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CONTENTS

Shigellosis Outbreak in Nelson Mandela Bay Health District, Eastern Cape Province

An NHLS pathologist based in Port Elizabeth (Nelson Mandela Bay Health District, Eastern Cape Province) noticed a sudden marked increase in the number of shigellosis cases at a provincial public hospital and primary health care clinic in the district during the last week of November 2012. This was reported to the National Outbreak Unit (NICD-NHLS and National Department of Health) which prompted further investigation.

Twelve laboratory-confirmed cases of *S. flexneri* had been reported between 23 and 26 November 2012; by 3 December 2012 the number of laboratory-confirmed cases had risen to 24 (21 of whom had severe disease necessitating hospital admission). Although cases were identified in both public and private healthcare facilities in the district, the majority were resident in the Kwazakhele area and shared no other common risk exposures. All presented initially with diarrhoea (which in the majority of cases was bloody).

The District Outbreak Response Team was activated and responded to the outbreak, facilitating alerts to healthcare facilities and addressing the possibility of a common water-borne source. Of major concern is that the catastrophic flooding in the district during late October may have resulted in contamination of the water supply to Kwazakhele and surrounding areas – investigations are ongoing and water safety has been prioritised.

As at 14 December 2012, a total of 58 cases has been identified (40 laboratory-confirmed, 1 probable and 17 suspected). Of the laboratory-confirmed cases, *Shigella* spp. were isolated from stool specimens in 38/40 (95 %); *Shigella* spp. was isolated from both blood culture and stool in a 2-year-old child with severe bloody diarrhoea and fever. There has been one fatal case to date (a 76-year-old female who presented with bloody diarrhoea and dehydration).

Of the *Shigella* spp. isolates referred to the Centre for Enteric Diseases (NICD-NHLS) for further characterisation, 11 have been tested to date and all are *Shigella flexneri* 1b.

Humans and other large primates are the only natural reservoirs of *Shigella* spp. Person-to-person spread is the commonest mode of transmission, but infection and outbreaks can also be caused by contaminated food or water. Shigellosis is one of the most communicable of the bacterial causes of diarrhoea, since a low dose of organisms readily causes disease. Following an incubation period of one to three days, infection with shigellae can result in a spectrum of disease from asymptomatic infection to severe bloody diarrhoea (the classical 'bacillary dysentery'). Fever and abdominal cramps are often the initial symptoms, followed by the onset of watery diarrhoea (indicating infection of the small bowel). As the fever decreases and infection spreads to involve the colon, passage of smaller volume, bloody mucoid stools may develop (in ±40% of cases). Abdominal pain and diarrhoea occur in almost all patients with shigellosis; fever can be documented in one third of cases at presentation.

Shigellosis is usually self-limiting, but severe disease may be associated with complications including dehydration, febrile seizures in infants and young children, bacteraemia, pneumonia,

keratoconjunctivitis, and immune-complex acute glomerulonephritis. A post-shigellosis reactive arthritis may develop in HLA-B27 -positive patients following infection with *S. flexneri*. Shigellosis due to *S. dysenteriae* 1 is associated with more serious diarrhoeal disease that carries a higher mortality rate in untreated cases, and is also associated with haemolytic uraemic syndrome (due to the production of Shiga toxin).

Shigellae can readily be isolated from stool specimens; bacteraemia is rare. Prompt antibiotic therapy is critical and can be life-saving in patients with severe disease. Although most cases of shigellosis are self-limiting, antibiotic therapy is advocated for all cases as a public health intervention, since treatment results in decreased duration of faecal shedding and therefore limits further transmission. A three-day course of ciprofloxacin (500 mg bd for adults and 25 mg/kg/day divided into two doses for children) is currently the recommended treatment regimen.

Source: Department of Health: Nelson Mandela Bay Health District, Eastern Cape Province; NHLS Port Elizabeth; Ampath and Pathcare laboratories, Port Elizabeth; Infection Prevention and Control practitioners (public and private healthcare facilities), Port Elizabeth; Division of Public Health Surveillance and Response, and Centre for Enteric Diseases, NICD-NHLS.

Rabies

During November 2012, rabies was confirmed as the cause of death in a 7-year-old male who was bitten by a dog in early October at Emathafeni village (near Cofimvaba), Eastern Cape Province. It seems that he received one dose of rabies vaccine following the bite. He was admitted to Frere Hospital on 6 November 2012 after a three-day history of illness, including fever, headache, vomiting, malaise, muscle spasms and localized weakness. He was noted to be delirious, aggressive and hypersalivating. CSF and saliva specimens taken on 12 November 2012 were rabies RT-PCR negative. The child died soon after and brain tissue from the subsequent post-mortem was positive for rabies virus by direct immunofluorescence.

