**Ontario Legionellosis Investigation Tool**

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|  **Legend**  | **♦ iPHIS System-Mandatory ❖ Required Personal Health Information**  |

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| **1. Investigation Summary:** |
| **♦ Disease: LEGIONELLOSIS**Case investigation status: [ ]  Completed: [ ]  Pending (specify): \_\_\_\_\_\_\_Completed Date: YYYY-MM-DD **♦ Case investigator**:**\* Name:** Enter office Tel:  **###-###-####**  Email: **Enter email address \_ \_****♦** Reported date: YYYY-MM-DD  **♦** Diagnosing Health Unit:  Enter health unit **♦ Is this case**:1. Linked to a **declared** outbreak (OB)?

[ ]  Yes[[1]](#endnote-2) *OB #* : ####-####-### [ ]  No1. Linked to a cluster investigation? [[2]](#footnote-2)

[ ]  Yes,investigation #: ####-####-### [ ]  A sporadic community case: link to OB # 0000-2005- 024 in iPHIS  |  **♦** Case/Client Name:  **Enter name \_** Alias:  **Enter alias \_ \_** **♦** Gender:  **Enter gender**  **♦** Age:  **Enter age ♦** DOB:YYYY-MM-DD. **♦** Address:  **Enter address \_**  Tel. 1:  **###-###-####** 0Type: [ ]  Home [ ]  Mobile [ ]  Work [ ]  Other, *specify*: Tel. 2:  **###-###-####** Type: [ ]  Home [ ]  Mobile [ ]  Work [ ]  Other, *specify*: Email: **Enter email address \_ \_****♦** Language:  **Specify \_ \_**Translation required*?* [ ]  Yes [ ]  No**Proxy respondent** Name:  **Enter name \_ \_**[ ]  Parent/Guardian [ ]  Spouse/Partner [ ]  Other  **Specify \_ \_****♦** Physician’s Name: **Enter name \_ \_****♦** Role**:** [ ]  Attending Physician [ ]  Family Physician [ ]  Specialist [ ]  Walk-In Physician [ ]  Other [ ]  Unknown |

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| **♦ Responsible Health Unit** | **Date** | **♦ Investigator’s Name** | **Designation** |
| Specify | **❖**Investigation Start DateYYYY-MM-DD | Specify | [ ]  PHI [ ]  PHN [ ]  Other \_\_\_\_\_\_\_  |
| Specify | Assignment DateYYYY-MM-DD | Specify | [ ]  PHI [ ]  PHN [ ]  Other \_\_\_\_\_\_\_  |

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| **♦ Disposition** | [ ]  Complete [ ]  Closed- Duplicate-Do Not Use [ ]  Entered In Error [ ]  Lost to Follow Up [ ]  Does Not Meet Definition [ ]  Untraceable [ ]  Closed- Unable to interview (specify)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  | **♦ Disposition Date**  | YYYY-MM-DD. |
| **♦ Status** | [ ]  Closed (completed or incompleted  | Initial here |  **Status Date** | YYYY-MM-DD. |

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| **Verification of Client’s Identity & Notice of Collection** |
| Client’s identity verified? [ ]  Yes, *specify*: [ ]  DOB [ ]  Postal Code [ ]  Physician  [ ]  No  |
| **Notice of Collection***Please consult with local privacy and legal counsel about PHU-specific Notice of Collection requirements under* *PHIPA s. 16. Insert Notice of Collection, as necessary.* |

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| **2. Clinical Laboratory Testing:** |
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| **Test** | **Date collected** | **Specimem type** | **Results** |
| [ ]  *Legionella* Urine Antigen[[3]](#footnote-3)  | YYYY-MM-DD  | [ ]  Urine | [ ]  Presumptive NEGATIVE for *L*. *pneumophilia* serogroup 1 antigen[ ]  Presumptive POSITIVE for *L*. *pneumophila* serogroup 1 antigen  |
| [ ]  *Legionella* PCR | YYYY-MM-DD  | [ ]  Lower respiratory secretions (e.g., sputum, BAL)[ ]  Other, specify:\_\_\_\_\_\_\_\_\_ | [ ]  Not detected[ ]  Detected[ ]  Indeterminate[ ]  Invalid |
| [ ]  *Legionella* Culture[[4]](#footnote-4) | YYYY-MM-DD  | [ ]  Lower respiratory secretions (e.g., sputum, BAL)[ ]  Other, specify:\_\_\_\_\_\_\_\_\_ | [ ]  Not detected[ ]  Detected[ ]  Indeterminate[ ]  Invalid |

