Investigation Steps: Legionnaires’ disease in a healthcare facility resident
North Carolina Communicable Disease Branch — Medical Consultation Unit

The Legionnaires’ disease case definition and investigation steps can be found here: [http://epi.publichealth.nc.gov/cd/lhds/manuals/cd/reportable_diseases.html](http://epi.publichealth.nc.gov/cd/lhds/manuals/cd/reportable_diseases.html).

For additional information, contact the NC Communicable Disease Branch, 919-733-3419 (24/7).

Was the patient in a healthcare facility (e.g., hospital, long-term care facility, skilled nursing facility) during the 10 days before symptom onset?

To answer this question, create a timeline of events.
- When was the patient originally admitted to each facility?
- When did symptoms start?
- Did the patient go anywhere else in the 10 days before symptom onset (e.g., family member’s home, trips, outings)?

What additional investigation steps are necessary?

First, determine if the case is a possible or definite healthcare-associated case. The algorithms below illustrate next steps for each case type.

**POSSIBLE HEALTHCARE-ASSOCIATED CASE**

(patient was in a facility for part of the 10 days before symptom onset)

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**NO**

Enhanced surveillance for 2 months. Patients with signs and symptoms of pneumonia should have a urine antigen test.

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**YES**

Have there been other cases of Legionnaires’ disease in facility residents, staff or visitors in the previous 6 months?

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**NO**

Facility should resume routine surveillance and water safety measures.

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**YES**

Two or more healthcare-associated cases in a single facility is considered an outbreak.

**Outbreak Investigation**

1. Consult with CDB (919-733-3419)
2. Follow [10 steps of an outbreak investigation](http://epi.publichealth.nc.gov/cd/lhds/manuals/cd/reportable_diseases.html)
3. Recommend that the facility retains an environmental [legionella consultant](http://epi.publichealth.nc.gov/cd/lhds/manuals/cd/reportable_diseases.html)
5. Institute [control measures](http://epi.publichealth.nc.gov/cd/lhds/manuals/cd/reportable_diseases.html)
6. Assist facility with [communication](http://epi.publichealth.nc.gov/cd/lhds/manuals/cd/reportable_diseases.html)
7. Assist facility with conducting environmental sampling and testing
8. Declare outbreak over in consultation with CDB


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Monitor for 6 months. Are other cases identified?

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**NO**

Facility should resume routine surveillance and water safety measures.

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**YES**

What additional investigation steps are necessary?

DEFINITE HEALTHCARE ASSOCIATED CASE
(patient did not leave the facility at any point during 10 days before symptom onset)

- Have there been other cases of Legionnaires’ disease in facility residents, staff or visitors in the previous 6 months?
  - Sentinel Case Investigation
    1. Consult with CDB (919-733-3419)
    2. Conduct a facility site visit; use the environmental assessment tool
    3. Conduct six-month retrospective surveillance
    
    See the CD Manual for materials:
  
  - Were other cases of Legionnaires’ disease identified?
  - Yes:
    - Enhanced surveillance for 2 months. Patients with signs and symptoms of pneumonia should have a urine antigen test.
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    - Monitor for 6 months. Are other cases identified?
      - No:
        - Facility should resume routine surveillance and water safety measures.
      - Yes:
        - 
  - No:

  - Two or more healthcare-associated cases in a single facility is considered an outbreak.
  - Outbreak Investigation
    1. Consult with CDB (919-733-3419)
    2. Follow 10 steps of an outbreak investigation
    3. Recommend that the facility retains an environmental legionella consultant
    4. Conduct environmental assessment
    5. Institute control measures
    6. Assist facility with communication
    7. Assist facility with conducting environmental sampling and testing
    8. Declare outbreak over in consultation with CDB

    See the CD Manual for materials:

- Monitor for 6 months. Are other cases identified?
  - No:
  - Yes: