

ECDC HEALTH INFORMATION

Information about Legionnaires' disease for managers of tourist accommodation

Disclaimer: This information leaflet is for general informative purposes only. Please contact the responsible authorities in your country for country-specific guidance or legislation.

What is Legionnaires' disease?

Background

Each year more than 1000 travellers are reported to have contracted Legionnaires' disease*. However, the risk of Legionnaires' disease in travel accommodation can be reduced. This leaflet contains information for owners or managers of tourist accommodation (e.g. hotels, apartments, camping sites).

What is Legionnaires' disease?

Legionnaires' disease is a severe type of pneumonia (lung infection) caused by *Legionella* bacteria. About 5–10 % of the patients die. Not everybody who is exposed to *Legionella* will get ill. People with underlying illness, smokers and older people are at a higher risk of getting ill from *Legionella*. Symptoms generally start between two and ten days after infection, but in rare cases it may take up to three weeks to develop symptoms.

The illness usually begins with a fever, chills, headache and muscle pain. This is followed by a dry cough and breathing difficulties that may progress to severe pneumonia. About a third of patients also have diarrhoea or vomiting and about half become confused or delirious. Most patients need to be hospitalised and treated with appropriate antibiotics. Diagnosis requires specific laboratory tests. The diagnosis is often made after the traveller has returned home.

How is Legionnaires' disease caught?

Legionnaires' disease is caught by inhaling microscopic water droplets (aerosols) containing the *Legionella* bacteria. These bacteria live in water and multiply when conditions are suitable; for example, stagnant water in man-made water systems at 20°C to 50°C. Aerosols with *Legionella* may be produced by, for example, running a tap or shower, by bubbles rising through water in a spa pool or by some air-conditioning systems.

* European Centre for Disease Prevention and Control. Legionnaires' disease in Europe, 2014. Stockholm: ECDC; 2016. Available from <http://ecdc.europa.eu/en/publications/Publications/legionnaires-disease-europe-2014.pdf>

Is the accommodation the source of infection?

If a person with Legionnaires' disease is reported to have stayed in specific accommodation, this does not necessarily mean that the patient got the infection there. He or she could have got the infection from a variety of different places. However, when two or more cases stayed at the same accommodation, especially within a short period of time, it is more likely that the accommodation is the source of the infection. In that situation, urgent investigations at the accommodation are needed.

As a manager of tourist accommodation you should be aware of the risk of Legionnaires' disease and take measures to reduce this risk as much as possible.

Where are the risk areas in tourist accommodation?

Wherever water droplets (aerosols) can be created, there is a risk of infection. Some examples are:

- Showers and taps
- Spa/whirlpool baths
- Cooling towers and evaporative condensers used for air conditioning
- Ornamental fountains, particularly indoors
- Humidified food displays and other misting devices
- Water systems of garden hoses used for watering plants

Where can *Legionella* bacteria survive and multiply?

- In water at temperatures between 20°C and 50°C
- In hot and cold water tanks or cisterns
- In pipes with little or no water flow (this includes unoccupied rooms)
- In slime (biofilm) and dirt on the inner surfaces of pipes and tanks
- On rubber and natural fibres in washers and seals
- In water heaters and hot water storage tanks
- In scale and corrosion in pipes, showers and taps.

These conditions encourage the growth of *Legionella* and increase the risk of infection to guests and staff.

How do we monitor Legionnaires' disease?

The European Legionnaires' disease Surveillance Network (ELDSNet) carries out surveillance of Legionnaires' disease. It is coordinated by the European Centre for Disease Prevention and Control (ECDC). The network consists of epidemiologists and microbiologists nominated by national public health authorities in the EU and many countries around the world. This network shares information between countries where people became ill and the countries where their infection could have occurred. This network also has procedures to notify clusters of cases to tour operators. You can reduce this risk by having a *Legionella* control plan.

What can I do as a manager of tourist accommodation to avoid Legionnaires' disease infections among my guests?

Reducing the risk: a 15-point plan for reducing the risk from *Legionella*

The risk of Legionnaires' disease can be minimised.

Hoteliers and other accommodation owners are recommended to follow the 15-point plan for reducing the risk from *Legionella*:

1. Have one named person responsible for *Legionella* control.
2. Ensure the named person has sufficient training and experience to be able to carry out the role competently and other staff are trained to be aware of the importance of their role in controlling *Legionella*.
3. Keep hot water hot and circulating at all times: 50°C - 60°C (too hot to put hands into for more than a few seconds) throughout the entire hot water system.

4. Keep cold water cold at all times. It should be maintained at temperatures below 20°C throughout the system to all outlets (this may not be possible when the ambient temperature is high, but every effort should be made to ensure that cold water entering the premises and in storage remains as cold as possible).
5. Run all taps and showers in guest rooms and other areas for several minutes to draw through water (until it reaches the temperatures stated in points 3 and 4) at least once a week if rooms are unoccupied, and always prior to occupation.
6. Keep shower heads and taps clean and free from scale.
7. Clean and disinfect cooling towers and associated pipes used in air conditioning systems regularly - at least twice per year.
8. Clean, drain and disinfect water heaters (calorifiers) once per year.
9. Disinfect the hot water system with high level (50mg/l) chlorine for 2–4 hours after work on the system and water heaters and before the beginning of every season.
10. Clean and disinfect all water filters regularly, as directed by the manufacturer, at least every one to three months.
11. Inspect water storage tanks, cooling towers and visible pipe work monthly. Ensure that all coverings are intact and firmly in place.
12. Inspect the inside of cold water tanks at least once per year and disinfect with 50mg/l chlorine and clean if containing a deposit or otherwise dirty.
13. Ensure that when carrying out system modifications or new installations they do not create pipework with intermittent or no water flow, and disinfect the system following any work.
14. If there is a spa pool (also known as whirlpool spas, 'Jacuzzis', spa baths), ensure that:
 - it is continuously treated with 2–3mg/l chlorine or bromine and the levels and pH are monitored at least three times per day;
 - at least half of the water is replaced each day;
 - sand filters are backwashed daily;
 - the whole system is cleaned and disinfected once per week.
15. Keep daily records of all water treatment readings, such as temperature, pH and chlorine concentrations and ensure they are checked regularly by the manager.

Further advice about specific controls should be sought from experts in this field. They can carry out a full risk assessment of the accommodation. Your local public health authorities can advise you further.

Environmental *Legionella* testing

Testing for *Legionella* is a useful tool, but only if carried out by trained personnel who in parallel also assess the water system. Further, water samples should be examined by laboratories accredited for *Legionella* testing (e.g. by UKAS, ISSO, ACCREDIA or equivalent national bodies). A negative test result does not necessarily mean that the accommodation site is clear of *Legionella* or that there is no risk.

How do I find out more?

On the ELDSNet webpage*, you can find more information and a link to the 'Technical Guidelines for the Investigation, Control and Prevention of Travel Associated Legionnaires' Disease' from the European Study Group on Legionella Infections (ESGLI).

* http://ecdc.europa.eu/en/healthtopics/legionnaires_disease/ELDSNet/Pages/index.aspx