

COVID-19 Outbreaks in Meat Processing Factories in Ireland

Briefing Paper for NPHE

Prepared by the National Outbreak Control Team

3 June 2020

Introduction

Epidemiology

Local outbreak control team updates

Health and Safety Authority Inspections

Department of Agriculture, Food and the Marine

Continuity of Business concerns

COVID-19 outbreaks in similar international settings

Proposed research

Interim recommendations

Appendix 1

Membership of the Outbreak Control Team COVID-19 Outbreaks in Meat Factories in Ireland

Appendix 2

Data from local OCTs

Facility 1

Facility 2

Facility 3

Facility 4

Facility 5

Facility 6

Facility 7

Facility 8

Facility 9

Facility 10

Facility 11

Facility 12

Facility 13

Facility 14

Facility 15

Facility 16

Facility 17

Facility 18

Facility 19

Facility 20

Introduction

1. This report is to complement and update on the previous briefing note from 21 May 2020.
2. Interim guidance in COVID-19 outbreaks in meat factories was issued to all meat processing facilities in Ireland on May 15th 2020.

Epidemiology

Numbers involved

3. As of 1st June 2020, there has been 1,054 notifications of COVID-19 infections associated with outbreaks among workers in meat processing plants in Ireland.
4. 20 facilities in total are involved, with 9 facilities affected in HSE North East, 3 in HSE Midlands, 3 in HSE Midwest, 2 in HSE East, and 1 each in HSE South, HSE South East, HSE West.

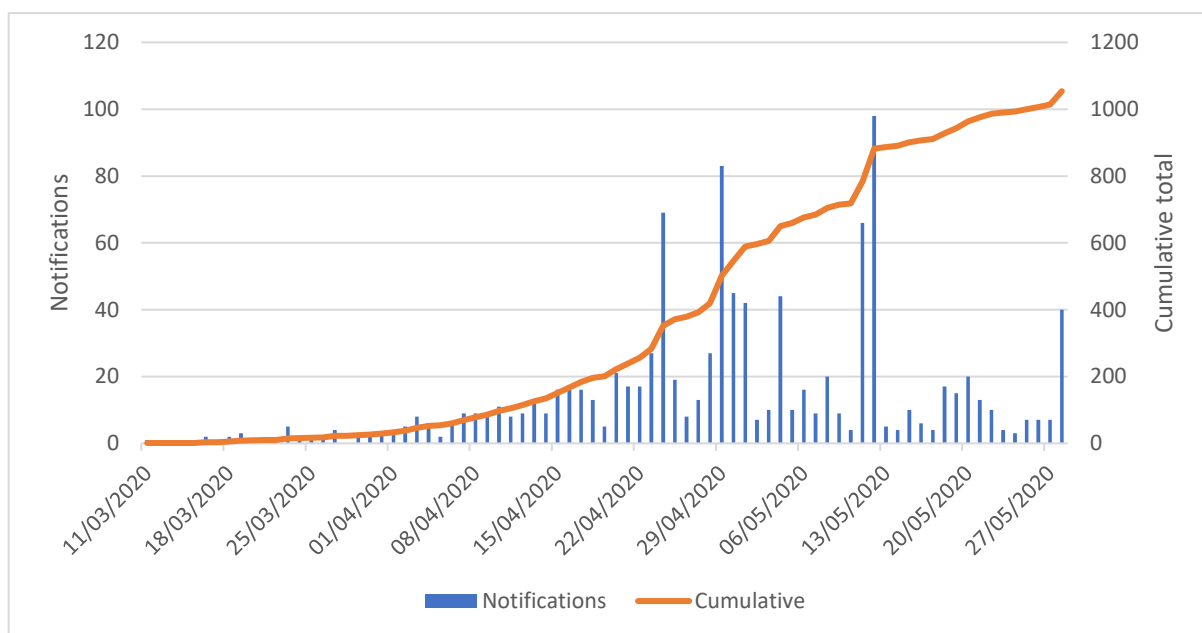
Facility	No. of cases associated with Outbreak
Facility 01	285
Facility 02	141
Facility 03	138
Facility 04	114
Facility 05	107
Facility 06	83
Facility 07	37
Facility 08	37
Facility 09	24
Facility 10	25
Facility 11	0
Facility 12	14
Facility 13	19
Facility 14	7
Facility 15	4
Facility 16	3
Facility 17	0
Facility 18	4
Facility 19	6
Facility 20	6

