

Date of issue: 28 February 2018, using data at close of business 27 February 2018

Report issued by: Centre for Enteric Diseases (CED) and Division of Public Health Surveillance and Response, Outbreak Response Unit (ORU), National Institute for Communicable Diseases (NICD)/ National Health Laboratory Service (NHLS).

Cautionary note Data collection and cleaning is ongoing and case numbers will change from day to day

Summary

- A total of 945 cases have been reported since 1 January 2017, with 30 additional cases recorded since the last update (20 February 2018).
- Outcome at the end of hospitalisation is known for an additional 18 cases, bringing the total with known outcome to 635/945 (67%) patients. 176 (19%) patients are known to have died.
- At present, the source of the outbreak is not known, although progress is being made in each area of the investigations listed below.
- The public are advised that processed, ready-to-eat meat products, soft cheeses, and unpasteurised milk and dairy products should be avoided by persons who are at risk of listeriosis. In addition, processed, ready-to-eat meat products include viennas, polonies, russians, ham, other 'cold' meats, sausages, various corned meats, salami, pepperoni and similar products typically found in the processed meat sections of food retailers and butcheries should be avoided, or thoroughly cooked in boiling water or heated at high temperatures of 70°C or higher before eating.

Following the declaration of the listeria outbreak in December 2017, a multi-sectoral outbreak response was initiated. Selected findings are reported here.

Investigative strategies adopted by the national and provincial departments of health and agriculture

Epidemiology and data management

- Case reporting through laboratory-based notifications and completion of notifiable medical condition report forms including more detailed case investigation forms are being conducted by public and private clinicians, private hospital groups and laboratories, the NHLS, the NICD and provincial health departments.
- Case interviews are being conducted by NICD clinicians and epidemiologists to ascertain food histories and identify implicated foodstuffs.

Environmental sampling

- Environmental health practitioners (EHPs) are sampling foodstuffs from cases identified and reported to them by the NICD.
- EHPs are also sampling retail outlets and food processing plants in a systematic manner.
- Environmental samples are being submitted to NHLS Infection Control Services Laboratory

Molecular epidemiological investigations

- All environmental isolates where *L. monocytogenes* is cultured, and selected clinical isolates from cases are being subject to whole genome sequencing in order to identify the outbreak strain.

Descriptive epidemiology (as determined from available laboratory information systems data)

As of 27 February 2018, 945 laboratory-confirmed listeriosis cases have been reported to NICD from all provinces since 01 January 2017 (Figure 1). To date, 743 cases were reported in 2017, and 202 cases in 2018. Females account for 55% (516/943) cases where gender is reported. Where age was reported (n=909), ages range from birth to 92 years (median 19 years) and 41% (377/902) are neonates aged ≤28 days (Figure 2). Of neonatal cases, 94% (355/377) had early-onset disease (birth to ≤6 days). Most cases have been reported from Gauteng Province (59%, 555/945) followed by Western Cape (12%, 116/945) and KwaZulu-Natal (7%, 66/945) provinces. Case distribution by district of South Africa is shown in Figure 2. Cases have been diagnosed in both public (65%, 610/933) and private (35%, 335/933) healthcare sectors. Amongst 945 cases, specimens that were positive for *Listeria monocytogenes* were blood culture (688, 73%), cerebrospinal fluid (206, 22%) and other including stool, pus, urine or other body site (70, 7%)

Additional case data and outcome (where provided through completion of case investigation forms, provincial report or patient interview)

Additional data on a limited number of cases is available where completed case investigation forms have been

submitted or provincial investigations have been conducted. Race distribution amongst 302 cases is black (258, 85%), colored (22, 7%), white (22, 7%) and Asian (1, <1%). Over 100 persons with laboratory-confirmed listeria have been interviewed to obtain detailed food histories. Outcome is known for 635/945 (67%) patients of whom 176 (19%) have died. Outcome by province and age category is tabulated and graphed below (Table 1 and Figure 3 respectively).

Environmental sampling

Over 1500 foodstuffs obtained from retail outlets, food processing plants and patient homes have been tested at the NHLS Infection Control Services laboratory. To date over 70 food items have tested positive for *L. monocytogenes*. These have undergone molecular sequencing at the NICD.

Molecular epidemiological investigations

Over 500 isolates of *L. monocytogenes* have undergone whole genome sequencing.

