

# Legionnaires' Disease

Although the number of confirmed cases of Legionnaires' Disease remain relatively low, the high mortality rate amongst susceptible individuals is such that the control of legionellosis is a real consideration in buildings, especially those which accommodate the elderly or people whose immune system is impaired.

## What is legionnaires' disease

Legionnaires' disease is a type of pneumonia, which kills between 10—40% of those infected. The illness occurs more frequently in men than women. It usually affects middle aged or elderly people and it more commonly affects smokers or people with other chest problems and in people whose immune system is impaired.

## How is the disease caught?

People catch legionnaires' disease by inhaling small droplets of water suspended in the air, which contain the bacteria.

Aerosols can be formed from fine droplets generated from water containing the legionella bacteria by, for example, running a tap or shower, flushing a toilet, or from bubbles arising from whirlpool baths, hydrotherapy pools, Jacuzzi's, garden water features and from cooling towers. Legionnaires' disease does not spread from person to person.

Any water system that produces tiny droplets of water has the potential to spread legionella.

## What can we do about it?

It is important to identify any places where the bacteria can grow and ensure adequate controls are put in place to reduce the risk of bacteria surviving and entering the environment on droplets.

The bacteria are more likely to grow:

- In warm water between 20 - 45°C (optimum temperature 37°C)
- Where there is a source of nutrients for the bacteria e.g. Slime (biofilm), rust, algae and dirt on pipe and tank surfaces
- In water heaters/calorifiers where water is stored at temperatures less than 45°C
- In pipes with little or no water flow (this includes unoccupied rooms)

## Know your system

You should prepare a plan of the hot and cold water system in the property based on evidence and information available on site. If you have a very old building you may need to ask a qualified plumber to help you.

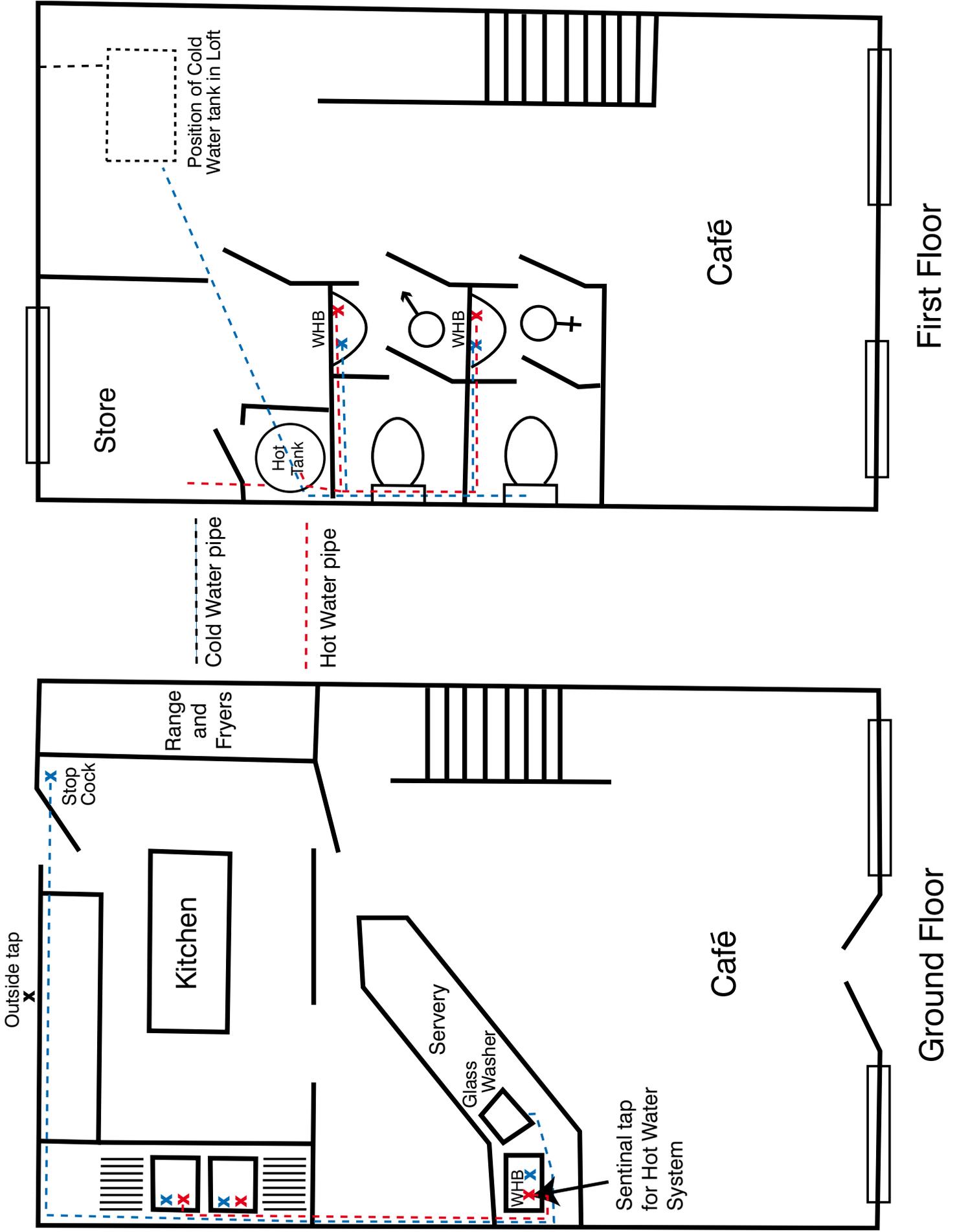
Update the diagram when new information comes to light or when you make any alterations to your water systems.

