

Healthy Cruising in the Tropical Pacific

By Richard Chesher, Ph.D.

***"Smart people learn from their mistakes,
smarter people learn from other peoples' mistakes."***

Every cruiser knows they will face dangers from the weather, equipment failure, collisions with other vessels, and accidents. A sensible captain takes precautions to prevent these accidents by getting good weather forecasts, maintaining the vessel's equipment, using lights and AIS and keeping watch at sea, having a good medical kit and safety equipment aboard, etc. And most cruisers know what to do if these dangers surprise them at sea.

But an amazing number of cruisers have no idea how to defend against the health dangers lying in wait for them when they arrive in remote tropical areas far from medical care. Surviving a storm at sea is traumatic, but over pretty quick. The weather clears and sailing is even better because you and your vessel survived it. But if you get a dose of heavy metal poisoning, attacked by malaria, a deadly blood virus like dengue fever, parasites, fish poisoning or a flesh eating microbe it won't clear up for a very long time and may cause permanent disabilities or even kill you or one of your crew.

Health issues are serious dangers for mariners but few cruisers take the elementary precautions to protect themselves and their crew. Disease organisms kill more people every year than all the maritime and diving accidents, shark, sea serpent, crocodile, sea wasp, or even pirate attacks combined. You and your crew truly want to avoid getting sick or injured anywhere, but especially when cruising far from medical support. The good news is most cruisers avoid serious health issues either through luck or prudence. To be sure the good news applies to you and your crew follow three very simple rules:

You can avoid health risks – large or small - if you follow three very easy rules;

- 1. Find out what health dangers are lurking where you are headed before you set sail.***
- 2. Don't let them get you.***
- 3. Know what to do if you fail #2.***

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Water Water Everywhere



Drinking water alert

Here's a health mistake I and my wife made that nearly killed us. We were anchored off a small island in eastern Papua New Guinea and I was writing in my evening log book after dinner:

"As I write this, I feel a little dizzy. Whatever has been wrong with us these past months is still lurking in the background. We've been going strong since Sunday, diving twice a day, taking underwater photographs of the reef, but right now I'm weak as a kitten...on and off

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and on and off. I don't think the medicine Dr. Cook gave me in Port Moresby got it. Maybe it's not parasites at all. But what???????

The image forms in my mind of a diesel engine running out of fuel. Just before it dies, the governor fails and the motor revs way up and then zonk, it's dead. Maybe, the past few days, I've been like a diesel engine revving as it runs out of fuel.

As a matter of fact, I feel really shaky. A wave of blackness rears up and the night surf falls. I gasp, shake my head. "Freddy, I...I don't feel so good."

She looks up from her reading, a worried, withdrawn look on her face. "Now that you mention it, I don't feel so good either."

My face flushes. A cold sweat beads on my forehead. The dizziness grows, the blackness roils up to engulf me. I am going to pass out. I put my head between my legs. In a few minutes I feel steadier but I know this is something really bad and getting worse minute by minute.

"This is not good." I am panting, my vision blurs, my chest aches and feels like it's on fire. I tremble. For a moment I black out but come to again immediately, in time to catch myself as I fall forward onto the dinette. My mouth feels numb, there is an awful, metallic taste in my mouth...I can hardly breathe.

"Oh Rick, what's wrong? My legs feel funny." She tries to stand to come to my aid but she's unable to stand.

"Come on, sweetheart, let's get to bed." All I can think is, something is wrong, really wrong. My head is swimming, confused, can't think straight. I help Freddy stand, she is trembling and cold. We stagger aft and collapse into bed.

Nightmares chase me all night long.

I wake up feeling worse, no idea what time it is. Daylight.

I try to type but my fingers miss the keys. I try to walk. I stumble and fall. I fumble my words and they come out wrong. I lie down and focus deep inside, searching. Something is terribly terribly wrong. A hard, cold, death reaches towards me like a rising black tide. Frightened, I pull back from the icy eternity, force myself awake, panting with fear.

My muscles ache. I can't think. Walter cat is down, too. He tries to jump up the companionway ladder and FALLS!

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Freddy goes over to him. She's crying. I'm Crying. "Oh Rick, what's WRONG with us?"

I sit there, unable to focus. She grips my arm, "It's the water. It's got to be. We've been poisoned."

My head aches. Water? "Huh? What?"

Freddy is shaking me, peering close into my face, I think I have been unconscious again but am not sure. "We've been poisoned. It must be the water. It must be. Listen to me. The water is the only constant thing in our diet. It has to be the water."

"We've been feeling rotten for a long time."

"Since the end of the expeditions in March," Freddy agrees.

"Since March....." This seems enormously important. I sit on the deck, trying to think about March. What is so important about March? "I know, we haven't had any rain since March. Maybe the water in the catchment tank at Belesona is contaminated."

"I think it is," Freddy agrees, "We've drunk the water from that tank for months.... Our rain catcher has been useless."

"It was right after we found out about all the streams and ground water being contaminated with leptospirosis." I remember something else, "Damn! I looked in the catchment tank and was surprised there was nothing in there." I slam my fist onto the dinette. "There were no mosquito larvae in there! Why didn't I know?"

"And remember the yacht - with the little baby? The baby was sick and crying all the time and nobody could figure out what was wrong with it." She's right.

The water in the catchment tank must be poisoned. "I'll bet it's lead. Lead hits infants and young children really hard and fast. The yacht had been using the water from the same tank for over a month. And Peter, too. Peter told us the water was OK. He said he always made his coffee with it. And Peter has been acting really strange lately, paranoid, erratic, angry one minute and laughing the next. Mad as a hatter."

"What?"

"Hatter. People used to make top-hats using a mercury compound and hatters went crazy because of mercury poisoning. Lead poisoning has neurological effects like that, too." I get up and pace the deck. "It could be mercury. In the Virgin Islands they found mercury in

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water catchment tanks from roofs painted with an antifungal compound. But the roof at Belesona is not painted, it's galvanized iron."

"It doesn't matter, we can't trust our tank water or the water from the catchment tank. We'll have to get to Samarai and buy milk." Freddy gets practical.

"Milk would be excellent. We need calcium - as much as we can get. I'll call Dr. Cook and see if we can get some Penicillamine to chelate whatever is in our system so we can get rid of it."

If, I think to myself, we are strong enough to get to Samarai tomorrow. When heavy metal poisoning goes from the chronic to the acute phase most people die. Right at the moment I could not get the anchor aboard or keep it together long enough to sail through the reefs and islands back to Samarai.

