

North Carolina Legionellosis Annual Report 2024



NC DEPARTMENT OF
**HEALTH AND
HUMAN SERVICES**
Division of Public Health

Legionellosis

2024 Key Points

- 201 cases of Legionellosis were reported in North Carolina in 2024, which was a steady increase since the start of the COVID-19 pandemic in 2020.
- No outbreaks were reported in North Carolina in 2024.
- 14 health care associated cases were investigated in 2024.

Legionellosis is an illness caused by the bacterium *Legionella*. The most common type of legionellosis is Legionnaires' disease which is a severe form of pneumonia (lung infection). A less common type of legionellosis is Pontiac fever, which is a milder illness without pneumonia. Extrapulmonary legionellosis is a rare type of legionellosis that affects areas of the body outside the lungs.

Legionnaires' disease (LD) is confirmed by laboratory testing in a patient with compatible clinical findings. Most LD cases are confirmed with a positive urinary antigen test (UAT); some cases are confirmed through other methods, including isolation of *Legionella* by culture or molecular methods.

Most healthy people exposed to *Legionella* don't get sick. People at increased risk of getting sick include:

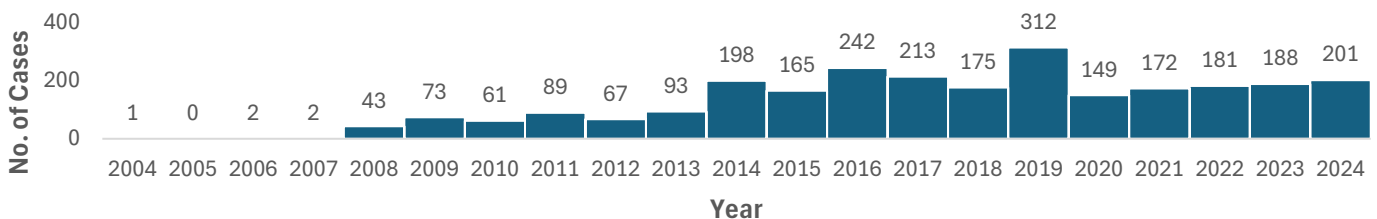
- People 50 years of age or older
- Current or former smokers
- People with chronic health conditions like cancer, lung disease, diabetes, kidney failure, liver failure
- People with weakened immune systems

Common sources of exposure include improperly maintained water systems such as:

- Hot tubs
- Decorative fountains
- Cooling towers
- Hot water tanks
- Large plumbing systems
- Misting devices

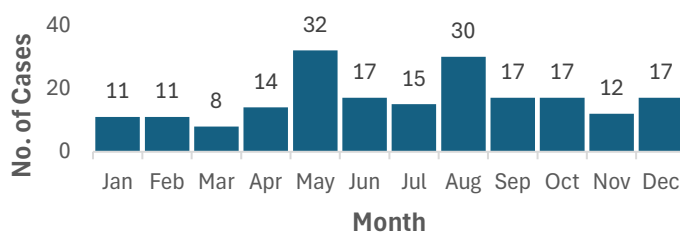
Home and car air-conditioning units don't use water to cool the air, so they aren't a risk for *Legionella* growth. This includes window units, such as the kind seen at some hotels.

NC 2004-2024 Legionellosis case counts by year



201 cases of Legionellosis were reported in North Carolina in 2024, which was a steady increase since 2020 and the start of the COVID-19 pandemic. In 2019 the case counts were higher due to an [outbreak at the Mountain State Fair](#). CDC defines a Legionnaires' disease outbreak as two or more cases associated with the same possible source during a 12-month period.

NC 2024 Legionellosis cases by month

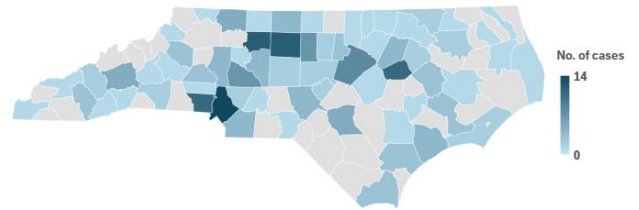


Legionellosis cases are reported throughout the year, but cases generally increase during summer and fall. In 2024, cases peaked in May and August.

Legionellosis

Cases are widespread, occurring in 65 of North Carolina's 100 counties during 2024. Some counties in southeastern North Carolina and northwestern North Carolina did not report any Legionellosis cases.

