

DIPHTHERIA SITUATION REPORT

Serial Number 01

Data as of Epi-week 03 2023



HIGHLIGHTS

Background

- NCDC was notified of suspected diphtheria outbreaks in Kano and Lagos states on 1st December 2022
- In response to the notification, Rapid Response Teams (RRTs) were deployed to both states to confirm the outbreak and support response activities
- Diphtheria outbreaks were confirmed in both States and NCDC has been supporting response activities in both States in responding

Outbreak Summary: Epi-week 01 – 03, 2023

- A total of 132 suspected cases were reported from two (2) States: Kano 130 (98.5%); Yobe 2 (1.5%)
- Of the suspected cases reported, 89 (67.4%) were confirmed (clinically compatible), 6 (4.5%) were discarded & 37 (28.0%) are pending classification
- Confirmed cases were all from 12 LGAs in Kano State
- Nine (9) deaths were recorded from all the confirmed cases (CFR: 10.1%).

Cumulatively: Epi-week 19 2022 – Epi-week 03 2023

- A total of 253 suspected cases were reported: Kano (169), Yobe (78), Lagos (5) and Osun (1) States
- Of the suspected cases reported, 111 (42.1%) were confirmed (8 lab confirmed & 103 clinically compatible), 18 (7.1%) were discarded, 40 (15.3%) are pending classification while 84 (33.2%) were unknown
- Majority (91.9%) of the confirmed cases occurred in those aged 2 – 14 years.
- A total of 22 deaths (CFR = 19.8%) were recorded among confirmed cases
- Only 12 (10.8%) out of 111 confirmed cases were fully vaccinated with a diphtheria toxin-containing vaccine

SITUATION UPDATES

Wk 19 2022 – Wk 03 2023

TOTAL SUSPECTED CASES

253

Suspected Cases [wk 1-3 2023]

132

STATE WITH SUSPECTED CASES

4

*New State with Suspected Cases
[wk 1-3 2023]*

0

TOTAL CONFIRMED CASES

111

Confirmed Cases [wk 1-3 2023]

89

STATE WITH CONFIRMED CASES

4

*New State with Confirmed Cases
[wk 1-3 2023]*

0

TOTAL DEATHS AMONG CONFIRMED CASES (CFR)

22 (19.8%)

*Deaths among Confirmed Cases
[wk 1-3 2023] (CFR)*

9 (10.1%)

Description of diphtheria cases by states in Nigeria, epi-week 19 2022 – epi-week 03 2023

Description of Cases	Kano State	Lagos State	Osun State	Yobe State	National
# Suspected cases	169	5	1	78	253
▪ LGAs with suspected case(s)	14	2	1	2	19
▪ # Sample collected (SCR)	53 (31.4%)	5 (100.0%)	1 (100.0%)	9 (1.2%)	68 (26.9%)
# Cases with sample collected	53	5	1	9	68
▪ Culture positive samples	23 (43.4%)	1 (20.0%)	1 (100.0%)	3 (33.0%)	28 (41.2%)
▪ Culture negative samples	8 (15.1%)	4 (80.0%)	0	6 (66.7%)	18 (26.5%)
▪ Pending samples	22 (41.5%)	0	0	0	22 (32.4%)
▪ Samples not tested	0	0	0	0	0
# Isolates from positive culture	23	1	1	3	28
▪ Toxin production positive	6 (26.1%)	1 (100.0%)	1 (100.0%)	0	8 (28.6%)
▪ Toxin production negative	0	0	0	0	0
▪ Pending toxin test	17 (73.9%)	0	0	1 (33.3%)	18 (64.3%)
▪ Toxin test not done	0	0	0	2 (66.7%)	2 (7.1%)
# Suspected cases	169	5	1	78	253
# Confirmed cases	107 (63.3%)	1 (20.0%)	1 (100.0%)	2 (2.6%)	111 (42.1%)
▪ <i>Lab confirmed (LC)</i>	6	1	1	0	8
▪ <i>Epidemiologically linked (EL)</i>	0	0	0	0	0
▪ <i>Clinically compatible (CC)</i>	101	0	0	2	103
# Discarded	8 (4.7%)	4 (80.0%)	0	6 (7.7%)	18 (7.1%)
# Pending	39 (23.1%)	0	0	1 (1.3%)	40 (15.3%)
# Unknown	15 (8.9%)	0	0	69 (88.5%)	84 (33.2%)
# Confirmed cases (LC+EL+CC)	107	1	1	2	111
▪ LGAs with confirmed case(s)	13	1	1	1	16
▪ Death among confirmed case (CFR)	21 (19.6%)	1 (100.0%)	0	0	22 (19.8%)