Continued on: <https://log-of-the-moira.com/31DYING.HTM>

It took us 3 months to get healthy enough to sail from PNG to Australia. It taught us an obvious lesson you can learn from;

Protect your drinking water as if your life depends on it.

Obviously the first and foremost drinking water danger is not having any. This isn't a big problem if you are weekend cruising from a marina but believe me, fresh water is a serious worry on long sea passages or cruising where there are no marinas or safe public water sources.

You might imagine a good rainwater collection system will get you between water sources but what if it doesn't rain? Or it rains like a waterfall but you are at sea getting saltwater spray blasted all over your yacht? What do you do if the only water sources ashore are contaminated with an alphabet-soup of tropical disease organisms, a pesticide gumbo or an array of heavy metals? Contaminated water sources are not only gummy creeks, stagnant ponds or muddy rivers but also poorly maintained or compromised municipal water supplies. As a consultant to the South Pacific Regional Environment programme I did pollution sources surveys in several island countries and I can assure you it's a bad idea to drink the shore water in many of them.

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If you want to be aware of how common and dangerous municipal water supplies can be – even in the USA - check out

https://www.cdc.gov/healthywater/drinking/public/water_diseases.html



Water can be contaminated by naturally occurring chemicals and minerals (for example, lead, tin, cobalt, arsenic, radon, uranium), local land use practices (fertilizers and pesticides), wastes from manufacturing processes, sewer overflows or wastewater releases.

Some of the most common dangerous contaminants in water supplies include:

Cholera, Amoebiasis (Traveller's Diarrhea), Dysentery, Infectious diarrhea (a virus), Hepatitis A, Lead Poisoning, Polyomavirus tumors, Polio (Infantile Paralysis), Fluorosis bone disease, Dracunculiasis (Guinea Worm Disease), Intestinal Worms, Trachoma (Eye Infection), Typhoid Fever, Schistosomiasis (Bilharzia), Legionella, Giardia, Norovirus, Shigella, Campylobacter, Salmonella, Cryptosporidium, Leptospirosis..... and lots more.

When you tie up to a marina wharf in a strange city - anywhere – you have no idea if the water is contaminated or not. A local person might tell you it's fine to drink and – for locals

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who have been drinking it for years – maybe since childhood – it is fine because they've built up an immunity to the contaminants. But the water could make you miserable. And sometimes a "good" local water source can become contaminated without the local people knowing about it. They might just think there is a new flu in town.

We stopped in Cairns, northern Queensland, many years ago (before watermakers for yachts) and just happened to see a notice in the local newspaper saying the water supply system had a major problem and the city was currently using a temporary alternative water source. The paper recommended boiling the water before drinking it. Many of the stores in town had only a skeleton staff because, we were told, there was a mysterious flu and lots of people were sick. The locals had not read the newspaper warning that their water was contaminated. There were no notices posted on the public wharf where we might have filled up our water tanks. If we had not happened to read the notice in the local paper we would also have gotten sick and, if we had filled up our water tanks with the contaminated water, our water tanks would have been contaminated and stayed that way until we realized the problem and sanitized them.

Even if the municipal water is safe, if there is no marina or wharf where you can fill up, you have to lug containers of water from your yacht to shore, fill them from a public water supply faucet (if you can find one), lug them back and load them aboard. Not fun if you need 300 liters of water.

How to prevent drinking water dangers.

Get a water maker.

If you are really going cruising (not just day or weekend sailing from a marina), install a good, reliable desalinator, learn how to use it correctly, and fresh water dangers will never be a problem no matter where you cruise. You can enjoy showers, wash the dishes, drink as much as you like, without ever having to worry what's in the water, search for someplace to get water, lug around heavy containers or try to decontaminate it.

Drink Safe Water.

Water tanks on yachts can get contaminated over time.

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To be SURE the water you drink is always safe, install your water maker with a valve to switch between putting water in your tanks or into the sink. After filling the tanks for the day, switch to the sink outlet and fill glass 1 litre bottles – only drink water from the glass water bottles, not from the tanks. We have 8 one liter bottles. My wife and I normally drink a total of 4 liters per day. Two of the glass bottles are kept cold in the refrigerator, 6 are in a canvas holder, and one liter is readily available in a glass thermos on the dinette or, at sea, in the galley sink.



Also install a carbon filter after the fresh water pump so any tank water is filtered before being used.

Our engine-driven watermaker cost us less than US\$5,000 complete with a cruising kit and extra pre-filters. It puts out 85 liters of fresh water an hour when the sea water is cold and 120 litres when the sea water is warm. We top up the tanks every morning in about 45 minutes giving us enough water for hot showers, a little laundry, washing the dishes, washing hands etc. We are never in a marina so our watermaker has produced every drop of water we have used aboard for over 15 years. We run it everywhere unless there is oil or diesel on the water surface or the water is so dirty I can't see half way down the rudder when I look over the stern. We exchange and wash the 20 micron and 5 micron pre-filters every week with sodium percarbonate and flush the whole system with fresh water after every run. The membrane lasts at least 5 years and the last replacement cost US\$168. That's more than 540,000 liters of reliable water for an investment of \$5,500 or about 1 cent a liter. The cost of the diesel to run the desalinator is less than the cost of paying a marina to come alongside and fill up, the fuel to do that or the fuel and time needed to get water in drums.

But the cost is not the primary concern; your health is. Because if you get sick from shore water it's not only going to ruin your cruise it could very well cost you a fortune in medical care plus a lot of pain and suffering. Even if just one person gets sick everyone else aboard is going to have a miserable time.

Never drink shore water, drinks with ice, or fresh fruit smoothies ashore.

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Having a water maker won't prevent you from getting sick from contaminated water ashore. An entire family, kids included, on a cruising yacht that had a perfectly good watermaker aboard got cholera after eating in restaurants ashore when cruising in South America. The most common way cruisers get sick from contaminated water is when they drink water or a beverage with ice in it when ashore. Always learn the local language for "No Ice". If a restaurant provides a glass with ice along with a jug of water do not drink the water or use the glass with ice; ask for bottled water. We do, even in Noumea.

Ordering a nice ice cold fruit smoothie ashore, tempting as it is, could be something you regret the next day, and possibly for the next few weeks. You might think it's worth the risk but if you luck out even once you'll never make the mistake again.

What to do when the Watermaker fails.

