



Situation Report			
Outbreak name	Listeriosis	Country affected	South Africa
Date & Time of report	4 July 2018	Investigation start date	August 2017
Prepared by	National Listeria Incident Management Team		

A member of our IMT with facility owners and staff following an inspection in KwaZulu-Natal province



A district environmental health practitioner swabbing polony chub casings at a factory in KwaZulu-Natal province



1. Highlights

- 1 056 laboratory confirmed cases have been reported from 01 January 2017 to 29 June 2018.
- The number of reported cases per week has decreased since the implicated products were recalled on 04 March 2018 with a total of 81 cases reported since 05 March 2018. Fewer than 5 cases per week have been reported for the last 5 weeks.
- Incident Management Team members have been despatched to various provinces to support the districts to conduct inspections and take environmental swabs of food processing facilities that manufacture processed meat. At close of business on 3 July 2018, 82 facilities that produce ready-to-eat meat products have been inspected. Reports on factory inspections and results from environmental testing are being collated for submission to Districts and Metros, who will implement responses according to the testing strategy and current legislation/regulations.
- Regulations governing 'General Hygiene Requirements for Food premises, the Transport of Food and Related Matters' were published on the 22 June 2018 in the Government Gazette as Notice R.638 of 22 June 2018.
- A dedicated listeriosis website went live <http://listeriosis.org.za/listeriosis/> on 31 May 2018. Please provide feedback to Nombulelo Leburu Nombul@health.gov.za

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



The Emergency Response Plan developed by the multi-sectoral incident management team (IMT) aims 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.

Phase 2 is nearing completion.

4. Public Health action/response interventions

1. CO-ORDINATION

The IMT met once during the week ending 30 June and once during week ending 6 July to coordinate response activities. Phase 1 of the Emergency Response Plan has been completed, and Phase 2 is nearing completion. Logistics support for factory inspections, including courier of specimens, collection material is ongoing. Reports on factory inspections and results from environmental testing are being collated. Support for risk communication activities, including logistics, arrangement of venues, refreshments for attendees has been provided. Financial and human resource support for all activities is ongoing. Progress on action items in the Listeria Emergency Response plan is being monitored through a tracking tool.

2. SURVEILLANCE

1 056 cases have been reported from 01 January 2017 to 29 June 2018. The number of new cases reported each week has decreased since the implicated products were recalled on 04 March 2018 (Figure 1). Neonates ≤ 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%, 614/1 056), followed by Western Cape (13%, 133/1 056) and KwaZulu-Natal (8%, 82/1 056) provinces (Table 1).

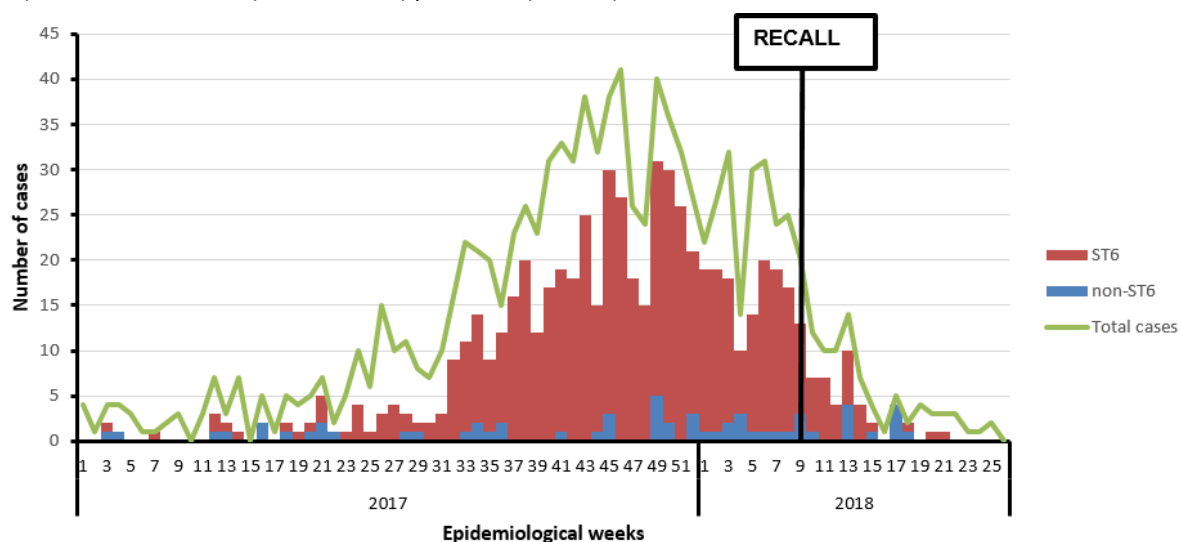


Figure 1: Epidemic curve of laboratory-confirmed listeriosis cases by date of clinical specimen collection (n=1 052) and sequence type (ST) (n=632), South Africa, 01 January 2017 to 29 June 2018 (n=1056)

