

2 VACCINE-PREVENTABLE DISEASES

Diphtheria outbreak in eThekweni, KwaZulu-Natal Province

A case report published in the March 2015 issue of the Communiqué detailed the first case of respiratory diphtheria caused by laboratory-confirmed toxigenic *Corynebacterium diphtheriae* identified in the Durban area since 1989.

Subsequently, two further cases of respiratory diphtheria caused by laboratory-confirmed toxigenic *Corynebacterium diphtheriae* have been identified in Durban, resulting in the declaration of an outbreak.

All three laboratory-confirmed diphtheria case-patients have been children (two aged eight years and one aged nine years) presenting with clinical features suggestive of typical respiratory diphtheria. All developed severe disease requiring high or intensive levels of care. Two patients developed systemic complications (including myocarditis, acute congestive cardiac failure and neuropathy). The first case-patient died following systemic complications; the second and third case-patients are currently still hospitalised but recovering. All three case-patients were not up to date with their diphtheria immunisations according to age; whilst all three children had received the primary series of diphtheria-containing vaccine at 6, 10 and 14 weeks of age, one child did not receive any booster doses and the other two children received the first booster dose at 18 months but missed the second booster dose at 6 years of age.

A fourth suspected diphtheria case presenting as possible cutaneous diphtheria in an adult patient presenting to a hospital in Durban was investigated, but the causative organism shown to be a non-toxigenic *C. diphtheriae* on Elek testing. Cutaneous diphtheria is a common clinical manifestation of non-toxigenic *C. diphtheriae* infection, presenting typically as chronic ulcers. Non-toxigenic *C. diphtheriae* do not cause typical respiratory diphtheria disease or outbreaks, and do not warrant any public health response.

In response to the outbreak, the Department of Health authorities undertook a number of public

health interventions, many of which are ongoing. The interventions to date include:

- Tracing of household and household-like contacts, for administration of post-exposure prophylaxis and collection of clinical samples for culture to detect secondary cases/carriers
- Mop-up vaccination campaigns were conducted at schools in the areas where the case-patients resided
- A catch-up vaccination campaign was conducted in Umlazi C-section on 10 April 2015, which was very well attended by the community
- All healthcare facilities and a range of healthcare workers were alerted to the outbreak and provided with information regarding the disease
- Social mobilization and health promotion activities included the provision of pamphlets (in English and Zulu) and information education communication (IEC) materials to communities

All healthcare workers should familiarise themselves with the varied clinical presentations of diphtheria, and be on the alert for suspected cases in both children and adults. A brief description of clinical features, laboratory investigation and management of diphtheria is available, in the 'Focus on respiratory diphtheria' feature in the March 2015 issue of the Communiqué (which can be accessed on www.nicd.ac.za).

Source: Division of Public Health Surveillance and Response, NICD-NHLS; Microbiology Laboratory, NHLS KwaZulu-Natal Academic Complex; Diagnostic Media Production Laboratory, NHLS Green Point Complex; Clinicians at Inkosi Albert Luthuli Central and R.K Khan Hospitals, KwaZulu-Natal Province; KwaZulu-Natal Province Department of Health; eThekweni Municipality