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| **3. Case Details:** |
| **♦ Aetiologic Agent** | [ ]  Legionella pneumophila If available specify serogroup: [ ]  Legionella Species If available specify species and serogroup:  |
| **♦ Classification** | [ ]  Confirmed [ ]  Probable [ ] Does Not Meet Definition  | **♦ Classification Date**  | YYYY-MM-DD. |

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| **4.** **Symptoms:** |
| **♦ Symptom***Ensure that symptoms in* ***bold font*** *are asked* | **♦ Response**  | **❖ Use as Onset***(choose one)* | **❖ Onset Date**YYYY-MM-DD |
|  | **Yes** | **No** | **Dont Know** | **Not Asked** | **Refused** |  |  |
| Abdominal pain |[ ] [ ] [ ] [ ] [ ]  ☐ | YYYY-MM-DD. |
| **Anorexia (loss of appetite)** |[ ] [ ] [ ] [ ] [ ] [ ]  YYYY-MM-DD. |
| **Chills** |[ ] [ ] [ ] [ ] [ ] [ ]  YYYY-MM-DD. |
| **Confusion** |[ ] [ ] [ ] [ ] [ ] [ ]  YYYY-MM-DD. |
| Cough (not productive) |[ ] [ ] [ ] [ ] [ ] [ ]  YYYY-MM-DD. |
| Cough (productive) |[ ] [ ] [ ] [ ] [ ] [ ]  YYYY-MM-DD. |
| **Diarrhea** |[ ] [ ] [ ] [ ] [ ] [ ]  YYYY-MM-DD. |
| **Fever ≥ 39 °C**  |[ ] [ ] [ ] [ ] [ ] [ ]  YYYY-MM-DD. |
| **Headache** |[ ] [ ] [ ] [ ] [ ] [ ]  YYYY-MM-DD. |
| **Malaise (generally unwell)** |[ ] [ ] [ ] [ ] [ ] [ ]  YYYY-MM-DD. |
| **Myalgia (muscle pain)** |[ ] [ ] [ ] [ ] [ ] [ ]  YYYY-MM-DD. |
| **Nausea** |[ ] [ ] [ ] [ ] [ ] [ ]  YYYY-MM-DD. |
| Other symptoms:*\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_­­­­­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*  |[ ] [ ] [ ] [ ] [ ] [ ]  YYYY-MM-DD. |

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| **5.** ♦ **Complications:** |
| [ ]  None [ ]  Pneumonia [ ]  Respiratory failure [ ]  Other (specify)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ [ ]  Unknown  |

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| **6.** **Incubation Period &** **Exposure Window:** |
| *Enter onset date and time, using this as day 0, then count back to determine the incubation period & exposure window.*  |
|  -72 hours (Pontiac) - 5 hours (Pontiac) symptom onset  -14 days (Legionnaires) Exposure window - 2 days (Legionnaires) date  YYYY-MM-DD.YYYY-MM-DD.YYYY-MM-DD. |

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| **7**. **Exposures:** *Enter all relevant exposures that occurred during the incubation period in this table and use the information to create exposures in iPHIS.* |
|  **Potential Exposure (s)** in the 14 days before onset of symptoms | **Response** | **Location** (facility name, city, province, postal code)To add additional location addresses, go to ***Section 13***  | **Dates(s)** |
|  | **Yes** | **No** | **Unknown** | **Not Asked** |  |  |
| **Travel Exposure** |  |  |  |  |  |  |
| Took shower/s away from home (including hotel/hospital)[[5]](#footnote-5)  |[ ] [ ] [ ] [ ]   | YYYY-MM-DD. |
| Visited a recreational water park |[ ] [ ] [ ] [ ]   | YYYY-MM-DD. |
| Attend a convention, reception, conference, or other public gathering |[ ] [ ] [ ] [ ]   | YYYY-MM-DD. |
| Visit an area with large buildings, e.g., shopping centers, high-rise complexes, that may have a cooling tower(s) |[ ] [ ] [ ] [ ]   | YYYY-MM-DD. |
| Visit a congregate living facility (e.g., correctional facilities, shelters, dormitories) |[ ] [ ] [ ] [ ]   | YYYY-MM-DD. |
| Went on a cruise (**complete Section 8)** |[ ] [ ] [ ] [ ]   | YYYY-MM-DD. |
| **Potential Exposure (s)** in the 14 days before onset of symptoms | **Response** | **Location** (facility name, city, province, postal code)To add additional location addresses, go to ***Section 13***  | **Dates(s)** |
|  | **Yes** | **No** | **Unknown** | **Not Asked** |  |  |
| **Incidential Exposure** |  |  |  |  |  |  |
| Resident/patient in a health care facility (hospital, LTCF, RH)[[6]](#footnote-6)  |[ ] [ ] [ ] [ ]   | YYYY-MM-DD. |
| Participating in an activity that disturbs soil (e.g. gardening, hiking) |[ ] [ ] [ ] [ ]   | YYYY-MM-DD. |
| Used or was close to a water aerosolizing structure (e.g., hot tub, whirlpool, sauna, hydrotherapy tub, float tank)  |[ ] [ ] [ ] [ ]   | YYYY-MM-DD. |
| Near a decorative water fountain or water feature |[ ] [ ] [ ] [ ]   | YYYY-MM-DD. |
| Was close to a mister |[ ] [ ] [ ] [ ]   | YYYY-MM-DD. |
| Close to Near a water sprinkler |[ ] [ ] [ ] [ ]   | YYYY-MM-DD. |
| Exposed to other water aerosolizing device, (e.g., humidifier, dental work devices)  |[ ] [ ] [ ] [ ]   | YYYY-MM-DD. |
| Live in a congregate living facility (e.g., correctional facilities, shelters, dormitories) |[ ] [ ] [ ] [ ]   | YYYY-MM-DD. |
| Construction/remodeling near home or place visited |[ ] [ ] [ ] [ ]   | YYYY-MM-DD. |
| **Occupational Exposure** |  |  |  |  |  |  |
| Work with water device/system maintenance (e.g., cooling towers, plumbing, hot tub) |[ ] [ ] [ ] [ ]   | YYYY-MM-DD. |
| **Potential Exposure (s)** in the 14 days before onset of symptoms | **Response** | **Location** (facility name, city, province, postal code)To add additional location addresses, go to ***Section 13***  | **Dates(s)** |
|  | **Yes** | **No** | **Unknown** | **Not Asked** |  |  |
| Work in water-related leisure (e.g., hotels, cruise ships, water parks) |[ ] [ ] [ ] [ ]   | YYYY-MM-DD. |
| Work in an industrial/manufacturing plant with a water spray cooling system or processes involving spraying water |[ ] [ ] [ ] [ ]   | YYYY-MM-DD. |
| Work as a commercial or long-haul truck driver |[ ] [ ] [ ] [ ]   | YYYY-MM-DD. |
| Work in a commercial kitchen |[ ] [ ] [ ] [ ]   | YYYY-MM-DD. |
| Work in custodial services (e.g., housekeeping, janitorial) |[ ] [ ] [ ] [ ]   | YYYY-MM-DD. |
| Work in construction (e.g., spraying water, demolition, refurbishing) |[ ] [ ] [ ] [ ]   | YYYY-MM-DD. |
| Work at a wastewater treatment plant |[ ] [ ] [ ] [ ]   | YYYY-MM-DD. |
| Work in another occupation involving aerosolized water exposures: |[ ] [ ] [ ] [ ]   | YYYY-MM-DD. |
| **Other Exposure** |[ ] [ ] [ ] [ ]  Continue on **Section 13**  |  |

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| **8. ❖ Cruise Details***Enter all relevant cruise information that occurred during the incubation period in this table and use the information to create exposures in iPHIS.* | **Response** |
|  | **Yes** | **No** | **Unknown** |
| In the 14 days before onset, did the patient take a cruise?*If yes, answer the following below* |[ ] [ ] [ ]
| Name of cruise line |  |
| Name of ship |  |
| Cruise departure city |  |
| Cruise departure province/state |  |
| Cruise departure country |  |
| Cruise departure date |  |
| Cruise return city |  |
| Cruise return province/state |  |
| Cruise return country |  |
| Cruise return date |  |
| Cabin number |  |
| **Ports of call:**  |
| **City** | **Province/State** | **Country** | **Date** |
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| **9. ❖ Medical/Behavioural Risk Factors** | **❖ Response** | **Details** |
|  | **Yes** | **No** | **Unknown** | **Not asked** |  |
| Age (over 50 years) |  |  |  |  |  |
| Smoker (current or former)  |[ ] [ ] [ ] [ ]   |
| Chronic lung disease (e.g., asthma, emphysema, chronic obstructive pulmonary disease)  |[ ] [ ] [ ] [ ]  If yes, specify |
| Other chronic diseases (e.g., diabetes, kidney disease, heart disease) |[ ] [ ] [ ] [ ]  If yes, specify |
| Weakened immune system due to medications or underlying illness/treatment (e.g., chemotherapy, radiation therapy, immunosuppressive medications, systemic malignancy, HIV infection with detectable viral load) |[ ] [ ] [ ] [ ]  If yes, specify |
| Use of respiratory therapy equipment (e.g., oxygen, nebulizer, CPAP, BiPAP) for treatment of sleep apnea, COPD, asthma, or any other reason.  |[ ] [ ] [ ] [ ]   |
| *If yes* to respiratory therapy equipment, does this device use a humidifier? |[ ] [ ] [ ] [ ]   |
| *If yes*, what type of water is used in the device? *(check all that apply)* |  |  |  |  | [ ]  Sterile; [ ]  Bottled; [ ]  Distilled; [ ]  Tap/Municipal; [ ]  Tap/Well Water; [ ]  Other[ ]  Unknown  |
| Other (specify) |  |  |  |  | If yes, specify |

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| **10. Hospitalization & Treatment** *Mandatory in iPHIS only if admitted to hospital* |
| Case presented to an emergency department? | [ ]  Yes [ ]  No  | If yes, Name of hospital: Enter nameDate(s): YYYY-MM-DD |
| **♦** Case was admitted to hospital as a result of their illness (not including stay in the emergency room)? | [ ]  Yes [ ]  No [ ]  Don’t recall  | If yes, Name of hospital: Enter name ♦ Date of admission: YYYY-MM-DD ❖ Date of discharge: YYYY-MM-DD[ ]  Unknown discharge date |
| *→ For iPHIS data entry – if the case is hospitalized enter information under Interventions.* |
| Case was prescribed antibiotics or medication for their illness?  | [ ]  Yes [ ]  No[ ]  Don’t recall  | If yes, Medication: Enter name Start date: YYYY-MM-DDEnd date: YYYY-MM-DDRoute of administration: Enter route Dosage: Enter dosage  |
| Case took over-the-counter medication for their illness?  | [ ]  Yes [ ]  No[ ]  Don’t recall  |  If yes, specify  |
| *Treatment and Rx information can be entered in iPHIS under* ***Cases > Case > Rx/Treatments>Treatment (or Rx) as per current iPHIS User Guide*** |

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| **11**. **Outcome** *Mandatory in iPHIS only if Outcome is Fatal* |
| [ ]  Unknown [ ]  ♦ Fatal [ ]  Ill [ ]  Pending [ ]  Residual effects [ ]  Recovered If fatal, please completed additional required fields in iPHIS including the Type of Death field and the outcome date. |
| **12. Interventions** (Use Section 14 to provide additional detail, e.g., number of site visits, environmental sample collection details, system treatment method) |
| **❖ Intervention Type** | **Intervention Implemented** (check all that apply) | **Investigator’s Initials** | ♦ **Start Date****YYYY-MM-DD** | **❖ End Date****YYYY-MM-DD** |
| Environmental Assessment |[ ]   | YYYY-MM-DD | YYYY-MM-DD |
| Site visit/s (name location) – complete in Section 14 |[ ]   | YYYY-MM-DD | YYYY-MM-DD |
| Environmental sample collection (pre-remediation)  |[ ]   | YYYY-MM-DD | YYYY-MM-DD |
| Environmental sample collection (post-remediation)  |[ ]   | YYYY-MM-DD. | YYYY-MM-DD. |
| Water system treatment |[ ]   | YYYY-MM-DD. | YYYY-MM-DD. |
| Remediation  |[ ]   | YYYY-MM-DD | YYYY-MM-DD |
| Letter - Client |[ ]   | YYYY-MM-DD | YYYY-MM-DD |
| Letter - Physician |[ ]   | YYYY-MM-DD | YYYY-MM-DD |
| Media release/community alerts |[ ]   |  |  |
| Other (specify) |[ ]   | YYYY-MM-DD | YYYY-MM-DD |
| *→**For iPHIS data entry – enter information under* ***Cases > Case > Interventions.*** |

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| **13**. **Additional** **Exposures/Exposure of Interest[[7]](#footnote-7)** *Continue from* ***Section 7****Enter all relevant exposures that occurred during the incubation period in this table and use the information to create exposures in iPHIS.*  |
|  **Potential Exposure/s** (in the 14 days before onset of symptoms) | **Response** | **Location** (facility name, city, province, postal code) | **Dates(s)** |
|  | **Yes** | **No** | **Unknown** | **Not Asked** |  |  |
| **Name of Accommodation/Location** |  |  |  |  |  | YYYY-MM-DD. |
|  |[ ] [ ] [ ] [ ]   | YYYY-MM-DD. |
|  |[ ] [ ] [ ] [ ]   | YYYY-MM-DD. |
|  |[ ] [ ] [ ] [ ]   | YYYY-MM-DD. |
|  |[ ] [ ] [ ] [ ]   | YYYY-MM-DD. |
|  |[ ] [ ] [ ] [ ]   | YYYY-MM-DD. |
|  |[ ] [ ] [ ] [ ]   | YYYY-MM-DD. |

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| **14**. **Additional Notes**: |
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1. If “yes” for OB, cluster investigations and cases are in high risk settings, consider consulting Public Health Ontario (PHO) for information on:

**Supplies:** If you require environmental swabs, contact the PHO’s laboratory Warehouse and complete the [Requisition for Specimen Containers and Supplies](https://can01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.publichealthontario.ca%2F-%2Fmedia%2FDocuments%2FLab%2Fspecimen-containers-supplies.pdf%3Fla%3Den%26sc_lang%3Den%26hash%3D7B900820D73DD75554059F42DA61245E&data=05%7C01%7CAllana.Murphy%40oahpp.ca%7C8ad93aa93fb74856c6fd08db78d55181%7Ccddc1229ac2a4b97b78a0e5cacb5865c%7C0%7C0%7C638236630825398541%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=pPPFhm0D7KCs5uI8lWDqUFSiNp4DZWDTNHV1CtK36m4%3D&reserved=0). Record the quantity of environmental swabs required on the comments line of the form.

**Sample Submission:** Consult with PHO laboratory (PHOL Customer Service Centre: CustomerServiceCentre@oahpp.ca), to have samples shipped to the Toronto laboratory for testing.

If applicable, consult with your local laboratory for information about acquiring supplies, hours of operation for sample receipt, testing, and the courier schedule.

**Investigation Support**

Contact:

EOH@oahpp.ca for support with an environmental investigation, including conducting an environmental risk assessment

Communicable.DiseaseControl@oahpp.ca for information on conducting case interviews and epidemiological linkages.

PHO’s laboratory for information regarding testing and sampling, as well as results interpretation.

PHO is available **on request** for consultation should PHUs require support with *Legionella* investigations. [↑](#endnote-ref-2)
2. **Contact PHO lab:** IORT@oahpp.ca **for investigation number to link cases and environmental samples** [↑](#footnote-ref-2)
3. *Legionella* Urine Antigen Test (UAT) does not allow for culture of *Legionella* bacteria [↑](#footnote-ref-3)
4. A clinical *Legionella* culture isolate is required for the purpose of sequencing (in situations where an environmental *Legionella* isolate is also available.) [↑](#footnote-ref-4)
5. **Travel-associated case**:

The patient stayed at least one night away from home within the 14 days prior to the onset of symptoms. This includes nights spent within their province or territory (P/T), in another P/T, or in another country, but excludes nights spent in healthcare facilities (HC) within their P/T. Note that a case can have both travel and HC related exposures. [↑](#footnote-ref-5)
6. **Presumptive healthcare-associated case**:

The patient had a continuous stay of 10 or more days in a healthcare facility within the 14 days leading up to symptom onset. For surveillance purposes, this case is considered presumptive healthcare-associated, even if the stay spanned multiple healthcare facilities.

**Possible healthcare-associated case**:

The patient spent part of the 14 days before symptom onset in one or more healthcare facilities. These cases do not qualify as presumptive healthcare-associated Legionnaires’ disease. [↑](#footnote-ref-6)
7. During an OB/cluster investigation the investigator/interviewer may maintain a list of potential exposure loctions to ask the case if they visited. [↑](#footnote-ref-7)