

IT'S A SMALL WORLD, AFTER ALL, ONE IN WHICH A MAN BOARDS AN AIRPLANE IN WEST AFRICA AND HOPSCOTCHES HIS WAY ACROSS EUROPE

and North America to land in Dallas the next day. One would never guess by looking at him, but microscopic strands of a virus travel with him, stowaways inside the man's body. Four days later, he is burning with fever. Next come the vomiting and diarrhea, and like that, Ebola is in America.

The man, identified by his sister as Thomas Eric Duncan of Liberia, spent the last hours of September and the early hours of October battling for his life in an isolation unit at Texas Health Presbyterian Hospital in Dallas. Meanwhile, investigators from the Centers for Disease Control and Prevention (CDC) in Atlanta fanned out in Dallas in search of close family and associates who had come into contact with the patient since his arrival in the U.S. on Sept. 20.

Within a day of the diagnosis, as many as 18 contacts were being monitored for symptoms, including some schoolchildren who live at the modest two-story townhouse complex where he was staying, according to Texas Governor Rick Perry.

And though the patient was placed in isolation on Sunday, limiting the scope of actual contagion, the *fear* of contagion had already spread. Outside the apartment complex, one woman drove by and asked where she could get an Ebola test for her son who goes to school down the road. A boy slouched in the backseat had a T-shirt over his mouth.

With more than 3,300 people dead in the growing West African epidemic, the arrival of Ebola in the U.S. is indeed un-

nering news. But it came as no surprise to the disease detectives at the CDC. In recent months, their Ebola command center has fielded at least 90 phone calls from hospitals around the country who suspected they might have the U.S.'s first Ebola patient. A few health care workers who became sick overseas were evacuated to the U.S. in special jets designed to contain the virus, but here we are talking about a symptomatic patient in need of a diagnosis. In a dozen of those cases, the CDC recommended a blood test. All came back negative. Duncan was the 13th to be tested.

But far from being alarming, the volume of calls is a reason to feel hopeful. It shows that many of America's health care workers are on high alert—precisely, infectious-disease experts agree, as they should be in the face of a virus like Ebola. The virus can be snuffed out quickly in North America, said CDC director Dr. Tom Frieden, who vowed to stop it “in its tracks.” He added, “There is no doubt in my mind that we will stop it here.” The prospects are good that Frieden is right.

Unlike in Liberia, Sierra Leone and Guinea, where Ebola could cause political upheaval and economic collapse, the U.S. has all the tools to fight Ebola that impoverished nations lack: a surfeit of trained doctors and nurses, systems for a coordinated and quick national response and sufficient hospital beds and isolation units. Dallas has plenty of ambulances and EMTs, lots of clean water and sanitizing soap. In short, the elements of pub-

lic health are everywhere in American lives and are almost completely taken for granted—until they are suddenly front and center, as a threat from over there rears up over here.

CONTAINING THE CASE

THIS PARTICULAR STRAIN OF EBOLA IS fatal in about half of all known cases, yet it is not quite as fearsome as some other strains. The good news—*good* being a relative term—is that if you know what to look for, you can see it coming. Patients are contagious only when they are suffering symptoms: fever, muscle aches, vomiting and so on. What's more, the virus cannot be transmitted through the air. Direct contact with infected bodily fluids like blood, urine, saliva and feces is how the virus hops from one person to the next.

This makes fighting Ebola a straightforward proposition in the resource-rich U.S. Step one is to isolate the symptomatic patient and confirm a diagnosis. Step two is called contact tracing—a hurried canvass to identify and locate people who have been close to the patient. And step three is to keep tabs on those contacts for symptoms. If they go 21 days without getting sick—Ebola's incubation period is three weeks, max—they're most likely in the clear.

The “isolate, canvass and observe” protocol has been a successful strategy in Nigeria and Senegal, where outbreaks of Ebola were extinguished this year. It can be tedious work, though, and it is only as good as the front-line caregivers who are the point of the spear. And in Dallas, the spear should have been a bit sharper.

The patient first visited the emergency room at Texas Health Presbyterian on Thursday, Sept. 25. He complained of fever and abdominal pain—common complaints during flu season and generally not much to worry about. But in taking his history, a nurse learned that he had recently arrived from Liberia, information that should have set off alarm bells. “Regretfully, that information was not fully communicated throughout the full team,” hospital executive vice president Dr. Mark Lester later explained. The patient was sent home.

