

The surge of diphtheria in 2023: Global overview, MSF responses & challenges

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Background

Diphtheria is an infection of the upper respiratory tract characterized by the production of an extracellular toxin. Individuals with incomplete immunization or low levels of antitoxin antibodies are particularly susceptible to infection. Specific treatment relies on Diphtheria Anti-Toxin (DAT) and the disease is preventable by active immunization. Since 2019, large outbreaks have been reported in WHO African Region, but 2023 has seen an unprecedented surge in diphtheria cases in West Africa, mainly Kano State, Nigeria.

Methods

Médecins Sans Frontières (MSF) and Epicentre have been involved in response efforts but have faced several challenges due to limited hospital capacity and a global shortage of DAT. This led to the implementation of new solutions such as home-based care, adaptation of DAT dosage and strategic allocation of DAT stocks. Preliminary descriptive analysis shows the key figures from the 2023 diphtheria outbreak and summarizes critical insights from one year of MSF intervention in Kano.

Results

MSF treated around 23 thousand individuals across 14 sites in five countries. Nearly half of these patients required hospitalization, with an overall case fatality rate (CFR) of 6%. The majority of patients were under 15 years of age, and most were female.

In Kano State, Nigeria, specifically, three main centres were established at the peak of the outbreak. MSF used adaptive strategies to deal with the constraints of the response, which were phased according to the number of cases and the

availability of drugs. Centralised case management was used for severe cases, while a decentralised care model, including home-based care, was used for mild and close contacts. The primary centre, which remains operational, has received approximately 9 thousand patients.

Data indicate that the prompt administration of diphtheria antitoxin (DAT) may influence patient outcomes. Furthermore, an early immunization campaign could have potentially reduced the overall mortality rate associated with the epidemic.

Conclusion

The surge of diphtheria in West Africa highlighted numerous challenges in combating the disease in low-resource settings, particularly concerning the availability of diphtheria antitoxin (DAT). Further analyses are required to accurately assess the impact of home-based care and DAT dosage strategies. Scaling up global DAT production and enhancing routine vaccination programs could be crucial in preventing future outbreaks.

Since 2022, West and Central Africa are facing diphtheria outbreaks, with MSF treating 23,000 people globally (CFR: 6%). Limited hospital capacity and DAT shortages emphasize the need for increased DAT production and improved vaccination programs.