Investigations are still ongoing in many facilities, with some facilities (such as 11 and 17) not having confirmed cases pending further assessment.

The above figures are subject to ongoing validation.

5. Onset dates range from the 11th of March to the 26th of May (the last epi date recorded is a specimen collection date on 28th May) – Figure 1.

Figure 1



Site of care

- 6. The vast majority of patients have been able to remain in the community during the course of their infection, with only 2.6% (n=27) requiring admission to hospital.
- 7. Of these 27, seven patients required admission to ICU (0.7% of the total number who were ill).

Demographics

- 8. The population affected are primarily younger adults, with 58.8% of cases aged between 25 and 44.
- 9. The majority of cases are male (78.3%).
- 10. Nationality information is unavailable for the majority of cases at present (not specified for 88.5% of cases).

Infectious period

- 11. It is estimated that 88% (n=928) of cases are out of their infectious period (based on an epi date that is 14 or more days ago). 74.4% (n=784) of cases are 21 or more days after their epi date, 61.8% (n=651) of cases are 28 days or more after their epi date. Based on this information, 88% of cases are no longer infectious to others and it is estimated that at least 62% of cases are back at work.

HSE local outbreak control team findings

- 12. Twenty meat processing facilities have been investigated for outbreaks of COVID-19, with 18 facilities having confirmed outbreaks.

13. 15 facilities continue to have an active outbreak. 5 facilities have had their outbreaks declared over. An outbreak is deemed over when 28 days have passed since the last case of COVID within the facility. No facility has had more than one outbreak.
14. One facility has had 21 suspected cases, though none have tested positive. The facility is under continued review.
15. Mass testing has been undertaken in eight facilities to date.
16. Where mass testing was undertaken it was principally due to concerns over ongoing transmission in the factory or concerns over incomplete/inadequate infection control precautions.
17. Repeat mass testing was undertaken in two facilities.
18. Ten facilities have been visited by members of the local OCT. Veterinary Inspectors from the DAFM are on site on a daily basis in the larger facilities. Similarly, local authority veterinary inspectors supervise smaller facilities, as well as a small number of larger facilities. The Health and Safety Authority is now undertaking a programme of inspections in meat processing facilities.
19. Local OCTs have found that the initial investigative stage and risk assessments can be very resource intensive.
20. There are challenges maintaining confidentiality of results following mass testing, while seeking cooperation from facility owners and managers, especially with regard to circumstances requiring prompt action such as identification of large numbers of asymptomatic positive employees, who need to be excluded from work rapidly and their contacts traced.
21. Medical Officers of Health from Public Health Departments requested testing, received and analysed results and informed individuals of their results in a planned way. On occasion employers or managers may have been informed in advance of the individual. This only occurred where it was necessary and desirable for preventing the spread of the infection where timeliness was paramount, in accordance with the infectious disease regulations (and amendments) of 1981 and in compliance with GDPR.
22. Investigations, arrangement of testing and maintenance of confidentiality works better for employees when occupational health support is employed by the meat processing facility, it should be noted at the moment, that this is not available at every site.
23. When infection prevention measures were implemented early, transmission was interrupted in many facilities, leading to better control of the outbreak.
24. Communication difficulties represent a significant threat to outbreak control. This is driven by language barriers. It was also noted that particularly in at least one plant, levels of literacy in some workers' own principal language were low.
25. Inter-Agency team work was effective in enhancing communication, achieving compliance with control measures and putting community supports in place in the Midlands and South. This was a collaborative endeavour by three lead agencies from the regional Inter-agency steering group An Garda Síochána (AGS), the Local Authority (LAs) and the HSE.

