

# Legionnaires' Disease Surveillance Summary Report, United States

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## 2020–2021



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*The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.*

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## Background

The objective of this report is to provide a descriptive summary of the reporting and burden of Legionnaires' disease within the United States (U.S.) in 2020 and 2021. Legionellosis is an illness caused by the bacterium *Legionella* that most commonly presents as Legionnaires' disease, a severe pneumonia. Pontiac fever, a milder illness without pneumonia, is less commonly reported. Extrapulmonary legionellosis, infection with *Legionella* outside the lungs, is rare. Legionnaires' disease is confirmed by appropriate laboratory testing in a patient with compatible clinical findings. Most Legionnaires' disease cases are confirmed with a positive urinary antigen test (UAT); fewer cases are confirmed through other methods, including isolation of *Legionella* by culture (1,2).

*Legionella* typically is transmitted to people through inhalation of aerosolized water containing *Legionella*, or less commonly via aspiration of water containing *Legionella* (3,4). People most susceptible to Legionnaires' disease include those with advanced age, weakened immune systems, or chronic medical conditions (5). Collecting and reporting information about potential exposures in patients with Legionnaires' disease is important for finding the source of infection and helping to prevent additional cases. Exposure to large, complex building water systems that are not adequately managed increases a person's risk for acquiring Legionnaires' disease (6,7).

The majority of recognized Legionnaires' disease outbreaks are associated with travel accommodations (e.g., hotels, resorts, cruise ships) or healthcare settings (e.g., hospitals, long-term care facilities) (7). Travel, particularly lodging in public accommodations, has been shown to be a risk factor for Legionnaires' disease (8,9). Healthcare facilities frequently undergo construction and plumbing changes, and they often have aerosol-producing devices such as cooling towers, decorative fountains, and other devices unique to healthcare facilities (e.g., respiratory therapy equipment, hydrotherapy tubs, heater-cooler units) (6). Other potential settings for exposure to *Legionella* include assisted or senior living facilities, workplace environments, and the general community. The number of outbreaks reported annually to the National Outbreak Reporting System rose 7-fold from 2009 through 2018, fell by more than half in 2020, and then increased steadily through 2023 (10).

## Case definition

Legionellosis case criteria defined in the 2019 Council of State and Territorial Epidemiologists (CSTE) Position Statement were in effect during 2020–2021 (1). Legionnaires' disease is characterized by pneumonia, diagnosed clinically or radiographically. Pontiac fever is characterized by a milder illness without pneumonia. Extrapulmonary legionellosis indicates *Legionella* infection outside the lungs, such as endocarditis or a wound infection. To be considered confirmed, a case must be clinically compatible and fulfill at least one of the confirmatory laboratory criteria (i.e., positive UAT, isolation of *Legionella* by culture, detection of *Legionella* by a validated nucleic acid amplification test [NAAT], or a 4-fold or greater rise in specific serum antibody titer to *Legionella pneumophila* serogroup 1). Please refer to [Definitions](#) in the [Technical Notes](#) for additional case status and laboratory criteria.

## Data sources

For this surveillance report, data from two surveillance systems (the National Notifiable Diseases Surveillance System [NNDSS] and the Supplemental Legionnaires' Disease Surveillance System [SLDSS]) were combined to provide a more comprehensive understanding of the national burden of Legionnaires' disease.

## NNDSS

The Centers for Disease Control and Prevention (CDC) coordinates collection of data on all notifiable diseases, including Legionnaires' disease, from across the United States through NNDSS. NNDSS is a passive surveillance system for case-level data. Clinicians and laboratories report cases to local or state health departments, who then investigate the cases and report selected data to CDC. For this report, NNDSS data are limited to Legionnaires' disease case counts, basic demographics, date of disease occurrence, and jurisdiction of residence.

The *Summary of Notifiable Infectious Diseases—United States* (hereafter referred to as the *Morbidity and Mortality Weekly Report (MMWR)* annual report) reports the official statistics for U.S.

Legionnaires' disease cases reported to NNDSS prior to 2016 ([https://www.cdc.gov/mmwr/mmwr\\_nd/index.html](https://www.cdc.gov/mmwr/mmwr_nd/index.html)). Provisional NNDSS data are published weekly on CDC Stacks (<https://stacks.cdc.gov/gsearch?collection=cdc%3A49375&terms=legionellosis&genre=Weekly%20Tables>), and finalized, yearly summary data for years after 2015 are also published annually on CDC Stacks (<https://stacks.cdc.gov/gsearch?collection=cdc%3A49375&terms=legionellosis&genre=Annual%20Tables%20%2%A0>).

Jurisdictions may report cases of any case status (i.e., confirmed, probable, suspect, and unknown) to NNDSS, but only confirmed cases of Legionnaires' disease from the 50 U.S. states, the District of Columbia, and New York City were included in *MMWR* annual reports and on CDC Stacks from 2000 through 2021, with the following exceptions:

During 2000, 2002, and 2003, Legionnaires' disease cases with probable, suspect, and unknown case status were also included.

- During 2001, Legionnaires' disease cases with probable and unknown case status were also included.
- During 2000–2001, Legionnaires' disease cases were not reportable in Oregon and West Virginia.
- During 2004–2012, Legionnaires' disease cases with unknown case status reported from California were also included.
- During 2011–2012, Legionnaires' disease cases were not reportable in the District of Columbia.

Learn more about reported cases of infectious diseases at

<https://www.cdc.gov/nndss/notifiable-infectious-disease-tables/about-data.html>.

## SLDSS

SLDSS, a voluntary, passive surveillance system for case-level data, includes additional information not reported to NNDSS. SLDSS captures disease severity indicators, exposure history information, and laboratory diagnostic test results. While not all jurisdictions consistently report to SLDSS, reporting completeness has improved over time (13). SLDSS facilitates rapid recognition of clusters of cases among persons from different jurisdictions who have recently dispersed from a point source of *Legionella* and became ill in their respective jurisdictions of residence.

## LEGIONNAIRES' DISEASE VS. LEGIONELLOSIS

Because NNDSS does not capture type of legionellosis diagnosis, it cannot distinguish clinical syndromes (Legionnaires' disease vs Pontiac fever vs extrapulmonary legionellosis). For this reason, CDC has used the term "legionellosis" historically for surveillance purposes (when referring to NNDSS data). However, approximately 98% of legionellosis cases reported to SLDSS, which does capture diagnosis data, are Legionnaires' disease (11,12). Furthermore, because Legionnaires' disease can be associated with substantial mortality (while Pontiac fever is self-limited), prevention efforts are often designed with Legionnaires' disease in mind. Accordingly, we refer here to cases of legionellosis reported to NNDSS as "Legionnaires' disease" instead of "legionellosis," and, unless otherwise specified, SLDSS data in this report are limited to cases of Legionnaires' disease.

However, this decision does not indicate that Pontiac fever is considered inconsequential. Outbreaks of Pontiac fever can be large and can place burden on the medical system. Furthermore, Pontiac fever can signal the presence of conditions that support *Legionella* growth and transmission, and environmental sources that lead to cases of Pontiac fever are often also associated with cases of Legionnaires' disease.

## Highlights

### Case count and incidence trends over time

From 2000 through 2021, a total of 97,104 confirmed Legionnaires' disease cases were reported to NNDSS from 52 U.S. jurisdictions. The crude national incidence rate increased more than 7-fold from 0.42 cases per 100,000 persons in 2000 to a peak of 3.04 cases per 100,000 in 2018 (Figure 1). Reported incidence dropped by more than 35% to 1.92 cases per 100,000 in 2020 but rebounded to 2.56 cases per 100,000 in 2021, nearly matching the incidence of 2019. There were 6,310 confirmed Legionnaires' disease cases reported to NNDSS in 2020, and 8,442 cases reported in 2021. Cases reported to NNDSS from 6 jurisdictions for 2020 may be incomplete due to the COVID-19 pandemic (<https://stacks.cdc.gov/view/cdc/175628>).

### Seasonality

Case month was based on *MMWR* week (assigned variably by reporting jurisdictions based on disease onset date, date of case report to state or local public health, date of case report to CDC, or some other jurisdiction-defined date), and was unevenly distributed, with more cases assigned to weeks in summer and fall versus winter and spring (Figure 2). However, seasonality was less pronounced in 2020 compared to 2021 and previous years, likely due to non-pharmacological interventions intended to slow the spread of COVID-19. Masking and handwashing may have reduced the transmission of respiratory pathogens spread person-to-person, but shelter-in-place orders, travel restrictions, and temporary closures of businesses (including hotels) may have had a larger impact on the incidence of Legionnaires' disease by keeping vulnerable persons away from environmental sources of *Legionella* transmission. Although, similar to most years, the peak number of cases occurred in the late summer and early fall, a clear nadir of cases was seen during the spring of 2020, coinciding with the strictest COVID-19-associated shelter-in-place and business closure orders.

### Geographic distribution

For 2020 and 2021, the incidence of reported Legionnaires' disease cases tended to be higher in jurisdictions in the East North Central (Illinois, Indiana, Michigan, Ohio, Wisconsin), Middle Atlantic (New York City, New York State, New Jersey, Pennsylvania), and New England (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont) U.S. Census Bureau divisions. (Figures 3a/3b).

- **2020:** The jurisdictions with the highest number of confirmed Legionnaires' disease cases reported to NNDSS included, in order, Ohio, Florida, California, Michigan, and New York (state) (Table 1).
- **2021:** The jurisdictions with the highest number of confirmed Legionnaires' disease cases reported to NNDSS included, in order, Ohio, New York (state), Michigan, Illinois, and Florida (Table 1).

### Demographic characteristics

#### Age

Most cases occurred in persons  $\geq 50$  years of age, and incidence increased with age (Table 2 and Figure 4a).

- **2020:** The majority (80%) of reported cases occurred in persons  $\geq 50$  years of age; persons  $\geq 85$  years of age had the highest rate of disease, with an incidence rate of 6.88 cases per 100,000 persons (Table 2).
- **2021:** Similar to 2020, the majority (81%) of reported cases occurred in persons  $\geq 50$  years of age; persons  $\geq 85$  years of age had the highest rate of disease, with an incidence rate of 8.43 cases per 100,000 persons (Table 2).

#### Sex

Males accounted for the majority of the confirmed cases reported to NNDSS and also had a higher rate of disease (Table 2 and Figure 4b).

- **2020:** Males accounted for 63% of cases, with a rate of 2.41 per 100,000 persons (Table 2).
- **2021:** Males accounted for 63% of cases, with a rate of 3.23 per 100,000 persons (Table 2).

## Race

Most cases reported to NNDSS occurred in White persons; however, incidence was higher in Black or African American persons (Table 2 and Figure 4c).

- **2020:** 63% of reported cases were in persons of White race, with an incidence rate of 1.55 per 100,000 persons. In contrast, 21% were in those of Black or African American race, with an incidence rate of 2.73 per 100,000 persons (Table 2).
- **2021:** 64% of reported cases were in persons of White race, with an incidence rate of 2.10 per 100,000 persons. In contrast, 22% were in those of Black or African American race, with an incidence rate of 3.84 per 100,000 persons (Table 2).

## Ethnicity

Of cases reported to NNDSS from the 52 jurisdictions in 2020 and 2021, 18% were missing ethnicity data. Non-Hispanic persons accounted for the majority of the cases for which this information was available (Table 2 and Figure 4d). Among all cases, including those missing ethnicity data,

- **2020:** 7% were in persons of Hispanic ethnicity (Table 2).
- **2021:** 7% were in persons of Hispanic ethnicity (Table 2).

## Comparison between NNDSS and SLDSS

- The distributions of demographic characteristics were similar for persons with confirmed Legionnaires' disease reported to NNDSS compared to those reported to SLDSS (Figures 4a–4d).

## Legionellosis syndrome

Nearly all cases submitted to SLDSS were categorized as Legionnaires' disease (99% in 2020, and 99% in 2021) rather than Pontiac fever or extrapulmonary legionellosis (Figures 5a/5b).

- **2020:** 6,192 confirmed legionellosis cases were reported to SLDSS from 52 jurisdictions: 6,104 (99%) were Legionnaires' disease, 75 (1%) were Pontiac fever, and 13 (<1%) were extrapulmonary legionellosis (Figure 5a).
  - The case fatality rate (CFR) was 10% for Legionnaires' disease cases, 8% for Pontiac fever cases, and 18% for extrapulmonary legionellosis cases (Figure 5a).
- **2021:** 8,162 confirmed legionellosis cases were reported to SLDSS from 52 jurisdictions: 8,085 (99%) were Legionnaires' disease, 61 (1%) were Pontiac fever, and 16 (<1%) were extrapulmonary legionellosis (Figure 5b).
  - The CFR was 10% for Legionnaires' disease cases, 9% for Pontiac fever cases, and 13% for extrapulmonary legionellosis cases (Figure 5b).

## Complete reporting jurisdictions

- **2020:** The following 47 jurisdictions met at least one of the criteria for a complete reporting jurisdiction: Alabama, Alaska, Arkansas, Arizona, California, Colorado, Connecticut, Delaware, Florida, Georgia, Hawaii, Idaho, Iowa, Illinois, Indiana, Kansas, Kentucky, Louisiana, Maine, Massachusetts, Michigan, Minnesota, Mississippi, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York (state), New York City, North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, and Wyoming. (Please refer to the Methods in the [Technical Notes](#) for the complete reporting jurisdiction criteria.)
  - 6,014 confirmed Legionnaires' disease cases were reported to SLDSS from these 47 complete reporting jurisdictions, accounting for 99% of all 6,104 confirmed Legionnaires' disease cases reported to SLDSS from the 52 U.S. jurisdictions in 2020 (Figure 5a).

- **2021:** The following 49 jurisdictions met at least one of the criteria for a complete reporting jurisdiction: Alabama, Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, District of Columbia, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Massachusetts, Michigan, Minnesota, Mississippi, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York (state), New York City, North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, and Wyoming. (Please refer to the Methods in the [Technical Notes](#) for the complete reporting jurisdiction criteria.)
  - 7,837 confirmed Legionnaires' disease cases were reported to SLDSS from these 49 complete reporting jurisdictions, accounting for 97% of all 8,085 confirmed Legionnaires' disease cases reported to SLDSS from the 52 U.S. jurisdictions in 2021 ([Figure 5b](#)).

## Sources of exposure

SLDSS captures detailed exposure history within the 14 days before symptom onset, including exposure to a healthcare setting, travel history, and exposure to an assisted or senior living facility (See [Definitions](#) in the [Technical Notes](#) for more detail).

- **2020:** 6,014 confirmed Legionnaires' disease cases were reported to SLDSS from the 47 complete reporting jurisdictions: 857 patients (14%) had a healthcare exposure, 585 patients (10%) had a travel exposure, 148 patients (3%) had an assisted or senior living facility exposure, and 4,553 patients (76%) had none of these exposures ([Figure 6a](#) and [Table 3](#)).
  - Distribution of demographic characteristics varied by exposure category ([Table 4a](#)).
  - The percent of patients reporting none of these exposures was higher than in previous years when that percentage was typically 65%. This could be due to restricted travel and reduced healthcare-seeking behavior associated with the COVID-19 pandemic.
- **2021:** 7,837 confirmed Legionnaires' disease cases were reported to SLDSS from the 49 complete reporting jurisdictions: 1,198 patients (15%) had a healthcare exposure, 1,227 patients (16%) had a travel exposure, 146 patients (2%) had an assisted or senior living facility exposure, and 5,503 patients (70%) had none of these exposures ([Figure 6b](#) and [Table 3](#)).
  - Distribution of demographic characteristics varied by exposure category ([Table 4b](#)).

## Healthcare exposure

Of the Legionnaires' disease cases reported to SLDSS from the 47 complete reporting jurisdictions in 2020 and 49 complete reporting jurisdictions in 2021, approximately 15% were in patients who reported a healthcare exposure ([Figure 6a](#), [Figure 6b](#), and [Table 3](#)) (See [Definitions](#) in the [Technical Notes](#) for more detail).

- **2020:** Of the 857 confirmed Legionnaires' disease cases in patients with any healthcare exposure reported to SLDSS from the 47 complete reporting jurisdictions, 178 (21%) were presumptive healthcare-associated cases, and 679 (79%) were possible healthcare-associated cases ([Figure 6a](#) and [Table 5a](#)).
  - Of the 178 confirmed Legionnaires' disease cases in patients with presumptive healthcare association, 108 (61%) were in patients who reported exposure to a long-term care facility, and 33 (19%) were in patients who reported exposure to a hospital ([Table 5a](#)).
  - Of the 679 confirmed Legionnaires' disease cases in patients with possible healthcare association, 271 (40%) were in patients who reported exposure to a hospital, 223 (33%) were in patients who reported exposure to a clinic, and 70 (10%) were in patients who reported exposure to a long-term care facility ([Table 5a](#)).
  - The percent of patients with a healthcare exposure (14%) was lower than the 18%–20% it had typically been in previous years, possibly due to reduced health-seeking behavior associated with the COVID-19 pandemic.

- **2021:** Of the 1,198 confirmed Legionnaires' disease cases in patients with any healthcare exposure reported to SLDSS from the 49 complete reporting jurisdictions, 159 (13%) were presumptive healthcare-associated cases, and 1,039 (87%) were possible healthcare-associated cases ([Figure 6b](#) and [Table 5b](#)).
  - Of the 159 confirmed Legionnaires' disease cases in patients with presumptive healthcare association, 80 (50%) were in patients who reported exposure to a long-term care facility, and 40 (25%) were in patients who reported exposure to a hospital ([Table 5b](#)).
  - Of the 1,039 confirmed Legionnaires' disease cases in patients with possible healthcare association, 391 (38%) were in patients who reported exposure to a clinic, 370 (36%) were in patients who reported exposure to a hospital, and 94 (9%) were in patients who reported exposure to a long-term care facility ([Table 5b](#)).
  - The percent of patients with a healthcare exposure (15%) was lower than the 18%–20% it had typically been in previous years, possibly due to reduced health-seeking behavior associated with the COVID-19 pandemic.

