The Atlantic

After Ebola

The disease has left a terrible legacy—and another outbreak is likely.

A caretaker stands in a classroom of a school that was used as an Ebola ward in Monrovia, Liberia.

John Moore / Getty

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THE OPEN-AIR GoByeandChop market in Monrovia, Liberia, sprawls across a field of mud. Customers pool around rough stalls, repurposed shipping containers, and wheelbarrows full of underwear or cassava tubers. When I visited the market late last year, the damp air smelled of coal-fire smoke and spices and rotting garbage. A dog's corpse lay bloated in a puddle pockmarked by steady rain.

Deep in the market sat a dim warehouse filled with tables of meat: fried fish, eels, a few goats' heads covered in flies. Then row after row of bushmeat, wild

game killed by hunters. Many of the piled-up cuts were unidentifiable, but the origins of one heap near the front was clear. At the top, a monkey's hand curled dried fingers toward the ceiling.

Long before West Africa's 2014 Ebola epidemic, Liberia was already stricken—by poverty, corruption, hunger. Bushmeat, a cheap source of protein, is a source of the disease, and scarcity, more generally, is what typically brings people into contact with the virus. The 2014 outbreak began when a toddler in a rural village in nearby Guinea touched an infected animal, most likely a wild fruit bat, following heavy deforestation of the surrounding area. The disease quickly spread to more than 28,000 people—nearly 11,000 of them Liberian.

Bushmeat is now banned in Liberia, but dozens of vendors at the GoByeandChop, along with hundreds more at other markets throughout Monrovia, Liberia's capital, break the law daily. "I don't believe it's in my meat," a woman named Rebbeca Klhea told me as she stood behind a table of quartered and smoked monkeys. "I've been doing this 20 years. I haven't got Ebola."

Despite the panic the epidemic caused, many Liberians still don't know how the virus spreads. Before the outbreak, the country's population of 4 million was served by just 50 licensed doctors (no one knows definitively how many there are today). It is the world's eighth-poorest country, and is still stunted by a civil war that killed 150,000 people and displaced another 850,000 from 1989 to 2003. It sits prominently on various unfortunate lists—classified as a fragile state by the Organization for Economic Cooperation and Development, ranked highly vulnerable on the Global Vulnerability and Crisis Assessment Index. In a country so weak and so fragmented, the disease was impossible to control.

ɪds over husband, Ibrahim, after he fell in a classroom used as an Ebola ward (in
ɪ above) in August 2014 in Monrovia, Liberia. (John Moore / Getty)

Now, about a year and a half after the peak of the outbreak, the vast assemblage of foreign disease experts and health-care workers and crisis-response teams who finally helped contain it has largely departed. But the virus keeps resurfacing. Ten flare-ups have been recorded in West Africa since Liberia was first declared Ebola-free, in May 2015. Three have occurred in Liberia itself. Like the dead, survivors of the initial epidemic number in the thousands. Experts believe the virus can be sexually transmitted for many months after symptoms abate.

“There are places where diseases are likely to emerge,” says William Karesh, an emerging-disease specialist at the EcoHealth Alliance and an adviser to the World Health Organization. Karesh believes it’s possible to map disease emergence the way geologists map earthquake risk. The risk is highest in places where land use has recently changed—as it has in Liberia, where poverty and displacement have led people to cut aggressively into jungle, to

log forests, to hunt deeper into the bush.

“We should be thinking ahead of time,” Karesh says. “We change building codes to be more prepared” for an earthquake. “We should do the same” for disease preparedness. He says that instituting better education and early-detection programs in high-risk areas could do a lot to prevent future outbreaks.

Yet in many respects, Liberia remains as poorly prepared for an epidemic as it was before Ebola burst from the bush. The poverty that made the 2014 epidemic possible appears to have deepened. Although the country has fallen out of the headlines, epidemiologists believe another outbreak is likely. That, of course, is not a problem only for West Africa. Thanks to international travel, viruses spread like never before.

LEVI LEARWELLIE, a string bean of a man, squatted down on the floor of his mud hut in Kingsville, a township on the outskirts of Monrovia. “Many families suffered here,” Learwellie said, gesturing toward the small huddle of huts around his own. “During Ebola time, you couldn’t even visit your friends. Even in your own house, you can’t touch anyone. You couldn’t hug your kids. People were very afraid.” As Ebola spread, airlines canceled flights to Monrovia, the offices of multinational businesses shuttered, schools and markets closed. Eventually, people stopped leaving their houses altogether. After farmers ate the food they’d stored, they began eating the seed rice they’d saved to plant the next year’s crops. After that, they ate nothing.

