**CHRONOLOGY OF EVENTS: 2020-60 *Salmonella* Newport in QC, ON, AB, and BC**

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| **OMD Team** |
| ***List team members and role*** |

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| **Acronyms**  |
| CFIA | Canadian Food Inspection Agency |
| CLSN | Canadian Laboratory Surveillance Network |
| CNPHI | Canadian Network for Public Health Intelligence |
| HC | Health Canada |
| HRA | Health Risk Assessment |
| NESP | National Enteric Surveillance Program |
| OICC | Outbreak Investigation Coordinating Committee |
| P/T | Provincial/Territorial |
| PHA | Public Health Alert  |
| PHAC | Public Health Agency of Canada |
| PHAC-COMMS | Strategic Communications |
| PHAC-NML | National Microbiology Laboratory  |
| PHAC-OMD | Outbreak Management Division |
| PHO | Public Health Ontario |
| PNC | Pulse Net Canada |
| USA | United States of America |
| US-CDC | Centers for Disease Control and Prevention, USA |
| WGS | Whole Genome Sequencing  |

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| **Day 1: Friday, May 8, 2020**  |
| 11:00 | * National Enteric Surveillance Program (NESP) reports that *Salmonella* Newport is above expected levels in Ontario for the week of April 26 to May 2, 2020.
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| **Day 2: Saturday, May 9, 2020** |
| **Day 3: Sunday, May 10, 2020** |
| **Day 4: Monday, May 11, 2020** |
| **Day 5: Tuesday, May 12, 2020** |
| **Day 6: Wednesday, May 13, 2020 (ON=5 as of 23:59 EDT) Total cases: 5** |
| 13:15 | * Ontario reports that the provincial public health laboratory conducted whole genome sequencing (WGS) on the case isolates and found that five cases matched by WGS. The provincial public health laboratory has shared sequence information with PulseNet Canada to check for matches in other provinces or territories.
* Ontario notes they requested case questionnaire data from the local health authorities with cases to determine if there are any common exposures. From looking at the exposure information currently available, they note that spinach, chicken, and eggs are commonly reported exposures. In addition, two of the cases reported purchasing chicken thighs from the same local butcher shop. A local health authority followed up with the butcher shop and learned that they only receive chicken from a provincially registered slaughter plant. This slaughter plant does not distribute chicken outside of Ontario.
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| **Day 7: Thursday, May 14, 2020 (ON=5 as of 23:59 EDT) Total cases: 5** |
| 15:00 | * PulseNet Canada’s weekly WGS cluster reports are posted to CLSN. The *Salmonella* report includes a new single jurisdictional cluster of five *Salmonella* Newport isolates from Ontario that are related by WGS (2005NEWWGS-1ON). PulseNet Canada did not identify any additional matches outside of Ontario.
* PHAC-OMD is monitoring this cluster to see if any new isolates from another province or territory are added to this cluster in the coming weeks.
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| **Day 8: Friday, May 15, 2020 (ON=5 as of 23:59 EDT) Total cases: 5** |
| 11:00 | * NESP reports that *Salmonella* Newport is above expected levels nationally, as well as in Ontario, Alberta and British Columbia for the week of May 3 to May 9, 2020.
* WGS is pending to determine if any new cases match the Ontario cluster (2005NEWWGS-1ON) or if there are any new clusters of *Salmonella* Newport.
