

## GLOBAL HEALTH

# *Egypt Wiped Out Hepatitis C. Now It Is Trying to Help the Rest of Africa.*

Effective drugs that have made the disease curable have yet to reach most of the region.

**By Stephanie Nolen** Photographs by Natalija Gormalova

Stephanie Nolen, who covers global health, reported this story in Ghana.

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For seven years, Sulemana Musah put almost every bit of money that came his way into his war with hepatitis C.

His student loans for graduate school, his salary from his job as a high school teacher and the cash he earned from a side gig selling yams all went to tests and medicines to try to cure the virus that debilitated him. Mr. Musah, 27, who lives in Accra, the capital of Ghana, set aside dreams of starting a business, building a house, getting married.

He scraped together enough cash — \$900, half his annual salary — to buy a course of the drugs that, a decade ago, began to revolutionize hepatitis C treatment in the United States and other high-income countries.

He was the rare patient for whom that treatment wasn't enough, so for years he tried, unsuccessfully, to save enough for another. "I was left just waiting for God to do his wonders," he said.

Then in March, his doctor gave him extraordinary news: The Ghanaian government had received a donation of medications for hepatitis C. He could have treatment for free. Within weeks, Mr. Musah had the pills. In October, a blood test showed he was cured at last.

He was broke, exhausted — and ready to dust off his ambitions.

The donation came from a most unlikely source: Egypt, which only a few years ago had the world's highest burden of hepatitis C. An estimated one in 10 people, about nine million Egyptians, were chronically infected. In a public health campaign extraordinary for both its scale and its success, Egypt screened its entire population, brokered a deal for hugely discounted drugs and cured almost everyone with the virus.

“This is one of the greatest accomplishments ever in public health,” said Dr. John W. Ward, the director of the Coalition for Global Hepatitis Elimination at the Task Force for Global Health.



Mr. Musah, an economics teacher, received pills from a donation of medications given to the Ghanaian government. He sells yams to make ends meet.

Egypt is on track to be the first country to achieve the World Health Organization goal of eliminating hepatitis C, and it is leveraging that victory into a campaign of “health diplomacy,” pledging to donate drugs and share expertise, with the goal of treating a million African patients. It is an unusual gesture in the world of global health, where largess is typically delivered to developing countries from high-income nations.



“The Egyptian government saw an opportunity to extend its expertise beyond its borders and contribute to global health efforts,” said Khaled Ghaffar, Egypt’s minister of health and population. “This health diplomacy allows Egypt to leverage its success with hepatitis treatment for the greater benefit of humanity while simultaneously enhancing its standing among the global community.”

Globally, about 58 million people are chronically infected with hepatitis C, according to the W.H.O., and the vast majority — 50 million — live in low- and middle-income countries. Four in five people don’t know they have the disease. About 300,000 people die each year of complications, particularly cirrhosis and liver cancer.

The virus is most commonly transmitted by blood; in high-income nations, it is often spread by unsanitary needles used for injecting drugs, while in developing countries transmission frequently happens in health care settings, either through unsterilized needles and instruments or in cutting by traditional healers. About a third of people clear the infection on their own, but in most people, it becomes chronic, slowly damaging the liver over time.



The waiting room of the hepatitis B and C infection clinic run by Dr. Yvonne Ayerki Nartey at Cape Coast Teaching Hospital in Ghana.



Dr. Nartey, a physician at Cape Coast Teaching Hospital, joined the Coalition of Global Hepatitis Elimination to make a plan for Ghana's new response.

Yet few countries include the disease in their public health plans, or carry out testing to track the number of people infected. Hepatitis C has not been the focus of any large international programs, the way H.I.V. and malaria are, and it has been such a low priority in low-income countries that governments rarely even track how many people have it, let alone treat it. Until this year, in Ghana as in other African countries, only a handful of wealthy people were accessing hepatitis C treatment, using drugs they purchased privately.

The situation had been the same in Egypt until 2007. A mass vaccination campaign that began in the 1950s and for 20 years used improperly sterilized needles had accidentally spread hepatitis through the population. Few people could afford private treatment. When the government decided to start its national program, the virus was killing tens of thousands of people every year. At first, Egypt used two old



drugs that only cured about half of those who were treated with them. But in 2013, Gilead Sciences Inc. brought to market an antiviral drug — the first cure for a viral infection in the history of medicine.

While the company was charging \$1,000 for its once-a-day pill in the United States, Egypt negotiated to buy it for \$10 a pill — and then arranged for Indian and Egyptian drug companies to make an even cheaper generic version in exchange for a royalty. Egypt has treated more than four million people, and cut hepatitis C prevalence to just 0.4 percent.



The Cape Coast fishing community in Ghana, about 90 miles southwest of Accra.

Other companies soon followed with more antivirals; they have been highly effective, safe, and thus far not bedeviled by the drug-resistance problems that often plague antivirals.

