SITUATION REPORT ON LISTERIOSIS OUTBREAK, SOUTH AFRICA, 2018

Date of issue: 3 March 2018, using data at close of business 2 March 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 948 cases have been reported since 1 January 2017, with 3 additional cases recorded since the last update (27 February 2018).
- Outcome at the end of hospitalisation is known for an additional 24 cases*, bringing the total with known outcome to 659/948 (70%) patients. 180/659 (27%) patients are known to have died. [*Note – these are outcomes from patients over the last 6 months, and not new outcomes from this week]
- The source of the outbreak has emerged – details will be made available through appropriate channels, along with public health messages.

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 2 March 2018, 948 laboratory-confirmed listeriosis cases have been reported to NICD from all provinces since 01 January 2017 (Figure 1). To date, 742 cases were reported in 2017, and 206 cases in 2018. Females account for 56% (517/917) cases where gender is reported. Where age was reported (n=914), ages range from birth to 92 years (median 19 years) and 41% (379/914) are neonates aged ≤28 days (Figure 2). Of neonatal cases, 96% (363/379) had early-onset disease (birth to ≤6 days). Most cases have been reported from Gauteng Province (59%, 558/948) followed by Western Cape (12%, 116/948) and KwaZulu-Natal (7%, 67/948) provinces. Case distribution by district of South Africa is shown in Figure 2. Cases have been diagnosed in both public (65%, 611/948) and private (35%, 337/933) healthcare sectors. Amongst 948 cases, specimens that were positive for *Listeria monocytogenes* were blood culture (691, 73%), cerebrospinal fluid (206, 22%) and other including stool, pus, urine or other body site (71, 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 305 cases is black (259, 85%), colored (22, 7%), white (23, 7%) and Asian (1, <1%). Over 100 persons with laboratory-confirmed listeria have been interviewed to obtain detailed food histories. Outcome is known for 659/948 (70%) patients of whom 180 (27%) 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

The source of the outbreak has emerged. Details and public health messages will be made available through appropriate channels

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 2 March 2018

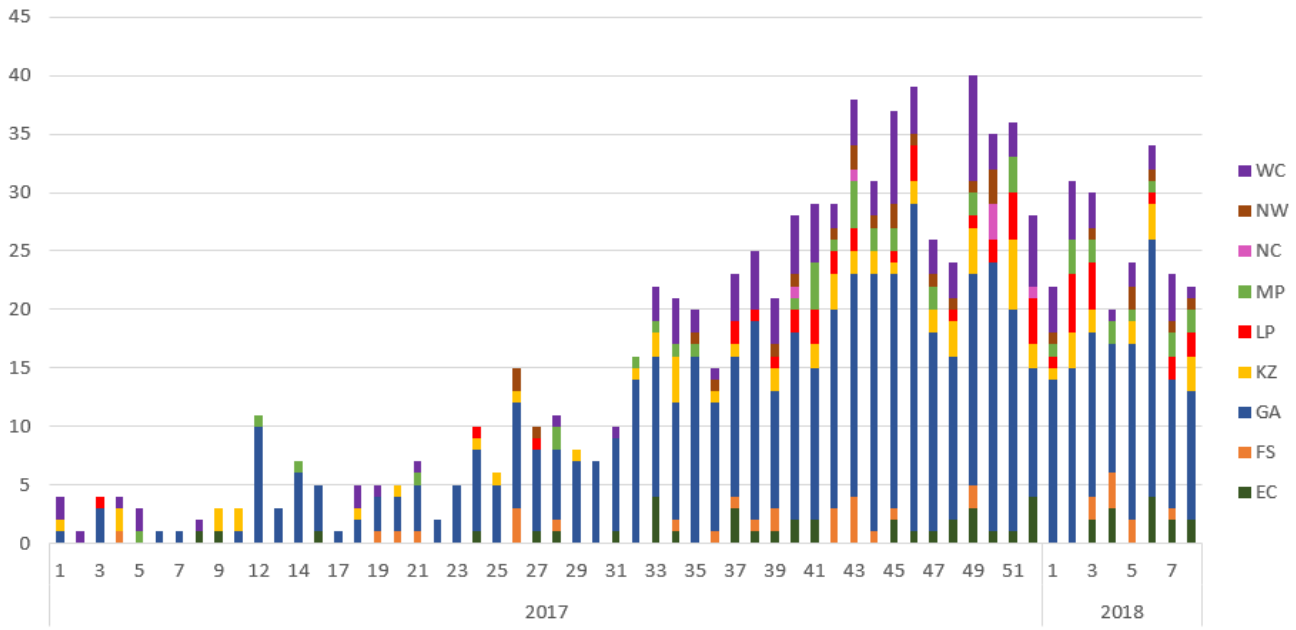
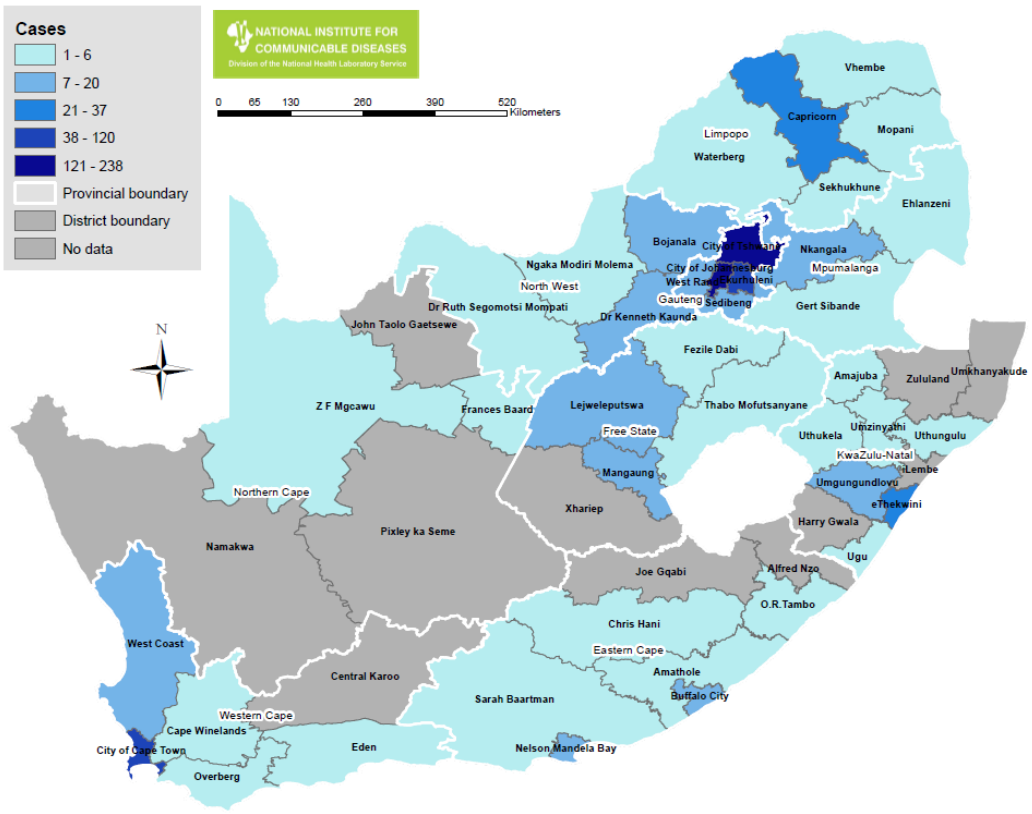