- ❖ All healthcare workers are requested to complete case investigation forms (CIFs – available on the website) for case-patients with listeriosis, and submit these to the NICD (outbreak@nicd.ac.za).
- ❖ Clinical listeriosis management guidelines are available on the website (www.nicd.ac.za).
- ❖ Where clinicians suspect listeriosis but specimens (including CSF and blood) are culture negative, a polymerase chain reaction (PCR)-based test can be performed at the NICD. PCR can also be performed on placenta samples for investigation of stillbirths/miscarriages. Please contact the Centre for Enteric Diseases on (011) 555 0343 for further details
- ❖ The NICD continues to operate its 24-hour hotline for healthcare workers.

Public health communications

National and Provincial departments of health have conducted communication campaigns aimed at sensitizing the public regarding food safety. The NICD released a communication update on 22 February (<http://www.nicd.ac.za/index.php/update-on-listeriosis-johannesburg-22-february-2018/>) urging persons at high risk of developing listeriosis (including pregnant women, adults aged over 65 years, persons with weakened immune systems such as those living with HIV/AIDS, cancer, kidney or liver disease, diabetes, or persons on medication that weakens the immune system) to avoid foods that have more commonly been linked to outbreaks of listeriosis. These include processed, ready-to-eat meat products, soft cheeses, and unpasteurised milk and dairy products. Processed, ready-to-eat meat products include viennas, polonies, russians, ham, other 'cold' meats, sausages, various corned meats, salami, pepperoni and similar products typically found in the processed meat sections of food retailers and butcheries. Such products must be avoided, or thoroughly cooked in boiling water or heated at high temperatures of 70°C or higher before eating.

Figure 1: Epidemic curve of laboratory-confirmed listeriosis cases by epidemiological week and date of sample collection and province, South Africa, 01 January 2017 to 27 February 2018

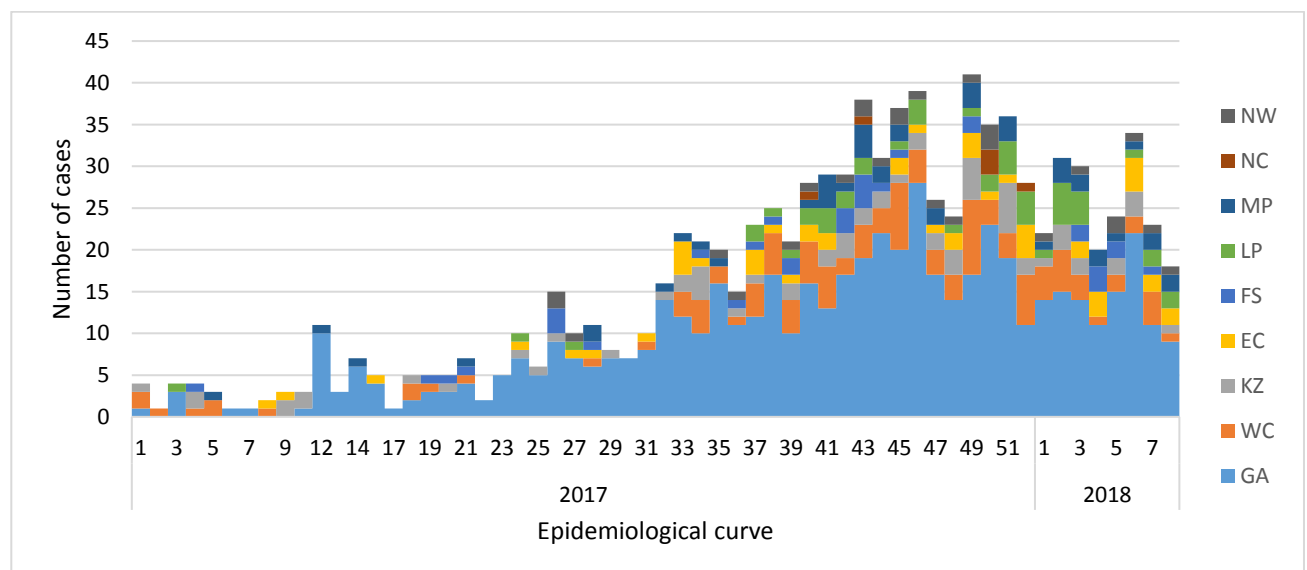
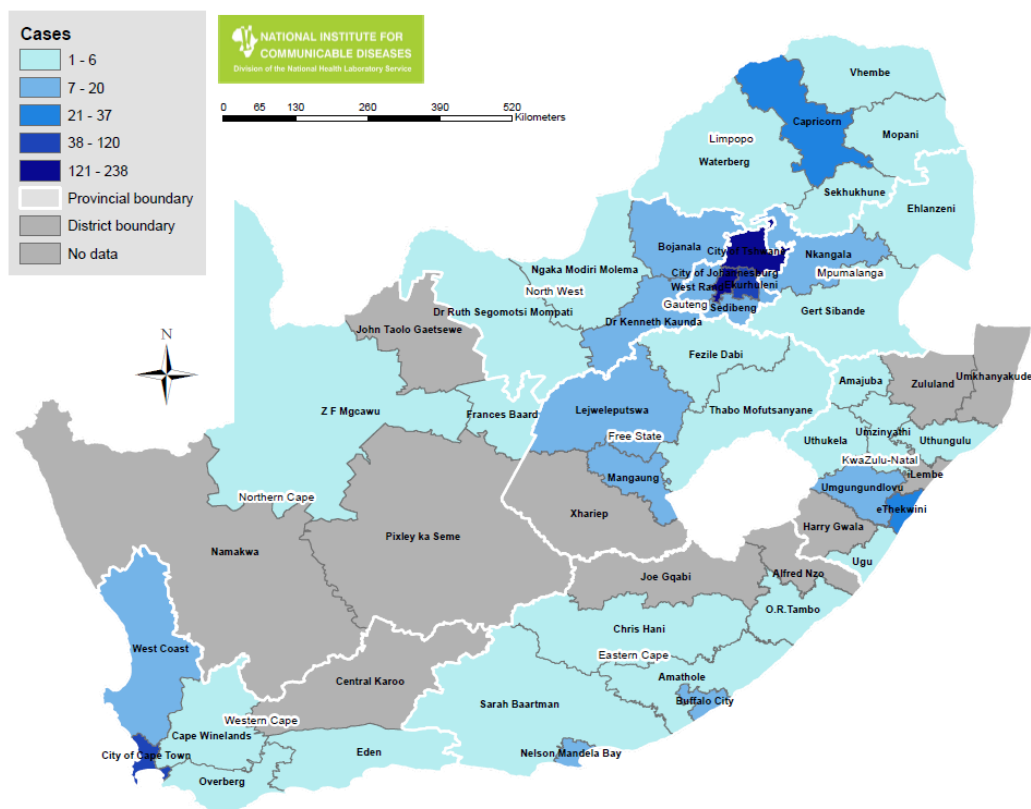


