1 RESPIRATORY DISEASES

a Diphtheria: Two confirmed cases in KwaZulu-Natal Province, May 2016

A toxigenic strain of *Corynebacterium diphtheriae* was isolated from a throat swab of an 18-year-old female, hospitalised in eThekwini on 10 May 2015. The patient reported feeling ill since 25 April 2016 with a minor sore throat. She used home remedies initially, but on 10 May, presented to a local clinic, which referred her immediately to a local hospital. On examination, the patient was observed to have a fever, difficulty swallowing, and swelling of the neck. The emergency unit ('Casualty') at that hospital referred her immediately to a tertiary level facility where she was admitted. Nasal and throat swabs were taken, which the next day yielded growth of *C. diphtheriae*. The isolate was submitted to the Centre for Respiratory Disease and Meningitis (CRDM) NICD where the identification of the organism was confirmed, and PCR for the *tox* gene found to be positive. The patient was treated with intravenous penicillin, which was changed to azithromycin 500 mg PO daily. The patient did not receive diphtheria antitoxin (DAT), and currently appears well with no evidence of myocarditis.

A second patient in eThekwini presented to a local clinic on 19 May 2016 and was referred to hospital on 21 May 2016 with typical signs and symptoms of diphtheria. A throat swab yielded growth of *C. diphtheriae*, which was confirmed by CRDM NICD to carry the *tox* gene.

The confirmation of this case following last year's outbreak is concerning. From March until June 2015, 15 cases of diphtheria were identified (11 confirmed, three probable, one possible) in eThekwini and Ugu districts, with four deaths. Cases ranged from three to 41 years with children <15 years accounting for 12/15 of the cases, and six children within the range 5-9 years. Males accounted for nine cases. Where the road-to-health card was available (n=5), one was up to date for age, four had missed one or more doses. Over the course of the outbreak, the KZN Department of Health implemented active contact tracing, taking throat swabs and administering of post-exposure prophylaxis, booster vaccination in schools amongst children aged 6-12 years, dissemination of clinical guidelines and sensitisation of clinicians, and community health promotion activities. The NICD and NHLS issued revised laboratory diagnostic guidelines, implemented routine culturing of throat swabs onto Hoyle's medium (potassium tellurite agar) and enhanced existing laboratory diagnostic and confirmatory capacity for *C. diphtheriae.*

Regarding the present cases, contact tracing and post-exposure prophylaxis administration have been conducted by the Ethekwini Outbreak Response Team. A strategic supply of diphtheria antitoxin for possible additional cases is in the process of being sourced. The NICD, provincial and national departments of health are convening meetings to consider a strategic response.

Source: Ethekwini Municipality; KZN Provincial Department of Health; Centre for Respiratory Diseases and Meningitis, NICD-NHLS; Division of Public Health Surveillance and Response, NICD-NHLS.