



SCIENTIFIC AMERICAN™

Permanent Address: <http://www.scientificamerican.com/article/ebola-exacerbates-west-africa-s-poverty-crisis/>

[Health](#) » [News](#)

This article is from the In-Depth Report [Ebola: What You Need to Know](#)

Ebola Exacerbates West Africa's Poverty Crisis

The virus spreading in Guinea, Liberia and Sierra Leone has led to food shortages and neglect of other devastating tropical illnesses

October 30, 2014 | By [David Biello](#) |

When Ebola came to Dorcas's home on the outskirts of Freetown in Sierra Leone, the virus spared no one. Her mother brought it home from the clinic where she worked, caring for an Ebola patient who ultimately died. Her mother, in turn, gave the virus to Dorcas's father and older sister who had helped clean up copious vomit and diarrhea while tending to the sickened mother. Then Dorcas's turn came, when the 17-year-old young woman transported her ailing mother and father to the hospital on the family's motorbike.

Dorcas carried her mother into the hospital, she told peace activist Chernor Bah during his recent visit to his home country, but it was too late. She then joined her father in quarantine. There she cared for her sicker and sicker father even as she, too, succumbed to the symptoms of the viral infection. Within a few short weeks her mother died, her father died and her older sister died. But Dorcas survived.

She has now returned home and has undertaken the care and feeding of two younger siblings with \$10 worth of rice and oil provided by the government, a supply that is quickly running out. Her neighbors treat her with suspicion, she told Bah. In turn, Bah shared Dorcas's story via Skype while he was under his own quarantine with a [conference on the Ebola crisis](#) in west Africa at Columbia University. Of the survivors Bah talked to while he was in Sierra Leone, most were young girls like Dorcas, who had lost entire families. Whole communities are now quarantined. Homes that once held extended families of 20 or more people are now reduced to just a few survivors. "This is affecting the very core of who we are as a people and as a nation," Bah said. "Taking care of the sick is a fundamental part of our humanity."

Or as Dorcas told Bah: "I got Ebola out of love and now I have to fend for myself and I don't know if I can ever go back to school."

[Surviving Ebola](#) is just the first challenge in Guinea, Liberia and Sierra Leone. These countries, which already lacked functioning health care systems, now face the economic and social aftereffects of a devastating outbreak. Just as Ebola insidiously infects the very health care workers tasked with fighting it, the virus is straining already struggling countries, exacerbating problems that linger from recent



Surviving Ebola is just the first challenge facing the residents of Liberia, like those in Mawa town pictured here, as well as Guinea and Sierra Leone. *Courtesy of USAID*

ADVERTISEMENT



civil wars and deep history. The 28 million or so people of Guinea, Liberia and Sierra Leone have just a few hundred doctors, many of whom have now perished in their [heroic struggle to stop the disease](#).

Ebola's arrival has only worsened the prospects for controlling other entrenched tropical diseases, such as Lassa fever and [malaria](#). Worse, given that symptoms for these other tropical maladies can be the same—and rapid tests for Ebola do not yet exist in the field—some of these patients end up in isolation wards where the infected suffer through the virus and where the risk of infection is highest. "This forces us to pay attention to people we don't usually pay attention to," said economist Jeffrey Sachs, director of the Earth Institute at Columbia University, which helped convene the one-day meeting. "We shouldn't be shocked, shocked that people didn't have health care. That's the system we have in the world. We are very negligent."

The problem is not just a faltering and overstrained health system. Food supplies in countries that were already pressed for calories have dwindled further. A lack of sufficient nutrition and even outright hunger are on the rise. Economies struggle as prices for staples like rice and cassava have spiked and suspicion closes markets. Crops fail to move and farmers have found it hard to work their fields, according to the [United Nations World Food Programme](#) (WFP), with farm laborers either sick or afraid to travel.

In fact, the WFP notes that [food prices have already risen](#) by 24 percent across the board so far this year in the three worst-afflicted countries. Families have been reduced to eating one meal per day in some cases. Paired with reduced incomes as work declines, access to food becomes harder and harder. Insurance prices for cargo traveling to or from the affected countries and their neighbors have risen, further exacerbating an incipient financial crisis. People are [not working because of Ebola](#) and are not getting paid. Without money, commerce grinds to a halt.

In Conakry, the capital of Guinea, people are even going into debt to provide food for their children; in rural areas of the country where the epidemic started the number of meals has been reduced—and this is during what is normally the harvest season when rural households have the most food and cash. The Famine Early Warning Systems Network suggests that "large populations would face [moderate to extreme food consumption gaps](#)" if Ebola continues to spread. In other words, the threat of famine looms.

The hardest hit by the Ebola crisis, as in all crises, are the poorest, whether in cities or remote rural communities. "The epicenters are places where people are disaffected from the health system," explained Ranu Dhillon via Skype from Guinea, where he is working to help bring the epidemic under control. "To them the health system doesn't even exist or if it does, it's a [run down clinic that doesn't have enough medicine](#). We are creating a health system while doing emergency response."