Figure 2: Distribution of laboratory-confirmed cases of listeriosis by district, South Africa, 01 January 2017 to 27 February 2018



	EC	FS	GA	KZ	LP	MP	NC	NW	WC	Total
Died	9	8	97	10	7	9	2	6	28	176
Discharged	18	17	257	28	10	32	2	17	78	459
Pending	22	8	201	28	30	5	2	4	10	310
Total	49	33	555	66	47	46	6	27	119	945

Table 1. Outcome of 945 persons with laboratory-confirmed listeriosis by province, as per 27 February 2018

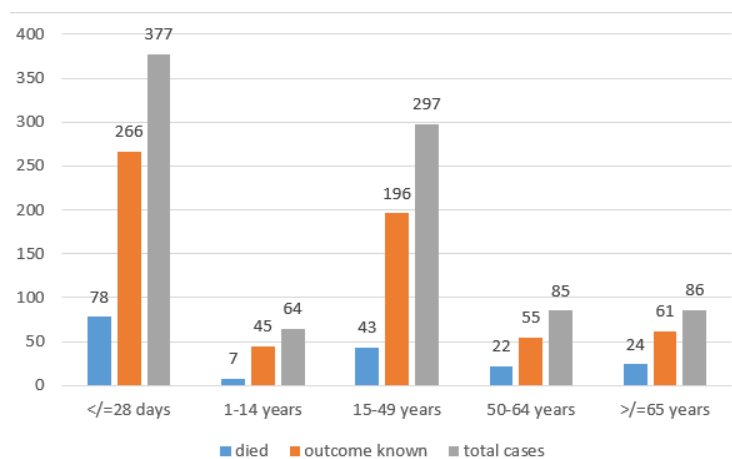


Figure 3: Age distribution and outcome of laboratory-confirmed cases of listeriosis identified from 01 January 2017 to 27 February 2018 (n=909 where age was reported)