Figure 2: Distribution of laboratory-confirmed cases of listeriosis by district, South Africa, 01 January 2017 to 2 March 2018



	EC	FS	GA	KZ	LP	MP	NC	NW	WC	Total
Died	10	8	97	11	7	9	3	7	28	180
Discharged	18	19	260	30	24	31	2	17	78	479
Pending	21	6	201	26	16	5	1	3	10	289
Total	**49**	**33**	**558**	**67**	**47**	**45**	**6**	**27**	**116**	**948**

Table 1. Outcome of 948 persons with laboratory-confirmed listeriosis by province, as per 2 March 2018

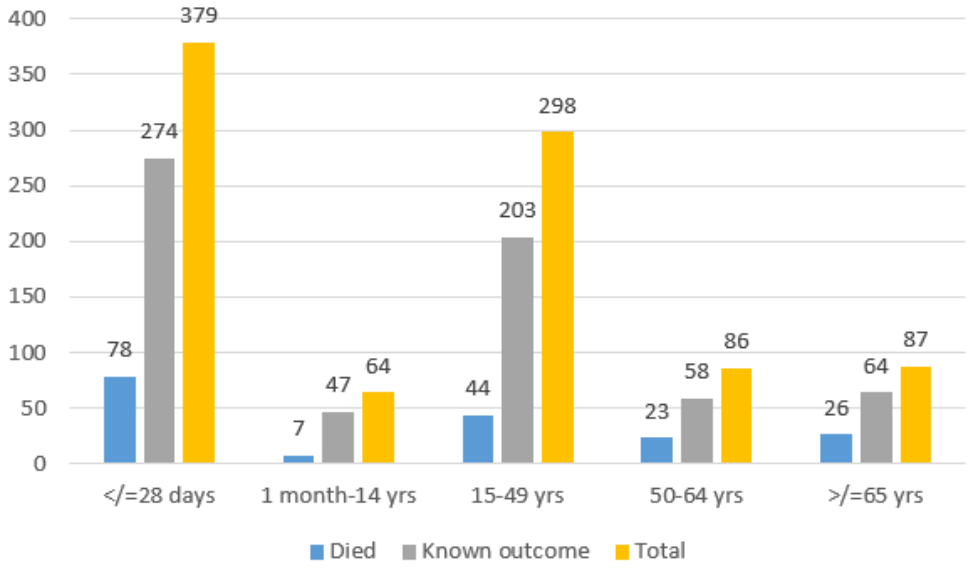


Figure 3: Age distribution and outcome of laboratory-confirmed cases of listeriosis identified from 01 January 2017 to 2 March (n=914 where age was reported)