This latest case brings the number of laboratory-confirmed human cases to a total of 10 for 2012. These cases were reported from KwaZulu-Natal (n=4), Limpopo (n=3), Mpumalanga (n=1), Free State (n=1) and Eastern Cape (n=1) provinces.

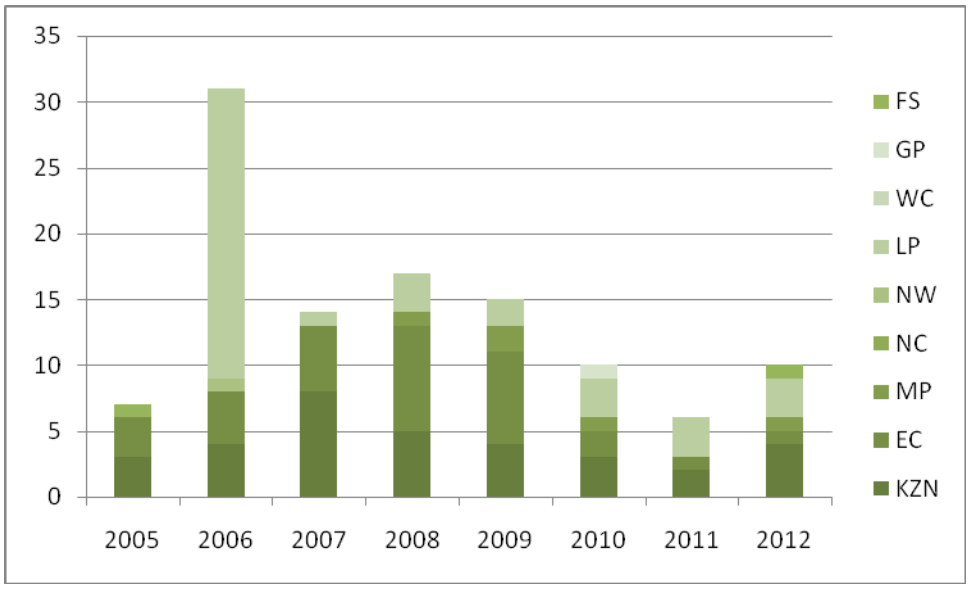

Figure: Laboratory-confirmed rabies cases for South Africa, 2005 – 2012 (to date).

Following the unprecedented increase in demand for rabies immunoglobulin since July 2012, there is a finite quantity of product available at present and healthcare workers are urged to utilise this product judiciously. The decision to administer rabies post-exposure prophylaxis (PEP) must be based on a thorough risk assessment, and the specific details relating to the animal and the exposure are extremely important to verify. With the outbreak of canine rabies in Gauteng Province in 2010-2011, there was a dramatic increase in rabies awareness and rabies PEP use. However, there have been no locally-acquired domestic animal rabies cases in Gauteng Province during 2012 - healthcare workers

are advised to take note of this since the likelihood of rabies transmission from domestic animals in the province is therefore very low. By contrast, animal rabies cases continue to be reported from KwaZulu-Natal, Mpumalanga and Limpopo provinces, and persons exposed to unvaccinated animals (particularly if they are stray, ill or behaving abnormally) are at greater risk of acquiring rabies and should promptly receive appropriate rabies PEP if indicated. The rabies risk assessment and PEP guidelines can be accessed at: http://nicd.ac.za/assets/files/Rabies-Guide-2010-small.pdf

Source: Centre for Emerging and Zoonotic Diseases, and Division of Public Health Surveillance and Response, NICD-NHLS.

East African Trypanosomiasis

Trypanosomiasis was confirmed on a peripheral blood smear in a 37-year-old Zambian national who presented with acute febrile illness and severe headache ±10 days after visiting a game ranch in the Luangwa Valley, Zambia, where he experienced numerous tsetse fly bites. No parasites were detected on initial blood smear tests (done to exclude malaria). A necrotic skin lesion was noted at a bite site but did not resemble a typical trypanosomal chancre. The course of the patient's illness was complicated by renal dysfunction, hepatitis and thrombocytopenia. The patient's level of consciousness was decreased on admission, but examination of the CSF did not suggest trypanosomal CNS disease. The patient responded very well to suramin treatment. A previous case of East African trypanosomiasis (EAT) was confirmed in a visitor to the same game ranch in 2010 (see communiqué August 2010) and communication between these patients raised the possible diagnosis of EAT and facilitated early treatment. For additional information on trypanosomiasis, refer to the following communiqué articles: February 2007, November 2007, January 2008 and May 2008.

