

SITUATION REPORT ON LISTERIOSIS OUTBREAK, SOUTH AFRICA, 2017

Date of issue: 15 December 2017

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).

Note:

- Case data and outbreak response activity summary is the best available at time of publication, and is updated on an ongoing basis.
- There have been challenges with NHLS laboratory case reporting during epidemiological weeks 47-49 and ongoing. Therefore the case loads reflected during these weeks are to be interpreted with caution

Descriptive epidemiology

As of 13 December 2017 602 laboratory-confirmed listeriosis cases have been reported to NICD from all provinces since 01 January 2017 (Figure 1). Most cases have been reported from Gauteng Province (61%, 370/602) followed by Western Cape (13%, 79/602) and KwaZulu-Natal (7%, 43/602) provinces. Cases have been diagnosed in both public (66%, 397/602) and private (34%, 205/602) healthcare sectors. Diagnosis was based most commonly on the isolation of *Listeria monocytogenes* in blood culture (71%, 425/602), followed by CSF (24%, 147/602). Where age was reported (n=581), ages range from birth to 93 years (median 26 years) and 38% (219/581) are neonates aged ≤28 days (Figure 2). Of neonatal cases, 96% (210/219) had early-onset disease (birth to ≤6 days). Females account for 54% (316/582) of cases where gender is reported.

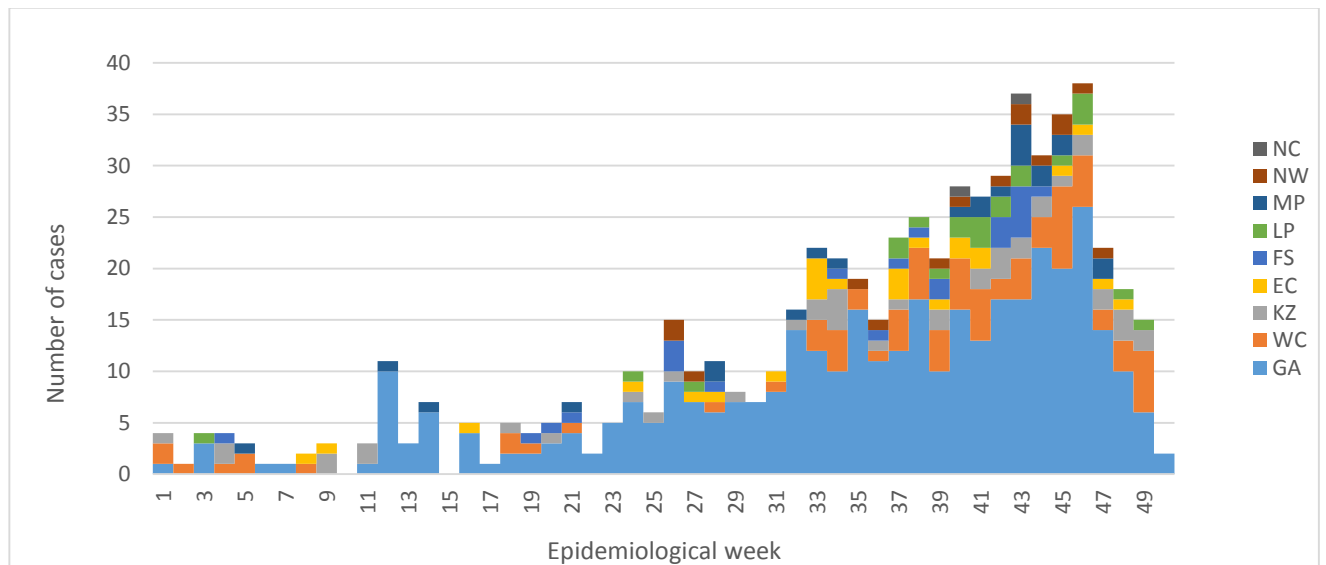


Figure 1: Epidemic curve of laboratory-confirmed listeriosis cases by epidemiological week and date of sample collection and province, South Africa, 01 January to 13 December 2017 (n=602)

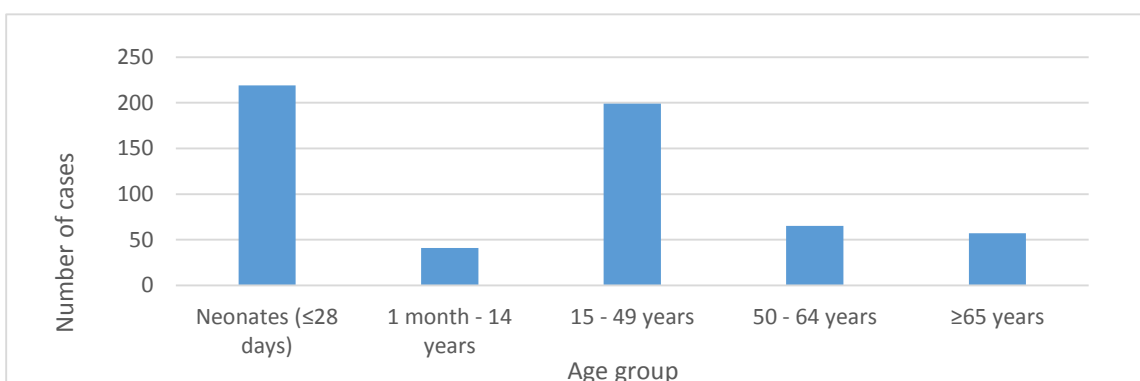


Figure 2: Age distribution of laboratory-confirmed listeriosis cases, South Africa, 01 January to 13 December 2017 (n=581)