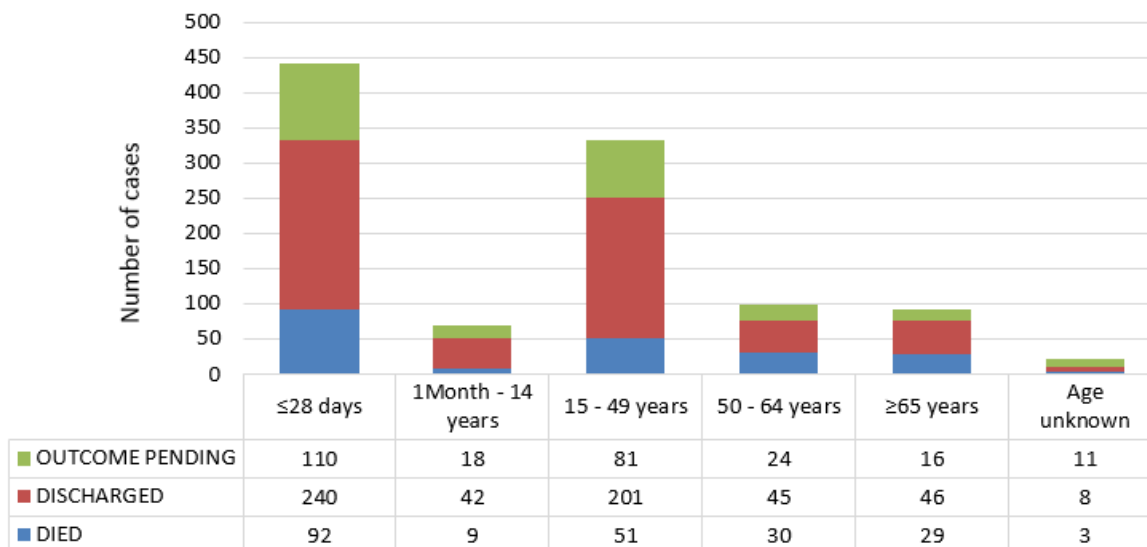


Figure 2: Age distribution and outcome of laboratory-confirmed listeriosis cases, South Africa, 01 January 2017 to 20 June 2018, where outcome is available (n=796/1056) ('Outcome pending' includes patients whose outcome is unknown (e.g. they may still be hospitalized) and those whose medical records could not be found).

Table 1. Number of laboratory-confirmed listeriosis cases and deaths by province, where outcome data is available, South Africa, 01 January 2017 to 29 June 2018 (n=1 056)

Province	Outcome available (as a % of total cases in RSA)	Number of deaths (% of those with outcome available)	# cases (% of total cases)
Gauteng	388 (63.2)	107 (27.6)	614 (58.1)
Western Cape	132 (99.2)	32 (24.2)	133 (12.6)
Kwa-Zulu Natal	76 (92.7)	21 (27.6)	82 (7.8)
Mpumalanga	50 (90.9)	11 (22.0)	55 (5.2)
Eastern Cape	40 (75.5)	113 (32.5)	53 (5.0)
Limpopo	47 (97.9)	11 (23.4)	48 (4.5)
Free State	32 (88.9)	9 (28.1)	36 (3.4)
North West	25 (86.2)	7 (28.0)	29 (2.7)
Northern Cape	6 (100.0)	3 (50.0)	6 (0.6)
Total	796 (75.4)	214 (26.9)	1 056

- 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 possible 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, resulting in ongoing exposure to contaminated food sources.
- 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.
 - Of 81 post-recall cases, 62 have been interviewed to date.
 - Of those interviewed, 37/62 (60%) of ill people or their proxy reported consuming polony prior to their illness onset; brands manufactured by Enterprise Foods were most commonly reported to have been consumed where brand of polony was known

3. LABORATORY

A. NICD:



- All clinical isolates received at NICD are undergoing whole genome sequencing (WGS). A total of 632 clinical isolates have undergone WGS to date (Figure 1); 91% (573/632) belong to the sequence type 6 (ST6) outbreak strain, and the remainder belong to 17 different sequence types.
- Of the 81 cases reported post recall, 49 viable isolates of *Listeria monocytogenes* have been received at the NICD from diagnostic laboratories. WGS has been completed for 42 of these isolates to date; 31 are outbreak strain ST6) and the remainder (n=12) belong to eight other sequence types (ST1, ST2, ST5, ST7, ST1039, ST554, ST808 and a novel ST).
- Case investigation forms have been received for 90% (73/81) post-recall cases
- For the purposes of assessing linkage of *L. 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>). Please contact Dr Anthony Smith (anthony@nicd.ac.za) regarding sequencing queries

B. NHLS Infection Control Services Laboratory:

- Approximately 44 samples were tested for Listeria in environmental swabs & food samples in the past week as part of the factory and municipal inspections conducted
- Presence or absence of *L. monocytogenes* in 25 g of food sample or the environmental swab is currently reported
- According to the agreed strategy, only environmental swabs from facilities that produce ready-to-eat processed meat products are being tested for *L. monocytogenes*. If swabs are positive, district municipalities are requested to submit food from that facility for testing. The testing strategy is available on the NICD website.

