

Situation Report			
<b>Outbreak name</b>	Listeriosis	<b>Country affected</b>	South Africa
<b>Date &amp; Time of report</b>	28 May 2018	<b>Investigation start date</b>	August 2017
<b>Prepared by</b>	National Listeria Incident Management Team		

**‘Team B’ demonstrating how food and environmental specimens should be collected, at a training of environmental health practitioners in Port Elizabeth, Thursday 24 May, 2018.**



**Members of the Risk Communication team Team after completing their community engagement activity at a clinic in Kimberley, Thursday 24 May 2018.**



## 1. Highlights

- 1 038 cases have been reported from 01 January 2017 to 22 May 2018. The number of new cases reported each week has decreased since the implicated products were recalled on 04 March 2018 (Figure 1).
- The description of the whole-genome sequence data related to this outbreak has been accepted for publication in the journal ‘Genome Announcements’.
- Training of EHPs in Mpumalanga and the Eastern Cape provinces was conducted from 22-24 May, and two food processing factories in the respective provinces were inspected by a team comprising district EHPs and IMT members to consolidate training and support district inspection teams.
- Risk communication and community engagement activities were conducted in the Northern Cape Province.
- Risk assessments on all meat processing plants in South Africa are being collated with a view to drawing up a schedule of inspections.

## 2. Background

Prior to 2017, an average of 60 to 80 laboratory-confirmed listeriosis cases per year (approximately 1 per week), were reported in South Africa. In July 2017, an increase in laboratory-confirmed cases of listeriosis was reported to National Institute for Communicable Diseases (NICD) which was followed by investigations into the reported increase. On 05 December 2017, the listeriosis outbreak was declared by the Minister of Health, Dr. Aaron Motsoaledi. The source of the outbreak was identified as ready-to-eat processed meat products manufactured at Enterprise Foods’ Polokwane production facility. A recall of affected products was initiated on 04 March 2018.

## 3. Emergency Management Approach

Phase 2 of the Emergency Response Plan developed by the multi-sectoral incident management team (IMT) is being implemented. The aim of the plan is to control and end the current listeriosis outbreak, and to strengthen systems to facilitate prevention and early detection of outbreaks. To inform and support these aims, surveillance and investigation of cases of listeriosis and risk communication activities are ongoing. Additional activities to complement these are being conducted as follows;

- Phase 1: Development of the ERP, communication of the plan with provincial and district stakeholders, development of material and training of staff to support inspections of facilities identified as at-risk food processing plants;

- Phase 2: Inspection of at-risk food processing plant and strengthening the capacity of district environmental health practitioners;
- Phase 3: Reporting and consolidation of health system strengthening activities, and after action review.

#### 4. Public Health action/response interventions

##### 1. CO-ORDINATION

The IMT met twice during the week ending 25 May to coordinate response activities. The schedule of provincial training has been drawn up. Risk assessments of processed meat facilities throughout the country are being collated and consolidated by the IMT, so as to plan a schedule of factory inspections. A mid-project review is being compiled by the IMT planning team based on achievement of indicators for each activity as per the Emergency Response Plan. Financial support has been obtained for the ERP and documentation to support transfer of funds is underway. Employment of laboratory and epidemiology staff to support laboratory testing and outbreak activities is underway. The WHO continues to contribute through the provision of expert technical support for epidemiology, risk communication and food safety.

##### 2. SURVEILLANCE

1 038 cases have been reported from 01 January 2017 to 22 May 2018. The number of new cases reported each week has decreased since the implicated products were recalled on 04 March 2018 (Figure 1). Neonates  $\leq 28$  days of age are the most affected age group, followed by adults aged 15 – 49 years of age (Figure 2). Most cases have been reported from Gauteng Province (58 %, 607/1 038), followed by Western Cape (13%, 130/1 038) and KwaZulu-Natal (7%, 76/1 038) provinces (Table 1).