### **Travel exposure**

Of the Legionnaires' disease cases reported to SLDSS from 47 complete reporting jurisdictions in 2020 and 49 complete reporting jurisdictions in 2021, 10% in 2020 and 16% in 2021 were in patients who reported travel exposure ([Figure 6a](#), [Figure 6b](#), and [Table 3](#)) (See [Definitions](#) in the [Technical Notes](#) for more detail).

- **2020:** Of the 585 confirmed Legionnaires' disease cases in patients with travel exposure reported by the 47 complete reporting jurisdictions, 370 patients (63%) reported at least one public accommodation, 165 patients (28%) reported private accommodations only, and 50 patients (9%) reported accommodations of unknown type ([Table 3](#)).
  - The percent of patients with a travel exposure (10%) was lower than the 15% that it had typically been in previous years, possibly due to travel restrictions and business closures associated with the COVID-19 pandemic.
- **2021:** Of the 1,227 confirmed Legionnaires' disease cases in patients with travel exposure reported by the 49 complete reporting jurisdictions, 728 patients (59%) reported at least one public accommodation, 287 patients (23%) reported private accommodations only, and 212 patients (17%) reported accommodations of unknown type ([Table 3](#)).

### **Assisted or senior living facility exposure**

Of the Legionnaires' disease cases reported to SLDSS from the 47 complete reporting jurisdictions in 2020 and 49 complete reporting jurisdictions in 2021, approximately 2% were in patients who reported an assisted or senior living facility exposure ([Figure 6a](#), [Figure 6b](#), and [Table 3](#)) (See [Definitions](#) in the [Technical Notes](#) for more detail).

- **2020:** Of the 148 confirmed Legionnaires' disease cases in patients with an assisted or senior living facility exposure reported to SLDSS from the 47 complete reporting jurisdictions, 75 patients (51%) had exposure to an assisted living facility, 54 patients (37%) had exposure to a senior living facility, 3 patients (2%) had exposure to both, and 16 patients (11%) had exposure to a facility of unspecified type ([Table 3](#)).
- **2021:** Of the 146 confirmed Legionnaires' disease cases in patients with an assisted or senior living facility exposure reported to SLDSS from the 49 complete reporting jurisdictions, 71 patients (49%) had exposure to an assisted living facility, 56 patients (38%) had exposure to a senior living facility, 3 patients (2%) had exposure to both, and 16 patients (11%) had exposure to a facility of unspecified type ([Table 3](#)).

## Hospitalizations and outcomes

Overall, nearly all patients diagnosed with Legionnaires' disease were hospitalized for treatment regardless of exposure or age (Table 6 and Figure 7). Overall, the CFR for Legionnaires' disease was approximately 10% (Figures 5a/5b and Table 7) and varied by exposure and age (Table 7 and Figure 8).

### Hospitalizations

#### By exposure category

- **2020:** The overall rate of hospitalization for treatment of Legionnaires' disease among cases with known hospitalization status reported to SLDSS from the 47 complete reporting jurisdictions in 2020 was 97%; that rate ranged from 95%–98% by exposure category (Table 6).
- **2021:** The overall rate of hospitalization for treatment of Legionnaires' disease among cases with known hospitalization status reported to SLDSS from the 49 complete reporting jurisdictions in 2021 was 97%; that rate ranged from 96%–97% by exposure category (Table 6).

#### By age group

- **2020:** The rate of hospitalization for treatment of Legionnaires' disease ranged from 95%–100% across age groups (Figure 7). Due to small case counts ( $N \leq 10$ ), hospitalization rates may be unstable in age groups 0–9 and 10–19, and where age is missing; therefore, caution should be used when interpreting these rates.
- **2021:** The rate of hospitalization for treatment of Legionnaires' disease ranged from 93%–100% across age groups (Figure 7). Due to small case counts ( $N \leq 12$ ), hospitalization rates may be unstable in age groups 0–9 and 10–19, and where age is missing; therefore, caution should be used when interpreting these rates.

### Outcomes

#### By exposure category

- **2020:** Among cases of Legionnaires' disease with a known outcome reported from the 47 complete reporting jurisdictions in 2020, the overall CFR was 10%. The CFR was 17% in patients with a healthcare exposure (29% for presumptive and 14% for possible healthcare-associated Legionnaires' disease), 5% in patients with a travel exposure, 18% in patients with an assisted or senior living facility exposure, and 9% in patients with none of these exposures (Table 7).
- **2021:** Among cases of Legionnaires' disease with a known outcome reported from the 49 complete reporting jurisdictions in 2021, the overall CFR was 10%. The CFR was 16% in patients with a healthcare exposure (37% for presumptive and 13% for possible healthcare-associated Legionnaires' disease), 5% in patients with a travel exposure, 12% in patients with an assisted or senior living facility exposure, and 9% in patients with none of these exposures (Table 7).

#### By age group

- **2020:** The CFR ranged from 0%–22% across different age groups and generally increased with age (Figure 8). Due to low case counts ( $N \leq 10$ ), CFRs may be unstable in age groups 0–9 and 10–19, and where age is missing; therefore, caution should be used when interpreting these rates.
- **2021:** The CFR ranged from 0%–28% across different age groups and generally increased with age (Figure 8). Due to low case counts ( $N \leq 10$ ), CFRs may be unstable in age groups 0–9 and 10–19, and where age is missing; therefore, caution should be used when interpreting these rates.

## Diagnostic methods

Most confirmed Legionnaires' disease cases (96%) were diagnosed by UAT (Table 8). Among the Legionnaires' disease cases confirmed through a positive culture or NAAT, *L. pneumophila* was the most common species identified.

# Technical Notes

## Table and figure organization

Tables and figures in this report are organized by surveillance system and content. Tables 1–2 and Figures 1–3 were created using data from NNDSS exclusively. Cases of legionellosis in these tables and figures are referred to as Legionnaires' disease (for further explanation, refer to [text box](#) in the [Background](#)). Figures 4a–4d were created using data from both NNDSS and SLDSS. Cases of legionellosis from NNDSS in Figures 4a–4d are referred to as Legionnaires' disease for the reasons discussed above; because syndrome of legionellosis is specified for SLDSS, data for SLDSS in Figures 4a–4d are limited to cases of Legionnaires' disease. Figures 5–8 and Tables 3–8 were created using data from SLDSS exclusively. These tables and figures present SLDSS data limited to cases of Legionnaires' disease except where noted. Only data for confirmed cases are presented in this report.

Figures 5a–5b include all cases of legionellosis (i.e., Legionnaires' disease, Pontiac fever, and extrapulmonary legionellosis) to illustrate the distribution of reporting by cases of different legionellosis syndrome and by completeness of reporting by jurisdiction.

## Methods

### Data collection

This surveillance report presents descriptive epidemiologic findings from NNDSS and SLDSS. Data were compiled from cases reported to either surveillance system from the 50 U.S. state, District of Columbia, and New York City health departments. The surveillance population includes residents of these 52 U.S. jurisdictions diagnosed with Legionnaires' disease in 2020 and 2021.

Public health officials electronically report cases to NNDSS. Data include demographic and basic epidemiologic information. Cases reported to NNDSS from 6 jurisdictions for 2020 may be incomplete due to the COVID-19 pandemic (<https://stacks.cdc.gov/view/cdc/175628>).

Public health officials use the SLDSS Legionellosis Case Report Form (available at <https://www.cdc.gov/investigate-legionella/php/data-research/forms-and-instructions.html>), or the equivalent state-specific case report form, to capture demographic, clinical, exposure, and laboratory testing details for routine surveillance purposes. For 2020 and 2021, SLDSS includes data from cases reported as of July 14, 2025. The COVID-19 pandemic may have affected jurisdictions' abilities to report Legionnaires' disease cases to SLDSS for both years.

Data from NNDSS are used to describe Legionnaires' disease trends by year, seasonal patterns by month, regional differences by jurisdiction of residence, and incidence rates by demographic characteristics. Incidence rate was calculated by dividing the number of confirmed Legionnaires' disease cases reported to NNDSS by the total resident population estimate or by a specific demographic population estimate as the denominator for 2020 or 2021, multiplied by 100,000. The National Cancer Institute, in collaboration with the U.S. Census Bureau, determines bridged race estimates of resident population by year, jurisdiction, county, age, sex, race, and ethnicity. Population estimates for jurisdictions as of July 1, 2023, are available through the Surveillance, Epidemiology, and End Results Program (available at <https://seer.cancer.gov/popdata/>).

Data from SLDSS are used to describe exposure settings that are potential sources of Legionnaires' disease infections (i.e., travel, healthcare, and assisted or senior living facilities) during the 14 days before symptom onset; clinical categorization of legionellosis (i.e., Legionnaires' disease, Pontiac fever, and extrapulmonary legionellosis); hospitalization; patient outcome; and laboratory diagnostic methods. CFRs were calculated as the number of reported confirmed Legionnaires' disease case deaths divided by the number Legionnaires' disease cases with a known outcome (See [Definitions](#) in the [Technical Notes](#) for more detail).

SAS 9.4 was used for data analysis for both systems (SAS Institute, Cary, NC).

## Complete reporting jurisdictions

NNDSS is considered the “gold standard” for case counts because almost all diagnosed Legionnaires’ disease cases are reported to NNDSS (5); however, NNDSS captures only basic demographic information. SLDSS collects additional data including exposure history, disease severity indicators, and diagnostic laboratory testing results. Completeness of reporting of cases to SLDSS varies by jurisdiction and year. Because data from the jurisdictions with more complete reporting are more representative and estimates are more likely to contain less bias, this report restricts most SLDSS analyses to complete reporting jurisdictions.

Complete reporting criteria varied by the number of annual cases a jurisdiction reported to NNDSS. A jurisdiction with 1–9 cases (inclusive) reported to NNDSS was considered a complete reporter for that year if the absolute difference in number of cases reported to NNDSS and SLDSS was  $\leq 2$ , the difference in natural logarithms of the number of cases reported to NNDSS and SLDSS was  $\leq 0.1$ , or  $\geq 66\%$  of the number of cases reported to NNDSS were reported to SLDSS. A jurisdiction with 10–99 cases (inclusive) reported to NNDSS was considered a complete reporter for that year if the absolute difference was  $\leq 4$ , the difference in natural logs was  $\leq 0.36$ , or  $\geq 90\%$  of cases were reported to SLDSS. A jurisdiction with  $\geq 100$  cases reported to NNDSS was considered a complete reporter for that year if  $\geq 90\%$  of cases were reported to SLDSS.

## Time period and setting

Reported confirmed cases of Legionnaires’ disease in NNDSS are based on case entry into the year’s database as of the closeout date (Figures 1–2). Cases reported after the closeout date for a given year’s dataset contribute to case counts for the following year regardless of the year in which they occurred (e.g., cases with symptom onset in 2020 reported to CDC after the closeout date for 2020 contributed to the 2021 case count). In NNDSS, month is calculated based on the *MMWR* week assigned to that case by the reporting jurisdiction (available at [https://ndc.services.cdc.gov/wp-content/uploads/2021/02/MMWR\\_Week\\_overview.pdf](https://ndc.services.cdc.gov/wp-content/uploads/2021/02/MMWR_Week_overview.pdf)) (Figure 2).

Reported cases in SLDSS are based on case year, defined as the year of symptom onset, when available. Date of symptom onset is self-reported by the patient as the date signs and symptoms of Legionnaires’ disease first occurred or deferred to the judgement of the clinicians providing care and the public health officials performing the interviews. If onset date is not stated, case year for confirmed cases is determined by the earliest available of the following dates: date of positive laboratory test; date patient was hospitalized for treatment of Legionnaires’ disease; or date case was first reported to public health at any level.

The population for this report includes residents from 52 U.S. jurisdictions (50 U.S. states, New York City, and District of Columbia). Resident jurisdiction is defined as the state, or jurisdiction, of usual residence of each case at the time of disease onset as reported to NNDSS (Figures 3a/3b) (available at <https://ndc.services.cdc.gov/wp-content/uploads/2021/02/11-SI-04.pdf>). New York City and New York State health departments report independently to both surveillance systems; data from these jurisdictions are mutually exclusive in this report, i.e. New York City data are not included in New York State data. Map shading of confirmed cases of Legionnaires’ disease reported to NNDSS by resident jurisdiction was determined by calculating individual jurisdictions’ incidence rates and shading by quintile of the distribution (Figures 3a/3b).

## Definitions

### Case status

CSTE criteria in effect during 2020 and 2021 were used to define and classify cases (1). This report includes confirmed cases only. To be considered confirmed, a case must occur in a person with a clinically compatible illness and at least one of the confirmatory laboratory criteria (i.e., positive UAT, isolation of *Legionella* by culture, detection of *Legionella* by a validated NAAT, or a 4-fold or greater rise in specific serum antibody titer to *Legionella pneumophila* serogroup 1) (1). A probable case is defined as a clinically compatible illness in a patient with an epidemiologic link to a setting with a confirmed source of *Legionella* or to a setting with a suspected source of *Legionella* that is associated with at least one confirmed case (1). CSTE defines a suspect case as a clinically compatible illness that meets at least one of the presumptive (suspect) laboratory criteria (i.e., a 4-fold or greater rise in antibody titer to multiple species using pooled antigens or specific species or serogroups of *Legionella* other than *Legionella pneumophila* serogroup 1, or a positive detection of specific *Legionella* antigen or staining

of the organism by direct fluorescent antibody staining or immunohistochemistry) (1). Most cases submitted to NNDSS and SLDSS were categorized as confirmed (98%–99%).

### Demographic characteristics

Selected demographic characteristics include age at onset, sex, race, and ethnicity. For both surveillance systems, age is categorized in 10-year periods until age 79 (then 80–84 and ≥85 years of age) (Tables 2, and 4a/4b and Figure 4a). Sex is reported by the health department completing the case investigation as either female or male (Tables 2, and 4a/4b and Figure 4b). NNDSS uses bridged-race categories that include American Indian or Alaska Native, Asian or Pacific Islander, Black or African American, or White (Table 2 and Figure 4d). SLDSS categorizes race as American Indian or Alaska Native, Asian, Black or African American, Hawaiian Islander or Pacific Islander, White, or multiple races (Figure 4c). For both systems, Hispanic ethnicity is restricted to Hispanic or Latino, or not Hispanic or Latino, and is independent of race (Tables 2, Table 4a/4b, and Figure 4d).

### Exposure categories

To assess potential sources of *Legionella* infection, SLDSS data were limited to confirmed Legionnaires' disease cases reported from complete reporting jurisdictions in 2020 and 2021 (Figures 6a/6b and Table 3).

SLDSS captures Legionnaires' disease-specific data including exposure history within the 14 days before symptom onset. Exposure to a healthcare setting, travel history, and exposure to an assisted or senior living facility are captured. The exposures are not mutually exclusive; multiple exposure types can occur during the exposure period. Cases without reported exposure to a healthcare setting, travel history, or exposure to an assisted or senior living facility are categorized as “none of these” (Figures 6a/6b and Table 3).

#### Healthcare exposure

Cases in patients who reported visiting, working in, or staying in a healthcare setting during the 14 days before date of symptom onset are classified as cases with a healthcare exposure. Because healthcare facilities often have large, complex water systems and aerosol-generating devices, healthcare exposure is a risk factor for Legionnaires' disease. Patients in healthcare settings often also have personal risk factors for Legionnaires' disease, such as advanced age, weakened immune systems, and chronic medical conditions (11). For the purpose of Legionnaires' disease surveillance, the CDC definition for healthcare facility does not include assisted living facilities, senior living facilities, prisons, or group homes, but does include long-term care facilities.

Cases in patients with a healthcare exposure are categorized by healthcare setting and exposure type. Healthcare setting includes the following mutually exclusive categories: hospital, long-term care facility, clinic, other, more than one type of setting, and not specified. Examples of “other” healthcare settings include diagnostic centers, disability service centers, eye centers, laboratories, and pharmacies. Healthcare exposure type includes the following mutually exclusive categories: inpatient, outpatient, visitor or volunteer, employee, more than one type of healthcare exposure, and not specified (Table 3).

For confirmed Legionnaires' disease cases in patients with a healthcare exposure, cases are classified as presumptive or possible healthcare-associated cases. Presumptive healthcare-associated cases are cases with ≥10 days of continuous stay at a healthcare facility during the 14 days before onset of symptoms. Possible healthcare-associated cases are cases that spent a portion of the 14 days before date of symptom onset in one or more healthcare facilities, but do not meet the criteria for presumptive healthcare-associated Legionnaires' disease (Figures 6a/6b and Tables 5a/5b).

A patient with Legionnaires' disease who spent ≥10 continuous days during the 14 days before symptom onset in multiple healthcare facilities (i.e., someone transferred between healthcare facilities) would be considered a presumptive healthcare-associated case for surveillance purposes. Cases in patients who reported a visit to a healthcare setting in the 14 days before date of symptom onset and did not indicate presumptive or possible healthcare associations were categorized as possible healthcare associations.

## Travel exposure

Cases in persons who reported spending at least one night away from home (in the state of residence, another state, or another country) in the 14 days before date of symptom onset, not including nights spent in a healthcare facility or congregate living setting, are classified as having a travel exposure.

Travel exposure is further classified at CDC as either public or private. Public travel includes spending at least one night away from home in the 14 days before symptom onset in a public accommodation (e.g., hotel, motel, resort, cruise ship, short-term vacation rental, RV park). Because hotels, resorts, and cruise ships often use large, complex water systems and aerosol-generating devices, travel to public accommodations is a known risk factor for exposure to *Legionella*. Private travel includes spending at least one night away from home in the 14 days before symptom onset in a private accommodation (e.g., in the home of family or friends or in a vehicle).