Even the roads to reach or leave rural communities are lacking, requiring hours by rugged vehicle or trudging for miles. "There are no roads, [very little electricity](#)," Dhillon added. "To even find patients is very difficult, much less transfer them from villages to testing sites."

An epidemic of fear rages along with the one transmitting Ebola. People hide their dead, worried that health workers in "space suits" are harvesting organs or murdering the sick with various treatment protocols, such as spraying the infected with chlorine solutions. [Trust in authorities has evaporated](#), if it was there to begin with, and people have resorted to bribing health officials to obscure the cause of death to allow for burials that include properly washing the corpse, which also exposes people to fresh Ebola infections and spreads the disease. "People see the treatment center as something akin to a death sentence. They are taken away from their families in their final days. They are buried in a way that doesn't conform with their cultural and religious practices," Dhillon said. "They are only going to come forward when they know they are going to get the best care, when people know there's hope."

As a result, the actual number of [Ebola infections may be underreported](#) by as much as 75 percent, according to the World Health Organization. And transmission via bodily fluids is easier in an overcrowded city environment of densely packed homes like Monrovia, Liberia's capital, whose infrastructure (such as roads and electricity) has the capacity to support perhaps 300,000 people yet hosts 1.5 million inhabitants. "One of the best ways to interrupt the spread in Africa is people identifying themselves as potentially infectious and showing up for medical attention," explained Robert Kanter, a research scientist at the National Center for Disaster Preparedness (NCDP) at Columbia and a pediatrician. "They are not going to do that unless they believe they are going to benefit."

As proved by recovery rates in richer countries, this strain of Ebola can be treated successfully with techniques as simple as replacing the volumes of liquids lost to the illness. Without water, organs fail and blood pressure plummets, causing death. In the U.S. and Spain

that has meant intravenous hydration but even [oral hydration](#) of four liters a day or more of liquids and electrolytes can reduce death rates below 50 percent it appears, according to both Dhillon and Kanter. The treatments already in place for cholera include rehydration but also use beds that have a hole in the middle for ease of defecation, which can be reemployed to treat Ebola patients. But there is simply not enough to go around as new isolation centers are built.

The key variable in controlling this outbreak of Ebola is reducing the time from symptoms in patients to their isolation. "Speed matters," said David Abramson, director of research for the NCPD.

The math is simple: If one person with Ebola infects two and they in turn infect two more, the epidemic continues its exponential growth and the world faces as many as a million cases by the end of 2014. Such an infection rate is helped by the number of days spent outside of treatment centers or isolation. But if a patient reports to such an isolation treatment center—assuming a bed exists for them there—within a day, the [infection can be slowed](#). "That's not a chain reaction, that is a self-limiting infection," Sachs noted.

That means this epidemic can be stopped. Already, U.S. troops, among others, have been deployed to the region to help construct new isolation centers and WFP workers have also been enlisted in the [rapid construction effort](#). "The epidemic here is exceedingly controllable just by doing things we already know how to do," Dhillon noted. "Until we see a case in Guinea with the same urgency as we see a case in New York, we are not going to be moving with the speed that is needed."

But the virus may yet spread farther, just as it jumped from Guinea to Sierra Leone, and to Liberia, the worst-afflicted country so far. Already an Ebola-infected toddler has brought the virus from Guinea to Mali and it may soon reach Ivory Coast, thanks to porous, forested borders. Potential outbreaks have been extinguished in both Senegal and Nigeria. "We [got lucky in Nigeria](#) it didn't explode further," Dillon noted. "We don't want to try our luck a second time."

A health crisis that was ignored for months until it was out of control is now beginning to get the attention required, if not the resources. So far the world's nations have [contributed far less](#) than the \$1 billion the U.N. estimates would be needed to control the epidemic before it becomes endemic.

Past outbreaks of Ebola have flared up in remote, forested communities, disconnected from much of the outside world. That allowed these outbreaks to die out, like the flare-up in the Democratic Republic of the Congo in the past few months. But the outbreak in west Africa has not slowed yet, and as it worsens there the chances of it spreading back to the U.S. or elsewhere grow as well. Should the Ebola crisis continue to expand, the host of social and economic problems will grow with it, such as farmers unable to plant fields next spring. "Ebola is not only a health emergency, it's a poverty crisis," Bah said. "It's a poverty crisis. It's an infrastructure crisis. It's an education crisis."

Scientific American is a trademark of Scientific American, Inc., used with permission

TRY A RISK-FREE ISSUE



YES! Send me a free issue of Scientific American with no obligation to continue the subscription. If I like it, I will be billed for the one-year subscription.

Subscribe Now

© 2014 Scientific American, a Division of Nature America, Inc.

All Rights Reserved.

X