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| **Day 9: Saturday, May 16, 2020 (ON=5 as of 23:59 EDT) Total cases: 5** |
| **Day 10: Sunday, May 17, 2020 (ON=5 as of 23:59 EDT) Total cases: 5** |
| **Day 11: Monday, May 18, 2020 (ON=5 as of 23:59 EDT) Total cases: 5** |
| **Day 12: Tuesday, May 19, 2020 (ON=5 as of 23:59 EDT) Total cases: 5** |
| **Day 13: Wednesday, May 20, 2020 (ON=5 as of 23:59 EDT) Total cases: 5** |
| **Day 14: Thursday, May 21, 2020 (ON=6, AB=1, BC=2 as of 23:59 EDT) Total cases: 9** |
| 15:0016:00 | * PulseNet Canada’s weekly WGS cluster reports are posted to CLSN. The *Salmonella* report includes a new multi-jurisdictional cluster of nine *Salmonella* Newport cases that are related by WGS (2005NEWWGS-1ON-1MP). This cluster was previously single jurisdictional (2005NEWWGS-1ON).
* PHAC-OMD requests exposure information for the ON, AB and BC cases.
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| **Day 15: Friday, May 22, 2020 (ON=6, AB=1, BC=2 as of 23:59 EDT) Total cases: 9** |
| 09:0015:0016:15 | * Provinces share initial case exposure information with PHAC-OMD throughout the day. PHAC-OMD enters the exposure information into a line list. PHAC-OMD also develops a case definition in collaboration with investigative partners.
* PHAC-OMD schedules an OICC assessment call for Monday, May 25.
* PHAC-OMD emails an epidemiological summary to investigative partners prior to Monday’s OICC assessment call.
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| **Day 16: Saturday, May 23, 2020 (ON=6, AB=1, BC=2 as of 23:59 EDT) Total cases: 9** |
| **Day 17: Sunday, May 24, 2020 (ON=6, AB=1, BC=2 as of 23:59 EDT) Total cases: 9** |
| **Day 18: Monday, May 25, 2020 (ON=6, AB=1, BC=2 as of 23:59 EDT) Total cases: 9** |
| 13:0018:00 | * An OICC assessment call is held with ON, AB, BC, CFIA, HC, and PHAC (OMD and NML)
	+ Provinces report on initial case exposure information.
	+ Spinach, berries, nuts and seeds are commonly reported among cases.
	+ CFIA agree to look into baby spinach due to multiple cases reporting that they ate baby spinach. There is limited information available at this time to conduct traceback on the other common food exposures.
	+ All partners agree to activate a national OICC for this investigation.
	+ PHAC-OMD will be re-interviewing cases.
	+ Next OICC call scheduled for Monday, June 1 at 13:00.
* PHAC-OMD posts a PHA on CNPHI for the purposes of case finding and to notify public health partners of the investigation and that a national OICC has been activated.
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| **Day 19: Tuesday, May 26, 2020 (ON=6, AB=1, BC=2 as of 23:59 EDT) Total cases: 9** |
| 09:0010:0011:3011:45 | * PHAC-OMD reviews the literature and Outbreak Summaries data for sources of past *Salmonella* outbreaks.
* PHAC-OMD attends a meeting with PNC to examine WGS trees for any historic clusters within 10 alleles, as well as any isolates/clusters within 25 alleles, of the current cluster. PNC notes that the current cluster of cases is within 25 alleles of a historic cluster of four Ontario cases in 2019 (1908NEWWGS-1ON). They also confirm that this cluster is not within 25 alleles of any non-clinical isolates (e.g., food isolates).
* PHAC-OMD emails Ontario to ask if a source was identified for cluster 1908NEWWGS-1ON.
* Ontario informs PHAC-OMD that a source was never confirmed for cluster 1908NEWWGS-1ON, although some type of nut or seed product was suspected.
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| **Day 20: Wednesday, May 27, 2020 (ON=6, AB=1, BC=2 as of 23:59 EDT) Total cases: 9** |
| 9:0010:00 | * PHAC-OMD attends weekly call with the United States Centers for Disease Control and Prevention (CDC).
	+ CDC notes they are seeing an increase in *Salmonella* Newport cases in two states.
* PHAC-OMD sends a request to PulseNet Canada to check if any of the US cases match the Canadian cluster.