- **Lab confirmed (LC):** a person with *Corynebacterium spp.* isolated by culture and positive for toxin production, regardless of symptoms
- **Epidemiologically linked (EL):** a person that meets the definition of a suspected case and is linked epidemiologically to a laboratory-confirmed case
- **Clin compatible (CC):** a person that meets the definition of a suspected case and lacks both a confirmatory laboratory test result and epidemiologic linkage to a laboratory confirmed case
- **Confirmed case = LC + EL + CC**

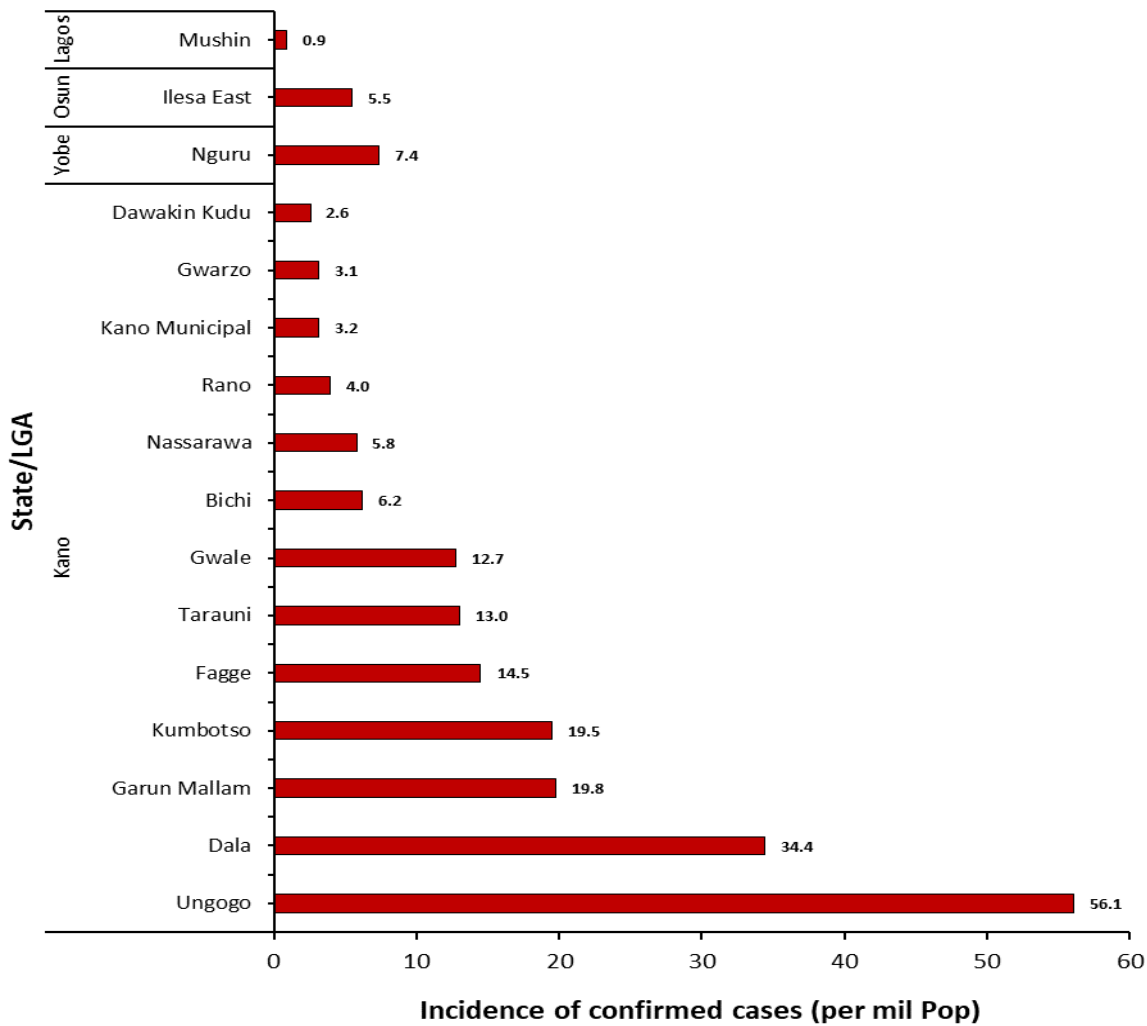


Figure 1: Incidence of confirmed diphtheria cases (LC+EL+CC) by LGA in Nigeria, epi-week 19 2022 – epi-week 03 2023

