2 VACCINE-PREVENTABLE DISEASES

Diphtheria

Update on the outbreak in KwaZulu-Natal Province

The first confirmed diphtheria case-patient was hospitalised in Durban on 15 March 2015 (onset of symptoms 11 March 2015), and additional cases continue to be reported. As at 27 May 2015, a total of 13 diphtheria cases (eight confirmed, 1 probable and four suspected), including five deaths, has been reported (Figure 2). In addition, two asymptomatic carriers of laboratory-confirmed toxigenic *C. diphtheriae* were identified in contacts epidemiologically linked to two confirmed cases. To date, diphtheria case-patients have been reported from two districts (eThekwini and Ugu) in KwaZulu-Natal Province. Cases range in age from 20 months to 41 years (median 9 years). Children aged <15 years account for 77% (10/13) of the cases, with a higher proportion (46%, 6/13) occurring in those aged 5 to 9 years. Vaccination history is known for five cases; only one case-patient had received all age-appropriate diphtheria-containing vaccine doses.

Diphtheria antitoxin treatment (DAT) has been procured through a generous donation by the Japanese government, and has been administered to three case-patients to date.

Alert to healthcare workers countrywide

Whilst there have been no reports of suspected diphtheria cases from elsewhere in the country, it is critical that healthcare workers in all provinces remain vigilant. An accumulation of children and adults susceptible to diphtheria results from suboptimal vaccination coverage rates and waning vaccine-induced immunity; as such, communities in all provinces are potentially vulnerable to outbreaks of diphtheria.

Suspected diphtheria case definition:

Any person presenting with: pharyngitis, naso-pharyngitis, tonsillitis, laryngitis, tracheitis (or any combination of these), where fever is absent or low-grade

AND

one or more of the following:

- Adherent pseudomembrane which bleeds if manipulated or dislodged
- Features suggestive of severe diphtheria, including: stridor, bull-neck, cardiac complications (myocarditis, acute cardiac failure and circulatory collapse), acute renal failure

Diphtheria is a notifiable medical condition. IMMEDIATELY report the case to infection prevention and control practitioners at healthcare facilities, or directly to District and Provincial health department communicable disease control coordinators. Recommendations for the management and public health response to diphtheria can be accessed on the NICD website (www.nicd.ac.za).

Reminder: diphtheria immunisation

Diphtheria is preventable through immunisation. The Expanded Program of Immunisation (EPI) schedule includes six doses of diphtheria toxoid-containing vaccine, given in combination with other antigens in various formulations:

1. Primary vaccination series (three doses)
   Vaccine is given at 6, 10 and 14 weeks of age (as Pentaxim® OR Infanrix-Hexa® OR Hexaxim®)
2. Booster vaccination series (three doses)
   Vaccine is given at 18 months of age (as Pentaxim® OR Infanrix-Hexa® OR Hexaxim®), then 6 years of age (as Diftavax® OR Infanrix® OR Adacel Quadra® OR Boostrix Tetra®), then 12 years of age (as Diftavax® OR Adacel Quadra® OR Boostrix Tetra®)

Immunity declines following immunisation, and many (20-80%) adults are susceptible to diphtheria. Adults working in high diphtheria exposure risk settings are encouraged to receive a booster dose (e.g. healthcare workers, school teachers, nursery/ crèche staff, staff working in child-care settings) with bivalent Td (Diftavax®) which is only available in the public health sector, or quadrivalent Tdap-IPV (Adacel Quadra®, Boostrix Tetra®) vaccine which is commercially available.

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 hospitals in eThekwini and Ugu Districts, KwaZulu-Natal Province; KwaZulu-Natal Province Department of Health; eThekwini Municipality; Ugu District Department of Health

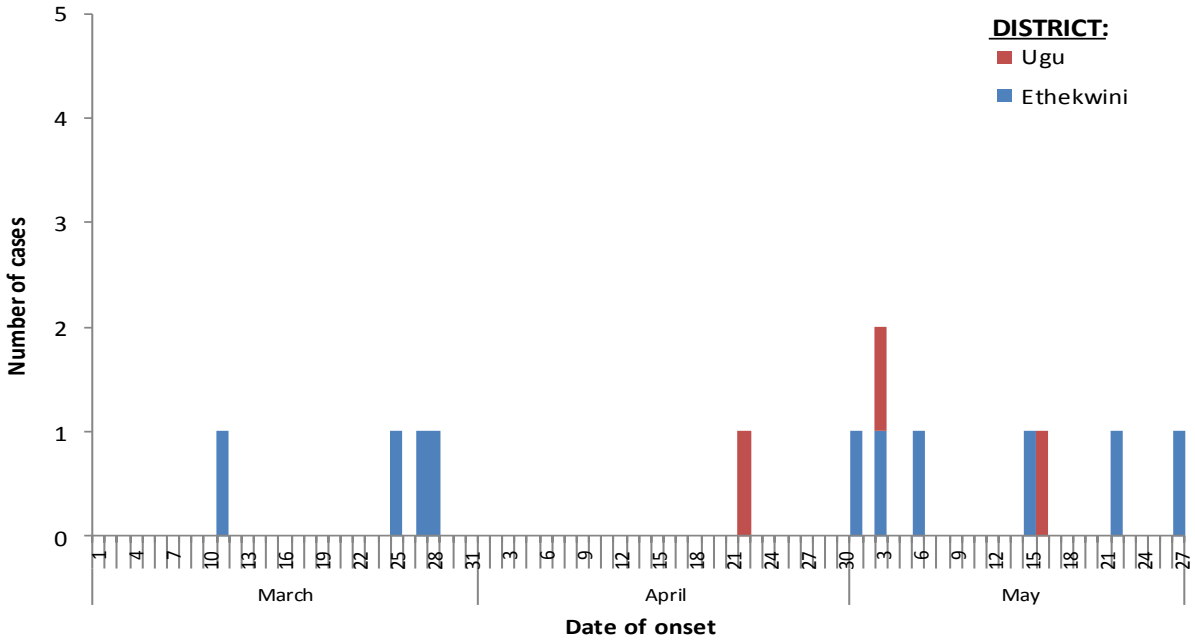

Figure 2. Epidemic curve illustrating the number of diphtheria cases by date of illness onset and district, KwaZulu-Natal Province, March to 27 May 2015