“The news on the drugs has only been good — the problem is that countries aren’t making the drugs available to the people in need,” said Dr. Ward, the coalition director.

Egypt chose Ghana as an early partner because it is investing in building up national health care. Dr. Yvonne Ayerki Nartey, a physician at Cape Coast Teaching Hospital, joined the Coalition for Global Hepatitis Elimination to put together a plan for Ghana’s new response. She needed first to figure out how many Ghanaians were infected and where they were; a national screening effort found that one in 20 people in the north of the country, an area where poverty rates are higher and health services weaker, had hepatitis C. She went on radio shows and spread word through Facebook and WhatsApp that treatment might soon be accessible.

Drugs were en route from Egypt, but the next step was tough: while a liver specialist would treat hepatitis in the United States, Ghana has fewer than 20 hepatologists. Dr. Nartey organized training courses for doctors in each district.

“Most have never treated hepatitis C before because treatment doesn’t happen here,” she said.





Dr. Nartey, with a patient at the hepatitis clinic in Cape Coast, Ghana.



Cape Coast Teaching Hospital. Ghana has fewer than 20 hepatologists, and Dr. Yvonne Ayerki Nartey has organized training courses for doctors in each district.

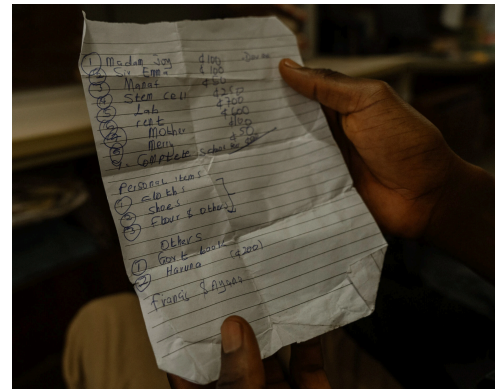
Most of the new treatment sites were teaching hospitals in regional centers, but she insisted on a pilot project at a rural hospital in an isolated region in the north, knowing that if Ghana was to truly wipe out the disease, frontline staff would have to be the ones to provide the treatment. The rural site had patients screened, tested and enrolled within a week.

Testing remained a problem: only private laboratories offered the viral load tests that are necessary to track hepatitis treatment, and they charged several hundred dollars per test. Dr. Nartey has 340 patients enrolled for potential treatment, but only 290 of them have been able to raise the funds for the viral load test they need to start. The new hepatitis program negotiated a lower rate, promising a steady flow of patients, but at about \$80 per test, it remains the biggest challenge to the program.



For patients who had been living with not only the financial cost of the disease but also anxiety and fear as they saw relatives die of liver disease, the news of free treatment was almost unbelievable.

Mr. Musah first began to feel ill as a high school student living in a small town in the north. The hospital near his home couldn't explain his back pain and feverish nights, and tested for everything from a dairy allergy to syphilis to H.I.V. After hundreds of dollars in tests, he was finally given a hepatitis diagnosis — but was told he would need a specialty hospital to help him. He traveled to Accra, where doctors said there were drugs, but he would have to pay for them.



A doctor noting Mr. Musah's hepatitis C viral load; taking his blood; and tracking his expenses.

In March, he joined other hepatitis patients at a celebration at a hotel in the capital where the Egyptian ambassador opened the free treatment program. But his challenges weren't over. He needed the costly viral load tests to confirm the treatment was working; in September, he was faced with the choice of using a new student loan he took out to pay the tuition for a master's degree, or for the test.

In scaling up the program across Ghana, Dr. Nartey hopes to screen two million people with a cheaper antigen test, which costs about a dollar per patient, and then run the viral load for the 200,000 she anticipates will have the antibodies, confirming active infection, and end up with 46,000 patients who can be treated, using the first tranche of drugs promised by Egypt. Her prevalence survey suggests this will leave another 300,000 still to treat.

“It’s a lot, but we’re ambitious,” she said.

Egypt is working to set up parallel hepatitis C programs in other countries including Chad and Sudan.

At the same time, Ghana is improving blood safety and injection practices, drawing on lessons from Egypt, and educating traditional healers, reducing the rate of new infections, Dr. Ward said.

He hopes that if Ghana manages to scale up its hepatitis program, it will spur neighboring countries to start their own.

“We have to get countries to realize the drugs exist and are so effective,” he said. “We should be on a warpath to eliminate hepatitis C because it is so feasible.”

Mr. Musah said that when he got the news he was finally virus-free, it was like the start of a whole new life: no more spending much of each day wondering how he could pay for drugs or tests, or if he could do it before the virus killed him.

“Now I am free to plan a future,” he said.

**Stephanie Nolen** covers global health. She has reported on public health, economic development and humanitarian crises from more than 80 countries around the world. [More about Stephanie Nolen](#)

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