NC 2024 Legionellosis cases by county



Annual Summary		2024
Cases		201
Rate		1.8
Case Statistics		
Sex	Cases	%
Male	104	52%
Female	97	48%
Unknown	0	0%
Age Group		
<20	0	0%
20-29	2	1%
30-39	14	7%
40-49	22	11%
50-59	45	21%
60-69	56	28%
70-79	43	22%
80-84	9	5%
85+	13	7%
Unknown	0	0%
Race		
White	118	59%
Black/African Am	67	33%
Asian	2	1%
American Indian/Alaskan Native	2	1%
Other	6	3%
Unknown	6	3%
Hispanic Ethnicity		
Yes	1	0%
No	139	69%
Unknown	61	30%
Disease Severity		
Hospitalized	190	95%
Died	20	10%

*Incidence rate calculated per 100,000 North Carolina residents

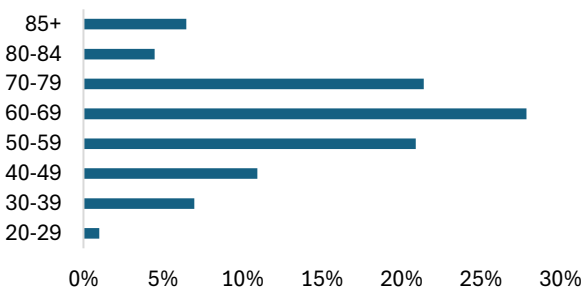
Annual Summary Key Points

- 201 cases of Legionellosis have been reported in North Carolina in 2024. While the number of annual cases has been steadily increasing since the COVID-19 pandemic, these numbers may be an underestimate. Legionellosis is likely underdiagnosed because its symptoms resemble pneumonia caused by other pathogens which may result in underutilization of *Legionella* specific tests.
- 199 cases were reported as Legionnaires' Disease and 2 cases were Pontiac Fever.
- Most cases occurred in people 50 years of age and above. Underlying medical conditions and a weakened immune system are more common among people of this age group, which can lead to an increase in disease severity.
- White North Carolina residents made up 59% of cases followed by 33% in Black/African American North Carolina residents, but the highest incidence was in Black/African American residents.
- The majority of cases were hospitalized (95%) and 10% of reported cases died. Among cases who died, 85% were 60 years of age and above.

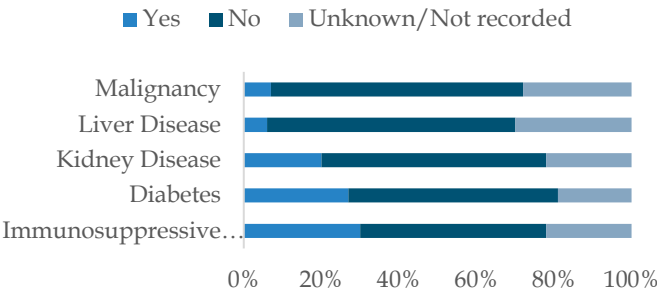
Legionellosis

The age group most affected in North Carolina reflects the national trend; adults ages 50 years and older made up 81% of cases. The age range with most reported cases in North Carolina in 2024 was 60 -69 (28%). There were no cases reported under 20 years of age.

NC 2024 Legionellosis cases by age group



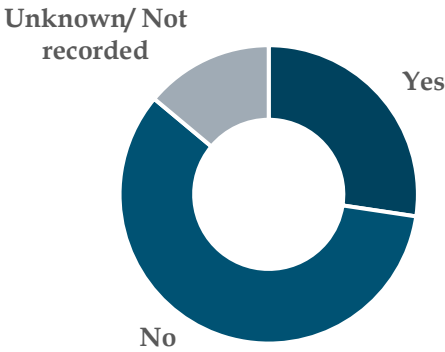
NC 2024 Legionellosis cases with Pre-condition(s)



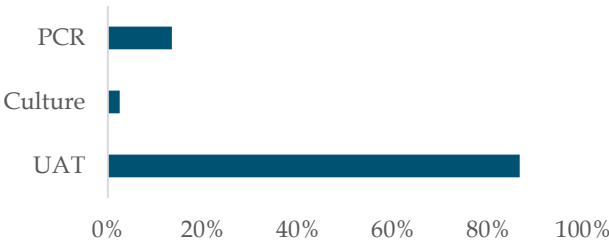
The majority of cases reported having one or more underlying medical conditions. The most commonly reported underlying medical condition was having an immunosuppressive condition (30%) followed by diabetes (27%) and kidney disease (20%). The graph represents preconditions that are not mutually exclusive.