Clinical findings

As of 13 December 2017, case investigation forms (CIFs) of variable completeness have been received for 221 (37%) cases. Apart from neonates (≤ 28 days) and the elderly (> 65 years), additional risk factors for listeriosis reported include pregnancy (11/46 females aged 15-49 years) and HIV infection status. In non-neonatal cases where HIV status was known (n=63), 62% (39/63) were HIV positive. Maternal HIV status is known for 57 neonatal cases, of which 22/57 (38%) were HIV positive. Final outcome data is available for 13% (77/602) of cases, of which 52% (40/77) died.

Reference laboratory findings

To date, whole genome sequencing has been performed on 206 clinical *L. monocytogenes* isolates. Fifteen sequence types (STs) have been identified; however, 74% (153/206) belong to a single ST (ST6). Isolates in this ST6 cluster are very closely related, showing < 20 single nucleotide polymorphism (SNP) differences. This suggests that most cases in this outbreak have had exposure to a widely available, common food type/source.

Narrative summary of actions to date

Outbreak co-ordination

- The Minister of Health convened a multisectoral meeting on 14 December 2017 with representatives from the Department of Agriculture, Forestry and Fishery (DAFF), NDoH and NICD at which NICD presented data contained in this Situation Report. A multisectoral outbreak response plan is being compiled.

Epidemiology and surveillance

- The line list database of listeriosis cases is updated daily with data from NHLS Central Data Warehouse (CDW) downloads, direct reports from NHLS and private laboratories and clinicians.
- Case investigation forms (CIFs) are currently being completed by healthcare workers in both the public and private healthcare sectors. All clinicians are requested to submit completed CIFs (found on the NICD website at www.nicd.ac.za) to outbreak@nicd.ac.za.
- Provincial CDCs have been requested to assist with outstanding demographic and clinical outcome data.
- Over 15 in-depth food histories have been taken from case-patients in Gauteng Province. A number of foodstuffs have been identified that are common to all affected persons. These data have been reported to NDoH and DAFF.

Clinical management and diagnosis

- Clinical listeriosis management guidelines have been reviewed and 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. Please contact nicolap@nicd.ac.za, junot@nicd.ac.za or arvindas@nicd.ac.za for further details.
- A meeting with obstetricians at public hospitals is planned for the week of 17-24 December to discuss diagnosis and management of listeriosis amongst pregnant women

Laboratory diagnostics and investigations

- Private and public sector laboratories are submitting clinical isolates to the NICD Centre for Enteric Diseases (CED). All isolates of *L. monocytogenes* received at the CED are subjected to confirmatory identification tests, and are stored. Please email arvindas@nicd.ac.za or junot@nicd.ac.za should you have queries or require assistance.
- Whole genome sequencing is being performed on all clinical isolates and food/environmental isolates received from the NHLS Infection Control Laboratory in Johannesburg.

Food control and environmental health

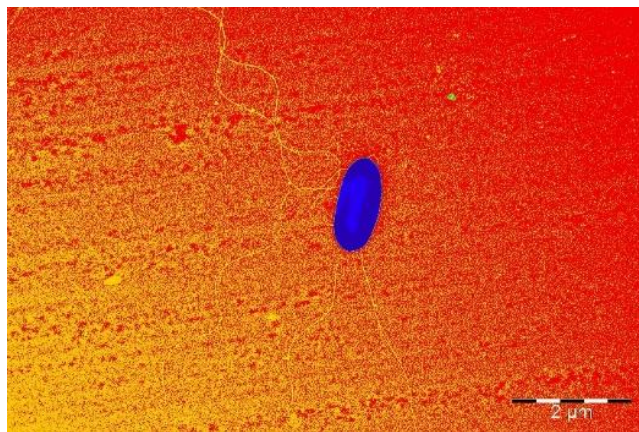
- Environmental health practitioners have been requested to visit homes of persons newly diagnosed with listeriosis and sample available food where possible. Environmental health practitioners should submit food specimens to the NHLS Infection Control Services Laboratory in Johannesburg. The specimen submission form for is available on the NICD website (www.nicd.ac.za). Contact rob.stewart@nhls.ac.za for further information.
- Some private sector food testing laboratories have voluntarily submitted *L. monocytogenes* isolates (from food and environmental samples) to the NICD.
- The Director General of the National Department of Health has formally requested food industry stakeholders to submit details of *Listeria*-positive foodstuffs, environmental swabs and *Listeria* isolates to the NICD, along with samples. Whilst several stakeholders have been forthcoming with information, *not all stakeholders have responded as yet*.

Communications

- The NICD has made information available on the website regarding listeriosis, including Frequently Asked Questions (FAQs), clinical management guidance, and laboratory testing methodology. These can be

accessed at <http://www.nicd.ac.za/index.php/listeriosis/>.

- The Food Control Division within the National Department of Health has distributed information about the outbreak to food industry stakeholders.
- The NICD continues to operate its 24-hour hotline for clinicians, and call-centre for support for members of the public.



Electron Micrograph of *L. monocytogenes*, courtesy of Monica Birkhead, Centre for Emerging, Zoonotic and Parasitic Diseases, NICD