Cases may occur in patients with multiple travel locations during the exposure period. If any exposure to a public accommodation occurs, the case is categorized as public travel. Private travel represents exposure to private accommodations only. If a patient has exposure to both private and unknown accommodations, the case is categorized as unknown travel ([Figures 6a/6b](#) and [Table 3](#)).

## Assisted or senior living facility exposure

Cases in patients who reported visiting or staying in an assisted or senior living facility in the 14 days before symptom onset are classified as having assisted or senior living exposure. Assisted living facilities, by the SLDSS case report form definition, provide custodial care without skilled nursing (e.g., assistance with activities of daily living, like bathing and dressing). Senior living facilities provide independent living for the elderly. Although assisted and senior living facilities are not considered healthcare facilities for Legionnaires' disease surveillance purposes, they often house populations at increased risk for Legionnaires' disease and can have large, complex water systems. For those reasons, these facilities should be considered as likely sources in outbreak investigations and should have water management programs in place.

Assisted or senior living facility-associated cases are categorized by assisted or senior living setting and exposure type. Setting includes the following mutually exclusive categories: assisted living facility, senior living facility both, and not specified. Exposure type includes the following mutually exclusive categories: resident, visitor or volunteer, employee, more than one type of exposure, and not specified ([Figures 6a/6b](#) and [Table 3](#)).

## “None of these”

“None of these” exposures includes confirmed Legionnaires' disease cases in patients who did not report healthcare, travel, or assisted or senior living facility exposures in the 14 days before symptom onset ([Figures 6a/6b](#) and [Table 3](#)).

## Hospitalization

Health department staff indicate on the SLDSS case report form whether the patient was hospitalized during treatment for Legionnaires' disease as yes, no, or unknown ([Table 6](#) and [Figure 7](#)). If the patient was hospitalized within the 14 days prior to the date of Legionnaires' disease symptom onset for unrelated reasons, the hospitalization information also contributed to the case having a healthcare exposure.

## Outcome

Health department staff indicate on the SLDSS case report form if the patient survived, died, or was still ill at time of reporting. If this information is unknown, case outcome is indicated as “unknown” ([Table 7](#) and [Figure 8](#)). This data element may not represent the final case outcome, as a patient's condition may change after submission of case data to SLDSS. Deaths may not have resulted from Legionnaires' disease or Legionnaires' disease alone. CFR refers to the number of reported deaths divided by the number of cases with a known outcome.

## Diagnostic methods

Frequencies for the laboratory diagnostic methods used to confirm cases of Legionnaires' disease (i.e., UAT, culture, NAAT, and serology) according to the CSTE definition are listed in [Table 7](#). The preferred diagnostic tests for Legionnaires' disease are the *Legionella* UAT in concert with a culture of lower respiratory secretions (e.g., sputum, bronchoalveolar lavage) on selective media.

## **Interpreting data**

The purpose of this surveillance report is to present descriptive information regarding Legionnaires' disease. Some data from this report can be used to assess disease trends and case counts, but they are not intended to suggest a causal relationship between exposures and Legionnaires' disease. NNDSS data were reported by the jurisdiction of the patient's usual residence at the time of disease onset, which does not necessarily represent the source of exposure to *Legionella*. Since NNDSS and SLDSS are separately managed surveillance systems, state public health offices report Legionnaires' disease cases separately to both systems. Data published in this report may be different from previously published data in *MMWR* for many reasons, including differences in the timing of reports, the data source, or the methodology of surveillance.

While the incidence of reported cases of Legionnaires' disease in the United States has increased 6-fold from 2000 through 2021, these numbers may underestimate the true incidence, because Legionnaires' disease is likely underdiagnosed (14). Incomplete reporting to SLDSS makes interpretation of data difficult; findings from these data may not represent the entire country. Only the numbers of cases reported to NNDSS and SLDSS were considered when determining which jurisdictions met the criteria for a complete reporting jurisdiction. It was assumed that SLDSS data were a subset of NNDSS data; this assumption was not verified for all jurisdictions. Limiting analyses to complete reporting jurisdictions in SLDSS reduced potential bias in SLDSS data. However, due to the different number of jurisdictions that were considered to have complete reporting in 2020 and 2021, interpretations of trends in SLDSS data are challenging, and data may not be directly comparable from year to year. More complete reporting to SLDSS would enhance surveillance quality.

In addition to incomplete reporting, another limitation is the timing of reporting to NNDSS and SLDSS. For cases reported to NNDSS, the case year is determined by the year's dataset to which the case is reported, whereas for SLDSS, the case year is determined by the onset date. To remain consistent with case counts published in *MMWR*, NNDSS analyses in this report include cases by the year of the dataset to which they were reported, rather than the earliest year associated with the case. However, the rate at which cases contributed to the following year's case counts in NNDSS was consistent over the years, and so this may not result in a significant skewing of data. Case data for 2020 and 2021 may be less complete than in past years due to case investigation resources being diverted to the COVID-19 pandemic. In addition, patient outcome may be unknown if the patient was still ill at the time of investigation and subsequent follow-up is not possible.

## **Importance of reporting**

Strong surveillance is critical for public health response and understanding the epidemiology as the reported incidence of Legionnaires' disease continues to increase. Prompt reporting of cases with complete exposure information facilitates timely identification of clusters of cases. CDC is uniquely positioned to identify connections among cases that occur in residents of different jurisdictions. However, state and local public health officials are best positioned to systematically track Legionnaires' disease cases and efficiently detect outbreaks among residents of their respective jurisdictions. Early detection of clusters can lead to faster exposure source identification and expedite interventions to prevent additional cases. Most cases of Legionnaires' disease are not associated with a known outbreak. Complete reporting renders a fuller picture of disease burden and trends and may suggest novel sources of transmission.

## **Prevention**

Regardless of setting or source of exposure to *Legionella*, a comprehensive approach to prevention requires an understanding of the mechanisms by which *Legionella* growth and transmission can occur in building water systems (6). Implementing and maintaining an effective water management program is the principal prevention measure. Rapid case identification with appropriate laboratory testing and prompt intervention may prevent additional cases from occurring (11).

## Acknowledgements

The findings in this report are based on contributions from the 50 U.S. state, District of Columbia, and New York City health departments.

## References

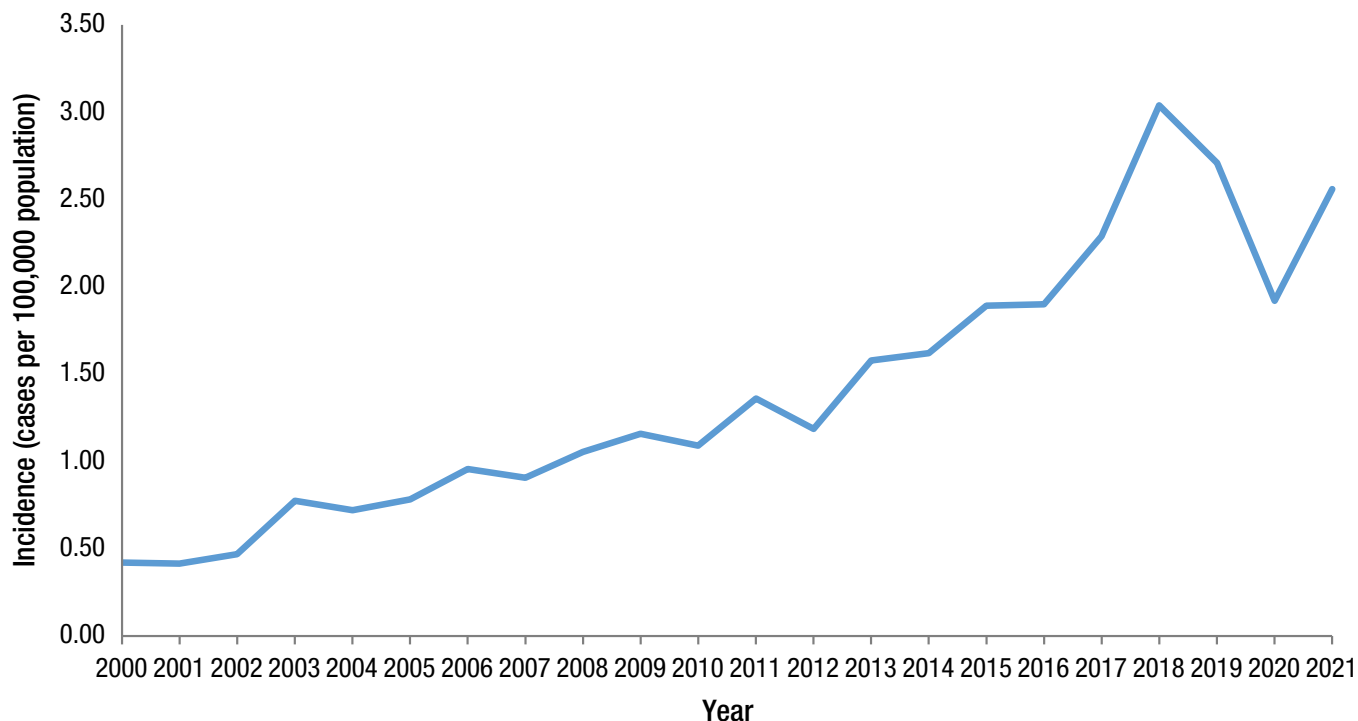
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# Tables and Figures

## Section 1: National Notifiable Diseases Surveillance System (NNDSS)

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**Figure 1. Crude incidence<sup>a</sup> rates of reported confirmed cases of Legionnaires' disease<sup>b</sup> by year<sup>c</sup>—NNDSS,<sup>d,e</sup> United States, 2000–2021.**



<sup>a</sup> Crude incidence of cases per 100,000 population (number of confirmed Legionnaires' disease cases reported that year divided by postcensal population estimate for that year times 100,000 population).

<sup>b</sup> Cases of disease due to *Legionella* are reported to NNDSS as legionellosis, which includes Legionnaires' disease, Pontiac fever, and extrapulmonary legionellosis, but are referred to as Legionnaires' disease in this figure (because almost all legionellosis cases reported in the United States are Legionnaires' disease cases).

<sup>c</sup> Based on year the case was reported to CDC.

<sup>d</sup> National Notifiable Diseases Surveillance System (NNDSS).

<sup>e</sup> Jurisdictions may report cases of any case status to NNDSS but only confirmed cases of Legionnaires' disease from the 50 U.S. states, the District of Columbia, and New York City are included in this figure, with the exceptions noted below. National case counts published in the *MMWR* use the same criteria and exceptions.

2000, 2002, and 2003: Legionnaires' disease cases with probable, suspect, and unknown case status were also included.

2001: Legionnaires' disease cases with probable and unknown case status were also included.

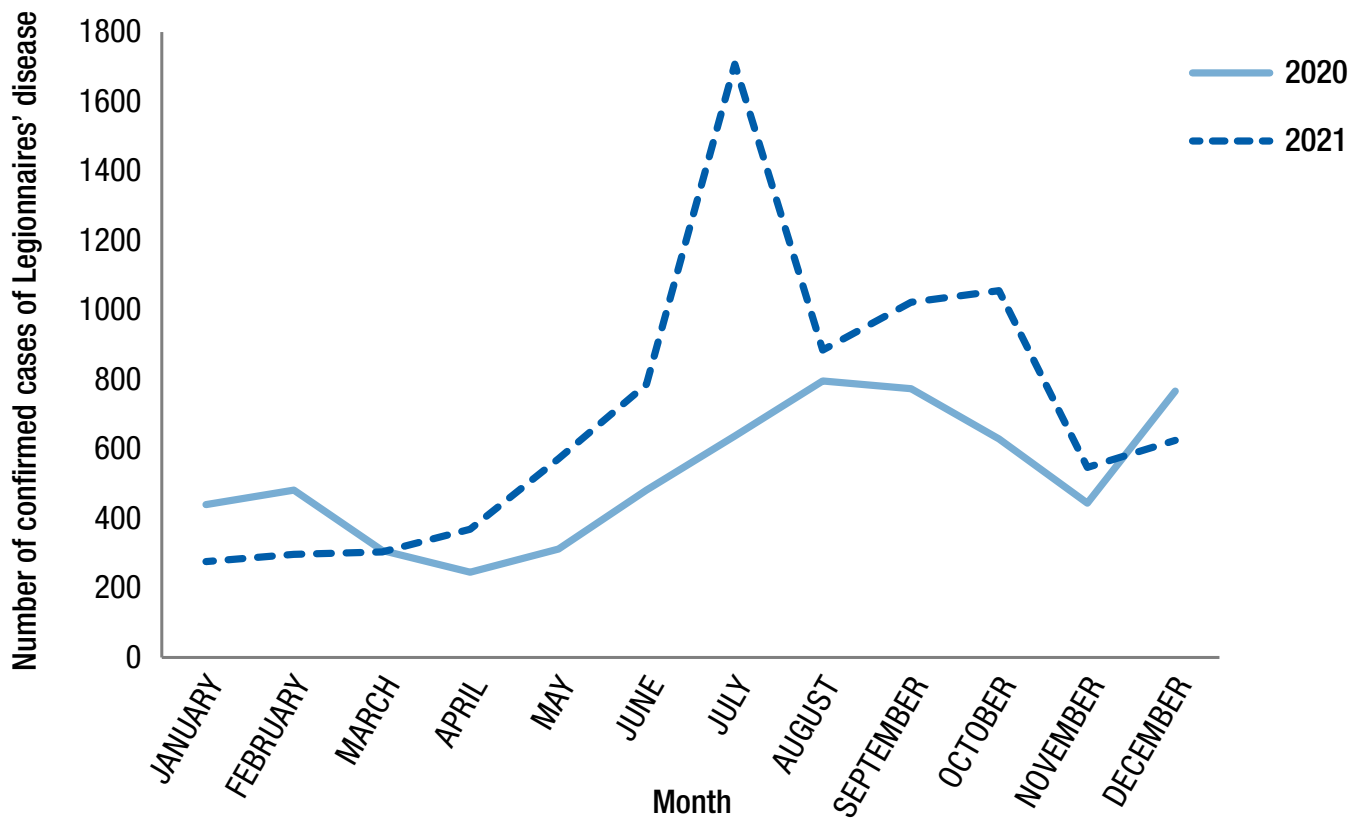
2000–2001: Legionnaires' disease cases were not reportable in Oregon and West Virginia.

2004–2012: Legionnaires' disease cases with unknown case status reported from California were also included.

2011–2012: Legionnaires' disease cases were not reportable in the District of Columbia.

**Accessible version at:** [www.cdc.gov/legionella/php/surveillance/surveillance-report-2020-2021.html#figure-1](http://www.cdc.gov/legionella/php/surveillance/surveillance-report-2020-2021.html#figure-1)

**Figure 2.** Number of reported confirmed cases of Legionnaires' disease<sup>a</sup> by month<sup>b</sup> and year<sup>c</sup>—NNDSS,<sup>d</sup> United States, 2020 and 2021.



<sup>a</sup> Cases of disease due to *Legionella* are reported to NNDSS as legionellosis, which includes Legionnaires' disease, Pontiac fever, and extrapulmonary legionellosis, but are referred to as Legionnaires' disease in this figure (because almost all legionellosis cases reported in the United States are Legionnaires' disease cases).

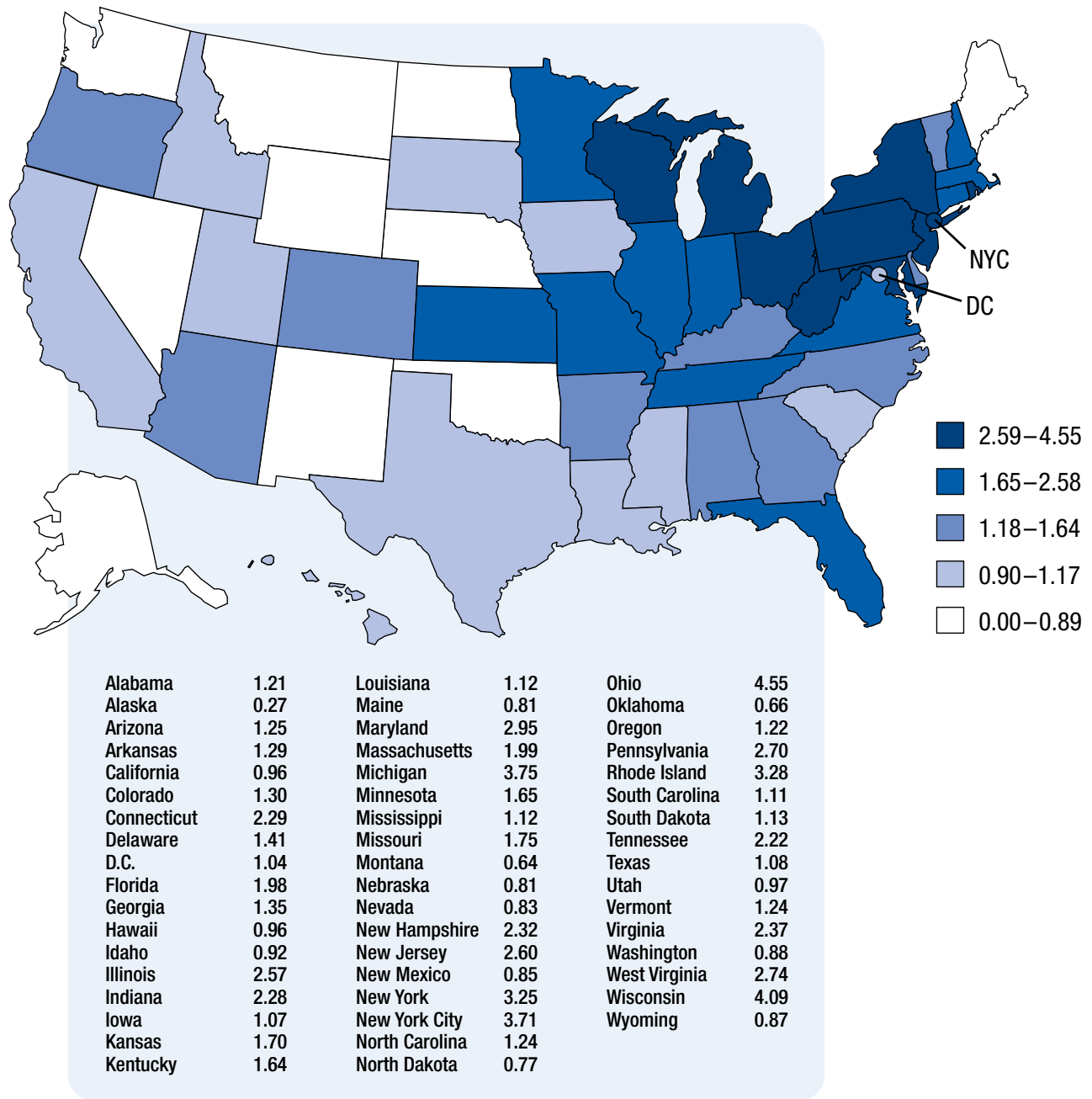
<sup>b</sup> Month is based upon Morbidity and Mortality Weekly Report year and week (available at [https://ndc.services.cdc.gov/wp-content/uploads/2021/02/MMWR\\_Week\\_overview.pdf](https://ndc.services.cdc.gov/wp-content/uploads/2021/02/MMWR_Week_overview.pdf)).