If your watermaker fails – and it will, eventually – you better have spare parts aboard and know how to fix it. That is, by the way, a good reason to buy the least "automatic" watermaker you can find. Watermakers with automatic sensors and electronics or complex "energy recovery" systems are much more likely to fail than simpler systems and are difficult to repair by yourself. Our desalinator is inexpensive, simple, with zero electronics, easy to find parts, and easy to repair.

Most desalinator companies sell a "cruising kit" with essential parts for maintenance during your cruise and a detailed operational and repair manual. If your watermaker fails, and you don't have the parts to fix it, you'll need to go somewhere you can get the parts shipped in and fill up with municipal water.

If you **have** to fill the tanks with shore water you need to attach the filling hose to a good charcoal high pressure filter to remove any bacteria, chlorine before the water goes into your tanks. **Always** use the pre-filter before any municipal water goes into your tanks.

If you ever absolutely need to take on river or creek water, filter the water to remove any sediment then sanitize it for drinking with 2 drops/liter (1ml/20 litres) of fresh (less than 6 months old) unsented household bleach – 5.8% sodium hypochlorite. Allow the treated water to stand at least 30 minutes before drinking. Or, better yet, boil the water for at least 1 minute and after it cools off, pour it into glass bottles to drink later.

When you reach a (hopefully) clean municipal water supply again completely empty your water tanks, sanitize them with 1 cup (300ml) fresh (not stored) non-sented household

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bleach for each 50 gallons (190litres) of water, remove any interior water filters, open the water valves, and run the fresh water pump to allow the sterilized solution to treat the entire system, then wait 8 to 12 hours, drain all the water out of your tanks, and refill with good, pre-filtered water – or refill with water from your repaired watermaker.

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Mosquito Health Alert

Pay Attention and learn from these Mossie Mistakes



Ben Zartman, S/V Ganymede

(Dengue fever is a serious threat in all the Pacific Islands, including Australia):

“I was bitten by mosquitos while hauled out at the Marina Manzanillo Club in Cartagena, Colombia. Symptoms began with a high fever, then a dangerously high fever with a full-body ache. They don't call it "breakbone fever" for nothing. I was in bed in an apartment at the marina for several days, partly delirious. Was finally able to stagger to a taxi and get to a hospital where they took blood and prescribed Acetaminophen (Ibuprophen is dangerous because of bleeding). The fever followed the normal cycle precisely: fever, fever reduced, fever returned, then stinging full-body rash--bright red palms and soles of feet. “

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Captain Mikem's mossier dengue mistake:

"I got Dengue in Vava'u Tonga in the mid 90's. Spent a week in my bunk with a high fever, fatigue, and extremely painful joints. No docs around so it was just me. When I got to NZ I went to see a Dr. as I was having trouble speaking loud and could only get out four or five words before running out of breath. She told me one of my vocal chords was paralyzed, most likely from the Dengue. I still have only one vocal chord that works but I have learned to live with a 'Clint Eastwood' voice. "

Mossier-Borne Diseases

Dengue fever is the most common health danger caused by mosquito bites in the south pacific islands but it's not the only bioweapons mosquitoes offer. They can inject their victims with a huge variety of bacteria, viruses or parasites **causing misery to nearly 700 million people each year and killing over one million of them.**

Mossier-borne diseases include malaria, dengue, yellow fever, filariasis, tularemia, dirofilariasis, encephalitis, Ross River fever, Zika fever, Keystone virus, Chikungunya virus, and 22 varieties of swine fever virus.

Most of these diseases are hard to diagnose by yourself and even harder to cure. Even if you figure out what's wrong with you or a crew member, it is unlikely you'll just happen to have the correct medicine and equipment aboard to do anything about it. And none - I say again, NONE – not one of the prophylactics sold by big Pharma will protect you against even a small number of these monsters. Yes, you can get a vaccine for yellow fever and even some (but not all) strains of malaria, but have you and everyone on your crew already been innoculated?

Even mossier not carrying a disease ghoul inside of them are a pain. Their high pitched whining is remarkably annoying when drifting off to sleep. And after they suck your blood, the feeding site can swell up and itch like crazy. One mossier is a nuisance, but when there are thousands of them

A few years ago we sheltered from an approaching cyclone in a mangrove lined river. At night our mosquito screens were a back quivering mass of mosquitoes. Not just one annoying mossier got inside or bit us, not one. We foiled a major air strike of bio weapons by a screen of precaution.

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How to prevent dangers from mosquito diseases

Don't let them bite you.



My wife and I have cruised areas with malaria, yellow fever and dengue epidemics for over 40 years and we have never had any mossier borne diseases because my wife and I are much more intelligent than any mosquito.

We don't let them bite us.

It was a no-brainer to install mosquito screens on the hatches, portholes and vents of our cutter. The screens on the coach hatches, vents and portholes are in place all the time – except when we remove one to open or close a hatch. Every evening, at sundown, we drop the dropslide screens entry hatches.

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Always.

No matter where we are.

You can see how we installed our screens so they are easy to use with this link:

<https://cruising-newcaledonia.com/flexiscreens-for-yachts.html>

You could use mosquito nets to protect a bunk area and there are even bigger ones to use as a “tent” over a cockpit. Mosquito nets can be untreated nets, Insecticide Treated Nets (ITNs) that need to be re-treated with insecticide every year, and Long Life Insecticide treated Nets (LLINs) re-treated every 3 years. The nice thing about treated nets is, of course, they kill the mosquitoes or other bugs. The insecticide is Pyrethrum, now man-made but originally from the crushed dried flowers of the daisy Chrysanthemum and safe to use if handled properly.

But.... Having a net over your bunk(s) isn't going to keep the devils out of your salon where they will be lurking, waiting for you to get up, or maybe teasing you at night breaking the sound barrier flocking around the mosquito net. Plus you need to put the nets up each evening. And the nets keep the heat in and they get dirty.

Having screens for your hatches and portholes is less expensive, more efficient, and easier to use. **BUT, you need to get them set up BEFORE you set sail.**

When we go ashore we **always** carry mosquito repellent in our pack and put it on if we see or hear a mosquito or suspect they may be a problem in the area. We put it on before leaving the yacht if we go ashore in the evening. I also wear socks, long pants and often long-sleeved shirts ashore in the evening or when trekking.

Dengue-virus mosquitoes hunt for victims any time during the day, especially where they can find bare ankles in a shady spot – even right in the center of town.