“When persons die, the government people come way dressed up. They stick the body in the car and carry them from the town,” Learwellie said. He scuffed at the dirt floor with a foot. “Ebola killed most of my family. Eleven persons died.”

a quarantine in West Point, the largest slum in Monrovia, in August 2014. *Bottom:*
ıry 2016—normal routines hide deep scars. (John Moore / Getty)

Ebola lingers like a ghost over Monrovia. In West Point, a crowded slum that spills between the Atlantic Ocean and the Mesurado River, on the edge of the city, I visited a school that had been temporarily converted into a treatment center during the crisis. I arrived after heavy rains, and the neighborhood's narrow maze of alleys was flooded with a mixture of rainwater and sewer water. Near the school, a woman in a hijab bathed a girl in a tin bucket. Since the epidemic, the building had been transformed: stripped bare and washed, new floors laid, freshly painted. It stood conspicuously new in the ramshackle alley. But it remained mostly empty; many students were still staying away.

Next door, Richard KoiKoi, a member of West Point's Ebola-response team, drank a beer at a bar. It was late morning, and the day's sticky heat beaded on the bottle. "Everyone's talking to us, but at the end, people just leave," KoiKoi said. During the epidemic, he drove the sick to the treatment center, and also retrieved the bodies of the dead. Local response teams like KoiKoi's—supported by international experts after initial containment strategies failed—played a crucial role in controlling the disease, though at a heavy cost: Across the region, 815 health-care workers, including 22 drivers, contracted Ebola. The teams have largely been disbanded since, their surviving members left to find other jobs.

KoiKoi's team was still theoretically operational, along with a hotline established to provide it with leads. But he was one of many people in West Point who felt forsaken. "Where are we supposed to take sick people now?" he asked, pointing out the window at the school. "Yesterday, we had a suspected case of Ebola referred." But he and his team members didn't follow up. "I'm owed my back pay for two months. So I'm sitting here now."

In January—within hours of Liberia being declared Ebola-free for the third time—the WHO announced that it would be investigating a case in nearby Sierra Leone. In March, a survivor transmitted the virus to another person (possibly through sex), and it spread to at least 10 more people, killing eight. Two people died before anyone in a position of authority knew of the flare-up.

“We know the virus is still circulating in West Africa,” William Karesh says. “The fact that there’s currently no human cases doesn’t mean the disease isn’t present.”

ON THE HIGHWAY heading out of Monrovia, a cargo truck veered suddenly, plunging off the road. It careened through a crowded yard and smacked into a house. People rushed toward the steaming wreck. Women screamed.

Pedelers Craig, a Liberian agriculture expert accompanying me to Lofa County to investigate the state of Liberia’s food security, went to have a look. “No one died!” he reported back. The front-left wheel had wedged into a plum tree, stopping the truck just feet from men drinking in the kitchen. Despite the miracle, Craig looked troubled. Apparently, the driver had known the truck had a steering problem and decided to venture forth anyway. “There are a lot of people willing to do the same work,” he explained.

The road was well paved for a few more kilometers, and then, as soon as a development project ended, it wasn’t. Concrete broke into gravel and then became mud. Craig couldn’t stop thinking about the truck driver. “People are doing things out of their will,” he said, “because that’s the only way to get daily bread.” Traffic in both lanes swerved around axle-deep holes, and for a while we bounced along in silence.

Eventually we passed a former camp for those displaced by the country’s civil war. Though Lofa County was historically the breadbasket of the region, agricultural production fell by about three-quarters during the war, and has never fully recovered—Liberia now imports most of its food. Many people in Lofa today harvest just enough rice for their own use, and even they often end up buying expensive imports because of low yields or a lack of storage facilities. Craig put it simply: “Rainy season,” before the harvest, “is hunger season.”

After farmers ate their stores, they ate their seed rice. Then they ate nothing.

This year, hunger is progressing toward famine. During the height of the Ebola epidemic, quarantines kept farmers from working together in *kools*, a traditional form of communal labor. Weeks of watching the sick and dying prompted many to flee. Kenyeh Barlay, a member of the Agriculture and Food Security Programme Unit of the Mano River Union, a West African intergovernmental association, told me that during the 2015 spring planting season, roughly 90 percent of farm plots in Lofa had been abandoned.

In Jalamai Waterside, a small village off the main road into Lofa, the town chief gathered villagers in a central shelter to speak with us, at Craig's request. A farmer in a floppy hat named Murphy Smith spoke first. "Things here have gone from bad to worse," he said. Many people had cleared their land of the natural vegetation that sprouts quickly when fields are left untended, but they had nothing left to plant. Smith, like most people in Lofa, eats once a day, usually cooking late in the evening so hunger doesn't keep him from sleeping.