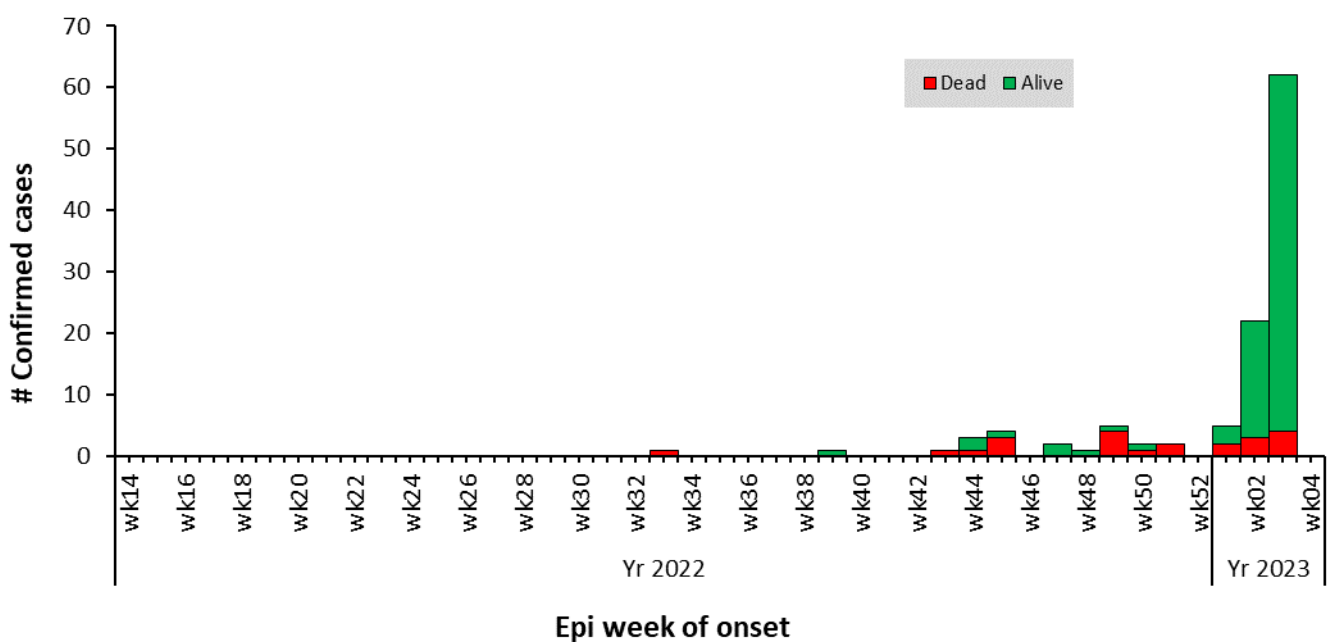


Figure 2: Epi-curve of confirmed diphtheria cases (LC+EL+CC) in Nigeria, epi-week 19 2022 – epi-week 03 2023