26. When undertaking mass testing, a reliable communication system needs to be determined in advance. This should be determined in consultation with staff, HR or managers of the affected facility and ideally should include occupational health.
27. Internal company communication is an important step for infection prevention across different facilities in the same company. Management could implement infection control measures from their other facilities, address car-pooling, overcrowded accommodation etc.
28. Many staff are low wage workers and some may reside in overcrowded accommodation.
29. There are risks for further spread within the community, e.g. spouses or housemates are often similarly vulnerable workers in nursing homes, supermarkets, etc.
30. Many workers do not have adequate access to healthcare, with substantial numbers not having their own GPs.
31. Continued monitoring to ensure adherence to social distancing and PPE usage is of particular importance.
32. Cleaning regimes and SOPs for hygiene measures need to be reviewed and enhanced in the event of an outbreak.
33. Engagement with key lead workers is important to help infection prevention messages be disseminated effectively.
34. Contact tracing was facilitated and expedited by employees filling in a contact tracing log every day in at least one facility. This approach worked well and should be considered for other facilities.
35. The relative contribution of COVID-19 transmission within and outside of the workplace needs to be considered.
36. Consideration is being given to undertaking air sampling in affected facilities as part of the outbreak investigation(s).
37. Public health Departments do not have an investigative arm or staff to inspect premises such as meat factories from an Infection Prevention and Control perspective (IPC). This is a gap in the investigation and control of an infectious disease outbreak in this setting.
38. Where mass testing has been undertaken, it is noted that there are high numbers of asymptomatic cases in these meat processing facilities. Following mass testing in one large facility it is estimated that 50% of positive workers were asymptomatic. Asymptomatic positive workers could be an important factor in meat processing plants.

Health and Safety Authority Inspections

39. The Health and Safety Authority commenced a campaign of inspections of meat processing facilities impacted by COVID-19 on the 20th May. The campaign included an examination of the implemented measures in meat processing facilities in line with the published interim public health guidance for COVID-19 outbreaks in meat plants. The Health and Safety Authority has liaised with the National Outbreak Control Team (NOCT) to prioritise premises for inspection.

During the inspections contact was made with worker representatives as well as the relevant Dept. of Agriculture Food and Marine staff on site.

40. The campaign included a joint inspection involving inspectors from the Authority along with officials from the HSE Dept. of Public Health, Environmental Health and Dept. of Agriculture Food and Marine covering two facilities.
41. Authority inspectors provide verbal updates following inspections to the NOCT and the relevant chairs of the local OCT's in place to address the COVID-19 outbreaks. While Reports of Inspection (ROIs) were issued by Inspectors to facility Duty Holders under the Safety, Health and Welfare at Work Act 2005, they cannot be disclosed to the OCT, however the following items were addressed across the facilities inspected:
 - Ensuring risk assessments/protocols are reviewed and aligned with the Interim Guidance issued and the National Return to Work Protocol.
 - Addressing some inconsistencies with PPE issued.
 - Reviewing of supervision arrangements.
 - The management of contractors on site and associated risk assessments
 - Reviewing of chemical agent risk assessments for disinfection
42. Overall, the inspections to date have shown a good level of adherence and compliance with the public health guidance issued and the National Return to Work Safely protocol and employers inspected to date are generally taking a responsible and proactive approach.
43. All sites have shown a high level of co-operation during inspections, some of which have taken 4-5 hours in duration.
44. As of close of business Monday 1st June, the Authority completed 12 inspections covering facilities in the South, Mid-West and Midlands. Inspections will continue again week commencing June 1st.