Source: Division of Public Health Surveillance and Response (South African National Travel Health Network), and Centre for Opportunistic, Tropical & Hospital Infections (NICD-NHLS); Ampath and Lancet laboratories.

BEYOND OUR BORDERS: INFECTIOUS DISEASE RISKS FOR TRAVELLERS

The 'beyond our borders' column focuses on selected and current international diseases that may affect South Africans travelling abroad.

Disease & Countries	Comments	Advice to travellers
Yellow fever: Sudan	As of 4 December 2012, a total of 732 suspected cases, (34 of which have been laboratory confirmed) including 165 deaths, has been reported. Most suspected cases have been reported from Central, South, and West Darfur.	Yellow fever (YF) is a viral haemorrhagic disease transmitted by infected mosquitoes (*Aedes aegypti)*. Cases have increased globally due to deforestation, urbanization, population movements and climate change. YF illness ranges from mild flu-like illness to a haemorrhagic fever (which carries a 50% case-fatality rate). Following an incubation period of 3 to 6 days, fever, muscle pain with prominent backache, and headache occur. Most patients improve and their symptoms resolve after 3 to 4 days. However, 15% of patients enter a second, more toxic phase within 24 hours of the initial remission. High fever returns and is accompanied by severe multisystem illness (including icteric hepatitis and haemorrhagic diathesis). There is no specific treatment for yellow fever. Travellers to at-risk yellow fever areas need to have proof either of yellow fever vaccination or a medical waiver certificate. All travellers 9 months of age or older should get vaccinated against yellow fever and avoid mosquito bites.

Disease & Countries	Comments	Advice to travellers
Yellow fever: Sudan **(Continued)**		Vaccination should be done at least 10 days before travel and is valid for 10 years.
Novel Coronavirus: Saudi Arabia, Qatar and Jordan	To date, a total of 9 laboratory-confirmed cases of novel coronavirus infection has been reported to the World Health Organization - 5 cases (including 3 deaths) from Saudi Arabia, 2 cases from Qatar and 2 cases (both fatal) from Jordan.	Coronaviruses are a large family of viruses that cause a wide range of illnesses in humans, from the common cold to SARS. Viruses of this family also cause a number of animal diseases. In the cases reported to date, infection with novel coronavirus has manifested as an acute febrile respiratory infection (presenting as a pneumonia or acute respiratory distress syndrome). Investigations are ongoing with regards to the likely source of infection, route of exposure, and possibility of human-to-human transmission of the virus. The World Health Organization (WHO) does not recommend any travel/trade restrictions to Saudi Arabia, Qatar or Jordan.
Ebola haemorrhagic fever: Uganda and Democratic Republic of Congo (DRC)	**Uganda**: As of 2 December 2012, the Ugandan Ministry of Health reported 7 cases (probable and confirmed) of Ebola virus infection, including 4 deaths, in the Luwero District of central Uganda. **DRC:** The DRC Ministry of Health has declared an end to the most recent Ebola outbreak in DRC's Province Orientale. As of 28 November 2012, the total number of cases was 62, (including 36 laboratory-confirmed cases, 21 probable and 5 suspected cases) with a total of 34 deaths.	The World Health Organization (WHO) does not recommend any travel restrictions to Uganda or the DRC. The Ebola virus is transmitted by direct contact with the blood, secretions, organs or other body fluids of infected persons. Healthcare workers have frequently been infected while treating patients with Ebola virus infection through close contact without appropriate infection prevention and control precautions and inadequate barrier nursing procedures. The incubation period is 2 to 21 days, and disease is characterised by the sudden onset of fever, intense weakness, muscle pain, headache and sore throat. This is often followed by vomiting, diarrhoea, rash, impaired kidney and liver function, and in some cases, both internal and external bleeding. Laboratory findings show low counts of white blood cells and platelets as well as elevated liver enzymes.

Source: Division of Public Health Surveillance and Response, NICD-NHLS.

References and additional reading: ProMED-Mail (www.promedmail.org); World Health Organization (www.who.int); Centers for Disease Control and Prevention (www.cdc.gov); Health Protection Agency (www.hpa.org.uk). Last accessed: 18 December 2012.