Malaria mosquitoes prowl in the evening, at midnight and dawn – except in forested areas where they snooze in the bushes and trees but are happy to wake up for a feed if disturbed. If you don't want to slather yourself with DEET wear long pants, heavy socks, and a long-sleeved shirt and just use a small amount of repellent on exposed skin.

Install mosquito screens so mosquitoes can't get inside the yacht and wear mosquito repellent in mosquito hazardous areas ashore. Avoid evening or dawn walks in island forests – or near airports or hospitals.

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Don't get bit. Problem solved.

It's so simple, but I was amazed to discover practically none of the residences or yachts in Tonga, Fiji, New Caledonia, PNG, Australia or New Zealand have screens. They certainly have lots of mossies loaded with an assortment of bugs. I have no idea why so few people in the South Pacific don't use screens. When I was a kid in upper state New York, everyone I knew had mosquito screens on their windows and doors, on camping tents, and recreational vehicles.

Most every yacht I've advised to install screens didn't.

I don't know why. Even in places like Bundaberg, Queensland Australia where we encountered the biggest, nastiest sand flies and mossies on our planet. One bite from them and you get huge welts that itch and burn for days. We knew one yacht that was attacked by evil sand flies in the Great Sandy Straits behind Fraser island. The lady of the yacht still had bruised welts 6 months later.

And six months afterwards they still didn't have screens on their portholes and hatches.

Bewildering.

How many yachts do you know with mosquito screens?

What about your yacht?

What to do if you goof up and get one of the dreaded mossie diseases?

Yes, well, you or your crew member could be in serious trouble very quickly.

Do not delay, at the first sign of any of these diseases get to the nearest hospital. If you can't sail there, get a medical evac team on it's way to you as soon as possible. You may have to relocate to an anchorage near an airport (if there is one). The problem is, many of the diseases could be mistaken for a bad flu (at first) or indigestion from something you or the crew member really should not have eaten ashore.

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If you know you are going to an area with any of the many diseases carried by mosquitos (ie. They are currently having an epidemic of Dengue Fever or Malaria) make sure you know what the early symptoms are before you lark off over the horizon.

Check the government health website – they alert their people to these dangers and their symptoms.

You might wish to add some malaria **treatment** pills if you are cruising in a malaria-zone. It's easier and usually cheaper to get them from a pharماسist in the country you will be cruising in.

But be warned, the mosquitos have become immune to the common malaria treatment pills so ask a local doctor which one medication is most effective in their area. In Vanuatu I was recommended to use Artesunate but there are many other medications and you need to consult with a local doctor for the best medication for you and your crew.

There is no cure for Dengue. The best advise is to drink a lot of water and take pain killers.

Or don't get bit by mosquitoes and don't worry about any of these diseases.

Like I said, it's a no brainer.

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Marine bacteria Health Alert

Lael and his wife Katherine were in Vanuatu aboard their sailboat Painted Skies, getting ready to sail to Australia.

“Part of the requirement for entering Australia was to have a 'clean bottom.' So we anchored in Port Havannah and dutifully spent two days with snorkel equipment only, scrubbing the hull. Over the next couple of weeks as we sailed north through the various islands to Espiritu Santo, Lael's ankle became red hot/swollen due to a tiny scrape from some marine organism, perhaps a barnacle, during our hull cleaning. Just days before we were due to depart with a rally heading to Bundaberg, the infection was seriously out of control. Of course, there was no hope of finding help in Luganville, so we consulted our extensive library of medical advice and started him on a combination of drugs for what we thought might be a *Vibrio* infection. We look back now and realize how dangerous it was to leave on a 10-day passage without a definitive resolution to this infection. But the infection slowly cleared as we sailed on,... at least for a time.



In 2012, after some extra-strenuous activity helping an injured person on a remote Australian island, Lael's ankle swelled up again with such agonizing pain he had to be flown to the Flinders Medical Centre in Adelaide. After a month in the hospital including two surgeries to debride/flush the staph infection from his ankle joint and high doses of intravenous antibiotics he returned to Painted Skies.

When released from the hospital to return to the boat, Lael's ankle was still the size of a softball. When off the boat, he could only tolerate sitting in the wheelchair (fitted with a leg bar) for short periods of time. Each 24 hours he got a new pressurized pump that

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delivers his IV antibiotics just like in the hospital, but this one fits in a fanny pack that allows more mobility. In total, he required IV antibiotics for more than 3 months.

The infection occurred in the exact location of the coral/barnacle cut from Vanuatu. One expert surmised that a pocket of infection may have lain dormant until disturbed by the strenuous activity with Glen on the dock.

In 2018, we found an innovative company in Colorado that designed Lael a custom orthotic called a 'Skywalker' that covers the entire lower leg - it suspends the ankle so the calf bears the weight of each step. Before this amazing device we never imagined we'd be able to again sail long distances. Now, we are ready to give it a go... when allowed. But it has been an 8-year journey to get to this point. " Katherine. S/V Painted Skies.

Why cuts in the marine environment are super dangerous

Everyone knows cuts and scrapes need to be protected from flies and other sources of infections. If you go trekking ashore, sooner or later you, or another member of your crew, will get a cut or scrape from a stumble or an inconsiderate broken branch or some other sharp.

Tropical varieties of Staphylococcus are truly superbugs. Just check out the legs of most island villagers and you'll almost always see some nasty scars. Villagers immune systems can handle the local superbug infections better than cruising sailors and you can get serious complications from minor nicks and scratches. The local flies pounce on any cut within seconds so wounds have to be treated immediately.

What most sailors don't know about cuts in the marine environment.

Many sailors don't know cuts in the marine environment are infected instantly by marine bacteria much much worse than Staph. Getting nicked by a barnacle when cleaning the

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bottom, sliced by an oyster shell when getting out of the dinghy or scraped by a coral when snorkelling in shallow water puts your future happiness in instant peril.

Lael's story is repeated many times every cruising season. We know a French sailor who got a minor cut on his ankle when wading ashore in Vanuatu. He was busy and the cut wasn't too bad so he ignored it. A few days later, as he was preparing to sail out of Port Vila and head back to Noumea, his ankle and foot began to swell up and hurt. It took him three days to get back to Noumea and by that time he couldn't stand up; the pain was excruciating and the wound had opened up revealing a festering hole that went right down to the bone with radiating jagged red lines. He was rushed to the hospital. Fortunately the medical facilities in Noumea are excellent and the doctors were able to save his foot. But, he was told, it was near thing and if treatment was delayed even a day longer they would have had to amputate.

