

This month we wanted to focus on recent changes that were made to the **Legionella** MAVEN Risk Question Package. In 2013, there were 196 confirmed and suspect cases of Legionella in Massachusetts. So far this year, we have a total of 101 confirmed and suspect cases. With the recent changes in the case report form, surveillance manual chapter, and risk question packages we wanted to review Legionella case investigations to highlight some key points to keep in mind when completing these case investigations.

Local Board of Health (LBOH) Reporting and Follow-Up Responsibilities for Legionella

Reporting Requirements

MDPH regulations (105 CMR 300.000) stipulate that legionellosis is reportable to the LBOH and that each LBOH must report any confirmed case of legionellosis or suspect case of legionellosis, as defined by the reporting criteria in Section 2A. Cases should be reported to the MDPH Bureau of Infectious Disease, Office of Integrated Surveillance and Informatics Services (ISIS) via MAVEN. Refer to the List of Diseases Reportable to Local Boards of Health for information on prioritization and timeliness requirements of reporting and case investigation <http://www.mass.gov/eohhs/docs/dph/cdc/reporting/rprtbdiseases-lboh.pdf>

Case Investigation

It is the responsibility of the LBOH to complete all questions in each of the question packages by interviewing the case and others who may be able to provide information. Much of the clinical information required can be obtained from the health care provider or from the medical record. Important details relevant to legionellosis exposure, control and prevention need to be obtained from the case or his/her family members.

Calling the provider

If the case was hospitalized (i.e. reporting facility is a hospital), call infection control at the named hospital. A list of infection preventionists can be found in the help section of MAVEN. If the case was seen at a clinician's office, ask to speak to a nurse working with the ordering provider.

Calling the case or parent/guardian of the case

Before calling the case, review the disease fact sheet by clicking on the Help Button located in MAVEN and/or reviewing this entire chapter. The call may take a few minutes, so in order to maximize the chance of getting the information needed, it might be good to note the potential length of the call with your contact, and offer the opportunity to call back when it is more convenient. Asking questions about how the case or child is feeling may get the case or parent talking. If you are unable to answer a question they have, don't hesitate to call the Division of Epidemiology and Immunization at 617-983-6800 for assistance, and call the case back with the answer later. People are often more than willing to talk about their illness, and they may be very happy to speak with someone who can answer their questions.

Using MAVEN

Administrative Question Package

Monitor your “Online LBOH Notification for Routine disease” workflow in MAVEN for any new cases of legionellosis. Once a new event appears in this workflow, open the Administrative Question Package (QP) and under the “Local Health and Investigation” section, answer the first question “**Step 1** - LBOH acknowledged” by selecting “Yes”. The “LBOH acknowledged date” will then auto populate to the current day. Completing this first step will move the event out of this workflow and into your “Online LBOH notified but Case Report Forms (CRF) are pending” workflow. Note the date you started your investigation by answering “**Step 2** – Investigation started” as “Yes” and then note the date where shown. Record your name, agency, and phone numbers where shown in “**Step 3** - LBOH/Agency Investigator.”

Demographic Question Package

Record all demographic and employment information. It is particularly important to complete the Race/Ethnicity and Occupation questions.

Clinical Question Package

Complete the “Diagnosis/Clinical Information” section, providing the diagnosis date, symptom information and date of symptom onset and other medical information. Accurate symptom information is necessary to distinguish cases of Legionnaires’ disease from Pontiac fever (e.g., x-ray diagnosed pneumonia indicates Legionnaires’ disease).

In the “Hospitalization/Clinician/PCP Information” section, note whether the case was hospitalized and if “Yes” record the date hospitalized, date discharged and medical record number. You can select the name of the hospital by clicking on the magnifying glass to the right of the question. Accurate information regarding hospitalization is important to determine whether the case is nosocomially-acquired. Nosocomially-acquired legionellosis cases may require additional follow-up as described in Section 4.

Risk Exposure/Control & Prevention Question Package

The incubation period for legionellosis can be as long as 10 days; therefore, when you are answering the questions in this section focus on the 10 days prior to the case becoming ill. Determine if the case spent any nights away from home, including **travel** out of the state or out of the country. Please record their departure date(s), arrival date(s), hotel(s) names and addresses or other accommodation information. It is important to get as many details as possible, as these cases get reported to the Centers for Disease Control and Prevention to help identify travel-associated outbreaks. Ask the patient if they spent time in or near a whirlpool spa or hot tub, and provide those details in the space provided.

In addition, it is important to ask the patient if they used a **nebulizer, CPAP, BiPAP or other respiratory equipment** in the 10 days prior to their onset of symptoms. If they did, please indicate whether the device used a humidifier and if so, what type of water was used in the device.