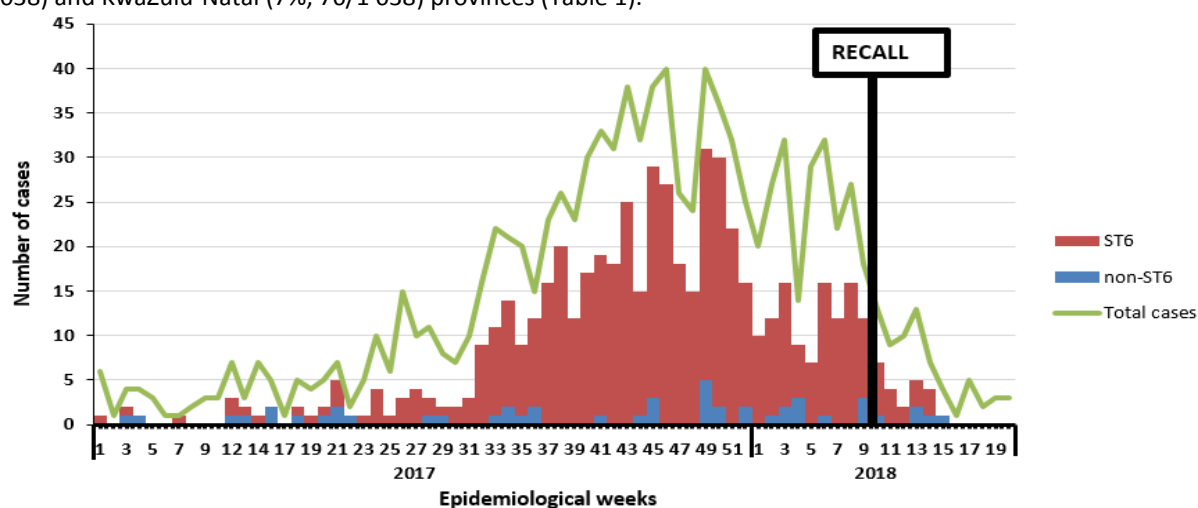


Figure 1: Figure 1: Epidemic curve of laboratory-confirmed listeriosis cases by date of clinical specimen collection (n=1 038) and sequence type (ST) (n=564), South Africa, 01 January 2017 to 22 May 2018

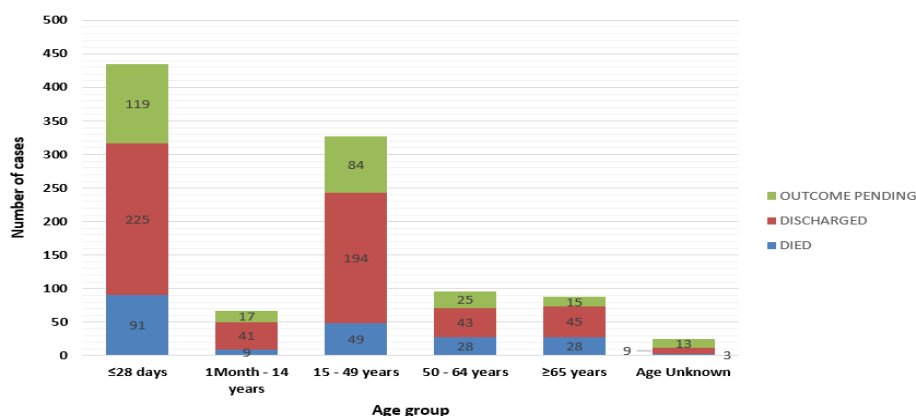


Figure 2: Age distribution and outcome of laboratory-confirmed listeriosis cases, South Africa, 01 January 2017 to 22 May 2018 (n=1 038)

**Table 1. Number of laboratory-confirmed listeriosis cases and deaths by province, where outcome data is available, South Africa, 01 January 2017 to 23 May 2018 (n=1 038)**