Cuts in the marine environment – from anything – are infected by a wide variety of marine bacteria (*Pseudomonas*, *Serratia*, *Vibrio*, *Aeromonas*, *Erysipelothrix* and *Mycobacteria*) and by your own skin-dwelling *Staphylococcus* bacteria.

You are at risk from any marine injury including (and especially) coral cuts and abrasions, getting pronged by fish, crustacean or echinoderm spines, fish hooks, nicks when filleting fish, scrapes when cleaning the bottom of your yacht, cuts by barnacles or oyster shells on the beach and even pre-existing open wounds.

Vibrio is especially common in marine injuries, and also causes severe health issues when marine food is eaten raw (especially if allowed to spoil). Seafood known to cause *Vibrio* poisoning includes oysters, clams, squid, mackerel, tuna, sardines, crab, conch, and shrimp.

Vibrio poisoning also causes over 95% of the deaths from seafood poisoning in the United States. https://en.wikipedia.org/wiki/Vibrio_vulnificus

Preventing infections from marine bacteria

Avoid getting cut in marine environments and stay out of the water if you have an open cut.

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Use good kelvar gloves when scrubbing the bottom, cleaning the prop, picking up mooring lines handling fish, lobsters, shrimp, crabs, clams and oysters. Leave other spiny things alone and don't bump into them by mistake.

Wear crocs or shoes (**never flip-flops or barefoot**) when getting in and out of the dinghy ashore or wading.

Wear gloves and protective clothing when snorkelling or diving – a wet suit or even a lycra full body suit will prevent most scrapes and also jellyfish or fire coral stings. Avoid breaking coral with parts of your body (including your feet) or falling when wading ashore. And don't stand or walk on living coral, it can cause dangerous infections on the coral – and on you if you get nicked.

Do NOT go walking barefoot ashore, even on nice beaches, near villages. In some areas the villagers use the beach as a toilet and beaches often have broken coral, shells, or bottles in the sand.

I don't suppose I need to tell you not to put a fish hook through your finger, but you get the idea. Accidents do happen from time to time – but less so if you watch where you put your body when in or near the water and use protective clothing, shoes and gloves when dealing with something sharp and pointy.

The one simple thing you absolutely must do to prevent serious problems from marine bacteria is to always have a small dark glass bottle of bleach less than 3 months old in your dinghy when you go diving or in your pack when you go ashore. Here's why.

What to do if you get cut in the marine environment?

There is a lot of incorrect information about how to treat cuts in the marine environment on the Internet, even from respectable medical websites. What I'm going to tell you comes from Dr. Carl Edmonds of the Diving Medical Center in Australia and his 1992 book Diving Medicine for Scuba Divers. By the way, he first heard of this treatment from us in the 1980's.

From 1974 to 1994 I was the principal investigator for a series of scientific coral reef studies in Florida, the Bahamas, PNG and Tonga. Over 350 volunteers from Earthwatch joined our surveys and lots of them ignored our repeated instructions and got nicked by coral or other

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sharp things during our scientific surveys. Not a single one of these divers developed even a minor infection from their cuts because we used an easy, inexpensive and effective way to prevent infection by marine bacteria.

Just before we began the first of the Earthwatch coral reef expeditions in the Bahamas, my wife, Freddy was talking with one the ladies who headed shrimp for the local Key West shrimp fishery. Shrimp have ultra sharp little spines and when the ladies popped off the shrimp heads they invariably got pronged.

The shrimp-beheader told Feddy they never had a problem with infection because they rinsed their hands with bleach. She said, "If you rinse with bleach before a cut stops bleeding, it never gets infected but you need to do it right away."

Bleach is cheap and easy to get anywhere. So when the first person got a coral cut during our expedition (OK, it was me) Freddy poured full strength bleach over the cut right there in the dinghy, as soon as I got out of the water, while it was still bleeding nicely.

I braced for agonizing, searing pain from the Chlorox but it actually didn't hurt much at all. And it didn't get the slightest bit infected. When we got back to our research vessel I brushed the coral scrape with a soft toothbrush to be sure I got out any bits of coral tissue or skeleton, gave it another rinse with bleach, then dried the area, added a puff of antibiotic powder (a mix of neomycin and penicillin) and applied a waterproof band aid.

We used the same technique on all our diving expeditions and Dr. Carl Edmonds tried the Clorox treatment on himself when he got a coral cut while diving in Ouvea, the Loyalty Islands with Freddy and myself and three other doctors from the Australian Diving Medical Clinic. It worked for Carl just as it has worked every time on many other divers over the years, and you can read Carl's recommendation in his book *Diving Meicine for Scuba Divers* (1992 J.L. Publications, Victoria, Australia; chapter 28, page 2.)

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DIVING MEDICINE *for Scuba Divers*



□ Treatment.

All coral cuts should be washed with bleach or soapy water as soon as possible and the surface of the cut or abrasion should be thoroughly cleaned by gentle rubbing with gauze or a soft brush. This removes foreign material which may be the source of inflammation. All cuts should then have local antibiotic powder, cream or ointment applied every 6 hours until healed. The senior (elderly) author, who has a tendency towards cowardice, relies more on the antibiotics than the cleansing. Suitable topical antibiotics include neomycin or bacitracin.

Early attention to every coral cut in this way will usually prevent serious infections. If treatment is delayed, or if systemic effects occur, oral broad-spectrum antibiotics may be needed. The development of a chronic inflammation causes severe itching over the next few weeks, but this usually responds to local steroid (cortisone) ointments.

Dr Carl EDMONDS

Dr Bart McKENZIE

Dr Robert THOMAS

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Always carry a small dark glass bottle of bleach (refreshed every 3 months) and some band-aids when going for a snorkel or a trek ashore.

NOTE: Marine bacteria are extremely tolerant of iodine – so do **NOT treat a marine cut with iodine.**

These are aerobic gram negative bacteria so hydrogen peroxide will help cleanse a wound – especially fish-hook wounds - but has little antiseptic effect on many of the most virulent marine bacteria. If you are a fan of hydrogen peroxide, use it to clean the wound – after rinsing the wound with bleach while it's still bleeding.

The reason you need to treat the wound while it is still fresh and bleeding is because marine bacteria thrive in warm, iron rich oxygenated blood. Once they begin to circulate in the blood they are very difficult to kill and secrete toxins to dissolve any cells they come in contact with. The outflow of blood from a fresh cut prevents them from moving deeper into your body. Once the blood flow stops and the wound closes over, you're in for some serious antibiotic treatment or, if you don't have the correct antibiotics on board, a trip to the hospital emergency ward. As Lael and Katherine discovered, having antibiotics aboard isn't always enough.