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| **Day 21: Thursday, May 28, 2020 (QC=1, ON=7, AB=3, BC=3 as of 23:59 EDT) Total cases:14** |
| 15:0016:00 | * PNC’s weekly WGS cluster reports are posted to CLSN. There are five new cases added to cluster 2005NEWWGS-1ON-MP.
* Information sharing call held.
	+ PHAC-OMD will re-interview cases using a standardized *Salmonella* hypothesis-generating questionnaire.
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| **Day 22: Friday, May 29, 2020 (QC=1, ON=7, AB=3, BC=3 as of 23:59 EDT) Total cases: 14** |
| 16:00 | * PHAC-OMD completes re-interviews for seven cases with the *Salmonella* hypothesis-generating questionnaire. PHAC-OMD enters questionnaire data into a database and completes a food frequency analysis. Based on analysis of the data, spinach, blueberries, almonds, walnuts, sesame seeds, as well as flax and chia seeds are foods items of interest for further investigation.
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| **Day 23: Saturday, May 30, 2020 (QC=1, ON=7, AB=3, BC=3 as of 23:59 EDT) Total cases: 14** |
| **Day 24: Sunday, May 31, 2020 (QC=1, ON=7, AB=3, BC=3 as of 23:59 EDT) Total cases: 14** |
| **Day 25: Monday, June 1, 2020 (QC=1, ON=7, AB=3, BC=3 as of 23:59 EDT) Total cases: 14** |
| 11:1513:0015:00 | * PHAC-OMD emails an epidemiological summary to investigative partners prior to the OICC assessment call.
* OICC call #2 is held with QC, ON, AB, BC, CFIA, HC, and PHAC (OMD and NML)
	+ Provinces report on case exposure information for new cases.
	+ NML notes that they checked for any US matches to this *Salmonella* Newport cluster and that they found no matches. The Canadian cases are not genetically related to the cases in the US by WGS.
	+ CFIA has conducted traceback of the spinach and based on product distribution, it is unlikely that spinach is the source of the outbreak. CFIA would like to initiate traceback on more products including the nuts and seeds; however, more product details would be required.
	+ PHAC-OMD will use a focused questionnaire to re-interview cases to gather more information on nuts, seeds, and blueberries.
* PHAC-OMD drafts the focused questionnaire and circulates it to provincial epidemiologists for review.
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| **Day 26: Tuesday, June 2, 2020 (QC=1, ON=7, AB=3, BC=3 as of 23:59 EDT) Total cases: 14** |
| 9:00 | * PHAC-OMD re-interviews cases with focused questionnaire throughout the day.
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| **Day 27: Wednesday, June 3, 2020 (QC=1, ON=7, AB=3, BC=3 as of 23:59 EDT) Total cases: 14** |
| 9:00 | * PHAC-OMD re-interviews cases with focused questionnaire throughout the day.
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| **Day 28: Thursday, June 4, 2020 (QC=1, ON=7, AB=3, BC=5 as of 23:59 EDT) Total cases: 16** |
| 15:0018:00 | * OICC call #3 is held with QC, ON, AB, BC, CFIA, HC, and PHAC (OMD and NML)
	+ PulseNet Canada’s weekly WGS cluster reports are posted to CLSN. There are two new cases added to cluster 2005NEWWGS-1ON-MP.
	+ PHAC-OMD was able to re-interview six cases with the focused questionnaire.
	+ Based on case re-interviews, PHAC-OMD notes that all six cases reported eating chia seeds. Two brands were identified by cases: “Smile” brand and “Nature’s Planet”.
	+ CFIA plans to conduct traceback on these products.
* Loyalty card information is obtained for four cases. Based on the purchase records, all four cases purchased “Smile” brand chia seeds.
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| **Day 29: Friday, June 5, 2020 (QC=1, ON=7, AB=3, BC=5 as of 23:59 EDT) Total cases: 16** |
| 14:0016:0016:30 | * OICC call #4 is held with QC, ON, AB, BC, CFIA, HC, and PHAC (OMD and NML).