The next series of questions are relevant to patients who visited or stayed in any **healthcare setting, such as a hospital, long term care facility, rehabilitation or skilled nursing facility**. Record the arrival and departure dates, the name and address of the facility, the type of setting, the type of exposure, and reason for visit.

If the patient visited or stayed in an **assisted living facility or senior living center**, please provide this information in the next table. Include visit dates, facility type, facility name, and address. Indicate the type of exposure, such as whether the patient is a resident, visitor, volunteer, or employee of the facility.

INFORMATION RELEVANT TO EXPOSURE, CONTROL AND PREVENTION							Risk Question Package	
In the 10 days before onset, did the patient spend any nights away from home, (excluding healthcare settings)? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unk <i>If yes, please complete the following table.</i>							Travel	
Dates of Stay Arrival Date: ___/___/___ Departure Date: ___/___/___		Lodging/Accommodation Name	City	State	Zip	Country		Room Number(s)
In the 10 days before onset, did the patient get in or spend time near a whirlpool spa (i.e., hot tub)? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unk Location of whirlpool, spa, hot tub: _____ Date Used: ___/___/___							Whirlpool/Spa	
In the 10 days before onset, did the patient use a nebulizer, CPAP, BiPAP or any other respiratory therapy equipment for the treatment of sleep apnea, COPD, asthma or for any other reason? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unk <i>If yes, Does the device use a humidifier? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unk</i> <i>If yes, What type of water is used in the device (choose all that apply)?</i> <input type="checkbox"/> Sterile <input type="checkbox"/> Distilled <input type="checkbox"/> Bottled <input type="checkbox"/> Tap <input type="checkbox"/> Other (specify): _____ <input type="checkbox"/> Unk							Nebulizer, CPAP, BiPAP respiratory equipment	
In the 10 days before onset, did the patient visit or stay in a healthcare setting (e.g. hospital, long term care/rehab/skilled nursing facility, clinic)? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unk <i>If yes, please complete the following table.</i>							Healthcare Settings (Hospital, LTC/Rehab/Skilled Nursing Facility, Clinic)	
Date of Visit/Admission Start Date: ___/___/___ End Date: ___/___/___		Type of Healthcare Setting/Facility <input type="checkbox"/> Hospital <input type="checkbox"/> Long term care <input type="checkbox"/> Clinic <input type="checkbox"/> Other: _____	Type of Exposure <input type="checkbox"/> Inpatient <input type="checkbox"/> Outpatient <input type="checkbox"/> Visitor or volunteer <input type="checkbox"/> Employee	Name of Facility	Is This Facility Also A Transplant Center <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unk	City		State
Reason for visit: _____		Room Number(s): _____						
In the 10 days before onset, did the patient visit or stay in an assisted living facility or senior living facility? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unk <i>If yes, please complete the following table.</i>							Assisted Living or Senior Living Facility	
Date of Visit/Admission Start Date: ___/___/___ End Date: ___/___/___		Type of Facility <input type="checkbox"/> Assisted Living <input type="checkbox"/> Senior Living	Type of Exposure <input type="checkbox"/> Resident <input type="checkbox"/> Visitor or volunteer <input type="checkbox"/> Employee	Name of Facility	City	State		Room Number(s)

Other information

Any additional information on the case you would like recorded in MAVEN can be included in the “Notes” section which is located to the right of the Event Summary on the dashboard; however, do not include any information in the Notes section which can already be captured in a QP (i.e., hotel accommodation details).

Completing Your Investigation

1. If you were able to complete a case investigation and follow-up is complete, mark “**Step 4 – Case Report Form Completed**” as “Yes” and then choose Local Board of Health (LBOH) –Ready for MDPH review for the Completed by variable.
2. If you have made several attempts to obtain case information but have been unsuccessful (e.g., the case or health care provider does not return your calls or respond to a letter, or the case refuses to divulge information or is too ill to be interviewed), please complete “**Step 4 - Case Report Form Completed**” as “No” and then choose a primary reason why the case investigation was not completed from the choices provided in the primary reason answer variable list.
3. If you are not online for MAVEN you may submit a paper case report form. After completing the form, attach laboratory report(s) and fax or mail (in an envelope marked “Confidential”) to ISIS. The confidential fax number is (617) 983-6813. Call ISIS at (617) 983-6801 to obtain a copy of the case report form and to confirm receipt of your fax.

If you have questions about MAVEN, please email isishelp@state.ma.us or contact the MAVEN help desk at 617-983-6801.