



Independent workplace compliance



## White Paper

# Legionella FAQs

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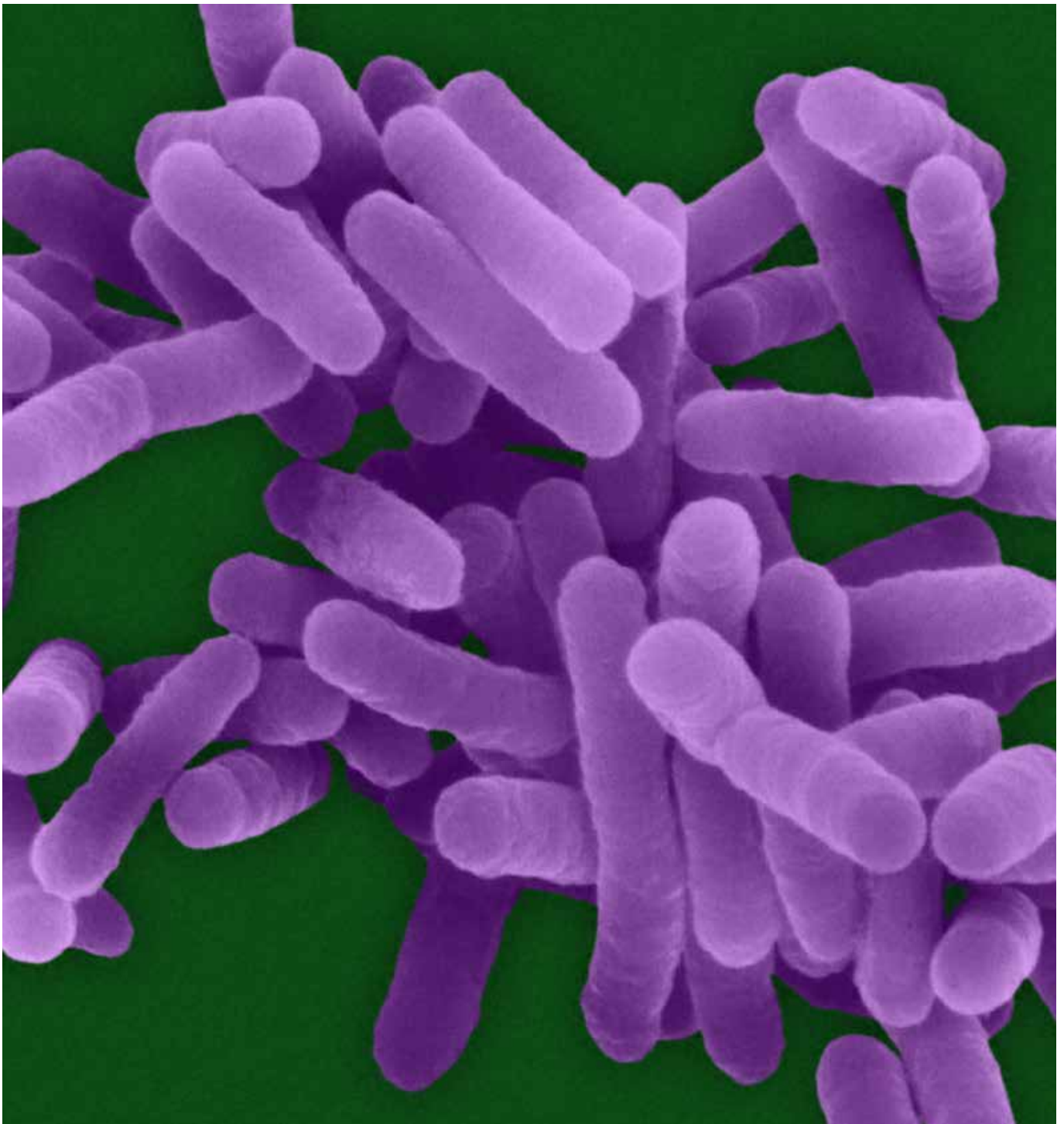


## Legionella FAQs

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With the Summer months here, typically in the UK, we will start to see an increase in the number of diagnosed and reported cases of Legionnaires' disease.

