



# Microbes and Infectious Diseases

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## Letter to the Editor

### Diphtheria outbreak in Nigeria: What do we know so far?

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#### Dear Editor

Currently, there is an ongoing outbreak of diphtheria in Nigeria, which has been confirmed in the two largest and most commercially active states, Lagos and Kano. Yobe and Osun states are also being closely monitored by health authorities [1]. The epidemic began in the week of January 9<sup>th</sup> to 13<sup>th</sup>, 2023 in the settlements of Tudun Rubudi and Bare-Bari in the state's Ungogo Local Government Area, and 25 fatalities have been reported in the state alone, with several others hospitalized [2]. The Director General of the Nigeria Centre for Disease Control (NCDC) has reported 78 suspected cases of extremely dangerous bacterial illness in 14 local councils in Kano State. The Kano state commissioner of Health has attributed the spread of the disease to low rates of regular immunization in difficult-to-reach areas. The exact number of cases and fatalities in the other three states is not publicly available. It is important to note that while Kano and Yobe states are

in the country's northern region, Osun and Lagos are in the southern region, indicating the potential for the outbreak to spread across the entire country if not promptly contained.

Diphtheria is a deadly, but preventable bacterial illness caused by *Corynebacterium* species [3]. After 2-10 exposures to the bacteria, symptoms such as fever, runny nose, sore throat, cough, conjunctivitis, and neck swelling may appear. In some cases, a thick, grey, or white pseudomembrane may form on the tonsils or back of the throat, making it difficult to breathe<sup>1</sup>. Diphtheria can cause a variety of clinical diseases, including cutaneous forms and severe respiratory infections with systemic side effects such as cardiac and neurological problems. People at greatest risk of contracting diphtheria include those who have not received all doses of the pentavalent vaccine, those living in crowded or unsanitary conditions, healthcare workers, and those in close contact with suspected or confirmed cases of diphtheria. The disease is easily spread through close contact, coughing or sneezing droplets, touching contaminated objects or clothes, and direct contact with sick individuals [1,2].

In recent decades, widespread immunization campaigns and routine child vaccination have significantly reduced the number of instances of diphtheria, which used to be one of the major causes of death in children worldwide. However, the illness is still prevalent in low- and middle-income countries (LMICs), while cases are rare in high-income nations [3]. Despite this, there have been a series of

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documented cases in Nigeria, leading to it becoming an endemic area for the disease [4].

To contain the ongoing outbreak, NCDC has collaborated with State Ministries of Health and partners to improve monitoring and response to the outbreak. The NCDC also sent personnel to Kano to establish an incident command structure, conduct a diphtheria outbreak investigation, provide technical support, and reactivate surveillance systems due to the outbreak's severity [2]. The Centre has urged Nigerians to exercise vigilance while surveillance was reactivated to stop and prevent the illness in the nation. Also, as recommended in the childhood immunization schedule, parents should ensure their children receive three doses of the pentavalent vaccine to fully immunize them against diphtheria. Healthcare professionals should be alert and watch out for signs. People with diphtheria symptoms should remain isolated and contact their local government area (LGA), state disease surveillance officer (DSNO), or the NCDC. A confirmed case of diphtheria should be thoroughly monitored, with antibiotic prophylaxis administered and diphtheria antitoxin therapy initiated as needed. All categories of healthcare professionals with higher exposure to cases of diphtheria should receive the diphtheria vaccine. Furthermore, public sensitization on the disease and personal and community safety should be sustained.

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#### **Authors' contribution**

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