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Vibrio fish poisoning can be treated with tetracycline or other cephalosporin antibiotics if begun at the onset of symptoms and continued for the full course of antibiotics - typically about two weeks. https://en.wikipedia.org/wiki/Vibrio_vulnificus

Most everyone knows cuts need to be cleaned, disinfected and covered.

Do you carry bandaids and bleach with you when you go ashore or have them in the dinghy when you go snorkleing?

Do you have crocs or reef shoes to wear when getting out of your dinghy?

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Food Health Danger Alert

“Only us who have had ciguatera know the extent of the agony because the symptoms are so varied and often indescribable.” A report by S/Y It’s a Necessity



“During our peacefully calm night crossing from Vieques to Culebra we were trolling two fishing lines behind the boat, in the hopes to catch ourselves a yummy, free, meal. As dawn broke we felt the line vibrate and the next hour was spent reeling in the catch as we bobbed along our course. When it got to the boat we were surprised at its smallish size considering the fight it gave, and couldn’t quite identify the type of fish it was. It looked like the shape

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of a small mahi with the colors of a tuna. Once we arrived in Vieques and were all settled in, Eben went online and spent about an hour trying to identify this mystery fish, but no luck.

Our guest prepared the fish for us for supper. The meat resembled chicken in texture, quite thick and heavy, nothing like we had ever eaten before. The evening went on as usual. Girls went to bed, we hung out, played some games, and headed to bed ourselves. That is when the, what seemed like, timed-released poison set in. When we got to bed Ellia woke up complaining of sore legs. I spent the next half hour rubbing her legs thinking maybe she was experiencing growing pains. But not long after Arias coughed, in her “I am going to throw up” type of cough, so Eben whipped her out of bed and stood her in front of the toilet just in time. We got her back to bed and then she started complaining that her legs were sore. That’s when Eben started feeling queasy, went out into the salon, only to find both of our guests up and not feeling well either. Then my legs started aching as well. Instantly we assumed it was the fish, and thought, food poisoning.

The rest of the night was spent with 4 adults and 2 kids all getting sick on a boat with only two toilets to use. The boat looked like one that was being attacked by an evil poison. There were people sleeping outside, throwing up over board, every bed was covered in towels in case of spontaneous eruptions, and every bowl, bucket, and pot was being used as a vomit receptacle. Other than everyone exploding from both ends, we were experiencing some other very strange symptoms, such as sore joints, muscle spasms, tingling sensations, mixed up temperature sensations, confused taste buds, sore gums and teeth, headaches, and slight hallucinations. All of the above made for a horrible sleepless night for everyone, except Arias. Thankfully after her first bout of sickness she seemed to have gotten it out of her system and slept the rest of the night, while everyone else writhed in pain.” Symptoms persisted for 6 months, the young girls recovered before the adults. **Read the whole story on <https://itsanecessity.net/we-got-ciguatera-html/>**

200+ Food Borne Nasty Monsters

The various monsters lurking in food are as varied and as common as those swimming in drinking water. There are about 200 common food borne diseases including bacteria, fungi, viruses, protozoan and other parasites as well as toxins (like fish poisoning), chemical and physical agents. Globally, about 33 million people per year have an unfortunate encounter with these diseases and poisons. You can get sick from food anywhere in the world but are

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more at risk when cruising in remote areas, especially in the tropics, where sanitation standards might be a little less than ideal.

Ciguatera

Ciguatera toxin is created by a dinoflagellate *Gambierdiscus toxicus*. It infests algae growing on dead or dying coral. Algae eating fish bioaccumulate the toxin in their muscle and livers. Predatory fish concentrate the toxin even more when they eat the algae grazing fish. ***More than 400 species of reef and lagoon fish have caused ciguatera poisoning and the toxin concentration varies sporadically and unpredictably.***

Fish may be safe to eat in one location and toxic on a nearby reef. The problem can spread from one area to another and with the continued wide spread degradation of coral reefs around the world the problem is getting much worse. In some areas where a particular species was considered OK to eat (according to the locals) they are now toxic.



Over 50,000 people a year get ciguatera poisoning – it's the most common and most serious form of fish poisoning. (ref: <https://wwwnc.cdc.gov/travel/yellowbook/2020/preparing-international-travelers/food-poisoning-from-marine-toxins>)

Eating reef or lagoon fish in the tropics is playing Russian roulette with the health of everyone aboard. If you are unlucky you and your crew are going to be sorry a long time. It will completely ruin your cruising adventure. Even some ocean going fish, like tuna and mackerel, have become toxic in some areas.

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Preventing food borne diseases

Avoiding the serious complications, misery, messiness, and even death caused by swallowing foodborne predators or toxins is ridiculously easy and inexpensive for yachties who eat aboard. If you eat ashore there is no way to know if your meal was contaminated until the suffering starts.

If you think I'm suggesting not eating fish or uncooked vegies or poorly cooked meat ashore in the tropics! – you're right - I am.

Tourists even get fish poisoning, dysentary, and salmonella poisoning in some of the finest restaurants and hotels in the tropics. That doesn't happen very often but why risk it?



If you **avoid EVER ordering fish, raw or poorly cooked meat, or fresh salads when eating ashore in the tropics** you are not likely to have a problem. Plump up with well cooked food (except sea food) and drink bottled water or other beverages (**no ice**) and you'll be perky and happy the next day.

Suppose you get invited to an Island feast in a village in Vanuatu. You'll see a wide variety of local food stuffs. Pig is common at such shindigs. Do not eat it. It is seldom properly cooked. When we attend feasts we eat things we know are safe; like bananas or fruit we peel ourselves and well cooked dishes (except pigs or fish). We always bring our own water.

Preparing your meals aboard avoids the shore-risks because, of course, you are in charge of sanitation and selecting your eatables. Here are some essentials for tummy protection.

1. **Wash greens and vegetables with one cap of household bleach in about 4 liters of fresh water.** Let them soak at least 15 minutes. Look at it carefully and remove any snails or insects. You can't imagine how many of the 200 odd foodborne diseases this

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will eliminate from your salads. Just make sure the bleach is less than 3 months old, unscented and without additives.

