



CONTENTS

1 FOOD- AND WATER-BORNE DISEASES

Diarrhoeal disease outbreak, Bloemhof, North West Province	1
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2 INTERNATIONAL ALERTS

a Middle East respiratory syndrome coronavirus (MERS-CoV): update and advice for pilgrims visiting the Middle East	2
b Ebola virus disease outbreak in West Africa: update	3

3 SEASONAL DISEASES

a Seasonal influenza	4
b Meningococcal disease	4

4 ZOOBOTIC DISEASES

Rabies	5
--------	---

5 ANTIMICROBIAL RESISTANCE

Update on carbapenemase-producing Enterobacteriaceae	6
--	---

6 VACCINE-PREVENTABLE DISEASES

Oral polio vaccine shortage in South Africa	8
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7 BEYOND OUR BORDERS

9

1 FOOD- AND WATER-BORNE DISEASES

Diarrhoeal disease outbreak, Bloemhof, North West Province

An outbreak of diarrhoeal disease in Bloemhof Municipality, North West Province, was reported during the week of 26 May 2014. Healthcare facilities in the area noticed an increase in the number of patients presenting with diarrhoea on Sunday 25 May 2014. Since then, >600 cases of diarrhoea have been reported by healthcare facilities in the area. The majority of cases were not severe, but 11 patients (mostly young children) required referral and/or admission to hospital. A total of three deaths was reported during the outbreak - all children <2 years of age with diarrhoea complicated by dehydration.

The number of diarrhoea cases has declined dramatically; during the week of 16 June 2014, very few cases were reported, in keeping with expected rates of background diarrhoeal disease in the community. Cases of diarrhoeal disease in young children may be expected to increase as a result of the annual rotavirus season (which is imminent), and is unrelated to the outbreak.

Stool samples collected during the outbreak were tested at Tshepong NHLS laboratory and NICD-NHLS (Centre for Enteric Diseases and Centre for Opportunistic, Tropical and Hospital Infections). Enteric pathogens were detected in 50% of the samples tested; in 71% of these cases, multiple pathogens were detected. *Cryptosporidium* spp. was detected in a single case, but no other enteric parasites were observed. Enteric viruses were detected in one-third of the samples, namely astrovirus, adenovirus and norovirus. At least 35% of stool samples yielded diarrhoeagenic *E. coli*; pathotypes isolated included diffusely adherent *E. coli* (DAEC), entero-invasive *E. coli* (EIEC) and enteropathogenic *E. coli* (EPEC). *Aeromonas* spp. was isolated in two cases.

Considering the clinical, epidemiologic and multipathogen nature of the outbreak, contaminated drinking water is the likely source of this outbreak. Water samples were collected and submitted for testing to independent laboratories by

local municipality/health officials, but test results are not known. Water samples are currently being tested at the Enteric Virus and Environmental Research Unit (Department of Medical Virology, University of Pretoria) for specific enteric viruses.

During the outbreak, numerous interventions and control measures were put in place to address the issues of safe water supply to the community, following which the case numbers decreased. Health promotion messaging included recommendations for making water safe (i.e. boiling

water or adding bleach), advising the use of home-made oral rehydration solution for diarrhoea and vomiting, and encouraging timely healthcare-seeking behaviour.

Source: Outbreak Response Unit, SA-FELTP, Centre for Enteric Diseases, and Centre for Opportunistic, Tropical and Hospital Infections, NICD-NHLS; North West Province Department of Health; Enteric Virus and Environmental Research Unit, Department of Medical Virology, University of Pretoria; Tshepong NHLS laboratory