<sup>c</sup> Based on year the case was reported to CDC.

<sup>d</sup> National Notifiable Diseases Surveillance System (NNDSS).

Accessible version at: [www.cdc.gov/legionella/php/surveillance/surveillance-report-2020-2021.html#figure-2](http://www.cdc.gov/legionella/php/surveillance/surveillance-report-2020-2021.html#figure-2)

**Figure 3a. Crude incidence<sup>a</sup> rates of reported confirmed cases of Legionnaires' disease<sup>b</sup> by jurisdiction of residence<sup>c</sup>—NNDSS,<sup>d</sup> United States, 2020.<sup>e,f</sup>**



<sup>a</sup> Crude incidence of cases per 100,000 population (number of confirmed Legionnaires' disease cases reported that year divided by postcensal resident jurisdiction population estimate for that year times 100,000 population).

<sup>b</sup> Cases of disease due to *Legionella* are reported to NNDSS as legionellosis, which includes Legionnaires' disease, Pontiac fever, and extrapulmonary legionellosis, but are referred to as Legionnaires' disease in this figure (because almost all legionellosis cases reported in the United States are Legionnaires' disease cases).

<sup>c</sup> Jurisdiction of the patient's "usual residence" at the time of disease onset.

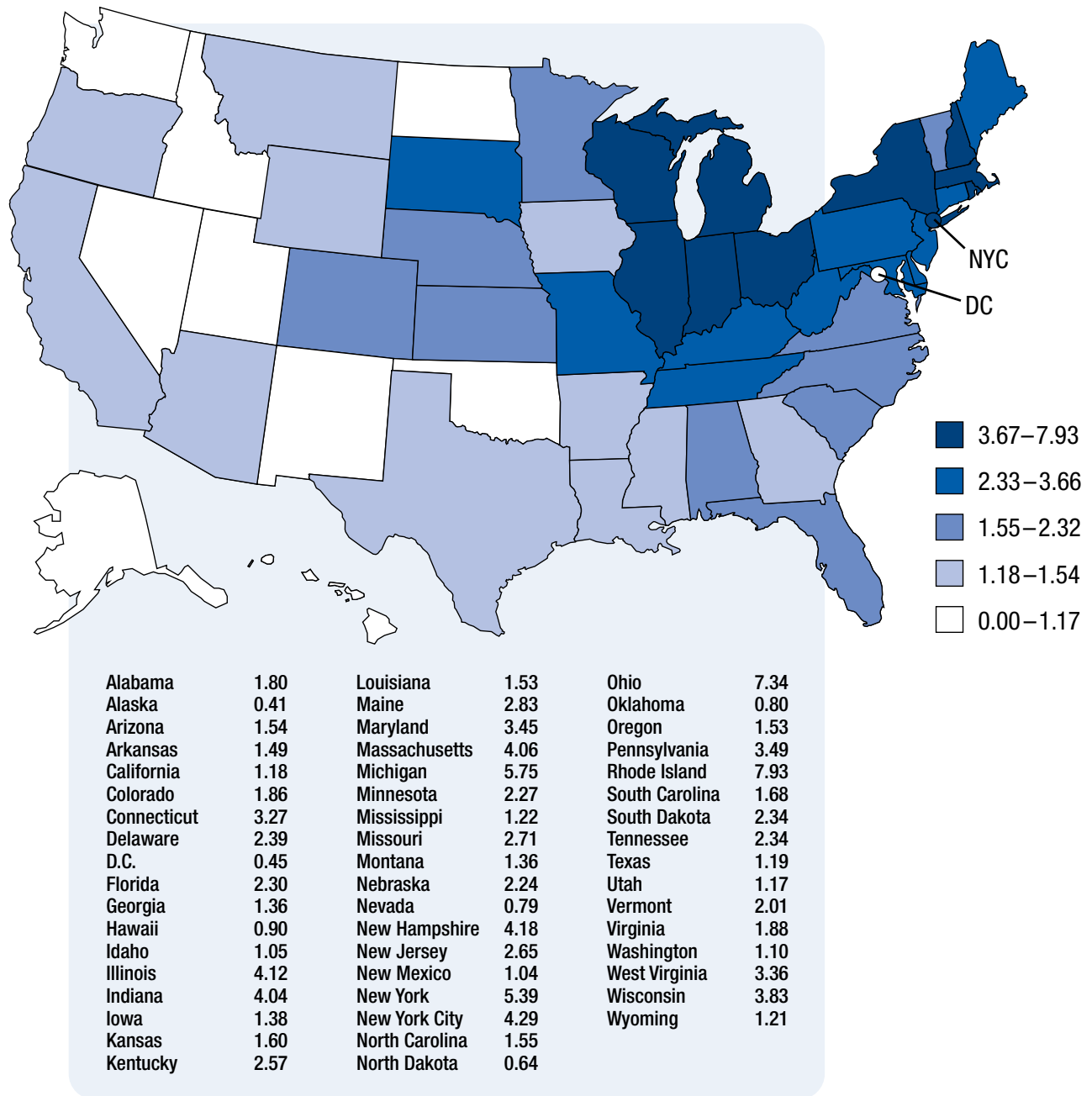
<sup>d</sup> National Notifiable Diseases Surveillance System (NNDSS).

<sup>e</sup> Based on year the case was reported to CDC.

<sup>f</sup> Shading represents quintiles of incidence rates.

Accessible version at: [www.cdc.gov/legionella/php/surveillance/surveillance-report-2020-2021.html#figure-3a](http://www.cdc.gov/legionella/php/surveillance/surveillance-report-2020-2021.html#figure-3a)

**Figure 3b. Crude incidence<sup>a</sup> rates of reported confirmed cases of Legionnaires' disease<sup>b</sup> by jurisdiction of residence<sup>c</sup>—NNDSS,<sup>d</sup> United States, 2021.<sup>e,f</sup>**



<sup>a</sup> Crude incidence of cases per 100,000 population (number of confirmed Legionnaires' disease cases reported that year divided by postcensal resident jurisdiction population estimate for that year times 100,000 population).

<sup>b</sup> Cases of disease due to *Legionella* are reported to NNDSS as legionellosis, which includes Legionnaires' disease, Pontiac fever, and extrapulmonary legionellosis, but are referred to as Legionnaires' disease in this figure (because almost all legionellosis cases reported in the United States are Legionnaires' disease cases).

<sup>c</sup> Jurisdiction of the patient's "usual residence" at the time of disease onset.

<sup>d</sup> National Notifiable Diseases Surveillance System (NNDSS).

<sup>e</sup> Based on year the case was reported to CDC.

<sup>f</sup> Shading represents quintiles of incidence rates.

**Accessible version at:** [www.cdc.gov/legionella/php/surveillance/surveillance-report-2020-2021.html#figure-3b](http://www.cdc.gov/legionella/php/surveillance/surveillance-report-2020-2021.html#figure-3b)

**Table 1.** Number of reported confirmed cases of Legionnaires' disease<sup>a</sup> by jurisdiction of residence<sup>b</sup> and year<sup>c</sup>—NNDSS,<sup>d</sup> United States, 2020 and 2021.

Jurisdiction	2020 (Total=6,310)		2021 (Total=8,442)	
	N	%	N	%
Alabama	61	1.0	91	1.1
Alaska	2	0.0	3	0.0
Arizona	90	1.4	112	1.3
Arkansas	39	0.6	45	0.5
California	380	6.0	460	5.5
Colorado	75	1.2	108	1.3
Connecticut	82	1.3	118	1.4
Delaware	14	0.2	24	0.3
District of Columbia	7	0.1	3	0.0
Florida	428	6.8	502	6.0
Georgia	145	2.3	147	1.7
Hawaii	14	0.2	13	0.2
Idaho	17	0.3	20	0.2
Illinois	329	5.2	523	6.2
Indiana	155	2.5	275	3.3
Iowa	34	0.5	44	0.5
Kansas	50	0.8	47	0.6
Kentucky	74	1.2	116	1.4
Louisiana	52	0.8	71	0.8
Maine	11	0.2	39	0.5
Maryland	182	2.9	213	2.5
Massachusetts	139	2.2	284	3.4
Michigan	378	6.0	577	6.8
Minnesota	94	1.5	130	1.5
Mississippi	33	0.5	36	0.4
Missouri	108	1.7	167	2.0
Montana	7	0.1	15	0.2
Nebraska	16	0.3	44	0.5
Nevada	26	0.4	25	0.3
New Hampshire	32	0.5	58	0.7
New Jersey	241	3.8	246	2.9
New Mexico	18	0.3	22	0.3
New York State	369	5.9	614	7.3
New York City	324	5.1	363	4.3
North Carolina	130	2.1	164	1.9
North Dakota	6	0.1	5	0.1
Ohio	537	8.5	864	10.2
Oklahoma	26	0.4	32	0.4
Oregon	52	0.8	65	0.8

Jurisdiction	2020 (Total=6,310)		2021 (Total=8,442)	
	N	%	N	%
Pennsylvania	351	5.6	454	5.4
Rhode Island	36	0.6	87	1.0
South Carolina	57	0.9	87	1.0
South Dakota	10	0.2	21	0.3
Tennessee	154	2.4	163	1.9
Texas	317	5.0	353	4.2
Utah	32	0.5	39	0.5
Vermont	8	0.1	13	0.2
Virginia	205	3.3	163	1.9
Washington	68	1.1	85	1.0
West Virginia	49	0.8	60	0.7
Wisconsin	241	3.8	225	2.7
Wyoming	5	0.1	7	0.1
<b>TOTAL</b>	<b>6,310</b>	<b>100.0</b>	<b>8,442</b>	<b>100.0</b>

<sup>a</sup> Cases of disease due to *Legionella* are reported to NNDSS as legionellosis, which includes Legionnaires' disease, Pontiac fever, and extrapulmonary legionellosis, but are referred to as Legionnaires' disease in this table (because almost all legionellosis cases reported in the United States are Legionnaires' disease cases).

<sup>b</sup> Jurisdiction of the patient's "usual residence" at the time of disease onset.

<sup>c</sup> Based on year the case was reported to CDC.

<sup>d</sup> National Notifiable Diseases Surveillance System (NNDSS).

**Accessible version at:** [www.cdc.gov/legionella/php/surveillance/surveillance-report-2020-2021.html#table-1](http://www.cdc.gov/legionella/php/surveillance/surveillance-report-2020-2021.html#table-1)

**Table 2. Number, percent, and crude incidence<sup>a</sup> rates of reported confirmed cases of Legionnaires' disease<sup>b</sup> by demographic characteristics and year<sup>c</sup>—NNDSS,<sup>d</sup> United States, 2020 and 2021.**

Characteristic	2020			2021		
	N	%	Rate <sup>a</sup>	N	%	Rate <sup>a</sup>
<b>Age</b>						
0–9	12	0.2	0.03	9	0.1	0.02
10–19	6	0.1	0.01	16	0.2	0.04
20–29	110	1.7	0.25	131	1.6	0.30
30–39	362	5.7	0.80	460	5.5	1.01
40–49	746	11.8	1.82	955	11.3	2.34
50–59	1,363	21.6	3.18	1,814	21.5	4.27
60–69	1,614	25.6	4.14	2,377	28.2	6.00
70–79	1,300	20.6	5.36	1,675	19.8	6.66
80–84	378	6.0	6.14	491	5.8	7.78
85+	417	6.6	6.88	509	6.0	8.43
Not stated	2	0.0	N/A	5	0.1	N/A
<b>Sex</b>						
Female	2,326	36.9	1.39	3,090	36.6	1.84
Male	3,960	62.8	2.41	5,316	63.0	3.23
Not stated	24	0.4	N/A	36	0.4	N/A
<b>Race</b>						
American Indian/Alaska Native	23	0.4	0.47	28	0.3	0.57
Asian/Pacific Islander	87	1.4	0.38	117	1.4	0.51
African American/Black	1,301	20.6	2.73	1,836	21.8	3.84
White	3,976	63.0	1.55	5,381	63.7	2.10
Other <sup>e</sup>	440	7.0	N/A	491	5.8	N/A
Not stated	483	7.7	N/A	589	7.0	N/A
<b>Ethnicity</b>						
Hispanic	441	7.0	0.71	577	6.8	0.92
Non-Hispanic	4,590	72.7	1.70	6,509	77.1	2.42
Not stated	1,279	20.3	N/A	1,356	16.1	N/A
<b>Total</b>	<b>6,310</b>	<b>100.0</b>	<b>1.90</b>	<b>8,442</b>	<b>100.0</b>	<b>2.54</b>

<sup>a</sup> Crude incidence of cases per 100,000 population (number of confirmed Legionnaires' disease cases reported that year divided by postcensal population estimate for that year times 100,000 population).

<sup>b</sup> Cases of disease due to *Legionella* are reported to NNDSS as legionellosis, which includes Legionnaires' disease, Pontiac fever, and extrapulmonary legionellosis, but are referred to as Legionnaires' disease in this table (because almost all legionellosis cases reported in the United States are Legionnaires' disease cases).

<sup>c</sup> Based on year the case was reported to CDC.

<sup>d</sup> National Notifiable Diseases Surveillance System (NNDSS).

<sup>e</sup> Other race includes individuals that did not identify with races listed.

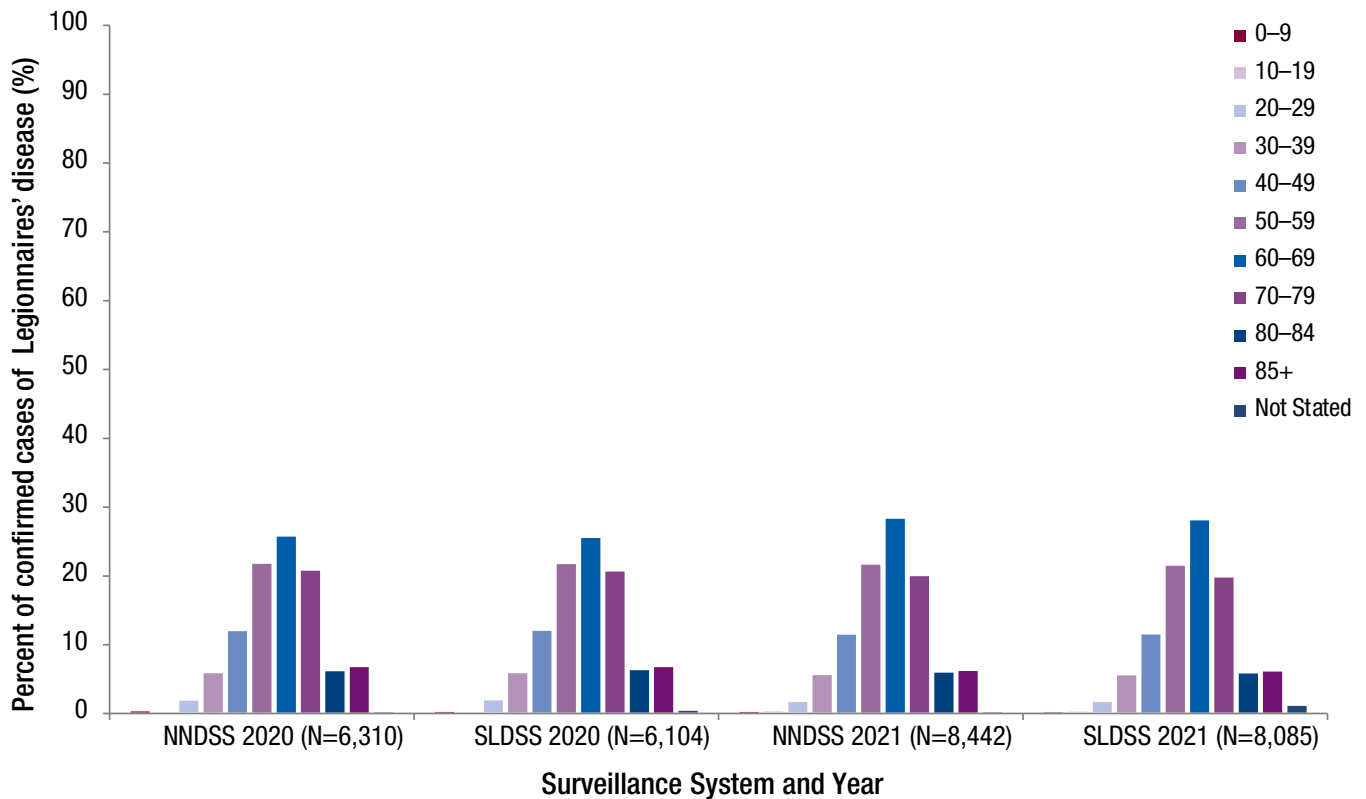
Accessible version at: [www.cdc.gov/legionella/php/surveillance/surveillance-report-2020-2021.html#table-2](http://www.cdc.gov/legionella/php/surveillance/surveillance-report-2020-2021.html#table-2)

## Section 2:

# **National Notifiable Diseases Surveillance System comparison with Supplemental Legionnaires' Disease Surveillance System (SLDSS)**

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**Figure 4a.** Percent of reported confirmed cases of Legionnaires' disease<sup>a</sup> by age group and year<sup>b</sup>—NNDSS<sup>c</sup> and SLDSS,<sup>d</sup> United States, 2020 and 2021.



