

purification operators servicing the Winburg area are not ensuring that water quality meets the safety standards as per the South African Water Quality guidelines. According to these guidelines, the pH, turbidity and chlorine level of treated water should be checked every two hours and documented on a log sheet, which was not done at the Winburg water purification plants. The Free State provincial EHP assistant manager has since advised the Winburg water purification operators to comply with these guidelines.

Source: South African Field Epidemiology Training Programme, Provincial Epidemiology Team, Division of Public Health Surveillance and Response, and Centre for Enteric Diseases, NICD -NHLS; Free State Department of Health Provincial CDC and Environmental Health; Lejweleputswa Environmental Health-Municipal Services. junot@nicd.ac.za

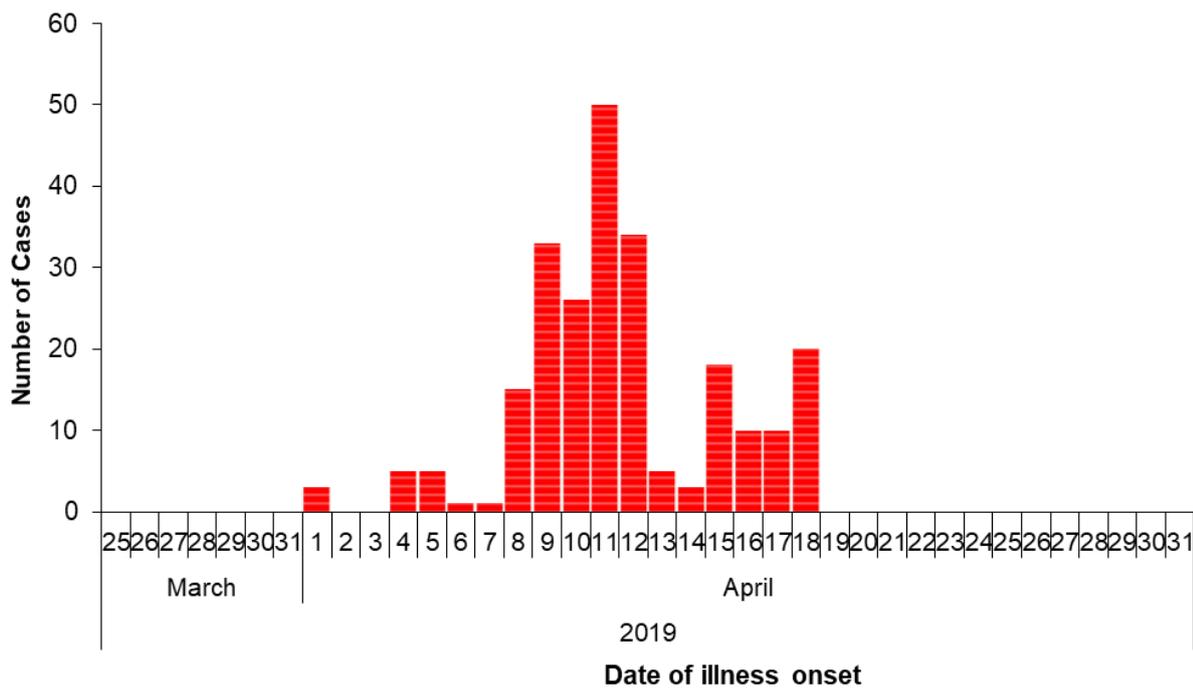


Figure 3. Epidemic curve illustrating number of diarrhoeal disease cases reported by date of illness onset, Winburg, Free State Province, April 2019.

3 VACCINE-PREVENTABLE DISEASES

a A household cluster of measles cases, Western Cape Province

Four suspected measles cases were reported from a private medical centre in the Southern Sub-district, City of Cape Town Metropolitan Municipality, on 11 April 2019. The four cases were unvaccinated siblings aged 12, 14, 17 and 19 years, and had recently visited a country in Eastern Europe.

Blood samples were collected, tested in the private sector and confirmed at NICD. Three tested positive for measles IgM (one also tested measles PCR positive) and one was IgM negative, likely in the incubation period. Outbreak response measures were implemented and contacts were vaccinated. The definition of a measles outbreak is usually con-

sidered as three cases in one district within 1 month. In this cluster, the cases were related and no additional cases were found in the district. It is likely that these cases were imported. Therefore, no outbreak of measles was declared, but healthcare workers should be on alert for additional cases.

Between 1 January and 15 May 2019, there have been 13 measles cases in South Africa (four in Gauteng, two in KwaZulu-Natal, two in Limpopo, one in Mpumalanga and four in the Western Cape provinces), Figure 4. In 2018, South Africa had 64 measles cases.

Measles is targeted for global elimination, with South Africa aiming at an elimination target of 2020. The pre-elimination goal is less than one case per million population per annum. All suspected measles cases must be reported through the notifiable medical conditions system, and blood samples must be collected for testing at NICD. Without laboratory testing, measles cannot be differentiated from other febrile rash illnesses.

