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E-MEDICINE FOR EXTREME ADVENTURERS, TRAVELING EXECUTIVES, AND OTHER WACKOS

Do-It-Yourself Surgery: It's Easier Than Ever!



Laura Malone on her powerboat in the Caribbean, before the infection struck

LAURA AND GREG MALONE WERE midway through their two-year sailing tour of the Caribbean in March 1997 when Laura complained of an ache in her right ear. Within 24 hours, and with the Malones far out at sea, Laura developed feverish nausea, her right ear went deaf, and her left was fading. "I was scared," she says.

Fortunately, before their trip the Malones had signed up with a novel telemedicine service called Voyager, which has pioneered a technique using satellite links, laptops, electronic cameras, and prepackaged medical kits to offer round-the-clock, anywhere-in-the-world medical coverage.

The Malones dashed off an e-mail. The diagnosis came back: Laura was suffering from a bacterial infection of the ear. If left untreated, her nausea would intensify to the point where she wouldn't be able to keep down antibiotic pills. The infection would then rage unchecked. "I knew I had to get Greg to push a surgical wick—a ribbon of bandage soaked in antibiotic solution—into her ear," says Voyager founder Dr. Dan Carlin. There were huge risks: If Greg didn't push the wick in far enough, the infection would persist; if he pushed too far, he would puncture his wife's

eardrum, guaranteeing the onset of meningitis. To make sure Greg knew what he was doing, Carlin e-mailed a diagram of the human ear, along with detailed instructions for the procedure. "He did the procedure perfectly," says Carlin. "The next day the fever broke, and within two days she had recovered her hearing."

The Malones were among the first trial patients in what could be a booming little medical subindustry: do-it-yourself health care. "The business is in its infancy now," says David Hamer, director of the Travelers' Health Service at the New England Medical Center. "But there's the potential for hundreds of millions of dollars' worth of business." Traditional telemedicine—landline videoconferencing between doctors and remote clin-

ics—is already a \$100 million industry. But it's limited in reach, and costs \$25,000 to \$50,000 per setup. Carlin's patients need only a satellite phone/radio/fax and a \$700 medical kit.

Carlin began developing his vision for cheaper long-distance health care after watching a young girl die of meningitis in a Pakistani refugee camp where he was volunteering in the late '80s. "We couldn't control the swelling of her brain," he says. "I wanted to know what else I could do, what else I could try. I tried to call one of my former professors, but I couldn't get through."

Back in the States, Carlin was working as an emergency-room doctor in Maryland when he met a schooner captain who asked whether he could use his medical expertise to take care of his crew and clients at sea. That first client grew into a full-time business, Voyager. In September 1998, Carlin formally launched WorldClinic, a larger operation, with seven specialists, based in Burlington, Mass. Though half its business is still ocean sailors, WorldClinic has shifted its focus to American expatriates and business travelers. "When the company's paying for it, people are very willing to demand the best," says Carlin.

Executives might make for better profits, but sailors make for better stories. Even before its official debut, WorldClinic found itself in the headlines. It was November 1998, and Carlin had volunteered the fledgling company's services for Around Alone, a round-the-world solo sailing race. The first call came in from Viktor Zazykov, a former Spetsnaz officer, who had hurt his elbow trying to



Dan Carlin at WorldClinic outside Boston



The "expatriate medical kit" includes bandages, tweezers, scalpels, forceps, assorted anesthetics and antibiotics, skin stapler (and staple remover), and other things one might need when operating on oneself.

salvage a broken mast.

From the e-mailed description of Yazykov's swollen joint, Carlin determined that the sailor had an abscess. He sent back an e-mail describing how to lance the swelling, swab out the pus, and sterilize the wound. But Yazykov hadn't told Car-

lin he was taking a dozen aspirin a day for arthritis pain—a dosage high enough to cause excessive bleeding. Covered in pus and blood after the incision, Yazykov improvised a tourniquet from a bungee cord. The next day, he e-mailed Carlin saying his arm had turned white and lost all feel-

ing Carlin quickly wrote back and told him to take off the tourniquet or he would lose the arm. Yazykov followed his advice. When he sailed into Cape Town a week later, his elbow was almost fully healed.

Today, ensconced in a sunny new office on the outskirts of Boston, Carlin reviews the status of his current patients, their positions marked by pushpins on a wall-sized map of the world. Surveying his nascent global empire, Carlin seems confident. Last month WorldClinic announced the completion of its initial round of private-equity financing. It intends to launch a second round next year.

Carlin has some good reasons to be optimistic—not least because of a mediagenic clientele. In January 2001, WorldClinic will lend its services to a high-profile adventure called the Race, a round-the-world event in which some of the world's top

yachtsmen compete in the most expensive sailing vessels ever built. "They'll be cold, they'll be underfed, they'll be sleep deprived, stressed, and physically exhausted," says Carlin. "There will be lots of opportunity for injury and infection." Ah, perfect. —Jeff Wise

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