<sup>a</sup> Cases of disease due to *Legionella* are reported to NNDSS as legionellosis, which includes Legionnaires' disease, Pontiac fever, and extrapulmonary legionellosis, but are referred to as Legionnaires' disease in this figure (because almost all legionellosis cases reported in the United States are Legionnaires' disease cases). SLDSS data are limited to cases of Legionnaires' disease in this figure.

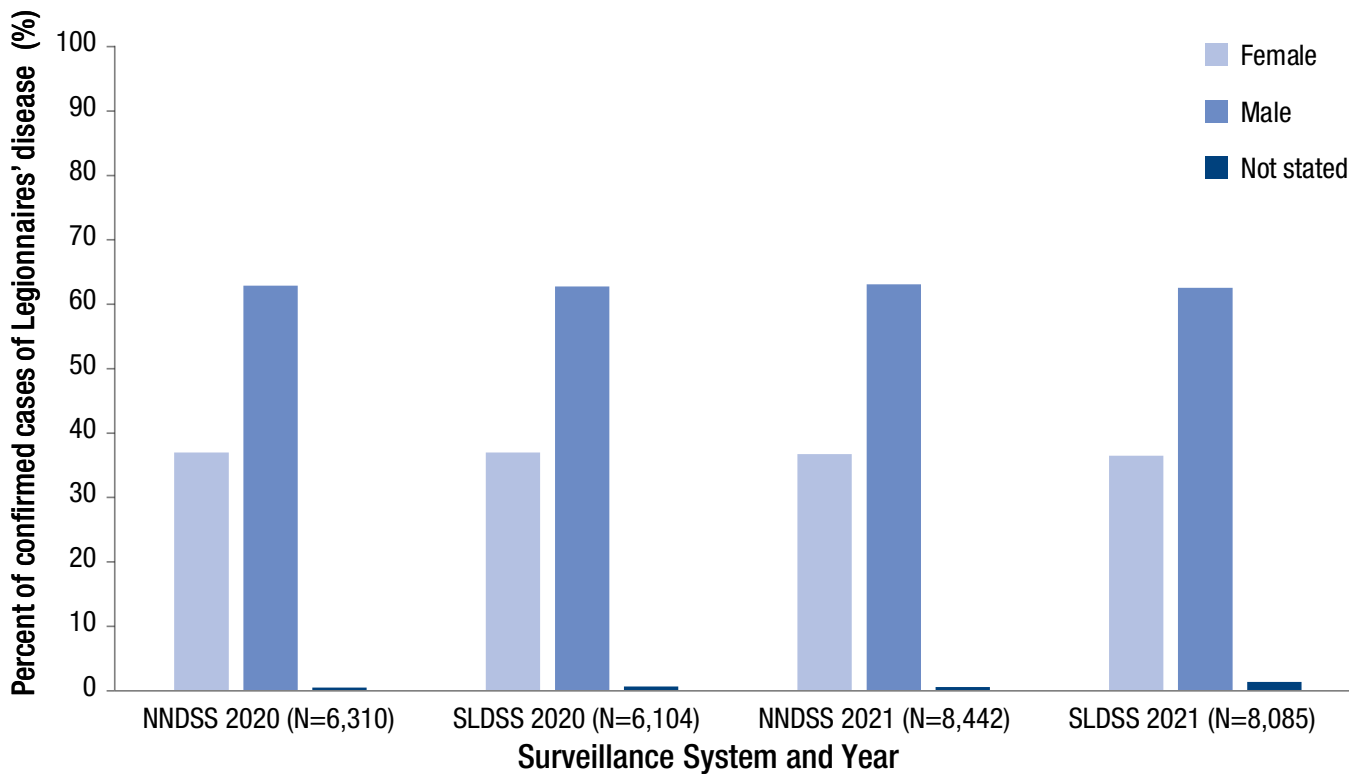
<sup>b</sup> Based on year the case was reported to CDC in NNDSS and year of symptom onset in SLDSS. If onset date was not stated in SLDSS, case year for confirmed cases was determined by the earliest of the following dates: positive laboratory date; date patient was hospitalized during treatment for Legionnaires' disease; or date case was first reported to public health at any level.

<sup>c</sup> National Notifiable Diseases Surveillance System (NNDSS).

<sup>d</sup> Supplemental Legionnaires' Disease Surveillance System (SLDSS).

Accessible version at: [www.cdc.gov/legionella/php/surveillance/surveillance-report-2020-2021.html#figure-4a](https://www.cdc.gov/legionella/php/surveillance/surveillance-report-2020-2021.html#figure-4a)

**Figure 4b.** Percent of reported confirmed cases of Legionnaires' disease<sup>a</sup> by sex and year<sup>b</sup>—  
NNDSS<sup>c</sup> and SLDSS,<sup>d</sup> 2020 and 2021.



<sup>a</sup> Cases of disease due to *Legionella* are reported to NNDSS as legionellosis, which includes Legionnaires' disease, Pontiac fever, and extrapulmonary legionellosis, but are referred to as Legionnaires' disease in this figure (because almost all legionellosis cases reported in the United States are Legionnaires' disease cases). SLDSS data are limited to cases of Legionnaires' disease in this figure.

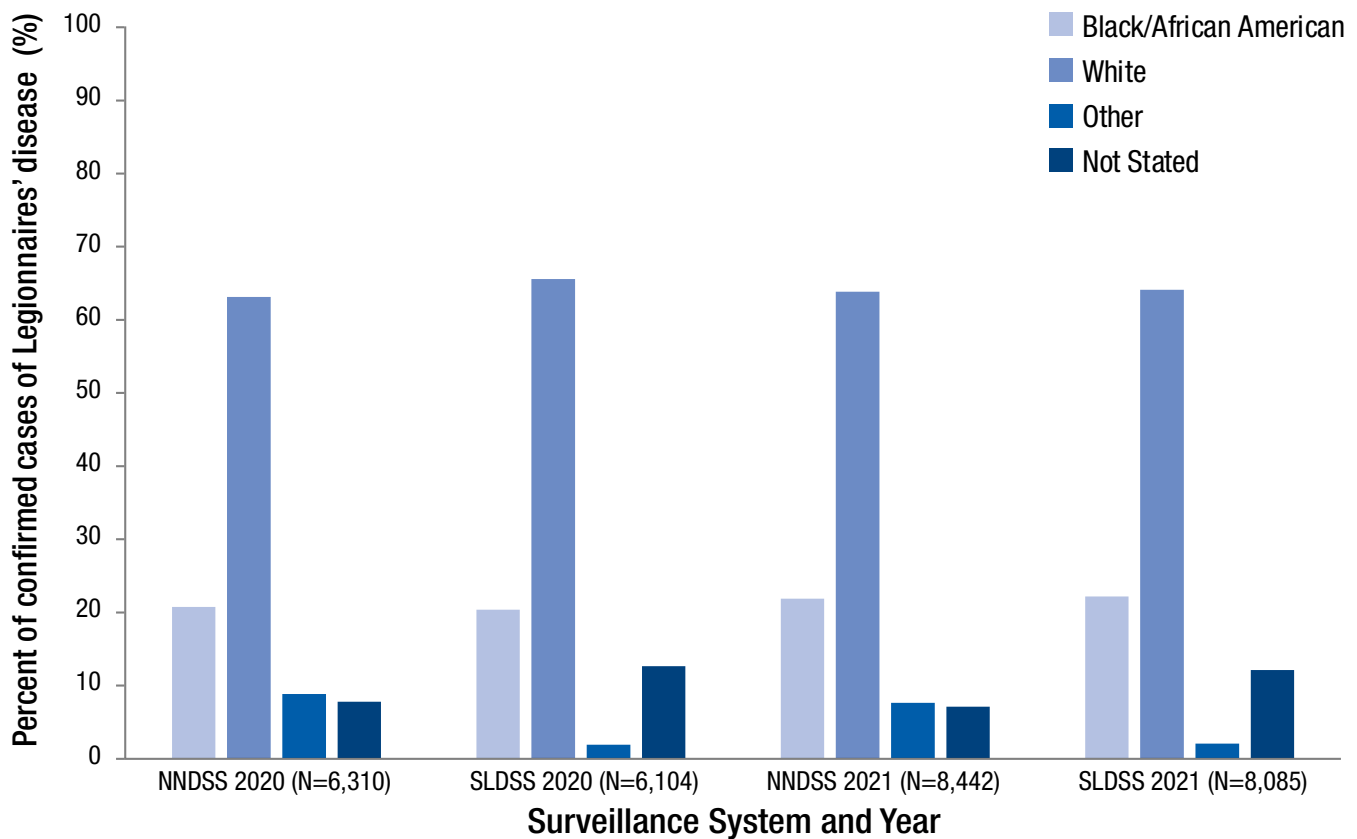
<sup>b</sup> Based on year the case was reported to CDC in NNDSS and year of symptom onset in SLDSS. If onset date was not stated in SLDSS, case year for confirmed cases was determined by the earliest of the following dates: positive laboratory date; date patient was hospitalized during treatment for Legionnaires' disease; or date case was first reported to public health at any level.

<sup>c</sup> National Notifiable Diseases Surveillance System (NNDSS).

<sup>d</sup> Supplemental Legionnaires' Disease Surveillance System (SLDSS).

Accessible version at: [www.cdc.gov/legionella/php/surveillance/surveillance-report-2020-2021.html#figure-4b](https://www.cdc.gov/legionella/php/surveillance/surveillance-report-2020-2021.html#figure-4b)

**Figure 4c.** Percent of reported confirmed cases of Legionnaires' disease<sup>a</sup> by race<sup>b</sup> and year<sup>c</sup>—NNDSS<sup>d</sup> and SLDSS,<sup>e</sup> United States, 2020 and 2021.



<sup>a</sup> Cases of disease due to *Legionella* are reported to NNDSS as legionellosis, which includes Legionnaires' disease, Pontiac fever, and extrapulmonary legionellosis, but are referred to as Legionnaires' disease in this figure (because almost all legionellosis cases reported in the United States are Legionnaires' disease cases). SLDSS data are limited to cases of Legionnaires' disease in this figure.

<sup>b</sup> In NNDSS, Other includes American Indian/Alaska Native, Asian/Pacific Islander, and individuals that did not identify with either race in NNDSS. In SLDSS, Other includes American Indian/Alaska Native, Asian, Hawaii/Pacific Islander, and individuals that identified with multiple races.

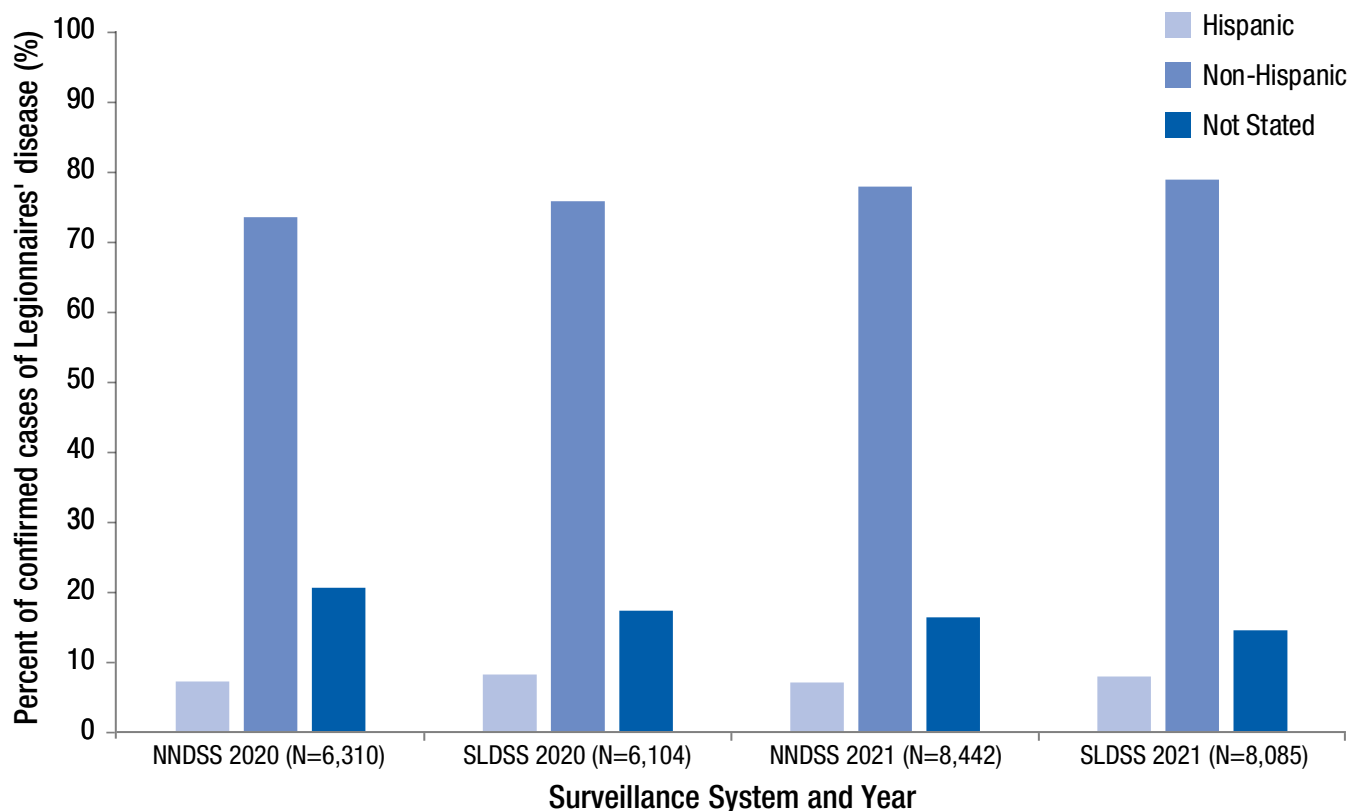
<sup>c</sup> Based on year the case was reported to CDC in NNDSS and year of symptom onset in SLDSS. If onset date was not stated in SLDSS, case year for confirmed cases was determined by the earliest of the following dates: positive laboratory date; date patient was hospitalized during treatment for Legionnaires' disease; or date case was first reported to public health at any level.

<sup>d</sup> National Notifiable Diseases Surveillance System (NNDSS).

<sup>e</sup> Supplemental Legionnaires' Disease Surveillance System (SLDSS).

Accessible version at: [www.cdc.gov/legionella/php/surveillance/surveillance-report-2020-2021.html#figure-4c](https://www.cdc.gov/legionella/php/surveillance/surveillance-report-2020-2021.html#figure-4c)

**Figure 4d.** Percent of reported confirmed cases of Legionnaires' disease<sup>a</sup> by ethnicity and year<sup>b</sup>—NNDSS<sup>c</sup> and SLDSS,<sup>d</sup> United States, 2020 and 2021.



<sup>a</sup> Cases of disease due to *Legionella* are reported to NNDSS as legionellosis, which includes Legionnaires' disease, Pontiac fever, and extrapulmonary legionellosis, but are referred to as Legionnaires' disease in this figure (because almost all legionellosis cases reported in the United States are Legionnaires' disease cases). SLDSS data are limited to cases of Legionnaires' disease in this figure.

<sup>b</sup> Based on year the case was reported to CDC in NNDSS and year of symptom onset in SLDSS. If onset date was not stated in SLDSS, case year for confirmed cases was determined by the earliest of the following dates: positive laboratory date; date patient was hospitalized during treatment for Legionnaires' disease; or date case was first reported to public health at any level.

<sup>c</sup> National Notifiable Diseases Surveillance System (NNDSS).

<sup>d</sup> Supplemental Legionnaires' Disease Surveillance System (SLDSS).