4. ENVIRONMENTAL HEALTH and FOOD SAFETY

- A team of 11 IMT members have conducted inspections and submitted environmental samples for Listeria testing. By close of business 3 July, inspections had been done and samples submitted from 82 factories that produce ready-to-eat meat across South Africa.
- Reports of findings and results of environmental swabs are being collated and shared with district municipalities or metros. Positive results are being followed up by districts, with the support of the National Department of Health and the IMT, according to the listeria testing strategy available on the NICD website

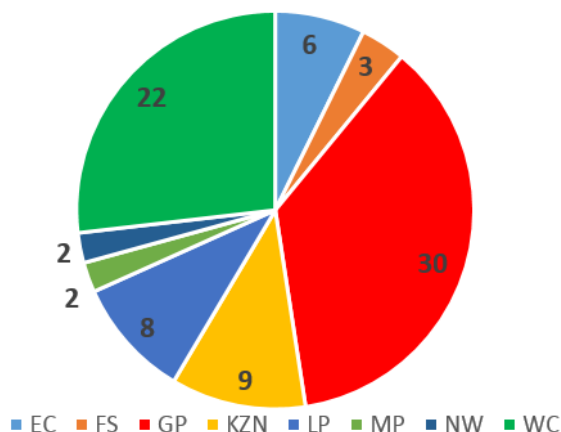


Figure 3. Distribution by province of 83 facilities producing ready-to-eat processed meat and which have been inspected through activities of the Incident Management Team, up until 18 July 2018

5. RECALL PROCESS

As of 8 June 2018 4 038 tons of recalled products have been destroyed by thermal treatment or landfill according to certificates provided by Department of Environmental Affairs officials. This includes products destroyed at exported destinations.



6. TRAINING/CAPACITY BUILDING

No dedicated training events have taken place this week. Ongoing in-service training of district environmental health practitioners is taking place through the factory inspections that have been conducted by IMT members together with districts.

7. FOOD SAFETY LEGISLATION REVIEW

Regulations governing 'General Hygiene Requirements for Food premises, the Transport of Food and Related Matters were published on the 22 June 2018 in the Government Gazette as Notice R.638 of 22 June 2018.

8. RISK COMMUNICATION, COMMUNITY ENGAGEMENT & SOCIAL MOBILISATION

- Approximately 747 persons have received training in risk communication related to food safety (Table 2).
- The 'Media Workshop on Listeria', will take place on 12 July in Johannesburg (venue to be advised), which will aim to equip journalists with a broad understanding of the South African frameworks for foodborne disease outbreak investigation, listeriosis surveillance and diagnosis, food safety and food legislation
- Public service announcements concerning food safety are in preparation for airing on community radio stations.

Table 2. Risk communication workshops that have taken place through the joint WHO/RSA Incident Management Team.

Province	Location	Start date	End date	Approximate number of attendees
Limpopo	Polokwane	31/05/2018	01/06/2018	55
North West	Orkney	29/05/2018	30/05/2018	60
Northern Cape	Kimberley	27/06/2018	27/06/2018	50
Gauteng	Tshwane	26/06/2018	26/06/2018	50
Gauteng	Ekurhuleni	25/06/2018	26/06/2018	50
Gauteng	West Rand	19/06/2018	20/06/2018	60
Gauteng	Sedibeng	17/07/2018	18/07/2018	50
Mpumalanga	Standerton	12/06/2018	12/06/2018	50
Mpumalanga	Nelspruit	11/06/2018	11/06/2018	54
Free State	Bloemfontein	07/06/2018	08/06/2018	43
Gauteng	Johannesburg	04/07/2018	05/07/2018	50
Gauteng	Johannesburg	04/06/2018	05/06/2018	50
Eastern Cape	Port Elizabeth	04/06/2018	05/06/2018	40

5. Challenges / Gaps

Nil to report at the time of writing

6. Recommendations & priority follow-up actions

Inspections of facilities that produce ready-to-eat meat products will be completed during the week ending 13 July. Districts are being supported in following up of findings of factory inspections.

A listeria workshop for the media with the aim of expanding knowledge base of media in relation to general principles of food safety, investigation of food-borne illness outbreaks, and the South African legislative framework is planned for 12 July 2018

7. Conclusions

Phase 2 of the ERP is nearing completion with the following activities conducted by the IMT over the past week: 1) ongoing surveillance and investigation of cases; 2) inspection by a team of 11 IMT EHPs of over 80 facilities that produce ready-to-eat processed meat across South Africa; 3) Publication of 'General Hygiene Requirements for Food premises, the Transport of Food and Related Matters were published on the 22 June 2018 in the Government Gazette as Notice R.638 of 22 June 2018; 4) ongoing community engagement activities