**b  Brucellosis in a child in the Western Cape Province**

A 5-year-old HIV-positive girl, formerly resident in an informal settlement in the Western Cape was diagnosed with tuberculosis and brucellosis in May this year. The patient had been put in foster care by social workers, and because she was found to be ill with diarrhea and ‘flu’ symptoms, the foster parents had taken her to a regional public hospital. Blood cultures taken there yielded growth of an oxidase-positive Gram-negative coccobacillus. The organism was identified by the National Institute for Communicable Diseases using MALDI-TOF (matrix-assisted laser desorption ionization time-of-flight) as a likely *Brucella melitensis*. Several laboratory workers, both in the Western Cape and NICD, were exposed to the organism. Post-exposure prophylaxis (PEP) measures have been implemented (chemoprophylaxis, baseline and 6-weekly serology, and temperature monitoring – see NICD Communiqué August 2015 for PEP regimens).

Investigation by environmental health practitioners showed that the area where the girl stayed prior to being placed in foster-care was surrounded by livestock farms. On interview, the child’s mother denied drinking unpasteurised milk, or eating meat from local farmers. The mother reported that she purchased food, including meat and milk from local shops.

Following the notification, veterinary services investigated the area and reported that the settlement revealed open spaces frequented by grazing horses and foraging backyard chickens and dogs, but no other livestock. There are, however, several livestock farmers within five kilometres of the settlement, some of whom are known to be speculators. Many dogs in the area are free-roaming, and the possibility that they could spread the infection from livestock to people in the area was considered (Epidemiology Report, Western Cape Government, May 2016, Volume 8, Issue 5). Testing of several herds in the area have been done, and results are pending.

The usual reservoirs of brucellosis in South Africa are goats and sheep (*B. melitensis*) and cattle (*Brucella abortus*). When infected, animals may abort and shed *Brucella* organisms in their milk. Brucellosis has also been previously documented in wildlife in South Africa. *Brucella* infection in animals is a controlled disease through national legislation (Animal Diseases Act, Act 35 of 1984) and any cases must be reported to the Provincial Veterinary Services. Brucellosis in animals is prevented through mandatory vaccination.

In humans brucellosis may be acquired through direct contact with infected animals or their secretions through skin cuts, abrasions or conjunctival splashes, or through inhalation of contaminated aerosols, or through consumption of unpasteurised dairy products. It is possible that the patient in this case acquired the infection through direct contact with infected animals, or indirect contact with animal products in the open veld in the area close to her home.

Brucellosis is treated with a triple regimen of an aminoglycoside, tetracycline and rifampicin. The aminoglycoside is given for two weeks, and the doxycycline and rifampicin are continued for six weeks. Patients require prolonged follow-up to monitor for further complications or relapse.

**Source:** Directorate Veterinary Services, Department of Agriculture, Western Cape Department of Health; NHLS Microbiology, Groote Schuur Hospital; Division of Public Health Surveillance and Response, NICD-NHLS; Centre for Emerging and Zoonotic Diseases, NICD-NHLS; (preneshni.naicker@nhls.ac.za)

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**2 RESPIRATORY DISEASES**

**a  Diphtheria in KwaZulu-Natal Province: a reminder to clinicians to be alert for suspected cases, and to laboratories to actively screen all throat swabs for *Corynebacterium diphtheriae***

In the May edition of the NICD Communiqué, two laboratory-confirmed cases of toxigenic *Corynebacterium diphtheriae* infection were reported in adults aged 18 and 44 years respectively from eThekwini, KwaZulu-Natal Province(KZN). Molecular investigations conducted by the Centre for Respiratory Diseases and Meningitis of the NICD have revealed that these
isolates are of the same genotype (sequence type 378) that caused the outbreak from May to June 2015 in the same district of KZN (See NICD Communiqué August 2015). This is suggestive of ongoing and undetected circulation and transmission of *C. diphtheriae*.