"We're trying to clear brush now," Garmai Tokpa, the town chief, a thin woman in a green traditional dress suit, said, but they had no seeds. The United Nations World Food Programme says it last distributed food here through a partner, the Adventist Development and Relief Agency, back in December 2014. This method of subcontracting is common, and often muddies who is responsible for what. Either the food never reached Jalamai Waterside, or the dozens of people I spoke with were lying. Whichever the case, the residents were struggling. Tokpa had heard that the next community down the road, Beyan's Town, had been given money and food. "Why can't they share with us?," Smith asked.

At a checkpoint before Beyan's Town, a rope was strung across the road, near a wash bucket. Because Ebola spreads by fluids, frequent handwashing is a useful prevention method. We were not asked to use the bucket. Kolubah Agoui, the town chief, had one eye and rubber boots. He stood beneath a giant cotton tree as rain started to fall. A woman sat on the roots nearby to nurse a gaunt baby. "No, WFP didn't bring food here," Agoui said. Nor did the government. "There's no help coming."

It was the same down the road in Salayea, a sizable town where life has still not returned to normal. Flomo Banna, a farmer wearing a LIFE IS GOOD T-shirt, said, "You see WFP trucks go by with food, but they don't stop here. They don't come to this town." (According to the World Food Programme, supplies were distributed to Salayea in November 2014.) Banna didn't know anyone who'd received food. "We don't know where the food goes," he said. "Beyan's Town, they say they go there."

Across the road, Domego Kollie, the Ministry of Agriculture's district officer, paused on his way home. He was dressed in a collared shirt, carrying a leather briefcase. "It's not hard for farmers to get food now, because people are harvesting," he said. "If people tell you they are satisfied, they think they won't get anything from you." That said, he didn't know how many farmers had been able to return to their fields, or how many had seed to plant. "After Ebola, I haven't been issued any gasoline, so I have to buy my own gas to reach farms." His forays had been limited.

In the up-country, twilight comes in phases. First you hear the crickets, then the sky blushes over the tips of the tall grass. Our Jeep had broken a wheel shaft and sat sullenly in the middle of a dirt road. It began to drizzle, the water hissing as it hit the hot engine. Craig was practically spitting. "Liberia is like a claw hammer," he said. "No matter who you are, it slashes you."

Eventually, we hitched a ride. In the back of the stranger's car, Craig told me, "When I was working at Catholic Relief Services, other guys were stealing

food. My friends built big, big houses. I could live on my salary; I'm happy with my place. And they say I'm stupid." Decades of graft and the absence of social protections have led to a reversal of ordinary values, where honesty can read as untrustworthiness.

Though Craig's family had stayed healthy during the outbreak, he was struggling. Acute crises in Liberia—the war, Ebola—have punctuated chronic dysfunction, and government and international aid budgets allocated to help solve the country's problems have been depleted without lasting effect. For instance, of the 382 vehicles donated during the epidemic to be used as ambulances, the General Services Agency of Liberia was able to account for only 268 in a recent audit. The remainder have been misplaced.

"There will be more flare-ups … These countries will have to assume Ebola will come back."

Depending on whom you ask, the country's food situation ranges from uncomfortable to dire. Though Liberia is not now considered to be experiencing a famine—whose technical definition involves a death rate of one person per 10,000 a day—630,000 Liberians don't have enough to eat, according to the Food and Agriculture Organization, which has the most conservative estimate. The World Food Programme says that more than half the country's population is borderline food-insecure or worse.

Even in the best of circumstances, real-time data can be hard to come by, but Gavin Macgregor-Skinner, a global-projects manager for the Elizabeth R. Griffin Research Foundation, which focuses on global health security and infectious disease, says the lack of accurate statistics in Liberia is extreme. "It shows that the international effort has fallen apart," he says bluntly. "Data are

never this hard to find. Something is really wrong." Typically, in the first 24 hours of any disaster response, aid workers go door-to-door to ask those affected what their needs are. Two years later, a comprehensive needs assessment has yet to be completed for Liberia. The problems that Ebola left in its wake, Macgregor-Skinner says, are "so serious, people don't know where to start."

LAST SUMMER, on the top floor of the Metropolitan Museum of Art in Manhattan, a group of disaster experts, led by Michael McDonald, the coordinator of the Global Health Response and Resilience Alliance, met to discuss what had gone wrong in West Africa. The group had broken away from the UN International Ebola Recovery Conference, taking place at the same time in the city. Name a disaster in the past 30 years, and someone in that room had been there.

The idea of empowering local people has recently come into vogue in aid circles, and getting community buy-in—using peer groups to monitor potential Ebola victims and educate people about how the disease spread—was what eventually turned the epidemic's tide, says Peter Graaff, the WHO's director of emergency operations and Ebola response. "Ebola proved local decision making can be an effective contribution to disease response."