Province	Outcome available (as a % of total cases in RSA)	Number of deaths (% of those with outcome available)	# cases (% of total cases)
Gauteng	383 (63.1)	106 (27.7)	607 (58.4)
Western Cape	129 (99.2)	30 (23.2)	130 (12.5)
Kwa-Zulu Natal	67 (88.1)	21 (31.3)	76 (7.3)
Mpumalanga	47 (97.9)	11 (23.4)	48 (4.6)
Eastern Cape	31 (56.6)	11 (35.4)	53 (5.1)
Limpopo	47 (87.0)	11 (23.4)	54 (5.2)
Free State	30 (85.7)	8 (26.7)	35 (3.4)
North West	25 (86.2)	7 (28.0)	29 (2.8)
Northern Cape	6 (100.0)	3 (50.0)	6 (0.6)
<b>Total</b>	<b>765 (73.7)</b>	<b>208 (27.2)</b>	<b>1 038</b>

- Following a recall of implicated products, the number of cases are going down. However, it is anticipated that cases could still be reported for the following reasons:
  - The incubation period of listeriosis can be up to 70 days
  - The implicated products have a long shelf life and it is possibly that despite the recall some products have not been removed from retail or consumer's homes
  - Cross-contamination at retail and in the home can occur
- Post recall (05 March 2018 to date), all new cases of laboratory-confirmed listeriosis are contacted by IMT members, and a comprehensive food history is obtained. Exposure to food products implicated in the listeria outbreak is determined.
  - 49 interviews have been done amongst 69 cases who were diagnosed with listeriosis after the recall
  - 13 case-patients were not able to be interviewed (as patients died, or proxy/ies unable to provide information etc)
  - 30/49 (61%) of ill people or their proxy reported consuming polony prior to their illness onset.

### 3. LABORATORY

#### A. NICD:

- All clinical isolates received at NICD are undergoing whole genome sequencing (WGS).
- Of the 69 cases reported post recall, four were diagnosed by PCR. Of the 65 cases which were culture-confirmed, isolates for 40 cases have been received to date. WGS has been completed for 23 of these isolates to date; 19 are outbreak strain ST6 and 4 are other sequence types (Figure 1).
- Case investigation forms have been received for 43/69 post-recall cases
- For the purposes of assessing linkage of *Listeria monocytogenes* strains to the South African outbreak, the NICD has deposited 10 representative ST6 sequences in the public GenBank - NCBI database (<https://www.ncbi.nlm.nih.gov/Traces/study/?acc=SRP142281>). The description of this whole-genome sequence data has been accepted for publication in the journal 'Genome Announcements'. Please contact Dr Anthony Smith ([anthony@nicd.ac.za](mailto:anthony@nicd.ac.za)) regarding sequencing queries.

#### B. NHLS Infection Control Services Laboratory:

- The ICSL began to receive environmental & food samples from food production facility inspections for *L. monocytogenes* testing on 17 May 2018
- Presence or absence of *L. monocytogenes* in 25 g of food sample or the environmental swab is currently reported, with quantitative culture conducted where appropriate.
- PCR testing has been introduced into the testing algorithm as the screening test in order to shorten the turn-around-time of results



- Feedback from Inspection teams will be implemented regarding improved communication with courier services, sourcing of swabs for collection of environmental specimens.
- District EHPs continue to submit all manner of specimens for listeria testing. The majority of these specimen types are not appropriate for various reasons. A meeting was held with Food Control, Environmental Health and IMT representatives to consider how to advise District EHPs regarding listeria testing.