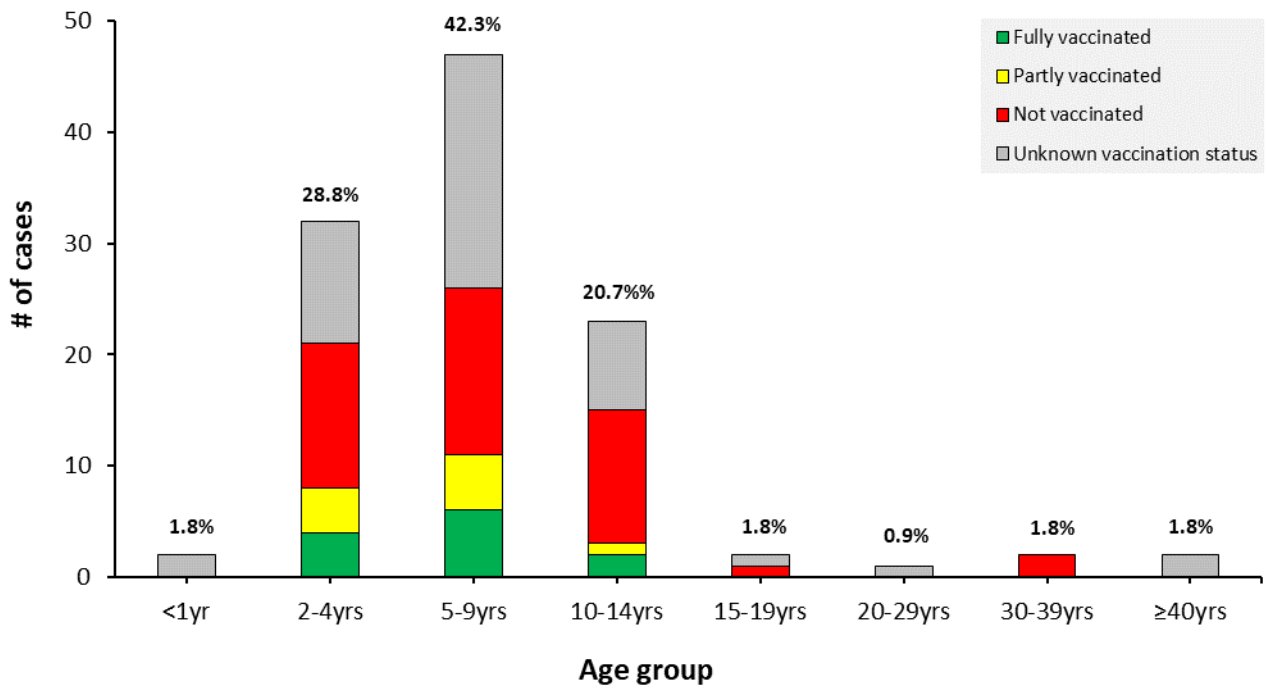


Figure 3: Age distribution and vaccination status of confirmed diphtheria cases (LC+EL+CC) in Nigeria, epi-week 19 2022 – epi-week 03 2023

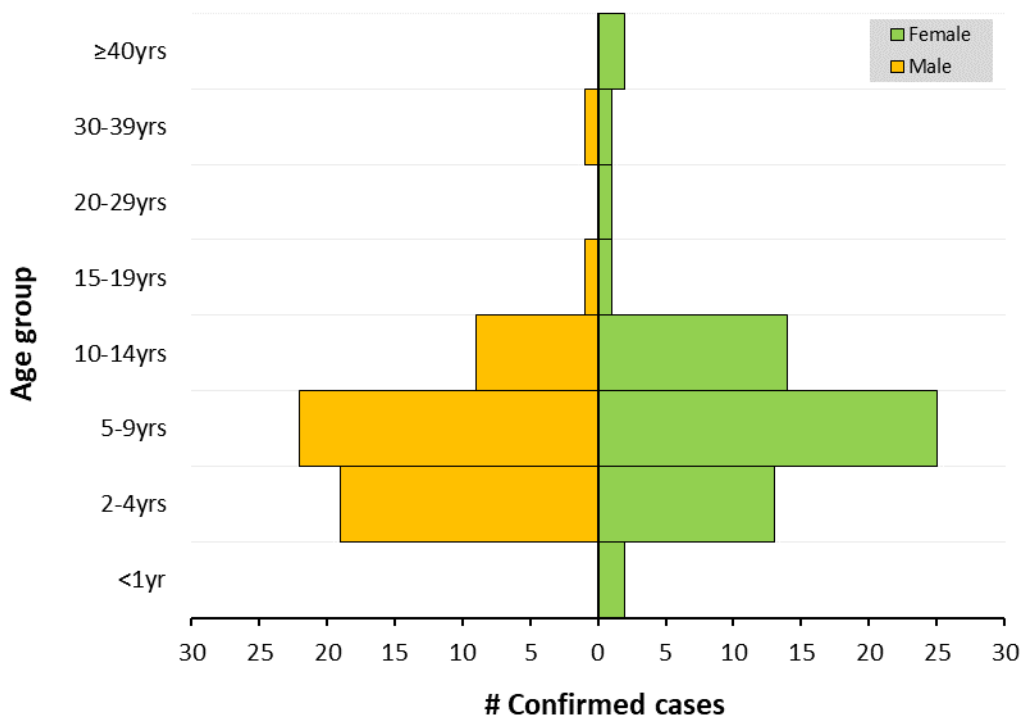


Figure 4: Age-sex distribution of confirmed diphtheria cases (LC+EL+CC) in Nigeria, epi-week 19 2022 – epi-week 03 2023

