spouse.
categorically state that a con-
bably the single most impor-
ng preventable and treatable
men are notorious for avoid-
sistent spouse, as Ethel in the
an be a lifesaver—literally.

It Feels Like

our heart in distress is called
ally, it is a dull pressure locat-
num. It can radiate down
your neck, jaw, and
e instances, it can
nt arm.

cribe it feeling
itting on their
is associated
ausea, some-
onset of chest
after exertion.
is also a com-

nger than 3
enerally not
It also is
cted by
eathing.
in per-
es or



one in your...
who is your point of contact at home
copy of your cardiac test results to t
records. (They are invaluable to the
who might have to treat you.)

Other Things To Do

1. Take a baby aspirin each day to
blood on the thin side. A glass of wine
will also help. Six glasses will not.

2. Take your blood pressure medi-
out fail every day. Take your blood
once a week, mornings before
your medicines are best.

3. Put down the cigarette.
You will not be able
your crew does not c

4. Be attentive to
Like a funny noise
engine room it
ignored.

Bon Voyage

Head out and h
voyage. Just remem
center of your c
world's most
pump.

Protect it, mai
it will give you
trouble-free li

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 re
- worse with pressing on it
- relieved by antacids
- short-lived, less than 30 second

(because what you can't see or feel, can kill you)



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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
 2. Maritime Medical Access 202-994-3921
 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**

◆ “For the truth is that I already know as much of my fate as I need to know. The day will come when I will die. So the only matter of consequence before me is what I will do with my allotted time. I can remain on shore, paralyzed with fear, or I can raise my sails and dip and soar in the breeze. “

-Richard Bode

“First You Have to Row A Little Boat”