We are also seeing increases in requests for both Legionella management training and Legionella awareness training. So, for this month we are taking eight frequently asked questions about Legionella, and we have provided the answers.



## 1. What is Legionella and where is it commonly found?

Legionella bacteria are naturally occurring and found in both natural and man-made water systems. Legionella is the name given to a genus of bacteria containing, at the time of writing, 64 species and approximately 70 serotypes. The genus derives its name from having been identified as the causal agent of an epidemic of pneumonia, centred on a convention of the American Legion in Philadelphia, Pennsylvania, USA, in 1976.

Legionella pneumophila was the first species to be characterised – and is the causal agent for most cases of Legionnaires' disease worldwide - Legionella bononiensis being the 64th species. Not all species of Legionella have been characterised as pathogenic (disease causing) in humans.

Legionellae occur naturally in aquatic environments such as lakes, rivers, ponds, and streams, as well as wet soil and potting compost. While they have an optimum growth temperature of approximately 36 °C, Legionella can tolerate a wide range in temperature and multiply anywhere between 20°C to 50°C. They can also survive and multiply in biofilms and free-living protozoa.

The bacteria will also, where conditions are conducive, readily colonise man-made water systems, including, hot and cold water systems, evaporative cooling systems, spa pools, misting and other irrigation systems, vehicle washes, water features, sprinkler, and hose reel systems.



## 2. What is Legionnaires' disease, what are the symptoms, how is it transmitted and what are the risk factors?

Legionellosis is the term applied to diseases caused by bacteria of the Legionella genus. Three diseases have been described and these are, Legionnaires' disease, Pontiac Fever and Lochgoilhead Fever.

Legionnaires' disease is a form of atypical pneumonia with symptoms including fever/high temperature, headache, lethargy/malaise, muscle pain, diarrhoea, and confusion. It can initially present as a mild cough, which can sometimes develop into the production of blood-stained sputum/coughing up blood. It can also, as seen with other severe pneumonia, lead to complications such as kidney failure, respiratory failure, and multi-organ failure.

The overall global fatality rate for Legionnaires' disease is between 5% and 10% (World Health Organisation (WHO) figures). Although, host susceptibility, the severity of the disease and prompt access to antibiotics can affect these figures. With antibiotic treatment most people recover from the illness within weeks or months.

Both Pontiac Fever and Lochgoilhead Fever (referred to as "non-pneumonic" forms of legionellosis) are flu-like illnesses with symptoms include fever/chills, headache, lethargy/malaise and muscle pain. These diseases are non-fatal and self-limiting, naturally resolving within a week or so of the symptoms occurring.

Transmission of Legionella is primarily through the inhalation of contaminated droplets of water (aerosols). There have been no recorded infections because of person-to-person contact. There have however been isolated cases caused by individuals aspirating contaminated water/ice, most often in patients already ill and hospitalised. Isolated cases involving neo-natal babies exposed during water births have also been recognised. The infective dose leading to a legionellosis occurring is unknown, but there are several factors that increase the susceptibility of individuals developing Legionnaires' disease, these include:

- **Age** – those over 50 are at greater risk;
- **Gender** – males are more prone to the disease at a ratio of 3:1; and
- **Underlying illness** – smoking, immuno-suppression, heart/lung/kidney disease/illness, diabetes, and alcoholism.

The WHO identify that the, "likelihood of illness depends on the concentrations of Legionella in the water source, the production and dissemination of aerosols, host factors such as age and pre-existing health conditions and the virulence of the particular strain of Legionella. Most infections do not cause illness."



### 3. What are the legal regulations and guidelines covering Legionella in the UK?

Legislation and guidance for Legionella has evolved since it was first identified and as a response to series of outbreaks and concerns resulting from them what good management looks like.

1987 saw the first Health and Safety Executive (HSE) published guidance in the form of EH48 "Legionnaires' disease".

In 1991 the Health and Safety Commission (HSC) introduced its initial Approved Code of Practice (ACoP) "The prevention or control of legionellosis (including Legionnaires' disease)" (L8) and associated guidance HS(G)70. This Code of Practice came into effect on 15th January 1992.

