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Lassa fever outbreak continues across Nigeria

Nigeria is undergoing a new outbreak of Lassa fever which highlights persisting problems in the country's preparedness to control the disease. Sanjeet Bagchi reports.

While the pandemic of COVID-19 is wreaking havoc across the world, Nigeria is facing a massive outbreak of Lassa fever, an acute hemorrhagic disease caused by Lassa virus, which belongs to the arenavirus family, and spreads through the contamination of food and household items by the urine or faeces of infected multimammate rats.

From Jan 1, 2020 through Apr 5, 2020, the Nigeria Center for Disease Control (NCDC) reported 963 laboratory-confirmed cases of Lassa fever and 188 deaths due to the disease (case fatality ratio: 19.5%). However, during the same period in 2019, NCDC reported 537 confirmed cases and 122 deaths from Lassa fever (case fatality ratio: 22.7%). As NCDC points out in its Lassa Fever Situation Report for the first 14 weeks in 2020, this year, the confirmed cases were reported across the 27 states of Nigeria; however, 72% of those cases were reported from the states of Edo (32%), Ondo (32%), and Ebonyi (8%).

In an interview with *The Lancet Infectious Diseases*, Oyewale Tomori, a professor of virology and former president of the Nigerian Academy of Science said that, lassa fever—discovered in Nigeria in 1969—has become a national tragedy occurring in regular outbreaks with increasing numbers of suspected cases, dry season peaks, and unacceptably high number of deaths. “This is as a result of years of neglect of disease surveillance in general, and the failure of past and present Nigerian governments to take appropriate public health measures to prevent and control the disease,” he pointed out.

Nigeria is well-experienced in dealing with Lassa fever, said Tolbert Nyenswah, a senior research associate at the department of

International health, Johns Hopkins Bloomberg School of Public Health (Baltimore, MA, USA). There were previous outbreaks of animal origin in Nigeria and other west African countries, including, Liberia, Guinea, and Sierra Leone, he told *The Lancet Infectious Diseases*. “Lassa fever is endemic in the region”, he notes.

In a Feb 20, 2020 statement, WHO points out that, “Lassa fever is endemic in Nigeria and the annual peak of human cases is usually observed during the dry season (December–April) following the reproduction cycle of the *Mastomys* rats in the wet season (May–June)”. As 90–95% of human infections of Lassa virus result from indirect exposure or direct contact with infected *mastomys* rats, the substantially increased density and circulation of the virus among the young and non-immune rats during the wet season “create a potential for further human infection, thus, the number of infections is expected to continue to rise until the end of the dry season”, the WHO statement adds.

According to Tomori, the cause of this outbreak in Nigeria includes the interplay of an explosion in the populations of the *Mastomys* rodents, and a general worsening of environmental sanitation—that facilitated an increased human-rodent contact.

Although there is a substantial increase in the number of confirmed Lassa fever cases in Nigeria in the first 14 weeks of 2020, as compared with the same period in 2019, the case fatality ratio for the disease is lower in 2020. Ifeanyi Nsofor, senior Atlantic fellow for health equity at George Washington University (WA, USA) told *The Lancet Infectious Diseases*

that, the reason for this reduced case fatality rate in 2020 could be attributed to improved epidemic preparedness by the NCDC through its support to the states to set up Public Health Emergency Operations Centres (PHEOCs). This centres, established in 23 Nigerian states, “help with prevention, detection and response to infectious diseases at sub-national levels”, says Nsofor. “States are now better prepared to pick up cases via surveillance and respond accordingly”, he added.

However, according to Tomori, to combat the Lassa fever situation in Nigeria, disease surveillance should be improved and it should be backed up with reliable laboratory services. Apart from that, the rodent population should be controlled in the country and an optimum environmental sanitation needs to be ensured, he said, adding that “public enlightenment programmes” should be carried out and information on “the disease, its mode of transmission, etc” should be provided to the population.

“Development of [a] Lassa fever vaccine [is also important]”, he suggests. According to Nsofor, public health, animal health, and environmental health must be integrated to reduce the incidence of Lassa fever in Nigeria, considering its mode of transmission. The federal, state and local governments should budget and release more funds for epidemic preparedness, he suggests, adding that, community education is substantially important to prevent of the disease. “Educating community members on how to keep their environments clean to discourage rats is very important”, he stresses.

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