2. ***Wash fruits with soap, especially if they are not organic produce.***
3. ***Well cook fresh meat or chicken.***
4. ***Do not catch or eat fish caught in coral reef or lagoon environments*** – in addition to avoiding fish poisoning by ciguatera or other fishy toxins you'll help minimize the serious overfishing of coral reef environments that is a problem almost everywhere in the tropics – and minimize anti-yachty feelings from local fishers.

There is no way to tell if a fish is toxic or not. Ciguatera toxins don't change the texture, taste, or smell of a fish, nor are they destroyed by cooking, smoking, freezing, canning, salting, or pickling. If you catch the fish yourself well outside the reef it is "probably" safe to eat. But the risk skyrockets if you accept a nice fillet from another yacht. A couple of years ago a yacht caught a big mackerel in the New Caledonia Lagoon. The captain shared his catch with his buddies on 4 other yachts and everyone on all 5 yachts except one little girl who didn't eat the fish, got a serious case of ciguatera poisoning. Nobody died but everybody was miserable for a very long time.

5. ***Never order fish in a restaurant;*** it may be one kind of "safe" fish on the menu but an entirely different kettle of fish in the kitchen. Even if it really is a tuna or a deep water fish, they can also be extremely toxic with scombroid poison if allowed to sit for several hours in the sun or at room temperature in the kitchen. A toxic tuna or bonito may have a sharp or peppery taste; nausea, vomiting, diarrhoea and abdominal pain starts within an hour of eating the fish. Order something other than fish and don't worry about it.
6. ***Never eat raw salads or rare or raw meat in a restaurant.*** Fruit you peel yourself is fine, but uncooked salads in restaurants or salad bars are a risk anywhere in the tropics.

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What to do if you goof up and get food poisoning.

Wendy's story:

"I can't hear out of my left ear. My mouth is numb. I've got a strange burning sensation shooting through my body...."



We were in Vava'u Tonga when Wendy began having terrible headaches. Wendy's condition was serious. We returned to the main harbor of Niefu and in the morning. Wendy and our infant son Ryan flew to Tongatapu and then on to Auckland.

She was immediately admitted into the Bishop Auckland General Hospital where a battery of tests showed nothing, but her agony was increasing.

Lumbar punctures revealed excessive cerebrospinal-fluid pressure but the cause was not bacterial or viral. It took six days of tests before the doctors identified the cause as rat lung-worm parasitic meningitis.

Recovery was slow, very slow. Wendy's worst symptoms abated over several weeks but the stiff neck and nervous tissue damage have continued for over a year. She still experiences debilitating pain, especially in the neck, with a strong, itching, burning sensation from the right armpit to the wrist. Wendy says it varies between six and seven on a pain scale of 10. A doctor and cruiser friend of ours has not fully recovered after 8 years.

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Parasitic meningitis is not rare in the Pacific islands and there are many cases of people on cruising yachts becoming severely infected. Although fatalities are rare they have happened. Two Westerners have died in recent years from parasitic meningitis in Vanuatu - both of whom were healthy adults who ate raw, untreated vegetables.

Cases have been reported from Hawaii, Tahiti, New Caledonia, Fiji, Tonga and Vanuatu.

It is far more common in southeast Asia.

Most westerners get infected from eating raw vegetables, usually in the form of a salad or coleslaw. Others have been infected by eating insufficiently cooked intermediate hosts or transport hosts such as escargot, shore crabs, freshwater shrimp (especially dangerous to eat), fish or frogs.

Wendy got it from a coleslaw. made from a cabbage that was washed in fresh water (but no bleach) and made into coleslaw.

I ate very little. Our son Ryan ate none. Wendy ate a large serving.”

Scott and Wendy Bannerot S/V Elan. Authors of The Cruisers Handbook on Fishing
<https://www.amazon.com/Cruisers-Handbook-Fishing-Scott-Bannerot/dp/0071427880>

Food poisoning can cause vomiting, diarrhea, stomach aches, nausea – or lot’s worse depending on what you get.

If you get Ciguatera the symptoms are pretty easy to diagnose but many other serious diseases, like rat-lungworm disease, require extensive testing to diagnose.

So get medical help as soon as possible.

Keep Pepto Bismol aboard. If you have a stomach upset shortly after eating chew two Pepto Bismol tablets to quickly find out if it is caused by a bacterial infection (and get relief). Pepto Bismol lines the stomach wall with bismuth, blocking bacterial toxins. If your discomfort (bloating, aches, acid stomach) was caused by bacteria you will feel fine in 10 to 20 minutes.

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If it's something else, like a virus, a protozoan, or other health issue, the Pepto Bismol will have little or no effect but it's a good quick test to find out how serious the problem is. Buy the chewable tablets; they keep forever and are an inexpensive way to diagnose your belly ache and hopefully provide instant relief. <https://www.amazon.com/Pepto-Bismol-Chewable-Heartburn-Indigestion/dp/B084HC1K4M/>

If you or a member of your crew ate a reef or lagoon fish, and it was ciguatoxic, symptoms start 2 to 12 hours later and include numbness and tingling, a burning or pain from cold water on the skin, joint pain, muscle pain, diarrhoea, weakness, headache, chills, abdominal pain, itchy skin, nausea, vomiting, sweating. Depending on the dose ingested, severe cases may result in tearing of the eyes, chills, skin rash, itching, inability to walk, shortness of breath, drooling, and paralysis. Death due to heart or respiratory failure occurs in rare cases.

Numbness and tingling may last up to three weeks. A painful itching beginning days after ingestion may spread from the extremities and be worse at night. A red, itchy rash on the hands and feet may last 2 to 5 days and is made worse by alcohol consumption. The reversal of hot and cold sensations may last for months. Insomnia, delirium and visual disorders lasted several months in 20% of the patients in one study. Patients may have a cold, clammy appearance with heart palpitations, and a low body temperature.

Once exposed to the toxin, a second poisoning (even years later) will be worse. Much worse. (Ref: Edmonds, C. 1989, Dangerous Marine Creatures Reed Books Pty. NSW Australia; 140-145.)

Intravenous Ketamine, given within 48 hours of the first appearance of symptoms, can quickly alleviate Ciguatera poisoning. (Ref: <https://jamanetwork.com/journals/jama/article-abstract/371918>) but you've got to get to a hospital that has Ketamine and knows how to use it for ciguatera poisoning within 48 hours. If everyone aboard is really sick and the yacht is in a remote area there is nothing you or anyone else can do but suffer it through. Some victims recommend taking Vitamin B12 to reduce symptoms.