Department of Agriculture, Food and the Marine

45. From when meat plants and other related activities were assigned as "essential services", the Department of Agriculture, Food and the Marine (DAFM) has been actively engaged with individual meat plants at regional levels through local veterinary inspectors and regional managers, and centrally through the industry representative organisation (Meat Industry Ireland) in relation to COVID-19 measures.
46. DAFM has also engaged with their own staff through line management structures and via trade union representation in relation to COVID-19 mitigation, health and safety, and other related issues.
47. The interim guidance document issued by the National Outbreak Control team (NOCT) was issued by DAFM to all meat plants (and DAFM staff) on 15th May on behalf of the NOCT and FSAI issued the guidance to all Local Authority County Veterinary Officers.
48. As part of a follow up, DAFM wrote to all meat plants on 19th May, requested each plant to outline in writing to DAFM the actions that the plant has taken to comply with the guidelines.
49. The HSA inspections that have taken place in meat plants and are ongoing since 20th May have given feedback to DAFM Veterinary Inspectors on each occasion.

50. Based on feedback from DAFM staff, submissions received from each meat plant, and feedback received from the HSA, there appears to be a high level of compliance with the guidelines issued by the NOCT on 15th May.
51. DAFM are not currently aware of any plant where their staff have any significant concerns in relation to lack of compliance or inaction on the part of Food Business Operators in respect of compliance with the NOCT guidelines.
52. Following HSA feedback and ongoing discussions, DAFM significantly updated its own guidance to staff in meat plants in respect of PPE, risk assessment, and other related issues on 28th May.

Continuity of Business concerns

53. The NOCT has been drafting further guidance on continuity of business concerns, with consideration of the possibility that temporary plant closure might be required in certain circumstances.
54. The specific matters that the document addresses include:
 - Advice for controlling spread while maintaining production
 - Assessment of control measures of outbreak
 - Considerations about closure of a plant
 - Legislative frameworks and legal considerations
55. This document is being considered by the NOCT and final approval is expected soon.

COVID-19 outbreaks in similar international settings

56. From the CDC's MMWR article (COVID-19 Among Workers in Meat and Poultry Processing Facilities — 19 States, April 2020), US authorities have been concentrating on meat processing plants as being the most likely location for their series of outbreaks.
57. The NOCT wrote to the authors of the MMWR article to seek further knowledge from them. Thus far, they have not responded to the request for discussion.
58. Other EU member states were contacted via EWRS (Early Warning Response System), and the NOCT have opened discussions with Dutch and German colleagues (both these countries are seeing a number of meat plant-associated COVID-19 outbreaks).
59. Both the German and Dutch authorities have tentatively identified accommodation of workers (including migrant workers) as being the likeliest explanation for their outbreaks. Nevertheless, many of these continental plants' workforces live in quite large-scale communal accommodation, which would not be the case in Ireland.
60. The Dutch have been engaging in mass testing of some of their meat plant workers following outbreaks, and they have preliminarily found that a 'significant' proportion are SARS-CoV-2 positive, but not symptomatic.
61. Both authorities have expressed interest in having discussions with the Irish team to share experiences.

62. Following an ECDC meeting in which this type of outbreak was discussed, there is now a plan to organise a teleconference on meat plant COVID-19 outbreaks with interested countries. It is hoped to include a representative from the CDC on the call, a staff member who works in the food systems working group of the CDC.
63. In light of this development, the NOCT will defer to ECDC's coordination of linking the various affected EU member states.

Proposed research

64. The OCT considered whether the direction of flow of infection was from COVID-19 outbreak generated within the meat plants, with subsequent export into the community, or infection and transmission within the community (and among meat plant workers), with cases being concentrated within meat plants and thus coming more readily to attention.
65. A draft protocol has been developed for a prospective cohort study that seeks to answer the research question, "Is the locus of infection in outbreaks of COVID-19 detected amongst meat plant workers, the meat processing plant where such cases work, or the domestic accommodation/other external locations, used by the cases?" The method we are proposing is to swab all work staff in a plant when an outbreak is declared, and to determine if the cases had more epi links externally, or within the meat plant, when compared to non-cases. This protocol will be considered by the NOCT.
66. If draft is agreed, this study can be carried out if a new outbreak requiring mass testing emerges (other than those already known as of June 1st) in a meat processing facility.