Travel history helps determine whether the infection may have been acquired locally or during travel, thus helping to narrow down the potential source of exposure. About 27% of the 2024 cases had a history of travel during their period of interest. 59% had no known travel history. The remaining 14% had unknown or missing information about their travel.

NC 2024 Legionellosis cases by history of travel



NC 2024 Legionellosis cases with type of diagnostic



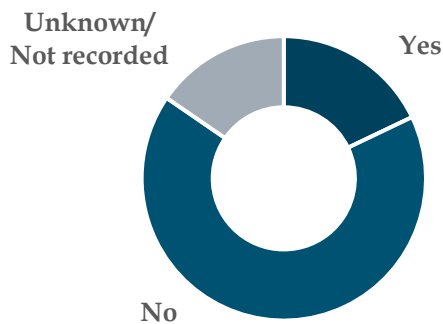
The graph represents diagnostic testing for LD that that may represent cases with multiple test types. UAT was the most used in 2024 (87%). Only about 13% of cases had Polymerase Chain Reaction (PCR) result and 2% were tested by culture from lower respiratory specimen. CDC recommends *Legionella* UAT paired with lower respiratory specimen testing by culture or molecular methods for diagnosis of LD, since UAT typically only detects *Legionella pneumophila* serogroup 1, while both culture and many molecular tests can detect additional *Legionella* species and serogroups.

Legionellosis

Health Care-associated Legionellosis

Health care facilities often have large, complex water systems and devices that produce small droplets of water. They also serve patients who have risk factors for Legionnaires' disease. Therefore, it is important to consider a patient's exposure to health care settings. The charts below summarize health care exposures reported in 2024; however, the findings may be limited due to incomplete exposure history from patients.

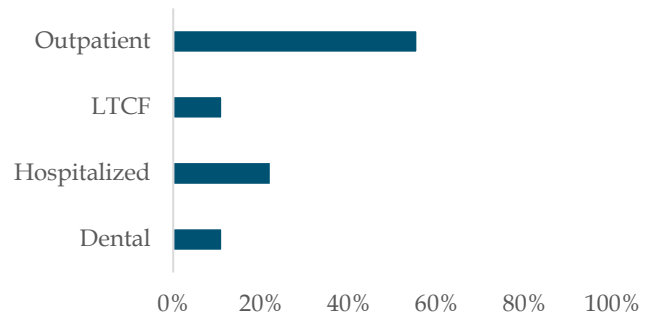
NC 2024 Legionellosis cases by health care exposure



In 2024, 18% of the legionellosis cases reported health care exposures. Exposures included dental work or oral surgery, hospitalization, long term care facility stays, and/or outpatient facility visits. 67% did not report health care exposure while the remaining 15% cases health care exposures were unknown or unrecorded.

Of the 18% of the legionellosis case that reported health care exposures during their period of interest, about 56% reported visiting at least one outpatient facility and 22% reported hospitalization. 11% each reported visiting a dental clinic or a long-term care facility (LTCF) stay during their period of interest.

NC 2024 Legionellosis cases by type of health care exposure



Health care-associated cases are further classified as presumptive and possible. If the duration of health care exposure is ≥ 10 days of continuous stay during 14-day exposure period, it is classified as presumptive health care-associated case. If the duration of health care exposure is any portion of the 14 days before symptom onset, it is classified as possible health care-associated case.

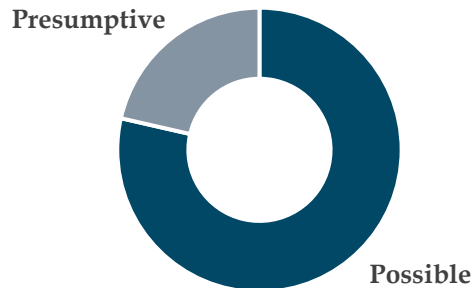
CDC recommends a full public health outbreak investigation into the source of *Legionella* in a facility upon identification of:

- ≥ 1 case of presumptive health care-associated Legionnaires' disease at any time
- ≥ 2 cases of possible health care-associated Legionnaires' disease within 12 months of each other

Please see [North Carolina's Investigation Steps](#) algorithm for additional details about these investigations.

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NC 2024 Health care associated Legionellosis cases



In 2024, there were total of 14 cases that were health care-associated cases that required investigations. 79% of cases met the possible health care associated case definition and 21% cases met the presumptive health care associated case definition as defined by CDC.

Resources:

[About Legionnaires' Disease](#)

[CDC Legionellosis Surveillance and Trends](#)

[NC DPH Legionellosis Facts](#)

[NC Communicable Disease Legionellosis](#)

[Occupational Safety and Health Administration Legionellosis Information](#)