In view of this, we urge clinicians throughout the country to have a high index of suspicion for cases of diphtheria, to be aware of the diphtheria case definition (see below) and to submit specimens from suspected cases for laboratory testing. Dacron, Rayon or nylon-flocked swabs should be used to collect throat swabs. These should be placed in Amies or Stuart’s transport media, and labelled ‘throat swab, ?diphtheria’. When cases of suspected diphtheria are identified, it is appropriate for clinicians (including facility infection control practitioners) to inform the District or Provincial Communicable Diseases Coordinator who will then be prepared to initiate contact tracing and post-exposure prophylactic measures should the case be confirmed.

**Diphtheria case definitions (from NICD diphtheria guidelines, [www.nicd.ac.za](http://www.nicd.ac.za))**

A diphtheria ‘case under investigation’:
- A person who presents with an upper respiratory tract illness characterised by sore throat, low-grade fever AND an adherent membrane of the nose, pharynx, tonsils, or larynx.

A confirmed case of diphtheria:
- A person presenting with an upper respiratory tract symptoms with or without an adherent membrane AND culture or detection by PCR of *C. diphtheriae* or *C. ulcerans* or *C. pseudotuberculosis* from a clinical specimen which is confirmed to be toxin producing by ELEK testing or tox gene-positive by PCR.

In addition, we remind all NHLS and private laboratories nationally to continue actively screening for *C. diphtheriae* by plating all throat/tonsillar swabs onto Hoyle’s (tellurite-containing) medium. *C. diphtheriae* reduces potassium tellurite to tellurium to produce grey-black coloured colonies. On blood agar, *C. diphtheriae* is easily overlooked as glistening, creamy white colonies resembling *Staphylococcus* species. Alternately, please submit throat swabs directly to the Centre for Respiratory Diseases and Meningitis (CRDM) of the NICD for culture and PCR. NHLS and private laboratories are asked to submit Hoyle’s plates with suspected *C. diphtheriae* colonies to the NICD for confirmation and/or detection of toxin by PCR.

Guidelines for diphtheria management and laboratory detection can be accessed at [http://nicd.ac.za/assets/files/Guidelines_diphtheria_20160322_v2_3.pdf](http://nicd.ac.za/assets/files/Guidelines_diphtheria_20160322_v2_3.pdf). Additionally, please contact CRDM to assist with identification of suspected organisms or supply of Hoyle’s plates (Linda de Gouveia 011 555 0327, lindad@nicd.ac.za or Mignon du Plessis 011 555 0387, mignon@nicd.ac.za).

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Source: Centre for Respiratory Disease and Meningitis, NICD-NHLS; KwaZulu-Natal Provincial Department of Health; Ethekwini Metro CDC team; Division of Public Health Surveillance and Response, NICD-NHLS (annev@nicd.ac.za; outbreak@nicd.ac.za)

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b  **The 2016 influenza season, South Africa**

The 2016 influenza season in South Africa has begun. The season is considered to have started when the detection rate of ‘Viral Watch’ specimens tested at the NICD has risen above 10% and remains there for ≥2 weeks. The influenza detection rate for the Viral Watch rose to 19.2% in week 19 (week starting 9 May) and continued to rise, and currently is 47.2% for week 23 (week ending 12 June) (Figure 3).

To date (week 23, the week ending 12 June), influenza has been detected in 182/2543 individuals tested from 3 surveillance programmes carried out by the NICD. Influenza B accounted for the majority of these detections i.e. 161/182 (88.5%); influenza A(H1N1)pdm09 for 8/182 (4.4%), and influenza A(H3N2) for 13/182 (7.1%).

Influenza vaccination, which provides protection against at least three strains of influenza each season, remains the most effective measure to prevent influenza and influenza-related complications. Individuals at risk of severe disease due to influenza and influenza-related complications, especially pregnant women and those who are vulnerable due to pre-existing illnesses or risk factors, are advised to obtain vaccination as soon as possible.

Source: Centre for Respiratory Disease and Meningitis, NICD-NHLS (cherylc@nicd.ac.za)