Interim recommendations

67. The NOCT advises that meat processing plants should continue to follow the interim guidelines which have issued. Health and Safety Authority will continue with inspections of meat processing facilities. The interim guidelines will be updated as required.
68. If they have not already done so, meat processing plants should consider employing an occupational health service to deal with COVID-19 related issues. Occupational Health can arrange referral for swabbing of symptomatic workers, ensure workers are fit to return to work following illness and where mass screening is required, the occupational health service can provide appropriate governance, including management of patient information.
69. Every effort should be made to encourage workers in meat processing facilities to register with a general practitioner. For those without a GP but who require medical care due to symptoms of COVID-19, all GPs will facilitate this for those who are not normally registered with the practice.
70. Meat processing plants should maintain records on the principal language of their staff members to facilitate the dissemination of information and advice. There should be active and ongoing promotion of the national HSE translated information sheets for cases and contacts. These need to be translated into additional languages. Further infographics might be considered that do not

require knowledge of the English language. The NASC (The migrant and refugee rights centre) videos should be more widely promoted. Social media e.g. Facebook and WhatsApp messages for some of the key worker groups could be utilised. Independent interpreters should be used, where possible.

71. The NOCT recommends that urgent consideration be given to convening a specific group with appropriate expertise (including representation from the communities of workers, sociology, anthropology, translators etc.) to conduct a rapid review and research as required, of social factors in relation to these workers. The group would review patterns of living and socialising, living conditions, ability to access/understanding of benefits if unable to work, barriers and facilitators to registering with a general practitioner, knowledge, health beliefs and understanding of COVID-19. It is anticipated that this would be an overarching group covering workers in different settings, such as workers in meat processing plants, workers in mushroom plants, and some healthcare assistants in nursing homes etc.
72. There is also need for further research into the specific conditions in meat processing facilities to identify if any specific conditions contribute to outbreaks e.g. temperatures, aerosolisation and humidity, fomites, or if cleaning regimes need to be altered.
73. As per legal advice obtained, the NOCT recommends that the Minister for Health enacts regulations to allow for the closure of premises as per Section 31A of the Health Act of 1947 (inserted under the Health (Preservation and Protection and other Emergency Measures in the Public Interest) Act of 2020).

Appendix 1

Membership of the Outbreak Control Team COVID-19 Outbreaks in Meat Factories in Ireland

Governance:

- Dr Lorraine Doherty, National Clinical Director Health Protection

Chair:

- Dr Mai Mannix - Director of Public Health, HSE MidWest

Health and Safety Authority:

- Darren Arkins – Senior Inspector & Occupational Hygiene Unit Manager, Health and Safety Authority

Department of Agriculture, Food and the Marine:

- Martin Blake – Chief Veterinary Officer – Department of Agriculture, Food and the Marine
- Michael Sheahan – Deputy Chief Veterinary Officer – Department of Agriculture, Food and the Marine

Occupational Health:

- Dr Deirdre Gleeson – Specialist in Occupational Health – Medwise

Food safety:

- Raymond Ellard – Director – Risk Management & Regulatory Affairs, Food Safety Authority of Ireland
- John Matthews – Chief Specialist Veterinary Public Health, Food Safety Authority of Ireland

Environmental Health, HSE:

- Catherine Cosgrove – Regional Chief Environmental Health Officer, National Lead Food Control – HSE

Public Health HSE:

- Dr Kevin Kelleher – Assistant National Director – Public Health and Child Health – HSE
- Dr Marie Casey – Consultant in Public Health Medicine – HSE Mid-West
- Dr Ann Marie Connolly – Consultant in Public Health Medicine - HSE West
- Michelle Connolly – Health Protection Nurse Manager, Public Health - HSE
- Dr Una Fallon – Director of Public Health, HSE Midlands
- Dr Desmond Hickey – Acting Specialist in Public Health Medicine, HSE East
- Dr Ina Kelly – Consultant in Public Health Medicine – HSE Midlands
- Dr Carmel Mullaney – Director of Public Health, HSE South East
- Dr Margaret O'Sullivan – Consultant in Public Health Medicine – HSE South
- Dr Keith Ian Quintyne – Consultant in Public Health Medicine – HSE North East
- Dr Aidan Ryan – Consultant in Public Health Medicine – HSE North West

Health Protection Surveillance Centre, HSE:

- Dr Paul Mc Keown – Consultant in Public Health Medicine – HSE HPSC
- Dr Mark O'Loughlin – SpR Public Health Medicine – HPSC
- Annamaria Ferenczi – Surveillance Scientist / EPIET Fellow – HPSC

Communications:

- Maurice Kelly, Client Director – Quality Improvement, Health Protection, Emergency Management, Communications Division, HSE

Advisory:

- Dr Ronan O'Neill – Head of Virology, Backweston Campus, Department of Agriculture, Food and the Marine
- Prof. Patrick Wall – Professor of Public Health – UCD

Appendix 2

Data from local OCTs

Facility 1

Date of first case:		19/04/2020
Date of last case:		Ongoing
Total number of positives (staff):	212 confirmed + 2 presumptive. (Total=214)	
Total number of positives (linked in community):	Secondary: 68	
	Tertiary: 4	
Number of suspect cases:	2	
Mass testing undertaken:	Yes	
Mass testing undertaken more than once:	Yes	
Is the outbreak is closed?	No	

Facility 2

Date of first case:		20/04/2020
Date of last case:		18/05/2020
Total number of positives (staff):	144	
Total number of positives (linked in community):	Secondary: approx. 50	
	Tertiary: Unknown	
Number of suspect cases:	0 (All tested)	
Mass testing undertaken:	Yes	
Mass testing undertaken more than once:	No	
Is the outbreak is closed?	No	

Facility 3

Date of first case:	21/03/2020
Date of last case:	28/05/2020
Total number of positives (staff):	142
Total number of positives (linked in community):	Secondary: 14
	Tertiary: Unknown
Number of suspect cases:	Unknown
Mass testing undertaken:	Yes
Mass testing undertaken more than once:	Yes
Is the outbreak is closed?	No

Facility 4

Date of first case:	30/04/2020
Date of last case:	22/05/2020
Total number of positives (staff):	113
Total number of positives (linked in community):	Secondary: Unknown
	Tertiary: Unknown
Number of suspect cases:	1
Mass testing undertaken:	Yes
Mass testing undertaken more than once:	No
Is the outbreak is closed?	No

Facility 5

Date of first case:	04/04/2020
Date of last case:	22/05/2020
Total number of positives (staff):	106
Total number of positives (linked in community):	Secondary: 1
	Tertiary: -
Number of suspect cases:	15
Mass testing undertaken:	Yes
Mass testing undertaken more than once:	No
Is the outbreak is closed?	No

Facility 6

Date of first case:	23/04/2020
Date of last case:	04/05/2020
Total number of positives (staff):	106
Total number of positives (linked in community):	Secondary: Approx. 50
	Tertiary: Unknown
Number of suspect cases:	31
Mass testing undertaken:	Yes
Mass testing undertaken more than once:	No
Is the outbreak is closed?	No

Facility 7

Date of first case:	03/04/2020
Date of last case:	01/05/2020
Total number of positives (staff):	40
Total number of positives (linked in community):	Secondary:
	Tertiary:
Number of suspect cases:	0
Mass testing undertaken:	No
Mass testing undertaken more than once:	No
Is the outbreak is closed?	Yes

