

Antarctic Practice: 'We See It All, and Then Some'

BY JOYCE FRIEDEN

Viral illnesses, strain injuries, and lacerations—Dr. Kenneth V. Iserson treated common cases like this several times in a single week, just like many emergency physicians.

The only difference?

He was at the bottom of the world—and the outside temperature was -15° F.

Last month, Dr. Iserson finished up a 6-month tenure as lead physician at McMurdo Station in Antarctica, where he had been since late August.

When asked why he decided to take the post, Dr. Iserson's responded:

"Are you kidding? Who *wouldn't* want to go if they had the chance?"

"You are challenged to use everything you know and know how to do in medicine," said Dr. Iserson in an e-mail interview. "The patients are all undiffer-

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COURTESY KENNETH STEARNS

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Dr. Iserson's facilities included a small clinic/hospital with a staff of three physicians, a physician assistant, a physical therapist, a dentist, a medical technologist, an x-ray technician, three nurses, and a flight technician. The facility, which generally gets visits from 135-200 patients per week, has four outpatient beds and three inpatient beds. Dr. Iserson also guided treatment for the South Pole station, which has one physician and one physician assistant, as well as multiple field camps scattered across Antarctica.

Dr. Iserson's salary for his stint at the station was paid by Raytheon Polar Services Co., the main logistical contractor to the U.S. Antarctic Program, a government-funded project operated by the National Science Foundation.

The Sub-Zero ED

Despite the polar environment, Dr. Iserson saw only a few cases of frostbite and one moderate case of hypothermia. "We're all issued extreme-cold-weather gear, and everyone takes its use seriously," he said.

Instead, the medical condition seen most often is "the crud," which he de-

finies as a series of viral illnesses that strikes each year. "This year appears to have been worse than most," he added, "and reflects the large rotating population on station."

The other common class of medical problem is overuse/sprain-strain, he continued. "Although there is a huge effort to reduce work-related injuries, this is an industrial park in the middle of a very unforgiving environment. Therefore, these injuries happen. That's one reason that we have a year-round physical therapist."

When he had questions about a difficult case, Dr. Iserson consulted by e-mail with infectious disease specialists, "particularly about our H1N1 concerns and a couple of particular patients," he said. "Of course, one of our flight surgeons—from the Delaware Air National Guard—is also a Stanford University professor in infectious disease, so that was a big help."

Although the South Pole station is a full 800 miles away, Dr. Iserson went down there for his work. "The modern facility sits immediately adjacent to the ceremonial South Pole—a nice silver ball with lots of flags—and the actual geographic South Pole," he said. "They are about 100 feet apart and about 100 yards from the nearest

station doorway. At more than 9,000 feet, the physiological altitude can range up to 15,000 feet due to extreme low pressure caused by wind vortices and the Coriolis effect."

Dr. Iserson was sent to the South Pole station to do gallbladder ultrasound exams required for people spending the winter at that location. "While I didn't know how to do that particular exam before I arrived at McMurdo, spending time with the ACEP ultrasound Web site allowed me to quickly learn and do these exams," he said.

Because the weather prevented him from leaving for a few days, "I got to see the enormous 'Ice Cube' project to detect neutrinos, the AERO project to measure the cleanliness of the earth's air, and the amazing self-sustaining ice tunnels around the station that carry the water and sewage pipes. The tunnels are a constant -60° F."

Psychiatry and Surgery

Dr. Iserson said he had a number of patients with panic attacks and depression. "A chronic problem here is sleep disorders."

One treatment option Dr. Iserson tries to avoid is surgery.

"The most serious 'surgical' cases in-

cluded a possible appendicitis we treated nonoperatively until we could fly him off the continent," he recalled. Another challenging surgical case involved a second-degree burn of almost the entire hand. The medical team treated it successfully by incision and drainage of the huge blisters, frequent dressing changes, and immediate full range-of-motion in the bandage.

"Not like the books say to do it," he admitted.

One of the toughest aspects of the job, he said, was deciding when to send a patient off continent. It is often a complex and expensive option. "You must decide what you will have to treat on station, because medical evacuation may not be available due to visibility or weather conditions."

Highs and Lows at the Bottom

Dr. Iserson's best day happened when the phone rang just as his office was closing.

"I picked it up. 'We've had a [snowmobile] accident with a hand injury,' the person said. 'We're at a field camp and have a helicopter coming.' After ascertaining that it didn't sound too bad, I suddenly thought to ask, 'Where are you located?'"

The response: "On [Mount] Erebus."

Dr. Iserson immediately got permission from the research manager to accompany the helicopter on an "amazing" trip to the Mount Erebus volcano.

"As billed, the patient had suffered only a minimal injury—while at an awesome location," he said. "We landed at the scientific field camp on the active, snow-covered volcano only a few hundred yards from the summit. As it turns out, most long-time workers at McMurdo have never even been on Erebus. That was quite a treat!" The patient was able to return to Mount Erebus and her research 2 days later.

His worst day wasn't because of a clinical crisis—although it involved a challenge all too common to emergency physicians everywhere: overcrowding. The management told him they were planning to put a bunk in his room, "in case we need to put someone else in there with you." Station management had already moved him to a very small room in the oldest dorm on station to guarantee that he would have a private room. "Eventually, they got so much push-back from the people in that dorm that they made other arrangements," he added. "No bunk beds in that dorm."

Expect the Unexpected

Then there have been the unexpected cases, like the heavy-equipment operator who had a very heavy pipe dropped on his finger and came strolling through the



COURTESY DR. KENNETH V. ISERSON

In February, Dr. Kenneth V. Iserson finished up a 6-month tenure as lead physician at McMurdo Station.

door with a gloved hand held high. "With our whole team watching, I removed the glove and immediately was wondering if we had a bone rongeur available."

A small bit of tissue was all that connected his entire fingertip to his finger; the bone itself was completely exposed. "But since he could move it—and I had no way of moving him off the continent—I decided to replace the tissue over the bone and repair it," Dr. Iserson recalled.

On another day, a friend of Dr. Iserson's came into his office and casually remarked that she had been unable to swallow anything—including water—since the night before. "After trying more benign options and without having any contrast I could safely use to image it, I opted to use the old push-it-through-with-the-NG-tube trick," he said. "Not the most elegant solution, but it worked."

More Than Medicine and Penguins

"Aside from the fascinating folks you meet everywhere you go, there are, intentionally, far more activities to do than time to do them," he wrote. Along with a large library, the station hosts musicians who play often. Movies are shown every night in the coffee house, and there are lots of organized sports activities, periodic team trivia, bingo and other games, cross-country skiing on the Ice Shelf, a craft room, and even the Ross Island Yacht Club, which he added doesn't have any boats—"only interesting talks and good food."

As for food, the staff has access to fresh fruits and vegetables, depending on what the supply planes bring. They also have eggs.

The continent also hosts periodic lectures by scientists and others who are sometimes among the most prominent experts in their field. Even the stars drop by for visits. Dr. Iserson had the chance to talk with Sir David Attenborough when he came to film for the BBC.

"This is a huge continent with amazing vistas over the Ross Sea Ice Shelf and of the Royal Geographic Society Mountain Range in the distance," he said.

Unlike workers at the South Pole Station, Dr. Iserson said that they often spent a lot of time outdoors. "So what's a little -15° F temperature among friends?"