Project Concern International is one organization that has adopted such an approach. Jolene Mullins, the group's Liberia director at the time of the epidemic, said that Project Concern International worked with local leaders and traditional healers in 700 towns to provide practical health advice. Because the organization had preexisting relationships with many of these leaders, and because these leaders (rather than foreign experts or contractors) were the ones spreading the word about the disease, the townspeople trusted the advice—and 95 percent of the towns remained Ebola-free.

Of course, a logical consequence of community empowerment is an eventual decrease in dependency—on foreign aid, on the national government. And any change to the way that aid is delivered tends to meet resistance from

national governments and entrenched aid providers, particularly when it involve shifts in resources. Patronage networks are powerful, says George Hurlburt, a scientist at STEMCorp, and have a vested self-interest in maintaining the status quo.

Still, it is obvious that business as usual in West Africa crippled disaster-response efforts during the epidemic. "Nearly everyone involved in the outbreak response failed to see some fairly plain writing on the wall," the WHO said in a draft report obtained in October 2014 by the Associated Press. Liberia was—and is—too weak and too fragmented for traditional crisis response to work.

Bryan Murphy-Eustis, the executive director of Partners in Health Liberia, says, "If you believe, as I do, that Ebola preyed upon a fractured health system, then anything less than a systematic and long-term strengthening of the health system falls short of what's needed." But 30 to 40 percent of Liberians lack access to health care today, just the same as before the epidemic. And now that aid budgets are moving on to the next international emergency, Zika, only one Ebola treatment center remains operational. "Ebola eroded the already weak confidence in the health system," Murphy-Eustis says, and serious new health problems have begun to emerge. During the outbreak, "mass vaccination campaigns were postponed to avoid public gatherings," he says. Drug regimens for contagious diseases were disrupted, which has led, for instance, to an increase in mortality from multiple-drug-resistant tuberculosis.

There have been some concrete improvements as a result of international investment to date. "Lab capacity has expanded," Graaff says (although the labs are unable to do some types of advanced work—in March, during the latest Ebola flare-up in Liberia, a specialist had to be flown in to help with genome sequencing). Health workers have been trained in triage and in rapid recognition of the early symptoms of Ebola. But as Murphy-Eustis points out, in the long term, the outlook is poor.

d in Monrovia last November celebrates resilience. *Bottom:* Jenneh Getu, an
ost her husband and 3-year-old son, and is now ostracized from her surviving
aits a psychological counseling session. (Lois Parshley; John Moore / Getty)

Even on an issue as simple as handwashing, the anecdotal evidence is troubling. No one I spoke with in Liberia still had stores of donated soap, and while donated wash buckets were scattered around neighborhoods, they were typically being used as market baskets or dish holders. "It's one thing to talk about the philosophy of resiliency, and another to have actually resilient systems," Michael McDonald told me.

"Statistically, there will be more flare-ups in the survivor population," Peter Graaff says. And down the road, "these countries will have to assume Ebola will come back."

A COCA-COLA AD CAMPAIGN in Monrovia late last year focused on Liberia's future. "I believe in a happy, better Liberia," one billboard read. "I'm hopeful of better days," said another. A third showed a photo of an Ebola survivor, facing the camera straight on with her arms raised over her head in a V for victory. "I made it," the ad says. "I believe."

Near one of the billboards, a survivor of the disease, Jenneh Getu, looked out a hospital window at the ambulances in the parking lot being pelted by hard rain, as the psychological-counseling session she'd come for began. "The sickness grabbed my husband," Getu said. "After four days, he died. We had just finished burying him when my son's skin started getting hot." Getu brought her 3-year-old from her rural hometown to Monrovia for help. "My son died on my lap in the taxi," she said. "I was forced to hold that body tight so people didn't know it's Ebola."

Getu called the health team charged with handling Ebola cases in the capital, but no one came. For days, she sat with her son's corpse in an empty house in Monrovia. Eventually, she got sick, turned herself in at a treatment center, and waited to die. But she didn't. "I survived," she said. "But I feel like a different human being. I'm different from other people. Even my family rejects me now." Emmanuel Ballah, the attending physician's assistant, handed her a tissue. He and his colleagues at the Doctors Without Borders clinic within the hospital treat several hundred Ebola survivors for medical

and psychological problems.

“There was a huge stigma against survivors,” Ballah told me later, as we walked through the clinic’s lobby. “People saw terrible things in Ebola treatment units. But leaving the ETUs, their challenges were just beginning.”

We stopped and greeted another patient, Amos Jessy, an Ebola survivor with yellow eyes, sitting in a plastic chair. As Ballah explained that many of his patients also receive aid from other organizations, Jessy jumped in. “Come down to the ground and ask the survivors themselves whether they are getting the relief,” he said. “Life after Ebola is worse than the Ebola virus itself.”

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