Measles complications are unpredictable, and can include diarrhoea, dehydration, blindness, brain

infection or death. Vaccination is safe and effective at preventing measles infection. Measles vaccinations are amongst the later vaccinations in the immunisation schedule, given at 6 and 12 months of age. For anyone who has missed immunisation doses, it is never too late to catch up measles vaccination.

Source: Centre for Vaccines and Immunology, NICD-NHLS; Western Cape Department of Health. melindas@nicd.ac.za; Charlene.Lawrence@westerncape.gov.za

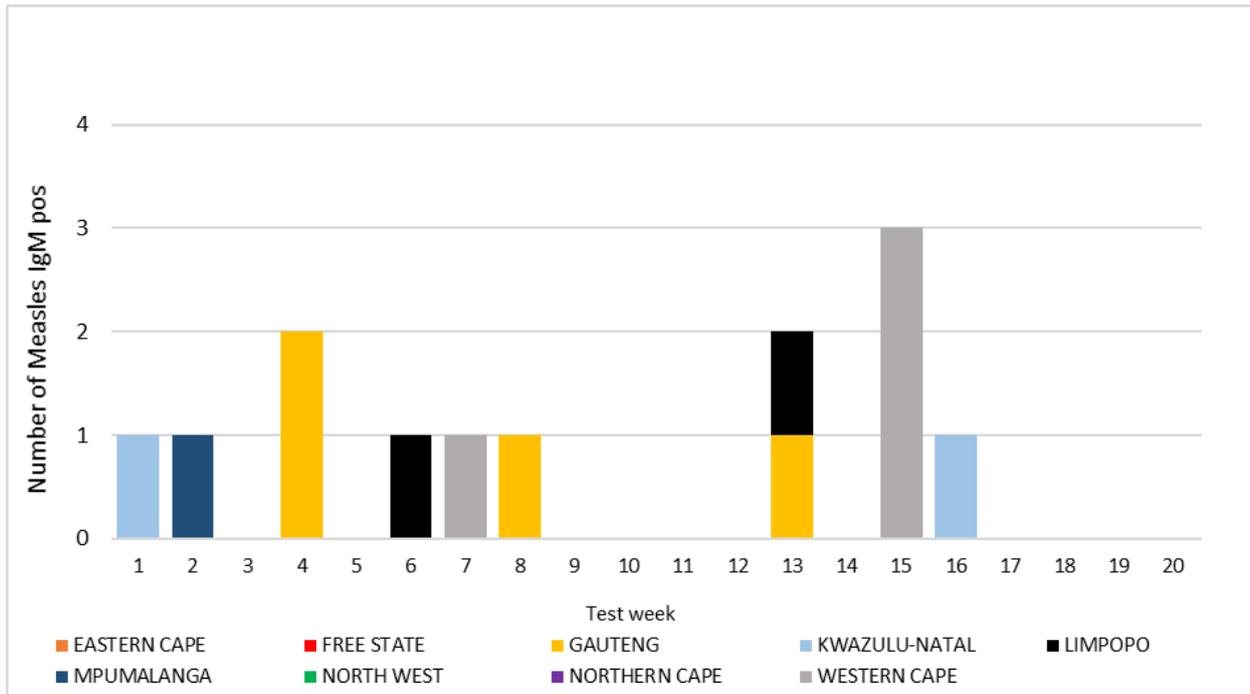


Figure 4. Number of measles cases by test week, South Africa, 1 January to 15 May 2019.

4 HOSPITAL ASSOCIATED INFECTIONS

a Carbapenem-resistant *Klebsiella pneumoniae* outbreak at a hospital in the City of Cape Town Metropolitan Municipality, May 2018-February 2019

A total of 17 neonates and children with invasive carbapenem-resistant *Klebsiella pneumoniae* (CR-KP) infections was reported by a tertiary hospital in the City of Cape Town Metropolitan Municipality, between May 2018 and January 2019 (Figure 5). Prior to December 2018, there had been one case of carbapenem-resistant *Enterobacteriaceae* (CRE) reported by the neonatal unit of the same hospital in 2017. Of the affected patients, nine had bloodstream infections, five had urinary tract infections, two had pneumonia, and one had meningitis. Four children and one neonate died (case fatality ratio = 29%). A colonisation survey was conducted in the last week of January 2019 in the neonatal wards. Of 112 rectal swabs tested, 52 (46%) cultured CRE. Strains from infected and colonised neonates

and children harboured different carbapenemase-encoding genes (OXA-48 and variants or NDM).

Infection prevention and control (IPC) measures were promptly implemented. All neonates and children infected or colonised with CR-KP were cohorted in separate isolation wards and managed with contact precautions. Universal contact precautions had been implemented across all five neonatal areas since the neonatal outbreak was declared on 3 January 2019. Other measures implemented included increased provision of hand sanitisers/automatic alcohol dispensers, provision of gloves, aprons and red plastic bags for each incubator/cot bed, restriction of visits to parents only, assignment of medical students to post-natal wards and neonatal areas not affected by CRE, and retraining of all