The European Working Group for Legionella Infections

Factsheet – Information for Owners and Managers of Hotels and Other Accommodation Sites: Minimising the Risk

This fact sheet should be made available to the hotel or other accommodation site when a person is reported to have developed Legionnaires’ disease following at least one overnight stay there in the 2-10 days before they became ill.

Background

Over 800 cases of travel associated Legionnaires’ disease in European residents were reported to the European surveillance scheme in 2009. The risk from Legionnaires’ disease can be reduced by careful attention to a number of simple measures. This page contains summary information for site owners and hotel managers and also provides links to other relevant resources.

What is Legionnaires’ disease?

An uncommon form of pneumonia (lung infection) from which approximately 5-15% of those that become ill will die. It is caused by legionella bacteria. These bacteria can also cause less serious illness. The infected person usually takes between 2-10 days to develop symptoms (typically five to six days but very rarely some cases may take longer to develop symptoms).

Symptoms

The illness usually starts with a fever, chills, headache and muscle pain. This is followed by a dry cough and breathing difficulties that progress to severe pneumonia. Between 25 -50% of those infected will also have diarrhoea or vomiting and around 50% may show signs of mental confusion.

Accurate diagnosis requires specific laboratory tests that often are not done until the guests have returned home.

How is Legionnaires’ disease caught?

The disease is acquired through breathing in air containing the Legionellae, in an aerosol that may not be visible. Aerosols can be formed from fine droplets generated from water containing the bacteria by, for example, running a tap or shower, flushing a toilet, or from bubbles rising through water in a spa pool. The bacteria can live and multiply in water at temperatures of 20°C to 45°C with the risk highest at the upper end of this range. They can be found in the natural environment such as rivers, lakes and moist soil but usually in low numbers. High numbers occur in inadequately maintained artificial water systems.
Where are the risk areas in a hotel?

Wherever water droplets can be created there is a risk of infection. Examples include:

- Showers and taps
- Spa baths, whirlpool baths and hot tubs
- Turkish baths and saunas
- Cooling towers and evaporative condensers used for air conditioning, even if situated on the roof or in the grounds of the accommodation site
- Ornamental fountains, particularly indoors
- Humidified food displays

Where can legionella multiply?

- Hot and cold water systems including storage tanks/cisterns
- Any system or part of a system where the water is warm-between 20°C and 45°C, and particularly when above 30°C
- Pipes with little or no water flow (this includes unoccupied rooms)
- Slime (biofilm) and dirt on pipes feeding showers and taps and tank surfaces
- Rubber and natural fibres in washers and seals
- Water heaters and hot water storage tanks
- Scale and corrosion in storage vessels, pipes, showers and taps
- Flexible hoses and artificial rubber seals.

These situations and conditions encourage the growth of legionella bacteria and increase the risk of infection to hotel guests and staff.

Reducing the risk - the 14 point checklist

The risk of Legionnaires’ disease can be minimised. Any hotel that does not have an active programme to control the growth of legionella bacteria is negligent in ensuring the safety of their guests. This programme should include the following:

1. Have one named person responsible for Legionella control.
2. Ensure the named person is trained in the control of Legionella 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 or under for more than a few seconds)

\[1\] Where these temperatures cannot be achieved due to local conditions, suitable alternative residual disinfection procedures must be used and supported by regular (at least quarterly) testing for Legionella. Residual disinfection procedures that have been used include chlorine dioxide and copper/silver ionisation.
4. Keep cold water cold at all times throughout the system. It should be maintained at temperatures below 25°C.
5. Run all taps and showers: in guest rooms run for several minutes at least once a week if they are unoccupied and always prior to occupation.
6. Keep shower heads, hoses 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 a year.
8. Clean and disinfect water heaters (calorifiers) and hot water storage tanks at least once a year.
9. Disinfect the hot water system with a high level (50mg/l) of chlorine for 2-4 hours after work on water heaters and before the beginning of every season.
10. Clean and disinfect all water filters regularly - every one to three months.
11. Inspect water storage tanks, cooling towers and visible pipe work monthly. Ensure that all lids and insulation are intact and firmly in place.
12. Inspect the inside of cold water tanks at least once a year and clean. If they contain a deposit or are otherwise dirty, disinfect with 50mg/l chlorine for a minimum of 1 hour.
13. Ensure that system modifications or new installations do not create pipe-work with intermittent or no water flow or insufficient capacity to cope with surges in requirement.
14. If there is a spa pool (synonyms - whirlpool spa, "Jacuzzi™", spa bath; hot tub) ensure that:
   - it is continuously treated with a minimum of 2-3mg/l chlorine or bromine and the pH is maintained at 7.0-7.6 and the levels are monitored at least three times a day
   - at least half of the water is replaced each day
   - sand or diatomaceous earth filters are back washed daily
   - the whole system including the balance tank is cleaned and disinfected once a week
   - daily records are kept of all water treatment readings, such as temperature, pH and chlorine concentrations and ensure that any measurements that are outside of those specified have been acted upon and are checked regularly by the manager.

Further advice about specific controls should be sought from experts in this field who can carry out a full risk assessment of the hotel site. Your local public health authorities may be able to recommend a good source of advice.


Legionella testing

Testing for legionella is a useful tool but only on condition that it is carried out by trained personnel. Water samples should be examined by laboratories accredited for testing water for legionella bacteria (e.g. by UKAS or equivalent national bodies elsewhere). A negative test result does not necessarily mean that the hotel is clear of legionella or that there is no risk.
Accreditation of water treatment companies

The co-ordinating centre in London has been asked by some water treatment companies if they can obtain EWGLI accreditation for carrying out legionella risk assessments at hotels. EWGLI does not have the authority or legal status to give such accreditation to any company.

How do I find out more?

Further information can be obtained from the European Guidelines for Control and Prevention of Travel Associated Legionnaires’ Disease (www.ewgli.org).