

4 ENTERIC DISEASES

a Suspected diarrhoeal outbreak in Upington—ZF Mgcawu District, Northern Cape Province March—July 2015

On the 11 June 2015, the Centre for Enteric Diseases (CED) at the National Institute for Communicable Diseases (NICD) received five stool specimens from Upington. A paediatrician at the district hospital noted an increase in diarrhoeal cases, and submitted these specimens directly to the NICD for further investigation. Reverse transcription polymerase chain reaction (RT-PCR), real-time RT-PCR, genotyping and sequencing methods were performed according to standardised protocols at NICD, CED. Three of the five specimens submitted tested positive for rotavirus antigens. The expanded testing results followed and other enteric pathogens including sapovirus (n=2) and norovirus (n=1) were also detected.

In response to these results, and by invitation of the Northern Cape Communicable Diseases co-ordinator, an outbreak investigation team was dispatched to establish the reason for the increase in case numbers. The team conducted a record review of cases seen in the district hospital casualty, and obtained the following data:

A total of 638 cases was identified from March to early July 2015. More females (326/638, 51%) were affected than males (278/638, 44%) with no gender indicated in the entries of 34/638 (5%). The majority of cases (318/638, 50%) were children under five years of age; of those 146/638 (23%) were <1 year of age. Amongst older adult cases, the majority were from age group of 45 years and above (103/638, 16%). A peak was identified around the 25 April 2015 and mid-June 2015 (Figure 3). In comparison to 2014, 251 cases were reported during mid-April 2014 to end June 2014 (epidemiologic week 14 – 26) and one death was reported. In contrast, at least 584 cases were reported for the same period in 2015 (epidemiologic week 14 – 26) with no deaths. Clinical symptoms that were identified along with diarrhoea were bloody diarrhoea (7/638, 1.7%), abdominal pain (61/638, 9%), fever (47/638, 7%) and vomiting (326/638, 51%). According to the case records, 20 of 638 cases suffered from dehydration and severity

of dehydration was mild in 13 (65%) and severe in 3 (15%). Underlying conditions were present in 23/638 (4%) and of these, HIV was present in 7 (30%). Treatment given to cases was intravenous therapy (185/638 – 29%), oral rehydration solution (25/638 – 4%) and antibiotics (71/638 – 11%).

While the outbreak team was on site, the mothers of nine infants who were admitted were interviewed to help identify any possible risk factors, and an additional four stool specimens were collected for processing at CED. Of the nine infants, 8 had received at least one dose of rotavirus vaccine, and 5/7 (71%) of age-eligible children had received two doses of rotavirus vaccine. The rotavirus ELISA screening revealed 6/9 (67%) of cases were rotavirus positive. Genotyping of the rotavirus strains revealed that all were G9P[8]. Sapovirus (n=1), norovirus (n=1) and adenovirus (n=1) were also detected in the rotavirus-positive cases. In one case negative for rotavirus, sapovirus was isolated. The increase in diarrhoeal cases coincided with the rotavirus season (April – June).

While the outbreak investigations were limited due to time constraints, it was felt that the increase in cases was most likely due to the seasonal increase in rotavirus that is typically seen during the winter months. Recommendations to the Department of Health of the Northern Cape included to continue to promote ongoing vaccination of infants against rotavirus according to the Expanded Programme of Immunisation, and to strengthen routine data collection and monitoring.

Source: Centr for Enteric Diseases, Field Epidemiology Training Programme, Division of Public Health Surveillance and Response, NICD-NHLS; Northern Cape Communicable Diseases Control

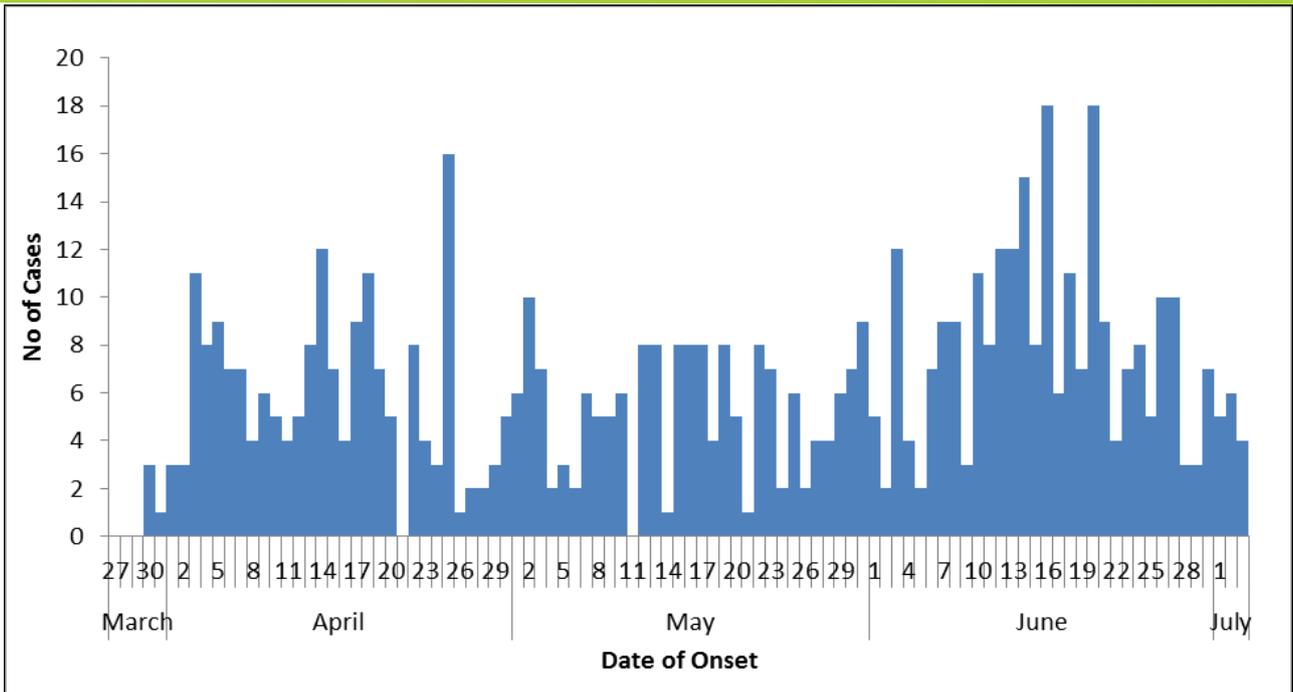


Figure 3 . Epidemic curve showing 638 diarrheal cases from 30 March to 3 July 2015, abstracted from the records of a district hospital in Upington, Northern Cape Province. (Date of consultation was used as a proxy for date of symptom onset.)