Ensure you note on the diagram:

The position of the header tank/s (if any) and water heater/s and how these link to all the water outlets (taps, shower heads etc.) on the systems supplied by the hot water heater.

An example of a plan is shown. On the following page please insert your own plan.

# Example plan of hot/cold water system



# Plan of the hot and cold water systems:

Name of business:

Address of property

Safety point	Why?	How do you do this?
<b>Hot and cold water tanks</b>		
<p>Water temperatures in the (boiler) should be set to reach at least 60°C.</p> <p>Cold water must be kept below 20°C at all times.</p>	<p>The bacteria grow easily in warm water between 20 - 45°C and may multiply to hazardous numbers in areas where water can collect.</p> <p>Please note that temperatures above 50°C in the pipes will increase the risk of scalding injuries. If your temperatures approach 60°C, you should provide warning signs and consider thermostatic mixing valves.</p>	<p>What temperature does your boiler/s operate at:</p> <div data-bbox="916 360 1463 651" style="border: 1px solid black; height: 130px; width: 100%;"></div> <p>What temperature is the water in your cold water storage tank?</p> <div data-bbox="916 734 1463 913" style="border: 1px solid black; height: 80px; width: 100%;"></div>
<p>Fit tight fitting covers or lids to all cold water storage tanks to prevent contamination from debris, insects and vermin.</p> <p>Visually inspect the insides of cold water storage tanks for cleanliness each year as well as checking that the water temperature is below 20°C.</p>	<p>Dirty tanks containing debris should be cleaned as necessary to prevent the available nutrients for the bacteria. If the water temperature is above 20°C then you may need to re-site or insulate the tank against thermal heat.</p> <div data-bbox="475 1240 884 1816" style="text-align: center;">  <p data-bbox="485 1742 874 1809"><b>Cold water tank with algae, rust and debris</b></p> </div>	<p>Can you gain access to your cold water storage tanks Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>How often do you inspect the tanks and ensure they are free from debris.</p> <div data-bbox="916 1128 1463 1368" style="border: 1px solid black; height: 107px; width: 100%;"></div> <p>Are the cold water storage tanks fitted with tight fitting lids? Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>If no, please advise what action is to be taken.</p> <div data-bbox="916 1576 1463 1906" style="border: 1px solid black; height: 147px; width: 100%;"></div>

Safety point	Why?	How do you do this?
<b>Hot and cold water temperatures</b>		
<p>Once a month hot and cold water temperatures should be taken from the sentinel taps for each hot and cold water system.</p> <p>If, after one minute, hot water temperatures are less than 50°C the boiler/calorifier thermostat should be increased.</p> <p>If cold water temperatures are greater than 20°C after two minutes of flushing, you will need to investigate why this is happening and seek further advice.</p>	<p>The sentinel taps are those closest to the boiler or the cold water tank and those furthest away.</p> <p>Note: Where taps are fitted with a thermostatic mixing valve limiting issuing water below 50°C then you will need to measure the surface temperature of the pipework prior to the mixing valve.</p>	<p>Where do you record your monthly temperature checks?</p> <div data-bbox="916 358 1461 649" style="border: 1px solid black; height: 130px; width: 100%;"></div> <p>Do your cold water taps achieve a maximum temperature of 20°C at the furthest point within 2 minutes? Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>If not what action have you taken?</p> <div data-bbox="916 869 1461 1052" style="border: 1px solid black; height: 82px; width: 100%;"></div>
<b>Outlets that are not in frequent use</b>		
<p>Any water outlets in the building including sealed off areas and outside taps must be identified and fully documented. Any outlets including showers and taps that may not be used during any given week must be highlighted.</p> <p>Each of these outlets must be flushed for two minutes on a weekly basis with a record kept.</p> <p>If these outlets are not required and if the pipework can be cutback to prevent the creation of a dead leg they should be removed.</p>	<p>A deadleg is the section of pipe leading to a fitting e.g. a sink, through which water only passes when there is water drawn from the fitting.</p> <p>Deadlegs or disused systems will cause water stagnation and mould growth and provide a perfect environment for bacteria to grow.</p> <div data-bbox="472 1487 893 1944" style="border: 1px solid black; text-align: center;">  <p>A deadleg</p> </div>	<p>Do you have any water outlets that are not used frequently? Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>Please list the outlets and their location here:</p> <div data-bbox="916 1339 1461 1720" style="border: 1px solid black; height: 170px; width: 100%;"></div> <p>How often do you flush these outlets?</p> <div data-bbox="916 1792 1461 1957" style="border: 1px solid black; height: 74px; width: 100%;"></div> <p>Do you have any deadlegs? Yes <input type="checkbox"/> No <input type="checkbox"/></p>

Safety point	Why?	How do you do this?
<b>Shower heads</b>		
<p>All shower heads should be removed, cleaned, descaled (if necessary) and disinfected every three months.</p> <p>Keep a record of the dates when the shower heads were cleaned in your diary.</p>	<p>Shower heads produce a fine spray and aerosol and are an ideal source for legionella bacteria.</p> <p>Shower heads also get a build up of dirt and mould which is a food source for bacteria. It is therefore important to clean all shower heads at least every three months.</p>	<p>Do you have any shower heads in your business?  Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>How often do you clean and disinfect every shower head?</p> <div data-bbox="916 474 1465 712" style="border: 1px solid black; height: 106px; width: 344px;"></div> <p>Where do you record these checks?</p> <div data-bbox="916 779 1465 1039" style="border: 1px solid black; height: 116px; width: 344px;"></div>