

Sudan's tropical disease spike reflects poor health system

February 9 2023, by MOHANED AWAD and JACK JEFFERY



Raqiya Abdsalam, who survived a bout of dengue fever, sits at her home in El-Obeid, Sudan on January 23, 2023. A surge in mosquito-borne diseases this winter has shown the fragility of Sudan's health system, and bodes ill for coming challenges, especially after a 2021 military coup. Credit: AP Photo/Marwan Ali

The two Sudanese women thought they had malaria and were taking

their medication, but things took a dire turn. Both complained of a splitting headache and fever that didn't respond to the anti-malaria treatment.

By the time she was diagnosed with dengue fever, Raqiya Abdsalam was unconscious.

"Soon after they examined me, I fell into a coma," she said, recounting her ordeal some three months ago. Both women have since recovered and are at home in the city of El Obeid in the central province of North Kordofan.

For decades, Sudan's underfunded public health sector has struggled to effectively diagnose or treat patients as significant government spending went to its vast security services. A recent spike in mosquito-borne diseases—such as dengue fever and malaria—has underscored the fragility of the African country's health system, boding ill for future challenges driven by climate change.

Sudan's best-equipped hospitals are concentrated in the capital, Khartoum, leaving those from far-flung provinces reliant on aid projects. But many of those have disappeared.

In October 2021, Sudan's leading military figure, Gen. Abdel-Fattah Burhan, led a coup that derailed the country's short-lived democratic transition. The move spurred a sharp reduction in aid, with the U.N Office for the Coordination of Humanitarian Affairs reporting that funding levels fell to less than 50% of required needs for both 2021 and 2022.

Burhan with his ruling generals and several other political forces pledged in December to install a new civilian government. But political wrangling is impeding a final deal, and it remains unclear when—and if—donor

funding will return to previous levels.

In late fall, a young doctor at a North Kordofan hospital thought that what she was seeing was a new malaria outbreak. Patients arriving at her hospital had malaria-like symptoms—high fever, body fatigue and a migraine-like headache.

But after blood samples were sent to a laboratory in Khartoum for testing, a worrisome picture emerged. Some of the patients did have malaria, which is caused by a parasite, but others had dengue fever—similar in symptoms but caused by a virus. If severe and untreated, dengue fever can lead to organ failure and death.

The young physician said the hospital lacked the facilities to deal with the outbreak. "Patients had to either lie on the floor or bring their own beds to the hospital," she said.

While malaria is common across central and southern Sudan, large dengue outbreaks are rare. But, since last fall, dengue fever spread to 12 of the country's 18 provinces, killing at least 36 people and infecting more than 5,200, according to Sudan's Ministry of Health. However, the actual numbers are likely higher, given the limitations on testing.

"Most hospitals outside of Khartoum are not connected to the Ministry of Health database," said Alaaeldin Awad Mohamed Nogoud, a liver and transplant surgeon who is also a prominent pro-democracy activist.

The World Health Organization says several factors enabled the dengue outbreak, including the absence of disease surveillance infrastructure and heavy flooding in autumn. The stagnant water allowed mosquitoes to breed and fueled the spread of the disease.

Health experts also fear that growing mosquito migration, induced by

climate change, could spur new surges in dengue fever, among other tropical diseases typically found beyond Sudan's southern borders. The *Aedes aegypti*, a long-legged mosquito growing in number across Sudan that can carry the dengue virus, is causing particular concern.

According to Anne Wilson, an epidemiologist at the Liverpool School of Tropical Medicine, containing illnesses spread by the *Aedes aegypti* is difficult because it mostly bites during the day, rendering insecticide-treated nets, similar to mosquito nets for beds, less effective.

Sudan's public hospitals are state-run, but patients often still pay for drugs and tests. Hospitals in rural areas are the most depleted, stocked with little more than metal-frame beds and doctors.

In North Kordofan—the site of the recent dengue outbreak—some believe the virus went unchecked for months due to a widespread lack of blood testing equipment. Abdsalam and Amany Adris, the two women from El Obeid, said several doctors had told them they had malaria before they were correctly diagnosed.

After the Ministry of Health officially recognized the outbreak in November, officials say free testing and treatment were made available to dengue fever patients. And by January, North Kordofan was declared free of dengue fever.

But even after that announcement, the young doctor from the province said she was treating suspected cases. Few patients can afford to pay for the blood tests themselves, however, she added, speaking on condition of anonymity for fear of reprisal.

Both Nogoud and the young physician said widespread shortages are forcing physicians to go to black market for basic medicines, such as paracetamol IV drips to treat fever.

For years, Sudan has been in an economic crisis with annual inflation topping 100% on most months. Since 2018, the Sudanese pound has lost over 95% of its value against the dollar, making it difficult to buy pharmaceuticals or medical equipment from abroad.

By the end of last year, Sudan's National Medical Supplies Fund—the body tasked with procuring pharmaceuticals—said the availability of cancer drugs stood at 48% of needed levels, and other emergency medication was at 68%. Doctors, working with little pay and in difficult conditions, have regularly gone on strike.

Critics accuse the country's leaders of not putting more funds towards the health sector. The federal budget for 2021, listed on the government's website, said the country's health ministry would receive less than half of what would be allocated to the Sudanese Armed Forces and the Rapid Support Forces, the country's largest paramilitary group. The military spokesperson did not respond to AP's request for comment.

With few resources, the Health Ministry has turned to short videos on social media, encouraging people in a catchy song to cover standing water sources and install netting on windows.

Few see this as a long-term solution.

"The whole country is in a state of chaos", said Nada Fadul, an infectious diseases physician and associate of the Sudanese non-governmental organization NexGen.

"Health care might not become the priority for survival," Fadul added.

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Citation: Sudan's tropical disease spike reflects poor health system (2023, February 9) retrieved 2 May 2024 from <https://medicalxpress.com/news/2023-02-sudan-tropical-disease-spike-poor.html>

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