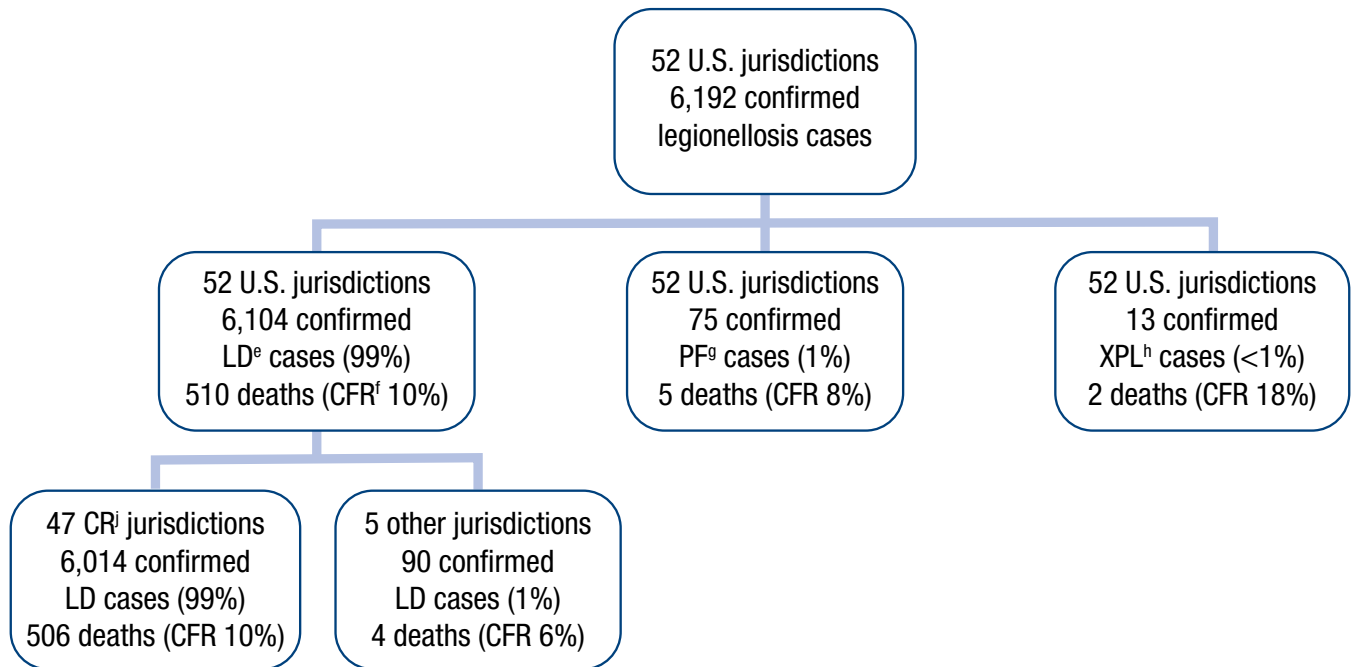
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# Section 3:

## **Supplemental Legionnaires' Disease Surveillance System**

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**Figure 5a. Reported confirmed cases of legionellosis<sup>a</sup> by syndrome and completeness of jurisdictional reporting<sup>b</sup>—SLDSS,<sup>c</sup> United States, 2020.<sup>d</sup>**



<sup>a</sup> Legionellosis includes Legionnaires' disease, Pontiac fever, and extrapulmonary legionellosis.

<sup>b</sup> 47 complete reporting jurisdictions in 2020: Alabama, Alaska, Arkansas, Arizona, California, Colorado, Connecticut, Delaware, Florida, Georgia, Hawaii, Idaho, Iowa, Illinois, Indiana, Kansas, Kentucky, Louisiana, Maine, Massachusetts, Michigan, Minnesota, Mississippi, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York (state), New York City, North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, and Wyoming.

<sup>c</sup> Supplemental Legionnaires' Disease Surveillance System (SLDSS).

<sup>d</sup> Based on year of symptom onset in SLDSS. If onset date was not stated in SLDSS, case year for confirmed cases was determined by the earliest of the following dates: positive laboratory date; date patient was hospitalized during treatment for Legionnaires' disease; or date case was first reported to public health at any level.

<sup>e</sup> Legionnaires' disease.

<sup>f</sup> CFR: Case fatality rate calculated as the number of reported confirmed case deaths divided by the number of patients with a known outcome.

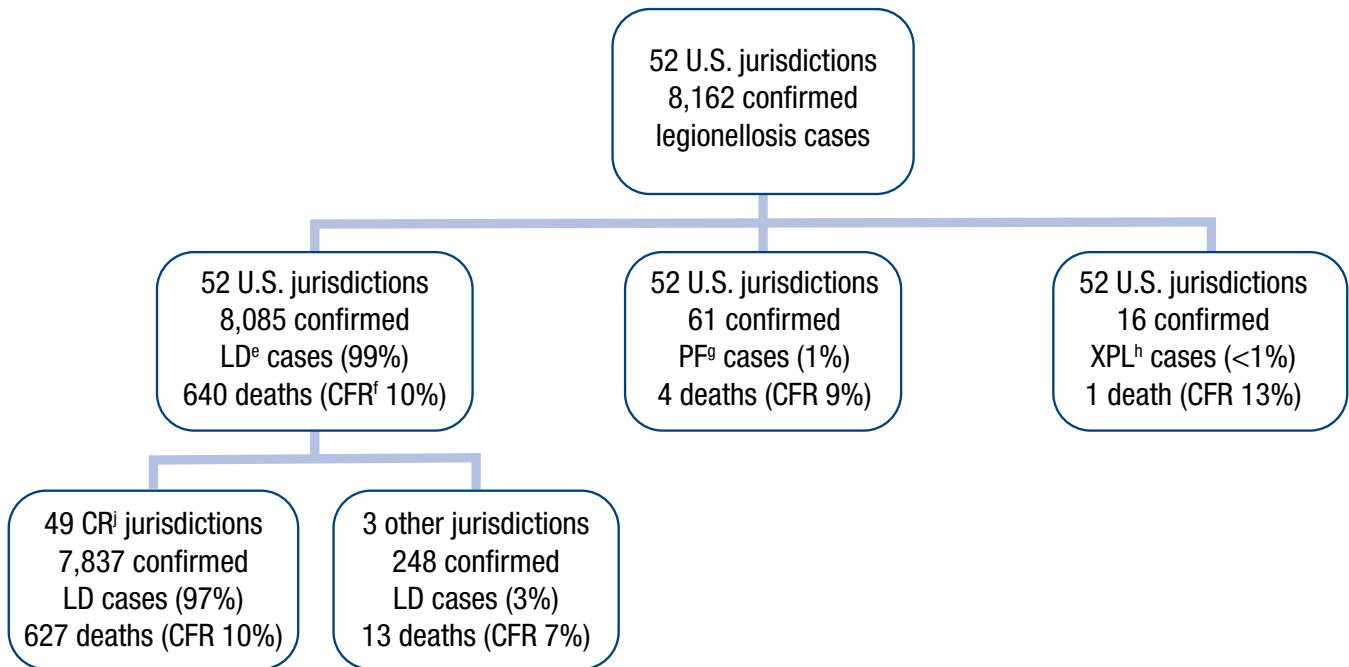
<sup>g</sup> Pontiac fever.

<sup>h</sup> Extrapulmonary legionellosis.

<sup>i</sup> Complete reporting.

**Accessible version at:** [www.cdc.gov/legionella/php/surveillance/surveillance-report-2020-2021.html#figure-5a](http://www.cdc.gov/legionella/php/surveillance/surveillance-report-2020-2021.html#figure-5a)

**Figure 5b. Reported confirmed cases of legionellosis<sup>a</sup> by syndrome and completeness of jurisdictional reporting<sup>b</sup>—SLDSS,<sup>c</sup> United States, 2021.<sup>d</sup>**



<sup>a</sup> Legionellosis includes Legionnaires' disease, Pontiac fever, and extrapulmonary legionellosis.

<sup>b</sup> 49 complete reporting jurisdictions in 2021: Alabama, Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, District of Columbia, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Massachusetts, Michigan, Minnesota, Mississippi, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York (state), New York City, North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, and Wyoming.

<sup>c</sup> Supplemental Legionnaires' Disease Surveillance System (SLDSS).

<sup>d</sup> Based on year of symptom onset in SLDSS. If onset date was not stated in SLDSS, case year for confirmed cases was determined by the earliest of the following dates: positive laboratory date; date patient was hospitalized during treatment for Legionnaires' disease; or date case was first reported to public health at any level.

<sup>e</sup> Legionnaires' disease.

<sup>f</sup> CFR: Case fatality rate calculated as the number of reported confirmed case deaths divided by the number of patients with a known outcome.

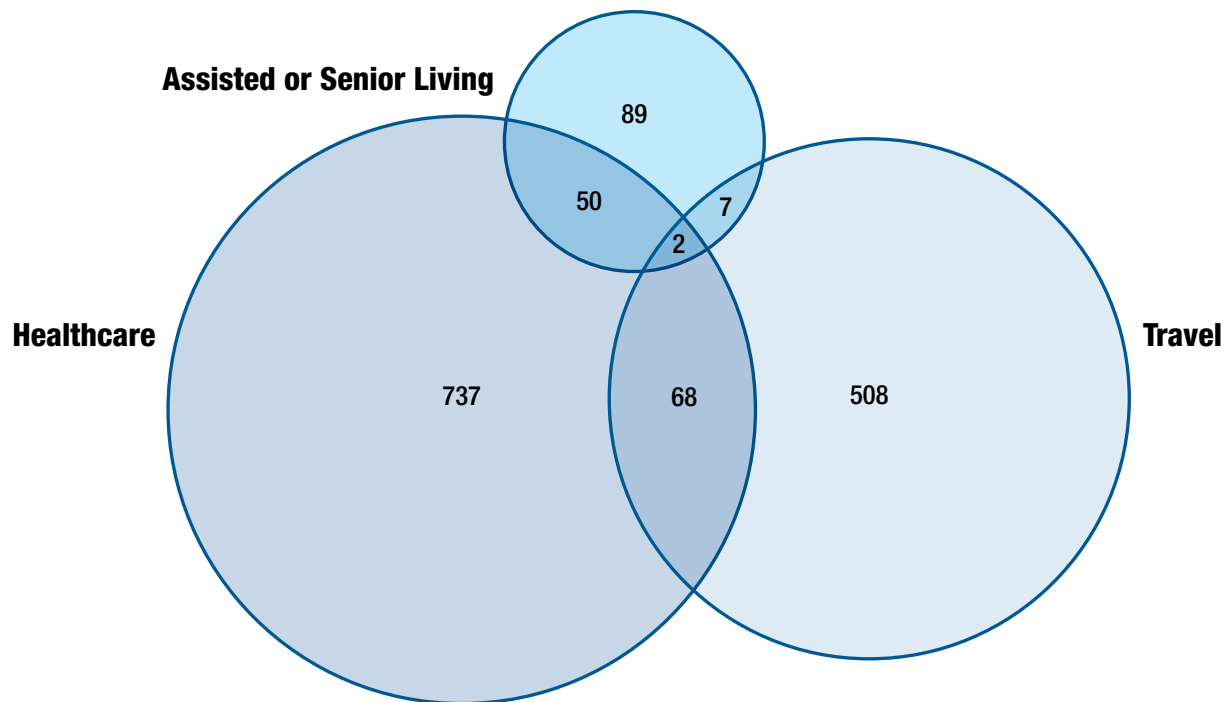
<sup>g</sup> Pontiac fever.

<sup>h</sup> Extrapulmonary legionellosis.

<sup>i</sup> Complete reporting.

**Accessible version at:** [www.cdc.gov/legionella/php/surveillance/surveillance-report-2020-2021.html#figure-5b](http://www.cdc.gov/legionella/php/surveillance/surveillance-report-2020-2021.html#figure-5b)

**Figure 6a.** Number of reported confirmed cases of Legionnaires' disease by exposure category<sup>a</sup>—SLDSS,<sup>b</sup> complete reporting jurisdictions,<sup>c</sup> 2020.<sup>d</sup>



Exposure category	Cases (Total = 6,014)	
	N	%
Any healthcare	857	14.3
Presumptive	178	3.0
Possible	679	11.3
Any travel	585	9.7
Any assisted or senior living	148	2.5
None of these	4,553	75.7

<sup>a</sup> Exposure categories are not mutually exclusive. A patient may report multiple exposures in the 14 days before date of symptom onset. Exposure categories:

**Healthcare:** A patient who visited, worked in, or stayed in a healthcare setting in the 14 days before date of symptom onset.

**Travel:** A patient with a history of spending at least one night away from home in the 14 days before date of symptom onset, not including nights spent in a healthcare facility.

**Assisted or senior living facility:** A patient who visited, worked in, or stayed in a senior or assisted living facility in the 14 days before date of symptom onset.

**None of these:** A patient without reported healthcare setting, travel, or senior or assisted living facility exposure in the 14 days before date of symptom onset.

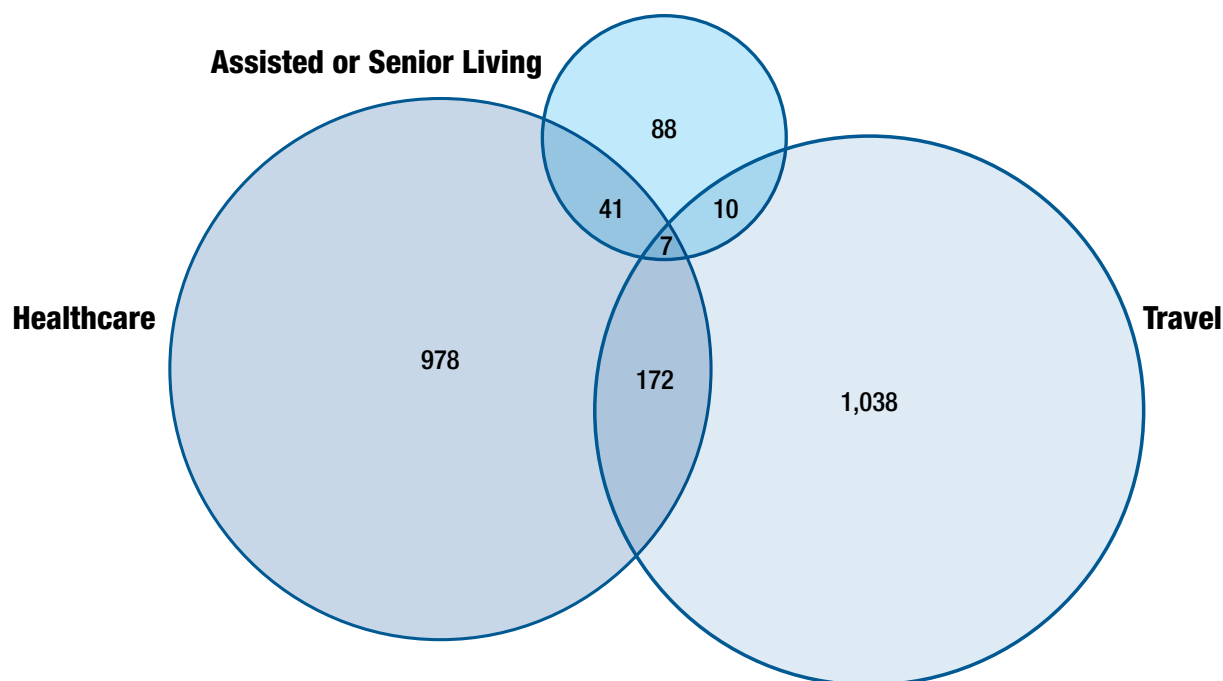
<sup>b</sup> Supplemental Legionnaires' Disease Surveillance System (SLDSS).

<sup>c</sup> 47 Complete reporting jurisdictions in 2020: Alabama, Alaska, Arkansas, Arizona, California, Colorado, Connecticut, Delaware, Florida, Georgia, Hawaii, Idaho, Iowa, Illinois, Indiana, Kansas, Kentucky, Louisiana, Maine, Massachusetts, Michigan, Minnesota, Mississippi, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York (state), New York City, North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, and Wyoming.

<sup>d</sup> Based on year of symptom onset in SLDSS. If onset date was not stated in SLDSS, case year for confirmed cases was determined by the earliest of the following dates: positive laboratory date; date patient was hospitalized during treatment for Legionnaires' disease; or date case was first reported to public health at any level.

Accessible version at: [www.cdc.gov/legionella/php/surveillance/surveillance-report-2020-2021.html#figure-6a](http://www.cdc.gov/legionella/php/surveillance/surveillance-report-2020-2021.html#figure-6a)

**Figure 6b.** Number of reported confirmed cases of Legionnaires' disease by exposure category<sup>a</sup>—SLDSS,<sup>b</sup> complete reporting jurisdictions,<sup>c</sup> 2021.<sup>d</sup>



Exposure category	Cases (Total = 7,837)	
	N	%
Any healthcare	1,198	15.3
Presumptive	159	2.0
Possible	1,039	13.3
Any travel	1,227	15.7
Any assisted or senior living	146	1.9
None of these	5,503	70.2

<sup>a</sup> Exposure categories are not mutually exclusive. A patient may report multiple exposures in the 14 days before date of symptom onset. Exposure categories:

**Healthcare:** A patient who visited, worked in, or stayed in a healthcare setting in the 14 days before date of symptom onset.

**Travel:** A patient with a history of spending at least one night away from home in the 14 days before date of symptom onset, not including nights spent in a healthcare facility.

**Assisted or senior living facility:** A patient who visited, worked in, or stayed in a senior or assisted living facility in the 14 days before date of symptom onset.

**None of these:** A patient without reported healthcare setting, travel, or senior or assisted living facility exposure in the 14 days before date of symptom onset.

<sup>b</sup> Supplemental Legionnaires' Disease Surveillance System (SLDSS).

<sup>c</sup> 49 Complete reporting jurisdictions in 2021: Alabama, Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, District of Columbia, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Massachusetts, Michigan, Minnesota, Mississippi, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York (state), New York City, North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, and Wyoming.

<sup>d</sup> Based on year of symptom onset in SLDSS. If onset date was not stated in SLDSS, case year for confirmed cases was determined by the earliest of the following dates: positive laboratory date; date patient was hospitalized during treatment for Legionnaires' disease; or date case was first reported to public health at any level.

