A federal report obtained by The Associated Press shows that the Legionnaire’s disease outbreak that killed 12 residents of an Illinois state veterans home this summer and sickened dozens was likely spread by an aging water system at a 129-year-old facility that lacked several safeguards. The Centers for Disease Control report was released to the AP through a public records request.

CDC environmental health specialists who spent nearly two weeks at the Illinois Veterans Home in Quincy in late August and September cited an "extensive and poorly understood water distribution system" and a "general lack of understanding of water system details" pertinent to the prevent and control of the Legionella bacteria that causes the severe form of pneumonia.

Already, the state is pursuing a $4.8 million project to replace the water system and make other emergency repairs at Illinois' oldest and largest home for veterans and their spouses, which sits along the Mississippi River in the far western part of the state. Officials with the Illinois Department of Veterans Affairs did not immediately respond to a request for comment.

Among the findings in the CDC’s report:

- Maintenance of a cooling tower built in 2012 to help air-condition the dozens of buildings on the 210-acre campus didn't meet industry standards for containing Legionnaires' disease, which is transmitted by breathing vapor or mist from contaminated water systems. The report said "operation and maintenance record keeping was largely absent."

- A pressure valve failure inside the main water tower in early September — at the height of the outbreak — potentially led to water sitting stagnant "for an unspecified period of time," increasing the risks of contamination.

- There was an absence of electronic medical records for residents of the long-term care facility, nearly half of whom suffer from dementia, which the CDC said hinders the ability to quickly track health patterns, trends and shifts.

Planned repairs at the Quincy facility include installing a new water main and other water lines; converting a garage into a chemical treatment station; installing mixing valves in a hot water system that will be heated to higher temperature; and adding disinfection equipment, backflow valves and other upgrades to the cold water system to prevent bacterial growth.