#### **4. ENVIRONMENTAL HEALTH and FOOD SAFETY**

- Following training of EHPs in Mpumalanga and the Eastern Cape provinces, two food processing factories were inspected by a team comprising district EHPs and IMT members.
  - Specimens were collected and submitted by courier to the NHLS ICSL laboratory.
  - The factories were evaluated for adherence to R962 using a checklist (available at <http://www.nicd.ac.za/index.php/listeriosis/>)
  - Reports will be provided to the District who will take responsibility for follow up actions required by the factories
- A feedback meeting with teams that conducted factory inspections in the provinces was held at the IMT on Friday 25 May to identify areas for strengthening. Improved communication with courier services, and the need for improved specimen collection material were identified. IMT members are addressing these challenges.
- A meeting was held with Food Control, Environmental Health and IMT representatives to consider how to advise District EHPs regarding listeria testing. An advisory is currently being drafted and will be distributed during the week ending 1 June.

#### **5. RECALL PROCESS**

A consolidated report on destruction of recalled product is expected on 31 May 2018. According to current report, destruction is expected to be finalised by end June 2018.

#### **6. TRAINING/CAPACITY BUILDING**

- Team A trained 19 EHPs from all districts in Mpumalanga at an all-day training at the Municipal offices in Nelspruit on 22 May.
- Team B trained x EHPs from the northern districts of the Eastern Cape on 22 May in East London.
- Team B trained x EHPs from the southern districts of the Eastern Cape on 23 May in Port Elizabeth
- All training material including power point presentations, RSA food legislation, checklists used by inspecting teams is available on the NICD website at <http://www.nicd.ac.za/index.php/listeriosis/>

#### **7. FOOD SAFETY LEGISLATION REVIEW**

- The Regulations relating to Hygiene on Food Premises and the Transport of food, published in 2015 for comment were received from the State Law Advisors and will be gazetted shortly .
- The process to make HACCP mandatory in high risk meat processing facilities through an amendment to the Regulations pertaining to the application of the hazard analysis and critical control system (HACCP), (R908 of 2003) will also be gazetted shortly
- The Regulatory Technical expert has assisted with training provincial EHPs.

#### **8. RISK COMMUNICATION, COMMUNITY ENGAGEMENT & SOCIAL MOBILISATION**

- Community engagement activities focusing on Listeria and food safety issues were conducted in the Northern Cape Province on 23-25 May in Kimberley at health facilities, schools and the Thusong centre.
- Media and social media monitoring is done daily. No rumours or misinformation is currently circulating. This week food safety legislation and the economic impact of the outbreak has been the focus of the outbreak.

### **5. Challenges / Gaps**

- EHPs in districts struggling to access Fraser broth that is required for collection of environmental swabs. The NHLS and NDoH are addressing the matter.
- Results from risk assessments have not been received for all processed meat facilities in the country. The IMT is collating those that have been received and will contact provinces and districts directly where these are outstanding.

## 6. Recommendations & priority follow-up actions

- A 3-hour media workshop to update journalists on listeria activities is planned for 30 May 2018, venue to be confirmed. For further enquiries please email Nombulelo Leburu at [NombuL@health.gov.za](mailto:NombuL@health.gov.za).
- Training of EHPs and factory inspections will take place in the Western Cape (City of Cape Town) and Limpopo (Polokwane) provinces this week.
- A schedule of factory inspections will be drawn up this week for Free State and North West provinces.

## 7. Conclusions

Phase 2 of the ERP continues with the following activities conducted by the IMT over the past week: 1) ongoing surveillance and investigation of cases; 2) inspection of two processed meat factories in Port Elizabeth and Nelspruit respectively, including assessment of food safety and collection of environmental samples; 3) training of Mpumalanga and Eastern Cape EHPs and 4) preparations for training and inspections in the Western Cape and Limpopo provinces; 5) Community engagement activities at clinics, Thusong Centre and a school in the Northern Cape; 6) Feedback meeting from training and factory visits in provinces, allowing refinements of logistics and specimen collection; 7) Discussions regarding

**A member of 'Team A' closing a cooler box containing specimens with tamper-proof tape at a processing plant in Mpumalanga, Wednesday 23 May, 2018. The cooler box is then shipped to Infection Control Services laboratory in Johannesburg where specimens are processed for listeria.**