Response Activities Update

▪ **Coordination**

- Establishment of the National diphtheria/pertussis TWG with the goal of bringing together relevant stakeholder to regularly monitor the diphtheria surveillance and response activities in the country
- Deployment of Rapid Response Teams (RRT) to Kano and Lagos States to support response to diphtheria outbreaks in the states

▪ **Surveillance**

- Development and dissemination of surveillance tools across the country – case definition, case investigation form (CIF), line listing template, etc
- Sensitization/training of clinical and surveillance officers on the presentation, prevention, and surveillance for diphtheria
- Harmonisation of surveillance and laboratory data from across states and labs

▪ **Laboratory**

- Assessment of capacity of state-owned labs to culture diphtheria in Kano and Lagos States
- Training of laboratory physicians and scientists from selected states across the country at the National Reference Laboratory (NRL), Abuja, on laboratory methods for diphtheria confirmation
- Supporting the States with laboratory and sample collection consumables
- Supporting the States in confirming cultures and toxin production testing (ELEK test and PCR) at the NRL on specimens sent in from States
- Performing drug susceptibility testing (DST) at NRL on isolates sent in from States

▪ **Case Management**

- Prepositioning of diphtheria antitoxin (DAT) in the country and distribution to Kano and Lagos States
- Development and dissemination of SOP for DAT use
- Establishment of two isolation wards with a total capacity of 80 beds at Murtala Mohammad Specialist Hospital (MMSH), Kano through support from MSF and Kano SMOH

▪ **Risk Communication**

- Development and dissemination of public health advisories on diphtheria
- Media appearances/engagement on diphtheria with media stakeholders to bridge the knowledge gap

- Ongoing development and review of diphtheria SBCC materials (Posters, FAQs, Flyers, and PSA) for dissemination to affect states.
- Diphtheria RCCE stakeholders’ coordination meeting both at the national and subnational level
- **Research**
 - Ongoing development of the zero draft of a manuscript on the first few laboratory-confirmed cases in the country

Challenges

- **Surveillance**
 - Non establishment of epidemiological linkage between cases despite clustering of cases in few LGAs and presence of laboratory confirmed cases in those areas
 - Poor data on contact tracing among contacts of cases in the state
- **Laboratory**
 - Low sample collection rate particularly low in Kano and Yobe States largely due to stockout of sample collection materials- swab and culture media
 - Delay in release of results from AKTH and shipment of isolates to the NCDC NRL for toxin production test
 - Incomplete documentation of information on samples submitted to AKTH lab
- **Case Management**
 - Low DAT reserve in the country
- **Immunization**
 - Lack of guidance on vaccination in an outbreak setting particularly for children aged 2 – 14 years which is the age group accounting for majority of cases reported as well as HCWs

Next Steps

- **Coordination**
 - Continue the weekly (every Thursday) TWG meetings
 - Deployment of RRTs to Osun and Yobe State and re-deployment of RRTs to Kano and Lagos States to support response activities and address some of the challenges highlighted above
- **Surveillance**
 - Conduct a geospatial analysis in order to examine/establish epidemiological linkages among cases as a potential driver for the outbreak
 - Creation of diphtheria module on SORMAS
 - Continue to review surveillance data and harmonizing it with lab data across all states in the country

- **Laboratory**
 - Procurement and distribution of sample collection materials and reagents/culture media
 - Release the first batch of drug sensitivity test (DST) results
 - Strengthening of lab network for diphtheria in the country
- **Case Management**
 - Request for more DAT from the global stock pile through WHO
- **Immunization**
 - NPHCDA to finalise plans for routine immunization (RI) intensification for children 2 years and below over a 3-month period in Kano, Jigawa and Lagos
- **Risk Communication**
 - Finalisation and dissemination of diphtheria IEC/BCC materials
- **Research**
 - Continue with the development of the zero draft of a manuscript on the first few laboratory- confirmed cases in the country