

1 VACCINE-PREVENTABLE DISEASES

a Diphtheria

Update on the outbreak in KwaZulu-Natal Province

The outbreak of diphtheria in KZN is ongoing, with a number of additional cases being reported since the last Communiqué (May 2015). During the past month, a new category, i.e. 'possible case', was included in the case definition. A possible case is defined as "A person who meets the clinical case definition for respiratory diphtheria and has no epidemiological link to a laboratory-confirmed case." This definition is to accommodate for cases where the clinical presentation is typical of diphtheria, but swabs are negative for *C. diphtheriae*. A negative swab does not conclusively rule out diphtheria as the organism may not be detected if the specimen or specimen transport is inadequate, or the specimen is not processed correctly. Presently there are 15 cases (10 confirmed, 2 probable, 3 possible and none under investigation) and 3 asymptomatic carriers of laboratory-confirmed toxigenic *C. diphtheriae*. Two carriers are epidemiologically linked to two confirmed cases from Margate (all siblings from the same family). One carrier is epidemiologically linked to a possible case from Umlazi. Three persons under investigation were found to have alternative causes of membranous pharyngitis, namely *Arcanobacterium haemolyticum* and Group A streptococcus (2 cases). To date, diphtheria case-patients have been reported from two (eThekweni and Ugu) of the 11 districts in KwaZulu-Natal Province. Cases range in age from 4 to 41 years

(median 10 years). Children aged <15 years accounted for 73% (11/15) of the cases, with 40% (6/15) occurring in those aged 5 to 9 years. Males accounted for 60% (9/15) of cases. Amongst cases ≤22 years old (n=13), vaccination history is known for 38% (5/13) of the cases. Of these (n=5), only a patient aged 11 years with probable diphtheria, had received all age-appropriate diphtheria-containing vaccine doses. He had presented with pharyngitis, a bull-neck and fever, and his throat swab grew *C. diphtheriae* which was negative for toxin production by ELEK test. Further laboratory tests are being conducted on the isolate. Figure 1 illustrates diphtheria cases by date of onset of illness and district as at 19 June 2015.

The KZN Department of Health, University of KwaZulu Natal and NICD together with a consultant from the WHO are reviewing the epidemic to determine the appropriate next steps, both locally in terms of preventive efforts and nationally, in terms of understanding factors contributing to the epidemic.

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 eThekweni and Ugu Districts, KwaZulu-Natal Province; KwaZulu-Natal Province Department of Health; eThekweni Municipality; Ugu District Department of Health, University of Pretoria, Zoonotic Diseases Division.

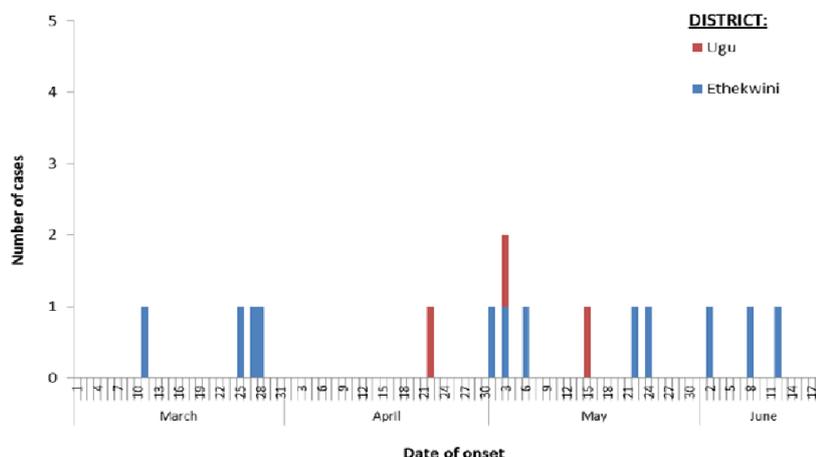


Figure 1. Epidemic curve illustrating the number of diphtheria cases by date of illness onset and district, KwaZulu-Natal Province, March to 19 June 2015