Two days later, an ambulance was

called to the Ivy Apartments near North Dallas, in a neighborhood so rich in recent arrivals to the U.S. that it has been called the Ellis Island of Dallas. By now the patient was in much worse condition, and the emergency crew returned him to Texas Health Presbyterian.

This time, the Liberia connection rang loud and clear. Doctors promptly admitted the patient to an isolated room, contacted the Texas health department and dialed the CDC hotline. One of the experts on call at the Emergency Operations Center in Atlanta then led the patient through a series of triage questions. Two days later, the CDC and the Texas health department received blood samples from the patient, and by that afternoon, both agencies had confirmed he had Ebola.

The CDC dispatched a 10-person team to Dallas on Tuesday, Sept. 30. Their job: find anyone and everyone the patient might have exposed to the virus. The patient's fellow passengers on the trip from Liberia, for example, are believed to be in little or no danger because of how the disease is transmitted; close family and friends, on the other hand, as well as hospital personnel, would need to be monitored.

Epidemiologists tackle the disease by building rings around the virus, starting with the circle of people in direct contact with the patient. Those people are asked about their own circles of close contacts. With close observation and clear education—don't travel, avoid crowded public spaces, monitor your symptoms and so on—these rings are typically sufficient to stop the spread of Ebola.

Of course, all this depends on honest and accurate information from the patient and his contacts, and enough doctors with beds to deal with infected people in his circle. All these have been in short supply in West Africa, where the stigma of Ebola has led patients to flee or mislead volunteer contact tracers. Quack cures, rumors and conspiracy theories have also run rampant in the crowded cities of Liberia, Sierra Leone and Guinea. And frankly, the U.S. and other Western governments have been too slow to respond to the epidemic. Only now are the first of 3,000 U.S. troops

promised to the Ebola fight on the scene and building hospital tents.

When President Obama announced in mid-September that he was sending troops, he spoke of Ebola as a national security threat with potential to destabilize a volatile part of the world. "If we don't make that effort now and this spreads not just through Africa but other parts of the world, there's the prospect then that the virus mutates," Obama told NBC's Chuck Todd on *Meet the Press*. "It becomes more easily transmittable. And then it could be a serious danger to the United States."

THE TIPPING POINT

THE HEIGHTENED SENSE OF URGENCY IS on display at the CDC's Emergency Operations Center, a hive of glowing computer screens and real-time maps documenting the spread of the Ebola virus. One entire wall of the sprawling bullpen displays clusters of cases of the disease across West Africa, built from data continually refreshed by health workers in the field. In an adjoining room, phones ring with calls from hospitals around the country seeking advice on potential cases in their emergency rooms. Through careful questioning, the CDC officers who answer the phones guide the callers toward a good diagnosis, now and then advising that a patient be

isolated long enough for a definitive blood test to settle the question. Each morning at 10 a.m. in the conference room that serves as mission control, CDC leaders meet with representatives of the State Department and USAID to size up progress—or lack thereof—and plot their next moves.

It's comforting to Americans (one would hope, anyway), but to the people of Liberia, all this work is not enough. Government officials in the capital of Monrovia grumbled about the fact that Americans were refusing to name the Dallas patient, making it impossible for them to investigate his Liberian contacts. Meanwhile, ordinary citizens vented on radio talk shows about the slow response to their epidemic. "Now people in America know Ebola is real," said one caller. Maybe now "they will send more personnel and doctors."

Is there a silver bullet in sight? Scientists employed by universities and pharmaceutical companies in the U.S., U.K. and Canada are working frantically on promising treatments for Ebola and a potential vaccine that could be given to the infected and the uninfected alike. But even if their breakthroughs are rushed into widespread use by the end of the year, they are unlikely to reach West Africa in time to stem the outbreak. A harrowing forecast by the CDC predicted that cases in Sierra Leone and Liberia, the two hardest-hit countries, could reach 1.4 million by early next year if the world fails to ramp up existing efforts to fight the disease.

There is a tipping point in all epidemics, when the number of infected patients becomes so large that no army of health care workers is big enough to draw protective rings around every cluster of patients, friends and family.

If the tipping point is reached, this virus will be everyone's problem. That's why, in the hospital tents of West Africa and in the brown brick buildings of Texas Health Presbyterian, the urgent business is the same. Ebola is burning, and it must be snuffed out. —WITH REPORTING BY ALEXANDRA SIFFERLIN/ATLANTA, ALEX ALTMAN/DALLAS, ARYN BAKER/MONROVIA AND ALICE PARK/NEW YORK CITY ■

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