News reports about the Ebola virus have been hard to ignore. By late September, we had learned that more than 180 of the 2,800 people who had died from the virus in West Africa were health care workers. The four Americans who had been infected, including two physicians, were evacuated to the United States to receive intensive care under quarantine. All are recovering.

Ebola is the latest threat to physicians doing medical missions overseas. Those who go abroad have always faced health risks ranging from the routine to the exotic.

“The risks that a physician faces are dependent on several variables,” says William Stauffer, M.D., associate professor of medicine and tropical and travel medicine at the University of Minnesota Medical School. “It depends on where you go, how long you go, and what type of infrastructure you have in place when you are providing care.” Infrastructure issues, including poor infection control, are one reason why Ebola, which is transmitted through human-to-human contact, has been so difficult to contain.

So how can physicians planning medical missions stay safe? What should they beware of, and how can they avoid problems? Here’s some advice from physicians who have confronted the common, the exotic and the unexpected while abroad.

**DIARRHEA**

Physicians are no different from anyone when it comes to their digestive tracts, so they are at risk for the same intestinal upsets other travelers face. “Of all the things that are liable to get a person sick on a medical mission, traveler’s diarrhea is going to be the most common,” says Brett Hendel-Paterson, M.D., who practices at HealthPartners’ Travel and Tropical Medicine Center in St. Paul and is an assistant professor of medicine at the University of Minnesota. According to the Centers for Disease Control and Prevention, traveler’s diarrhea will affect anywhere from 30 to 70 percent of travelers, depending on their destination.

Although it may be routine, it can cause problems even for the most vigilant. Hendel-Paterson himself can vouch for that. While on a medical mission to Haiti in 2010, he suffered a bout of diarrhea so severe he needed IV fluids.

He says health care providers sometimes joke about the stomach problems they’ve had while providing clinical care in austere or low-resource settings. “But if you are not prepared, you not only become unable to serve patients, you end up being a resource draw because other people need to now take care of you,” he says. “If you are a physician and you become sick to the extent that a member of the medical team has to sit with you … well, then you are taking two people out just like that.”

He says the best way to prevent traveler’s diarrhea is to drink bottled water and make sure food is prepared safely. If you do get sick, stay as hydrated as possible. And before you go overseas, have a physician prescribe antibiotics you can take with you in the event you do get sick.
it would arrive and the extent to which it would take hold. Two days after her arrival, patients at the Port-au-Prince clinic where she volunteered began presenting with characteristic symptoms of the disease. Then two weeks

sputum. “If a chest X-ray has already been performed, then the utility of listening to a patient’s lungs is less,” he says.

2. Examining the patient from behind. In developing nations, personal protective equipment (eg, masks) can be at a premium. If such equipment is not readily available, additional precautions are necessary. “Oftentimes, when doing a lung exam, a standard instruction to ‘Breathe deeply’ will make the patient start coughing,” he says. “When I listen to a patient’s lungs, I stand behind the patient to listen, so that when the patient does start coughing, it’s not directly in my face.”

MOSQUITOS (AND THE DISEASES THEY CARRY)

When pediatric emergency medicine physician Jennifer Halverson, M.D., traveled to Haiti at the end of April, she knew that the mosquito-borne illness chikungunya was inching its way toward the country, but she wasn’t prepared for how quickly it would arrive and the extent to which it would take hold.

Two days after her arrival, patients at the Port-au-Prince clinic where she volunteered began presenting with characteristic symptoms of the disease. Then two weeks

Jennifer Halverson, M.D., who contracted chikungunya during a recent mission to Haiti, advises colleagues to “be vigilant with the insect repellent.”

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later, Halverson herself awoke at 3 a.m. with the same symptoms: fever; excruciating shoulder, hip and knee pain; mouth sores; nausea; rash; enlarged lymph nodes. On May 19, when she was finally well enough to take a commercial flight back to Minnesota, blood work confirmed her well-educated suspicion: she had chikungunya.

“I had read a lot about chikungunya because I knew I would see it in Haiti eventually, but didn’t think I would become infected with it so soon after it showed up in country, which in retrospect was a pretty naïve thought,” recalls Halverson, who has been volunteering in Haiti since the late 1990s and has spent a total of about two years living in the country since then. “The official case count in Haiti of 50,000 is the worst underestimate I have ever encountered. Of all the people I know who live there, only a handful don’t have it. It’s just exploded,” she says.

Chikungunya is just one illness transmitted by mosquitoes. Malaria and dengue are others that are common to the places medical missions take physicians.

To reduce the risk of mosquito-borne illnesses, Boulware advises his traveling colleagues to do what the U.S. Army does:

- Spray your clothes with permethrin or purchase permethrin-impregnated clothing at a local sporting goods store. Permethrin-treated bed nets are also available.
- He also recommends using a DEET-containing insect repellent on exposed skin and reapplying it every four hours. According to results of a field trial conducted in Alaska published in Annals of Internal Medicine in 1998, people wearing permethrin-treated clothing along with an insect repellent containing 35 percent DEET had a 99.9 percent protection rate against mosquitoes. Halverson admits she might have avoided chikungunya had she been better about using repellent. “I was not good at applying it. It felt sticky, and the dirt would cling to my skin when I had it on. Now, I tell my colleagues who are going to go to Haiti, ‘Be vigilant with the insect repellent.’”

ACCIDENTS AND INJURIES

Being in a serious car accident while overseas is much more likely than contracting a serious illness. According to the Centers for Disease Control and Prevention, injuries cause 23 percent of the deaths that occur among U.S. citizens traveling abroad, whereas infectious diseases account for only 2 percent.

“There are things that people do abroad that they wouldn’t do in the United States—they may hop on a motorcycle taxi, ride around in a car without a seatbelt,” Boulware says. “And some things are just riskier there than here—like traveling at night.” (The lack of center lines and seat belts, poor-quality roads and cars without headlights present the perfect storm for an accident.)

PRE-EXISTING CONDITIONS

Among people 50 years of age and older, the biggest concern is complications from conditions they already have such as heart disease or diabetes. “Travel is inherently stressful; you don’t want to unnecessarily forego travel just because of these pre-existing conditions, but you should be managing those conditions, and you should make sure you are in reasonable shape before you travel,” Boulware says.

Hendel-Paterson, who was diagnosed with chronic lymphocytic leukemia in June 2013, traveled to Thailand this past July to teach a 10-day tropical medicine course. He and his family planned to spend another two weeks traveling throughout the country. But within days of finishing teaching, he developed severe hemolytic anemia. He was hospitalized in northern Thailand for two weeks before being medically evacuated back to the United States. “I was actually flown home via air ambulance accompanied by a doctor and a nurse part way, and the rest of the way on a commercial flight accompanied by a doctor,” he says.

Hendel-Paterson is back to work but still recovering from his illness. “It’s true that there are certain diseases that we can acquire while working abroad as physicians. But really, it is far more common for someone to get ill from what they are bringing with them,” he says. “For me, that was a complication of a cancer that I already knew about, even though it was stable when I left.”

Halverson is also back home. She continues to experience joint pain in her upper body, but she knows it could be much worse. “In Haiti, you have whole populations who cannot afford to lose a week’s worth of income because they need to eat, and most of them have had chikungunya, so they are walking around pushing carts, walking over bumpy roads, carrying five-gallon buckets of water on their head, doing manual labor every day while they have all this chronic pain,” she says. “When I have bad days, I think of them.”

Jeanne Mettner is a frequent contributor to Minnesota Medicine.