Accessible version at: [www.cdc.gov/legionella/php/surveillance/surveillance-report-2020-2021.html#figure-6b](http://www.cdc.gov/legionella/php/surveillance/surveillance-report-2020-2021.html#figure-6b)

**Table 3. Number of reported confirmed cases of Legionnaires' disease by exposure category<sup>a</sup> and year<sup>b</sup>—SLDSS,<sup>c</sup> complete reporting jurisdictions,<sup>d</sup> 2020 and 2021.**

Exposure Category	2020 (Total = 6,014)		2021 (Total = 7,837)	
	N	%	N	%
<b>Healthcare</b>	857	14.3	1,198	15.3
<b>Healthcare facility type</b>				
Hospital	304	35.5	410	34.2
Long-term care facility	178	20.8	174	14.5
Clinic	226	26.4	393	32.8
Multiple	84	9.8	103	8.6
Other	32	3.7	65	5.4
Not stated	33	3.9	53	4.4
<b>Healthcare exposure type</b>				
Inpatient	331	38.6	317	26.5
Outpatient	322	37.6	583	48.7
Visitor	37	4.3	67	5.6
Employee	60	7.0	91	7.6
Multiple	46	5.4	63	5.3
Not stated	61	7.1	77	6.4
<b>Travel</b>	585	9.7	1,227	15.7
Any public accommodation	370	63.2	728	59.3
Hotel/motel/resort	369	N/A	724	N/A
Cruise ship	4	N/A	6	N/A
All private accommodations	165	28.2	287	23.4
Unknown travel accommodation type	50	8.5	212	17.3
<b>Assisted or Senior Living</b>	148	2.5	146	1.9
<b>Assisted or Senior Living Facility Type</b>				
Assisted living facility	75	50.7	71	48.6
Senior living facility	54	36.5	56	38.4
Both	3	2.0	3	2.1
Not stated	16	10.8	16	11.0
<b>Assisted or Senior Living Exposure Type</b>				
Resident	107	72.3	106	72.6
Visitor	14	9.5	11	7.5
Employee	13	8.8	13	8.9
Multiple	1	0.7	1	0.7
Not stated	13	8.8	15	10.3
<b>None of these</b>	4,553	75.7	5,503	70.2

<sup>a</sup> Exposure categories (categories are not mutually exclusive):

**Healthcare:** A patient who visited, worked in, or stayed in a healthcare setting in the 14 days before date of symptom onset.

**Travel:** A patient with a history of spending at least one night away from home in the 14 days before date of symptom onset, not including nights spent in a healthcare facility. Cases may occur in patients with multiple travel locations during the exposure period. If any exposure to a public accommodation occurs, the case is categorized as public travel. Private travel represents exposure to private accommodations only. If a patient has exposure to both private and unknown accommodations, the case is categorized as unknown travel.

**Assisted or senior living:** A patient who visited, worked in, or stayed in a senior or assisted living facility in the 14 days before date of symptom onset.

**None of these:** A patient without reported healthcare setting, travel, or senior or assisted living facility exposure in the 14 days before date of symptom onset.

<sup>b</sup> Based on year of symptom onset in SLDSS. If onset date was not stated in SLDSS, case year for confirmed cases was determined by the earliest of the following dates: positive laboratory date; date patient was hospitalized during treatment for Legionnaires' disease; or date case was first reported to public health at any level.

<sup>c</sup> Supplemental Legionnaires' Disease Surveillance System (SLDSS).

<sup>d</sup> 47 complete reporting jurisdictions in 2020: Alabama, Alaska, Arkansas, Arizona, California, Colorado, Connecticut, Delaware, Florida, Georgia, Hawaii, Idaho, Iowa, Illinois, Indiana, Kansas, Kentucky, Louisiana, Maine, Massachusetts, Michigan, Minnesota, Mississippi, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York (state), New York City, North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, and Wyoming.

49 complete reporting jurisdictions in 2021: Alabama, Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, District of Columbia, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Massachusetts, Michigan, Minnesota, Mississippi, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York (state), New York City, North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, and Wyoming.

**Accessible version at:** [www.cdc.gov/legionella/php/surveillance/surveillance-report-2020-2021.html#table-3](http://www.cdc.gov/legionella/php/surveillance/surveillance-report-2020-2021.html#table-3)

**Table 4a.** Number of reported confirmed cases of Legionnaires' disease by demographic characteristics and exposure category<sup>a</sup>—SLDSS,<sup>b</sup> complete reporting jurisdictions,<sup>c</sup> 2020.<sup>d</sup>

Characteristic	Healthcare (Total = 857)		Travel (Total = 585)		Assisted or senior living (Total = 148)		None of these (Total = 4,553)	
	N	%	N	%	N	%	N	%
Median Age (years)	67	N/A	60	N/A	75	N/A	62	N/A
<b>Age</b>								
0–9	3	0.4	1	0.2	0	0.0	1	0.0
10–19	4	0.5	2	0.3	0	0.0	1	0.0
20–29	14	1.6	13	2.2	2	1.4	80	1.8
30–39	40	4.7	32	5.5	6	4.1	273	6.0
40–49	71	8.3	91	15.6	6	4.1	559	12.3
50–59	128	14.9	148	25.3	13	8.8	1,032	22.7
60–69	209	24.4	145	24.8	26	17.6	1,176	25.8
70–79	200	23.3	117	20.0	36	24.3	914	20.1
80–84	95	11.1	23	3.9	19	12.8	252	5.5
85+	93	10.9	12	2.1	40	27.0	264	5.8
Not stated	0	0.0	1	0.2	0	0.0	1	0.0
<b>Sex</b>								
Female	387	45.2	218	37.3	85	57.4	1,592	35.0
Male	466	54.4	362	61.9	63	42.6	2,942	64.6
Not stated	4	0.5	5	0.9	0	0.0	19	0.4
<b>Race</b>								
American Indian/ Alaska Native	3	0.4	1	0.2	0	0.0	16	0.4
Asian	12	1.4	3	0.5	0	0.0	53	1.2
African American/Black	159	18.6	95	16.2	24	16.2	955	21.0
Native Hawaiian/ Other Pacific Islander	1	0.1	1	0.2	1	0.7	9	0.2
White	581	67.8	404	69.1	107	72.3	2,940	64.6
Multiple	2	0.2	2	0.3	0	0.0	7	0.2
Not stated	99	11.6	79	13.5	16	10.8	573	12.6
<b>Ethnicity</b>								
Hispanic	69	8.1	31	5.3	8	5.4	385	8.5
Non-Hispanic	646	75.4	453	77.4	117	79.1	3,388	74.4
Not stated	142	16.6	101	17.3	23	15.5	780	17.1

<sup>a</sup> Exposure categories (categories are not mutually exclusive):

**Healthcare:** A patient who visited, worked in, or stayed in a healthcare setting in the 14 days before date of symptom onset.

**Travel:** A patient with a history of spending at least one night away from home in the 14 days before date of symptom onset, not including nights spent in a healthcare facility.

**Assisted or senior living:** A patient who visited, worked in, or stayed in a senior or assisted living facility in the 14 days before date of symptom onset.

**None of these:** A patient without reported healthcare setting, travel, or senior or assisted living facility exposure in the 14 days before date of symptom onset.

<sup>b</sup> Supplemental Legionnaires' Disease Surveillance System (SLDSS).

<sup>c</sup> 47 complete reporting jurisdictions in 2020: Alabama, Alaska, Arkansas, Arizona, California, Colorado, Connecticut, Delaware, Florida, Georgia, Hawaii, Idaho, Iowa, Illinois, Indiana, Kansas, Kentucky, Louisiana, Maine, Massachusetts, Michigan, Minnesota, Mississippi, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York (state), New York City, North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, and Wyoming.

<sup>d</sup> Based on year of symptom onset in SLDSS. If onset date was not stated in SLDSS, case year for confirmed cases was determined by the earliest of the following dates: positive laboratory date; date patient was hospitalized during treatment for Legionnaires' disease; or date case was first reported to public health at any level.

**Accessible version at:** [www.cdc.gov/legionella/php/surveillance/surveillance-report-2020-2021.html#table-4a](http://www.cdc.gov/legionella/php/surveillance/surveillance-report-2020-2021.html#table-4a)

**Table 4b.** Number of reported confirmed cases of Legionnaires' disease by demographic characteristics and exposure category<sup>a</sup>—SLDSS,<sup>b</sup> complete reporting jurisdictions,<sup>c</sup> 2021.<sup>d</sup>

Characteristic	Healthcare (Total = 1,198)		Travel (Total = 1,227)		Assisted or senior living (Total = 146)		None of these (Total = 5,503)	
	N	%	N	%	N	%	N	%
Median Age (years)	65	N/A	61	N/A	73	N/A	62	N/A
<b>Age</b>								
0–9	0	0.0	0	0.0	0	0.0	5	0.1
10–19	3	0.3	0	0.0	0	0.0	9	0.2
20–29	20	1.7	23	1.9	1	0.7	86	1.6
30–39	51	4.3	72	5.9	3	2.1	314	5.7
40–49	88	7.3	167	13.6	8	5.5	664	12.1
50–59	231	19.3	289	23.6	17	11.6	1,188	21.6
60–69	335	28.0	370	30.2	33	22.6	1,525	27.7
70–79	288	24.0	221	18.0	34	23.3	1,071	19.5
80–84	80	6.7	41	3.3	13	8.9	325	5.9
85+	102	8.5	38	3.1	37	25.3	314	5.7
Not stated	0	0.0	6	0.5	0	0.0	2	0.0
<b>Sex</b>								
Female	526	43.9	445	36.3	79	54.1	1,924	35.0
Male	671	56.0	776	63.2	67	45.9	3,557	64.6
Not stated	1	0.1	6	0.5	0	0.0	22	0.4
<b>Race</b>								
American Indian/ Alaska Native	2	0.2	3	0.2	0	0.0	27	0.5
Asian	17	1.4	7	0.6	1	0.7	77	1.4
African American/Black	276	23.0	231	18.8	24	16.4	1,234	22.4
Native Hawaiian/ Other Pacific Islander	1	0.1	0	0.0	0	0.0	6	0.1
White	766	63.9	833	67.9	108	74.0	3,542	64.4
Multiple	3	0.3	5	0.4	0	0.0	7	0.1
Not stated	133	11.1	148	12.1	13	8.9	610	11.1
<b>Ethnicity</b>								
Hispanic	88	7.3	74	6.0	9	6.2	465	8.4
Non-Hispanic	971	81.1	979	79.8	114	78.1	4,287	77.9
Not stated	139	11.6	174	14.2	23	15.8	751	13.6

<sup>a</sup> Exposure categories (categories are not mutually exclusive):

**Healthcare:** A patient who visited, worked in, or stayed in a healthcare setting in the 14 days before date of symptom onset.

**Travel:** A patient with a history of spending at least one night away from home in the 14 days before date of symptom onset, not including nights spent in a healthcare facility.

**Assisted or senior living:** A patient who visited, worked in, or stayed in a senior or assisted living facility in the 14 days before date of symptom onset.

**None of these:** A patient without reported healthcare setting, travel, or senior or assisted living facility exposure in the 14 days before date of symptom onset.

<sup>b</sup> Supplemental Legionnaires' Disease Surveillance System (SLDSS).

<sup>c</sup> 49 complete reporting jurisdictions in 2021: Alabama, Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, District of Columbia, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Massachusetts, Michigan, Minnesota, Mississippi, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York (state), New York City, North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, and Wyoming.

<sup>d</sup> Based on year of symptom onset in SLDSS. If onset date was not stated in SLDSS, case year for confirmed cases was determined by the earliest of the following dates: positive laboratory date; date patient was hospitalized during treatment for Legionnaires' disease; or date case was first reported to public health at any level.

**Accessible version at:** [www.cdc.gov/legionella/php/surveillance/surveillance-report-2020-2021.html#table-4b](http://www.cdc.gov/legionella/php/surveillance/surveillance-report-2020-2021.html#table-4b)

**Table 5a. Number of reported confirmed cases of healthcare-associated<sup>a</sup> Legionnaires' disease by healthcare facility type and healthcare exposure certainty<sup>b</sup>—SLDSS,<sup>c</sup> complete reporting jurisdictions,<sup>d</sup> 2020.<sup>e</sup>**

Facility type	Healthcare exposure certainty					
	Presumptive		Possible		Total	
	N	%	N	%	N	%
Hospital	33	18.5	271	39.9	304	35.5
Long-term care facility	108	60.7	70	10.3	178	20.8
Clinic	3	1.7	223	32.8	226	26.4
Multiple <sup>f</sup>	17	9.6	67	9.9	84	9.8
Other <sup>g</sup>	2	1.1	30	4.4	32	3.7
Not stated	15	8.4	18	2.7	33	3.9
<b>Total</b>	<b>178</b>		<b>679</b>		<b>857</b>	

<sup>a</sup> Healthcare-associated Legionnaires' disease includes both presumptive and possible cases in patients who worked in, visited, or stayed in a healthcare setting for any amount of time in the 14 days preceding symptom onset.

<sup>b</sup> Healthcare exposure certainty defined as:

**Presumptive** case of healthcare-associated Legionnaires' disease was defined as laboratory-confirmed legionellosis in a patient with ≥10 days of continuous stay at a healthcare facility during the 14 days before onset of symptoms.

**Possible** case of healthcare-associated Legionnaires' disease was defined as laboratory-confirmed legionellosis in a patient who spent a portion of the 14 days before date of symptom onset in one or more healthcare facilities but does not meet the criteria for a presumptive healthcare-associated case.

<sup>c</sup> Supplemental Legionnaires' Disease Surveillance System (SLDSS).

<sup>d</sup> 47 complete reporting jurisdictions in 2020: Alabama, Alaska, Arkansas, Arizona, California, Colorado, Connecticut, Delaware, Florida, Georgia, Hawaii, Idaho, Iowa, Illinois, Indiana, Kansas, Kentucky, Louisiana, Maine, Massachusetts, Michigan, Minnesota, Mississippi, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York (state), New York City, North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, and Wyoming.

<sup>e</sup> Based on year of symptom onset in SLDSS. If onset date was not stated in SLDSS, case year for confirmed cases was determined by the earliest of the following dates: positive laboratory date; date patient was hospitalized during treatment for Legionnaires' disease; or date case was first reported to public health at any level.

<sup>f</sup> Multiple indicates more than one type of healthcare facility.

<sup>g</sup> Other facility includes locations such as outpatient laboratories and pharmacies.

**Accessible version at:** [www.cdc.gov/legionella/php/surveillance/surveillance-report-2020-2021.html#table-5a](http://www.cdc.gov/legionella/php/surveillance/surveillance-report-2020-2021.html#table-5a)

**Table 5b.** Number of reported confirmed cases of healthcare-associated<sup>a</sup> Legionnaires' disease by healthcare facility type and healthcare exposure certainty<sup>b</sup>—SLDSS,<sup>c</sup> complete reporting jurisdictions,<sup>d</sup> 2021.<sup>e</sup>

Facility type	Healthcare exposure certainty					
	Presumptive		Possible		Total	
	N	%	N	%	N	%
Hospital	40	25.2	370	35.6	410	34.2
Long-term care facility	80	50.3	94	9.0	174	14.5
Clinic	2	1.3	391	37.6	393	32.8
Multiple <sup>f</sup>	22	13.8	81	7.8	103	8.6
Other <sup>g</sup>	5	3.1	60	5.8	65	5.4
Not stated	10	6.3	43	4.1	53	4.4
<b>Total</b>	<b>159</b>		<b>1,039</b>		<b>1,198</b>	

<sup>a</sup> Healthcare-associated Legionnaires' disease includes both presumptive and possible cases in patients who worked in, visited, or stayed in a healthcare setting for any amount of time in the 14 days preceding symptom onset.

<sup>b</sup> Healthcare exposure certainty defined as:

**Presumptive** case of healthcare-associated Legionnaires' disease was defined as laboratory-confirmed legionellosis in a patient with ≥10 days of continuous stay at a healthcare facility during the 14 days before onset of symptoms.

**Possible** case of healthcare-associated Legionnaires' disease was defined as laboratory-confirmed legionellosis in a patient who spent a portion of the 14 days before date of symptom onset in one or more healthcare facilities but does not meet the criteria for a presumptive healthcare-associated case.

<sup>c</sup> Supplemental Legionnaires' Disease Surveillance System (SLDSS).

<sup>d</sup> 49 complete reporting jurisdictions in 2021: Alabama, Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, District of Columbia, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Massachusetts, Michigan, Minnesota, Mississippi, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York (state), New York City, North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, and Wyoming.

<sup>e</sup> Based on year of symptom onset in SLDSS. If onset date was not stated in SLDSS, case year for confirmed cases was determined by the earliest of the following dates: positive laboratory date; date patient was hospitalized during treatment for Legionnaires' disease; or date case was first reported to public health at any level.

<sup>f</sup> Multiple indicates more than one type of healthcare facility.

<sup>g</sup> Other facility includes locations such as outpatient laboratories and pharmacies.

**Accessible version at:** [www.cdc.gov/legionella/php/surveillance/surveillance-report-2020-2021.html#table-5b](http://www.cdc.gov/legionella/php/surveillance/surveillance-report-2020-2021.html#table-5b)

**Table 6.** Number of reported confirmed cases of Legionnaires' disease by hospitalization<sup>a</sup> and exposure category<sup>b</sup>—SLDSS,<sup>c</sup> complete reporting jurisdictions,<sup>d</sup> 2020 and 2021.<sup>e</sup>

Exposure Category	2020			2021		
	Number of Cases with Known Hospitalization Status	Number of Hospitalizations	Hospitalization Rate	Number of Cases with Known Hospitalization Status	Number of Hospitalizations	Hospitalization Rate
All Cases	5,410	5,257	97.2	7,565	7,340	97.0
Healthcare	790	754	95.4	1,184	1,147	96.9
Travel	564	545	96.6	1,201	1,157	96.3
Assisted or senior living	139	133	95.7	145	140	96.6
None of these	4,041	3,945	97.6	5,270	5,124	97.2

<sup>a</sup> Where status of hospitalization for treatment of Legionnaires' disease was known (2020: 5,410/6,014 cases (90.0%); 2021: 7,565/7,837 cases (96.5%)).

<sup>b</sup> Exposure categories (categories are not mutually exclusive):

**Healthcare:** Legionnaires' disease in a patient who visited, worked in, or stayed in a healthcare setting in the 14 days before date of symptom onset.

**Travel:** Legionnaires' disease in a patient with a history of spending at least one night away from home in the 14 days before date of symptom onset, not including nights spent in a healthcare facility.

**Assisted or senior living:** Legionnaires' disease in a patient who visited, worked in, or stayed in a senior or assisted living facility in the 14 days before date of symptom onset.