	+ PHAC-OMD notes that purchase records were obtained for four cases. All four cases had purchased “Smile” brand chia seeds.
	+ Two chia seed samples have been collected for laboratory testing from cases’ homes: one “Smile” brand and one “Nature Planet’s” brand.
	+ CFIA has been conducting a detailed traceback investigation. They have determined that the chia seeds from the two different brands are packaged at the same facility in Ontario. Inspection of the facility has begun. CFIA has taken environmental samples at the facility, as well as product samples.
	+ Members of the OICC agree that it is time to consider recalling these products.
* PHAC-OMD completes an epidemiological assessment.
* CFIA requests an HRA.
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| **Day 30: Saturday, June 6, 2020 (QC=1, ON=7, AB=3, BC=5 as of 23:59 EDT) Total cases: 16** |
| 9:0010:00 | * Health Canada completes the HRA.
* CFIA recalls two brands of chia seeds: “Smile” brand (two lot codes) and “Nature’s Planet” brand (one lot code). Public Health Notice is posted at the same time as the recall notice.
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| **Day 31: Sunday, June 7, 2020 (QC=1, ON=7, AB=3, BC=5 as of 23:59 EDT) Total cases: 16** |
| **Day 32: Monday, June 8, 2020 (QC=1, ON=7, AB=3, BC=5 as of 23:59 EDT) Total cases: 16** |
| **Day 33: Tuesday, June 9, 2020 (QC=1, ON=7, AB=3, BC=5 as of 23:59 EDT) Total cases: 16** |
| **Day 34: Wednesday, June 10, 2020 (QC=1, ON=7, AB=3, BC=5 as of 23:59 EDT) Total cases: 16** |
| **Day 35: Thursday, June 11, 2020 (QC=2, ON=7, AB=3, BC=6 as of 23:59 EDT) Total cases: 18** |
| 13:00 | * OICC call #4 is held with QC, ON, AB, BC, CFIA, HC, and PHAC (OMD and NML).
	+ PNC’s weekly WGS cluster reports are posted to CLSN. There are two new cases added to cluster 2005NEWWGS-1ON-MP.
	+ Both Quebec and British Columbia report that their new case had an illness onset date prior to the recall date. Both cases reported eating chia seeds. One case was able to recall brand information and reported eating “Smile” brand chia seeds.
	+ PHAC-OMD to re-interview new British Columbia case with focused questionnaire. Quebec notes their case asked not to be contacted again.
	+ CFIA reports that they are completing effectiveness checks for the recalled products.
	+ The chia seed samples from two cases’ homes tested positive for *Salmonella*. Whole genome sequencing results are pending. CFIA is currently testing product from the implicated lots, as well as previous and subsequent lots of both products.
	+ NESP reports that numbers are within expected levels for *Salmonella* Newport across all provinces and territories for the week of May 31 to June 6.
	+ Partners agree that it is time to decide on a date when the outbreak can be declared over and take the necessary steps to close the investigation.
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| **Day 36: Friday, June 12, 2020 (QC=2, ON=7, AB=3, BC=6 as of 23:59 EDT) Total cases: 18** |
| 14:0015:00 | * CFIA reports that four samples from the recalled lots (unopened product) tested positive for *Salmonella*. None of the samples from the previous and subsequent lots of chia seeds or from the environmental samples at the facility tested positive for *Salmonella*.
* PHAC-OMD re-interviews the newest British Columbia case using the focused questionnaire and determines that the case consumed one of the recalled lots of “Smile” brand chia seeds.