Facility 8

Date of first case:	16/04/2020
Date of last case:	06/05/2020
Total number of positives (staff):	45
Total number of positives (linked in community):	Secondary:
	Tertiary:
Number of suspect cases:	0
Mass testing undertaken:	Yes
Mass testing undertaken more than once:	No
Is the outbreak is closed?	No

Facility 9

Date of first case:	23/03/2020
Date of last case:	02/05/2020
Total number of positives (staff):	24
Total number of positives (linked in community):	Secondary: 10
	Tertiary: Unknown
Number of suspect cases:	Unknown
Mass testing undertaken:	No
Mass testing undertaken more than once:	No
Is the outbreak is closed?	Yes

Facility 10

Date of first case:	26/04/2020
Date of last case:	18/05/2020
Total number of positives (staff):	26
Total number of positives (linked in community):	Secondary:
	Tertiary:
Number of suspect cases:	0
Mass testing undertaken:	No
Mass testing undertaken more than once:	No
Is the outbreak is closed?	No

Facility 11

This facility is presently under review following a number of suspect cases which subsequently tested negative.

Facility 12

Date of first case:		27/04/2020
Date of last case:		08/05/2020
Total number of positives (staff):	14	
Total number of positives (linked in community):	Secondary:	
	Tertiary:	
Number of suspect cases:	7	
Mass testing undertaken:	Yes	
Mass testing undertaken more than once:	No	
Is the outbreak is closed?	No	

Facility 13

Date of first case:		27/04/2020
Date of last case:		28/05/2020
Total number of positives (staff):	19	
Total number of positives (linked in community):	Secondary:	
	Tertiary:	
Number of suspect cases:	2	
Mass testing undertaken:	No	
Mass testing undertaken more than once:	No	
Is the outbreak is closed?	No	

Facility 14

Date of first case:	02/04/2020
Date of last case:	07/05/2020
Total number of positives (staff):	7
Total number of positives (linked in community):	Secondary: 3
	Tertiary:
Number of suspect cases:	67
Mass testing undertaken:	No
Mass testing undertaken more than once:	No
Is the outbreak is closed?	No

Facility 15

Date of first case:	16/04/2020
Date of last case:	22/04/2020
Total number of positives (staff):	4
Total number of positives (linked in community):	Secondary: 2
	Tertiary: Unknown
Number of suspect cases:	9
Mass testing undertaken:	No
Mass testing undertaken more than once:	No
Is the outbreak is closed?	Yes

Facility 16

Date of first case:		24/04/2020
Date of last case:		28/04/2020
Total number of positives (staff):	3	
Total number of positives (linked in community):	Secondary:	
	Tertiary:	
Number of suspect cases:	0	
Mass testing undertaken:	No	
Mass testing undertaken more than once:	No	
Is the outbreak is closed?	Yes	

Facility 17

This facility is presently under review following a number of suspect cases which subsequently tested negative.

Facility 18

Date of first case:		29/03/2020
Date of last case:		26/04/2020
Total number of positives (staff):	4	
Total number of positives (linked in community):	Secondary:	
	Tertiary:	
Number of suspect cases:	0	
Mass testing undertaken:	No	
Mass testing undertaken more than once:	No	
Is the outbreak is closed?	No	

Facility 19

Date of first case:	13/04/2020
Date of last case:	27/05/2020
Total number of positives (staff):	9
Total number of positives (linked in community):	Secondary:
	Tertiary:
Number of suspect cases:	2
Mass testing undertaken:	No
Mass testing undertaken more than once:	No
Is the outbreak is closed?	No

Facility 20

Date of first case:	11/03/2020
Date of last case:	16/03/2020
Total number of positives (staff):	6
Total number of positives (linked in community):	Secondary:
	Tertiary:
Number of suspect cases:	Not available
Mass testing undertaken:	No
Mass testing undertaken more than once:	No
Is the outbreak is closed?	Yes