**None of these:** A patient without reported healthcare setting, travel, or senior or assisted living facility exposure in the 14 days before date of symptom onset.

<sup>c</sup> Supplemental Legionnaires' Disease Surveillance System (SLDSS).

<sup>d</sup> 47 complete reporting jurisdictions in 2020: Alabama, Alaska, Arkansas, Arizona, California, Colorado, Connecticut, Delaware, Florida, Georgia, Hawaii, Idaho, Iowa, Illinois, Indiana, Kansas, Kentucky, Louisiana, Maine, Massachusetts, Michigan, Minnesota, Mississippi, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York (state), New York City, North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, and Wyoming.

49 complete reporting jurisdictions in 2021: Alabama, Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, District of Columbia, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Massachusetts, Michigan, Minnesota, Mississippi, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York (state), New York City, North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, and Wyoming.

<sup>e</sup> Based on year of symptom onset in SLDSS. If onset date was not stated in SLDSS, case year for confirmed cases was determined by the earliest of the following dates: positive laboratory date; date patient was hospitalized during treatment for Legionnaires' disease; or date case was first reported to public health at any level.

Accessible version at: [www.cdc.gov/legionella/php/surveillance/surveillance-report-2020-2021.html#table-6](http://www.cdc.gov/legionella/php/surveillance/surveillance-report-2020-2021.html#table-6)

**Table 7. Number of reported confirmed cases of Legionnaires' disease by outcome<sup>a</sup> and exposure category<sup>b</sup>—SLDSS,<sup>c</sup> complete reporting jurisdictions,<sup>d</sup> 2020 and 2021.<sup>e</sup>**

Exposure Category	2020			2021		
	Number of Cases with Known Outcome	Number of Deaths	Case Fatality Rate	Number of Cases with Known Outcome	Number of Deaths	Case Fatality Rate
All Cases	5,111	506	9.9	6,494	627	9.7
Healthcare	756	131	17.3	990	154	15.6
Presumptive	157	46	29.3	120	44	36.7
Possible	599	85	14.2	870	110	12.6
Travel	507	26	5.1	1,080	57	5.3
Assisted or senior living	137	25	18.2	130	16	12.3
None of these	3,820	340	8.9	4,503	417	9.3

<sup>a</sup> Where outcome was known (2020: 5,111/6,014 cases (85.0%); 2021: 6,494/7,837 cases (82.9%)).

<sup>b</sup> Exposure categories (categories are not mutually exclusive):

**Healthcare:** Legionnaires' disease in a patient who visited, worked in, or stayed in a healthcare setting in the 14 days before date of symptom onset.

**Travel:** Legionnaires' disease in a patient with a history of spending at least one night away from home in the 14 days before date of symptom onset, not including nights spent in a healthcare facility.

**Assisted or senior living:** Legionnaires' disease in a patient who visited, worked in, or stayed in a senior or assisted living facility in the 14 days before date of symptom onset.

**None of these:** A patient without reported healthcare setting, travel, or senior or assisted living facility exposure in the 14 days before date of symptom onset.

<sup>c</sup> Supplemental Legionnaires' Disease Surveillance System (SLDSS).

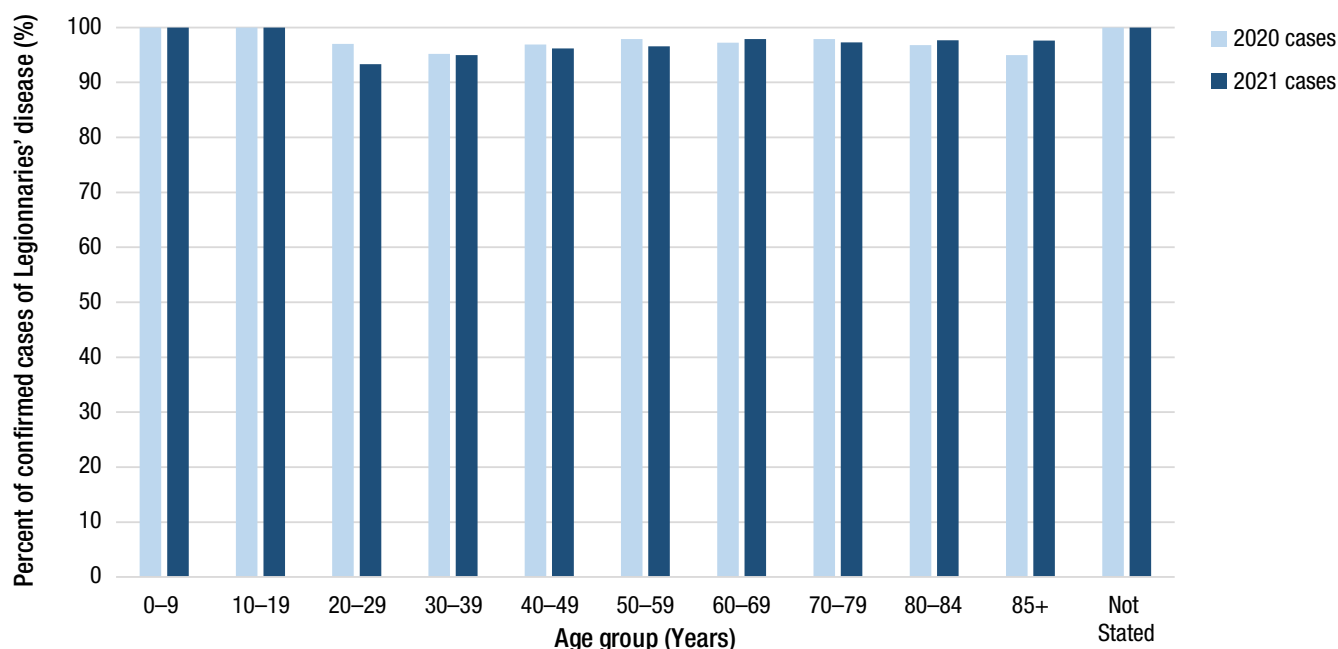
<sup>d</sup> 47 complete reporting jurisdictions in 2020: Alabama, Alaska, Arkansas, Arizona, California, Colorado, Connecticut, Delaware, Florida, Georgia, Hawaii, Idaho, Iowa, Illinois, Indiana, Kansas, Kentucky, Louisiana, Maine, Massachusetts, Michigan, Minnesota, Mississippi, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York (state), New York City, North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, and Wyoming.

49 complete reporting jurisdictions in 2021: Alabama, Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, District of Columbia, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Massachusetts, Michigan, Minnesota, Mississippi, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York (state), New York City, North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, and Wyoming.

<sup>e</sup> Based on year of symptom onset in SLDSS. If onset date was not stated in SLDSS, case year for confirmed cases was determined by the earliest of the following dates: positive laboratory date; date patient was hospitalized during treatment for Legionnaires' disease; or date case was first reported to public health at any level.

**Accessible version at:** [www.cdc.gov/legionella/php/surveillance/surveillance-report-2020-2021.html#table-7](http://www.cdc.gov/legionella/php/surveillance/surveillance-report-2020-2021.html#table-7)

**Figure 7.** Percent of reported confirmed cases of Legionnaires' disease that were treated in hospital<sup>a</sup> by age group<sup>b</sup> and year<sup>c</sup>—SLDSS,<sup>d</sup> complete reporting jurisdictions,<sup>e</sup> 2020 and 2021.



<sup>a</sup> Where status of hospitalization for treatment of Legionnaires' disease was known (2020: 5,410/6,014 cases (90.0%); 2021: 7,565/7,837 cases (96.5%)).

<sup>b</sup> Due to small case counts (N≤12), hospitalization rates may be unstable in age groups 0-9 and 10-19, and where age is missing; therefore, caution should be used when interpreting these rates.

<sup>c</sup> Based on year of symptom onset in SLDSS. If onset date was not stated in SLDSS, case year for confirmed cases was determined by the earliest of the following dates: positive laboratory date; date patient was hospitalized during treatment for Legionnaires' disease; or date case was first reported to public health at any level.

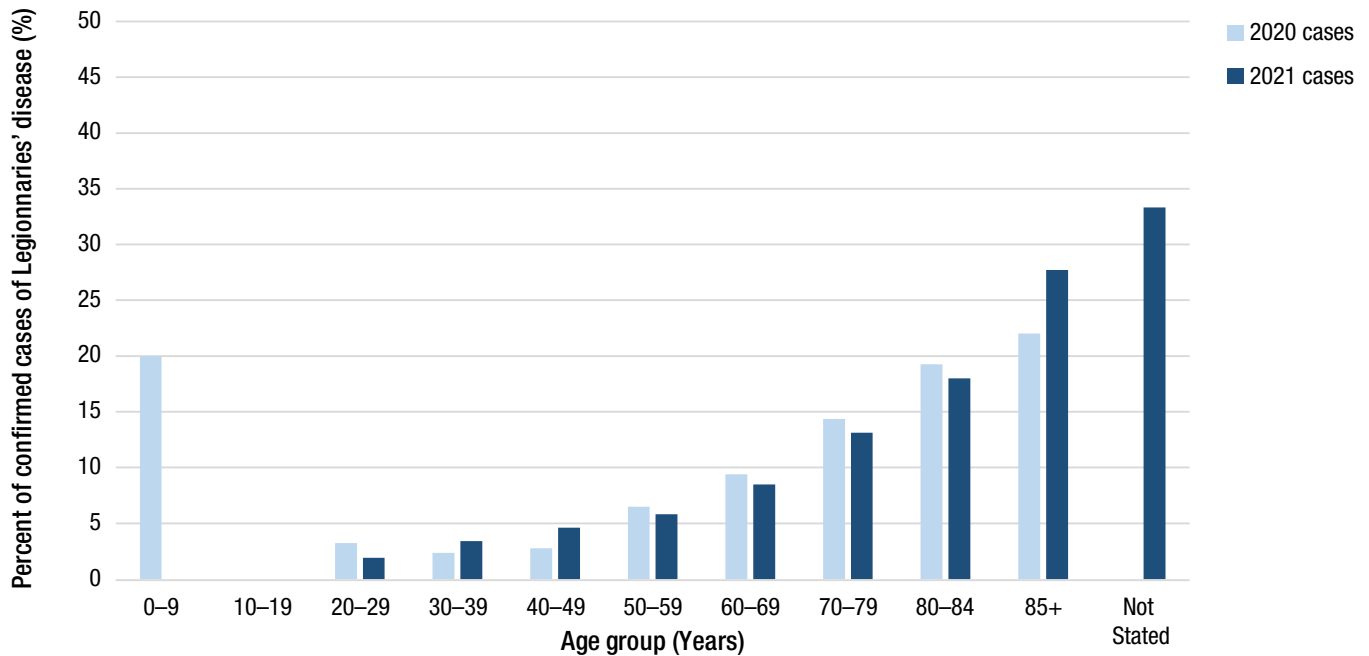
<sup>d</sup> Supplemental Legionnaires' Disease Surveillance System (SLDSS).

<sup>e</sup> 47 complete reporting jurisdictions in 2020: Alabama, Alaska, Arkansas, Arizona, California, Colorado, Connecticut, Delaware, Florida, Georgia, Hawaii, Idaho, Iowa, Illinois, Indiana, Kansas, Kentucky, Louisiana, Maine, Massachusetts, Michigan, Minnesota, Mississippi, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York (state), New York City, North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, and Wyoming.

49 complete reporting jurisdictions in 2021: Alabama, Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, District of Columbia, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Massachusetts, Michigan, Minnesota, Mississippi, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York (state), New York City, North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, and Wyoming.

Accessible version at: [www.cdc.gov/legionella/php/surveillance/surveillance-report-2020-2021.html#figure-7](http://www.cdc.gov/legionella/php/surveillance/surveillance-report-2020-2021.html#figure-7)

**Figure 8.** Percent of reported confirmed cases of Legionnaires' disease resulting in death<sup>a</sup> by age group<sup>b</sup> and year<sup>c</sup>—SLDSS,<sup>d</sup> complete reporting jurisdictions,<sup>e</sup> 2020 and 2021.



<sup>a</sup> Where outcome was known (2020: 5,111/6,014 cases (85.0%); 2021: 6,494/7,837 cases (82.9%)).

<sup>b</sup> Due to low case counts (N≤10), CFRs may be unstable in age groups 0-9 and 10-19, and where age is missing; therefore, caution should be used when interpreting these rates.

<sup>c</sup> Based on year of symptom onset in SLDSS. If onset date was not stated in SLDSS, case year for confirmed cases was determined by the earliest of the following dates: positive laboratory date; date patient was hospitalized during treatment for Legionnaires' disease; or date case was first reported to public health at any level.

<sup>d</sup> Supplemental Legionnaires' Disease Surveillance System (SLDSS).

<sup>e</sup> 47 complete reporting jurisdictions in 2020: Alabama, Alaska, Arkansas, Arizona, California, Colorado, Connecticut, Delaware, Florida, Georgia, Hawaii, Idaho, Iowa, Illinois, Indiana, Kansas, Kentucky, Louisiana, Maine, Massachusetts, Michigan, Minnesota, Mississippi, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York (state), New York City, North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, and Wyoming.

49 complete reporting jurisdictions in 2021: Alabama, Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, District of Columbia, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Massachusetts, Michigan, Minnesota, Mississippi, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York (state), New York City, North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, and Wyoming.

Accessible version at: [www.cdc.gov/legionella/php/surveillance/surveillance-report-2020-2021.html#figure-8](http://www.cdc.gov/legionella/php/surveillance/surveillance-report-2020-2021.html#figure-8)

**Table 8.** Number of reported confirmed cases of Legionnaires' disease by diagnostic testing method<sup>a</sup> and year<sup>b</sup>—SLDSS,<sup>c</sup> United States, 2020 and 2021.

Diagnostic testing method	2020		2021		Total	
	N	%	N	%	N	%
Urinary antigen test	5,843	95.7	7,762	96.0	13,605	95.9
Serology	2	0.0	3	0.0	5	0.0
Culture	271	4.4	322	4.0	593	4.2
Culture Site						
Respiratory secretion <sup>d</sup>	177	65.1	218	67.7	395	66.5
Lung biopsy	12	4.4	11	3.4	23	3.9
Pleural fluid	6	2.2	15	4.7	21	3.5
Blood	0	0.0	2	0.6	2	0.3
Other	16	5.9	28	8.7	44	7.4
Not stated	61	22.4	48	14.9	109	18.4
Culture Species						
<i>L. pneumophila</i>	148	54.4	194	60.2	342	57.6
Serogroup 1	69	N/A	100	N/A	169	N/A
Serogroup 2	1	N/A	2	N/A	3	N/A
Serogroup 6	1	N/A	1	N/A	2	N/A
Serogroup 3	0	N/A	1	N/A	1	N/A
<i>L. longbeachae</i>	6	2.2	8	2.5	14	2.4
<i>L. anisa</i>	6	2.2	2	0.6	8	1.3
<i>L. bozemanii</i>	2	0.7	6	1.9	8	1.3
<i>L. micdadei</i>	1	0.4	6	1.9	7	1.2
<i>L. dumoffii</i>	1	0.4	0	0.0	1	0.2
<i>L. feeleii</i>	1	0.4	0	0.0	1	0.2
Serogroup 1	1	N/A	0	N/A	1	N/A
<i>L. wadsworthii</i>	0	0.0	1	0.3	1	0.2
Not stated	107	39.3	105	32.6	212	35.7
<b>Nucleic Acid Amplification Test (NAAT)</b>	<b>170</b>	<b>2.8</b>	<b>298</b>	<b>3.7</b>	<b>468</b>	<b>3.3</b>
NAAT site						
Respiratory secretion <sup>d</sup>	106	61.6	204	65.8	310	64.3
Pleural fluid	4	2.3	30	9.7	34	7.1
Lung biopsy	6	3.5	6	1.9	12	2.5
Blood	4	2.3	4	1.3	8	1.7
Other	11	6.4	9	2.9	20	4.1
Not stated	41	23.8	57	18.4	98	20.3

Continued on next page ►

Diagnostic testing method	2020		2021		Total	
	N	%	N	%	N	%
NAAT species						
<i>L. pneumophila</i>	59	34.3	147	47.4	206	42.7
Serogroup 1	13	N/A	29	N/A	42	N/A
<i>L. micdadei</i>	2	1.2	2	0.6	4	0.8
<i>L. bozemanii</i>	1	0.6	1	0.3	2	0.4
<i>L. longbeachae</i>	1	0.6	0	0.0	1	0.2
Not stated	109	63.4	160	51.6	269	55.8

<sup>a</sup> More than one type of test might apply. Laboratory criteria for diagnosis include the following for confirmed cases:

**Urinary antigen test:** detection of *Legionella pneumophila* serogroup 1 antigen in urine using validated reagents.

**Serology:** 4-fold or greater rise in specific serum antibody titer to *L. pneumophila* serogroup 1 using validated reagents detected 3–6 weeks apart.

**Culture:** isolation of any *Legionella* organism from respiratory secretions, lung tissue, pleural fluid, or other normally sterile site.

**NAAT:** detection of any *Legionella* species from lower respiratory secretions, lung tissue, pleural fluid, or extrapulmonary site by a validated nucleic acid amplification test.

<sup>b</sup> Based on year of symptom onset in SLDSS. If onset date was not stated in SLDSS, case year for confirmed cases was determined by the earliest of the following dates: positive laboratory date; date patient was hospitalized during treatment for Legionnaires' disease; or date case was first reported to public health at any level.

<sup>c</sup> Supplemental Legionnaires' Disease Surveillance System (SLDSS).

<sup>d</sup> Respiratory secretions include sputum, bronchial wash, bronchoalveolar lavage.

**Accessible version at:** [www.cdc.gov/legionella/php/surveillance/surveillance-report-2020-2021.html#table-8](http://www.cdc.gov/legionella/php/surveillance/surveillance-report-2020-2021.html#table-8)