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| **Day 37: Saturday, June 13, 2020 (QC=2, ON=7, AB=3, BC=6 as of 23:59 EDT) Total cases: 18** |
| **Day 38: Sunday, June 14, 2020 (QC=2, ON=7, AB=3, BC=6 as of 23:59 EDT) Total cases: 18** |
| **Day 39: Monday, June 15, 2020 (QC=2, ON=7, AB=3, BC=6 as of 23:59 EDT) Total cases: 18** |
| **Day 40: Tuesday, June 16, 2020 (QC=2, ON=7, AB=3, BC=6 as of 23:59 EDT) Total cases: 18** |
| **Day 41: Wednesday, June 17, 2020 (QC=2, ON=7, AB=3, BC=6 as of 23:59 EDT) Total cases: 18** |
| **Day 42: Thursday, June 18, 2020 (QC=2, ON=7, AB=3, BC=6 as of 23:59 EDT) Total cases: 18** |
| 13:00 | * PNC reports that the chia seed samples from the two cases’ homes are determined by WGS to be genetically related to the outbreak strain.
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| **Day 43: Friday, June 19, 2020 (QC=2, ON=7, AB=3, BC=6 as of 23:59 EDT) Total cases: 18** |
| 16:00 | * PNC reports that the four samples from the recalled lots (unopened product) are found to be genetically related by WGS to the outbreak strain.
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| **Day 44: Saturday, June 20, 2020 (QC=2, ON=7, AB=3, BC=6 as of 23:59 EDT) Total cases: 18** |
| **Day 45: Sunday, June 21, 2020 (QC=2, ON=7, AB=3, BC=6 as of 23:59 EDT) Total cases: 18** |
| **Day 46: Monday, June 22, 2020 (QC=2, ON=7, AB=3, BC=6 as of 23:59 EDT) Total cases: 18** |
| **Day 47: Tuesday, June 23, 2020 (QC=2, ON=7, AB=3, BC=6 as of 23:59 EDT) Total cases: 18** |
| **Day 48: Wednesday, June 24, 2020 (QC=2, ON=7, AB=3, BC=6 as of 23:59 EDT) Total cases: 18** |
| **Day 49: Thursday, June 25, 2020 (QC=2, ON=7, AB=3, BC=6 as of 23:59 EDT) Total cases: 18** |
| **Day 50: Friday, June 26, 2020 (QC=2, ON=7, AB=3, BC=6 as of 23:59 EDT) Total cases: 18** |
| **Day 51: Saturday, June 27, 2020 (QC=2, ON=7, AB=3, BC=6 as of 23:59 EDT) Total cases: 18** |
| **Day 52: Sunday, June 28, 2020 (QC=2, ON=7, AB=3, BC=6 as of 23:59 EDT) Total cases: 18** |
| **Day 53: Monday, June 29, 2020 (QC=2, ON=7, AB=3, BC=6 as of 23:59 EDT) Total cases: 18** |
| **Day 54: Tuesday, June 30, 2020 (QC=2, ON=7, AB=3, BC=6 as of 23:59 EDT) Total cases: 18** |
| **Day 55: Wednesday, July 1, 2020 (QC=2, ON=7, AB=3, BC=6 as of 23:59 EDT) Total cases: 18** |
| **Day 56: Thursday, July 2, 2020 (QC=2, ON=7, AB=3, BC=6 as of 23:59 EDT) Total cases: 18** |
| **Day 57: Friday, July 3, 2020 (QC=2, ON=7, AB=3, BC=6 as of 23:59 EDT) Total cases: 18** |
| **Day 58: Saturday, July 4, 2020 (QC=2, ON=7, AB=3, BC=6 as of 23:59 EDT) Total cases: 18** |
| **Day 59: Sunday, July 5, 2020 (QC=2, ON=7, AB=3, BC=6 as of 23:59 EDT) Total cases: 18** |
| **Day 60: Monday, July 6, 2020 (QC=2, ON=7, AB=3, BC=6 as of 23:59 EDT) Total cases: 18** |
| **Day 61: Tuesday, July 7, 2020 (QC=2, ON=7, AB=3, BC=6 as of 23:59 EDT) Total cases: 18** |
| 23:59 | * Outbreak is declared over and OICC is deactivated.
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