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Human to Human Health Dangers

With COVID19 depopulating the planet, international cruising became difficult or impossible. Thankfully that has been resolved – at least for now - and there are lots of other viral, bacterial, parasitic, and fungal diseases caught from being in close proximity – or physical contact – with other humans.

Cruisers are more at risk from these diseases than most people because they spend a lot of time in isolation and when they come in contact with a new populations of people their immune systems have very little resistance to the new varieties of diseases.



Preventing Human Transmitted Diseases

You could get vaccinated for the most common diseases in the areas you will be cruising. There are vaccinations for 19 diseases: COVID, Chickenpox (Varicella), Diphtheria, Flu (Influenza), Hepatitis A, Hepatitis B, Hib (Haemophilus influenzae type b), HPV (Human Papillomavirus), Measles, Meningococcal, Mumps, Pneumococcal, Polio (Poliomyelitis), Rotavirus, Rubella (German Measles), Shingles (Herpes Zoster), Tetanus (Lockjaw), Yellow Fever, and Whooping Cough (Pertussis). Some vaccinations, like Hepatitis B, require 6 months to complete the series. Others need a month after the vaccination to become effective. So vaccinations can be a big, long term project – especially for a family.

If you are sailing out into the blue for an extended time it would be worthwhile to get or update tetanus, cholera, yellow fever, and typhoid vaccinations. International travelers used to be required to have a vaccination document with them when entering a country and this will be required again, as it was with COVID.

However, there are lots of other diseases out there and the very best way to prevent them is to avoid getting them.

These simple precautions will minimize the risk of getting sick from other people.

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1. **Wash your hands or use hand sanitizer** after shopping and after shaking hands (or don't shake hands at all). In French countries don't participate in the usual French Kiss Greeting.
2. **Wash your hands a minimum of 20 seconds** the instant you return to your yacht.
3. **Avoid touching your eyes, mouth or nose** with your hands whenever you are ashore.
4. **Avoid sick people and crowds**, especially indoors (like in bars). If there is a cruise ship in port don't shop where the passengers shop (cruise ships are major importers of the latest flu).
5. **Cover your mouth when you sneeze or cough** and wash your hands afterwards.
6. **Wear a N95 rated mask** if you can't avoid crowds or areas where there are sick people.
7. **Eat aboard** and practice good sanitation with your food.
8. **Never drink tap water or drinks with ice when ashore.**
9. **Quarantine entry to your yacht.** If someone wants to come aboard, or if you want to invite someone aboard for drinks always ask if they are, or have recently been, sick. Not the ritual, "How are you?" Or "How's it going?" resulting in a ritual reply "Fine, Good, Never Better". Ask directly "Are you contagious?" or, even better "Do you have a flu or cold?" If they do have a contagious disease and come aboard to spend the evening down below in the cabin of your yacht you will catch whatever bug they have for sure. Reciprocate – if you visit another yacht or are invited aboard tell them you have the flu, a cold, or whatever and do not go aboard to share it with them.

What to do if you catch a disease from someone.

If you are somewhere with reasonable medical facilities, go see a doctor.

If you are cruising where there is no medical help or the doctors and hospitals are more dangerous than most of the common diseases you'd better have a good medical kit aboard with broad spectrum antibiotics and pills to treat a variety of diseases.

You may have to weather the disease aboard your yacht wherever it happens to be at the time. If it is a highly contagious disease you can be sure the whole crew will come down with it.

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It's so much better to take the elementary precautions and not catch diseases from other people.

Plan Ahead

What are you going to do if you or one of your crew gets seriously sick or injured while you are anchored in a remote island anchorage or at sea, days from help of any kind?

You need to know, before you set sail for that tropical paradise, what medical supplies to have on board and be sure everyone knows where they are and how to use them effectively. You also need an emergency plan and medical insurance for you and every member of your crew that includes emergency rescue and evacuation from wherever you are going to where you can get medical treatment. Medical evacuations by air cost about \$50,000 or more these days and many countries now require each member of the crew to show proof of medical insurance with repatriation included before allowing your yacht to enter the country.

You and your crew also need to decide, in advance, who's going to take charge of dealing with the government officials, the medical team and the yacht itself if the captain is injured or has died. Not a happy topic but one you need include in your pre-voyage planning sessions.

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About the Author



Richard and Frederique Chesher began cruising the Pacific aboard their Peterson 44 cutter in 1976. Richard is a Ph.D. marine scientist and Frederique is an artist and professional photographer. Together they created and publish the [Rocket Cruising Guide to New Caledonia](#) and the [Rocket Cruising Guide to Vanuatu](#), widely praised as the best cruising guides in the world.

Rocket Guides are programs for Windows and Mac computers (not I pads or Android tablets). They are unlike any other kind of cruising guide you've ever used; extremely intuitive, fast and comprehensive.

You'll find critical information on staying healthy while cruising (including avoiding injuries from dangerous marine creatures – like sharks). Important conservation regulations, local custom

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requirements, repair services and supplies, accessing the Internet, weather, navigation aids and much more. With just two clicks you can do a virtual visit to 220 anchorages in New Caledonia and 170 anchorages in Vanuatu, with 240 verified GPS routes in New Caledonia and 160 GPS routes in Vanuatu. The guides cover all of New Caledonia and Vanuatu and are updated at least 4 times a year.

Every anchorage has a high definition, color aerial image showing the anchorage area, surface or drone shots showing what it looks like on approach, what it looks like after you get there plus above and below water (sometimes even spherical 360 degree images) of beaches, coral reefs, forests, waterfalls, and trails. You'll have everything you need to choose the places you and your crew will enjoy most along with reliable sailing directions, exact GPS coordinates of the safest place to anchor, depths, bottom type, protection from wind and waves, hazards, VHF reception and times of the weather reports, mobile phone, Internet, Wi-Fi and TV reception, points of interest, treks and trails. Plus important information on health hazards, social issues, where to get fuel, supplies or repairs, government and local restrictions, conservation laws, and more. You'll also get the Rocket Travel Guides prepared for the tourism departments of New Caledonia and Vanuatu to train travel agents about the enormous range of tourism facilities and activities in both counties; accommodation, car rentals, shopping, tours, sights, beaches all the things tourists need to know about visiting these holiday destinations. Rocket Guides have it all available in a couple of clicks— and you don't need to be online.

Your time in Vanuatu and New Caledonia is going to fly by. Don't waste time racing here and there searching for the places you're going to like best. Take a virtual tour on the Rocket Cruising and Travel guides and you'll discover the best anchorages for you and your crew before you even set sail.