Since this time the ACoP/L8 has been expanded and updated with the current, and 4th Version, "Legionnaires' disease The control of legionella bacteria in water systems", coming into force on the 25th November 2013.

Each version of the ACoP/L8 is enabled through three pieces of legislation:

- **The Health and Safety at Work etc. Act 1974**
  - Section 2 – employers duties to their employees
  - Section 3 - employers and self employed duties to persons other than employees;
  - Section 4 - persons concerned with premises to persons other than their employees;
  - Section 6 - manufacturers etc as regards to articles and substances for use at work.
- **The Management of Health and Safety at Work Regulations 1999 (S.I. 1999/3242)**
  - Regulation 3 - Risk assessment;
  - Regulation 5 - Health & Safety arrangements;
  - Regulation 7 - Health and safety assistance (competent support);
  - Regulation 10 - Information to employees; and
  - Regulation 13 - Capabilities and training.
- **The Control of Substances Hazardous to Health Regulations 2002 (S.I. 2002/2677)**
  - Regulation 6 - Suitable and sufficient assessment;
  - Regulation 7 - Prevention or control of exposure;
  - Regulation 8 - Use of control measures;
  - Regulation 9 - Maintenance, examination and test of control measures;
  - Regulation 12 - Information, instruction and training.

In combination these are utilised to shape the main requirement of the ACoP/L8 and the responsibilities placed on dutyholders and others involved in the Legionella management process. The five main requirements of the ACoP/L8 are:

- **Identification and assessment of the risk** - To identify and assess the risk of exposure from all water systems, evaluate the potential sources of risk and means of preventing exposure to Legionella or if not reasonably practicable controlling that risk and be regularly reviewed.
- **Managing the risk: management responsibilities, training, and competence** - Appointing people to managerial responsibility who are trained and competent to perform their roles/tasks. That those providing the risk assessment and precautionary measures are competent and understand the potential sources and risk, measures to be adopted and to ensure control remains effective.

- **Preventing or controlling the risk from exposure to Legionella** - Avoid exposure where reasonably practicable and where not practicable the implementation and proper management of a written scheme of control. This should include for each relevant system, an up-to-date plan, a description of its safe operation, the precautions taken, the checks to be carried out and remedial action should the scheme be shown not to be effective.
- **Record keeping** - The production and maintenance of records including details about, the appointed responsible person(s) for conducting the risk assessment, managing, and implementing the written scheme, the significant findings of the risk assessment, the written scheme and its implementation, details about the state of operation of the water system and the results of any monitoring inspection, test or check carried out. The length of time these records should be kept.
- **Responsibilities of manufacturers, importers, suppliers, and installers** - The duties placed on designers, manufacturers, importers and suppliers of products and services (including maintenance, water treatment and consultancy), that their products and services are safe, suitable and competently provided/delivered.

In 2013 HS(G)70 was replaced by series of technical guidance, also published by HSE, in the form of the HSG 274 series of documents. These provide more specific information on system operation and risks and the controls to be adopted, covering:

- HSG 274 Part 1- Legionnaires' disease Part 1: The control of legionella bacteria in evaporative cooling systems;
- HSG 274 Part 2 - Legionnaires' disease Part 2: The control of legionella bacteria in hot and cold water systems;
- HSG 274 Part 3 - Legionnaires' disease Part 3: The control of legionella bacteria in other water systems.

Other relevant regulation includes:

- **The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013 (RIDDOR) (S.I. 2013/1471)** - requiring employers and others (e.g. those in control of work premises) to report work related accidents and some diseases to HSE.
- **The Notification of Cooling Towers and Evaporative Condensers Regulations 1992 (SI 1992/2225)** – requiring those who have, to any extent, control of premises, a duty to notify their local authority of details of any 'notifiable devices'.
- **The Safety Representatives and Safety Committees Regulations 1977 (SI 1977/500) and the Health and Safety (Consultation with Employees) Regulations 1996 (SI 1996/1513)** - requiring employers to consult with employees, trade unions or other relevant representatives about health and safety matters.
- **The Water Supply (Water Fitting) Regulations 1999 (SI 1148/1999)** – the requirements for the materials used, design, installation and maintenance of water fittings, appliances and plumbing systems.

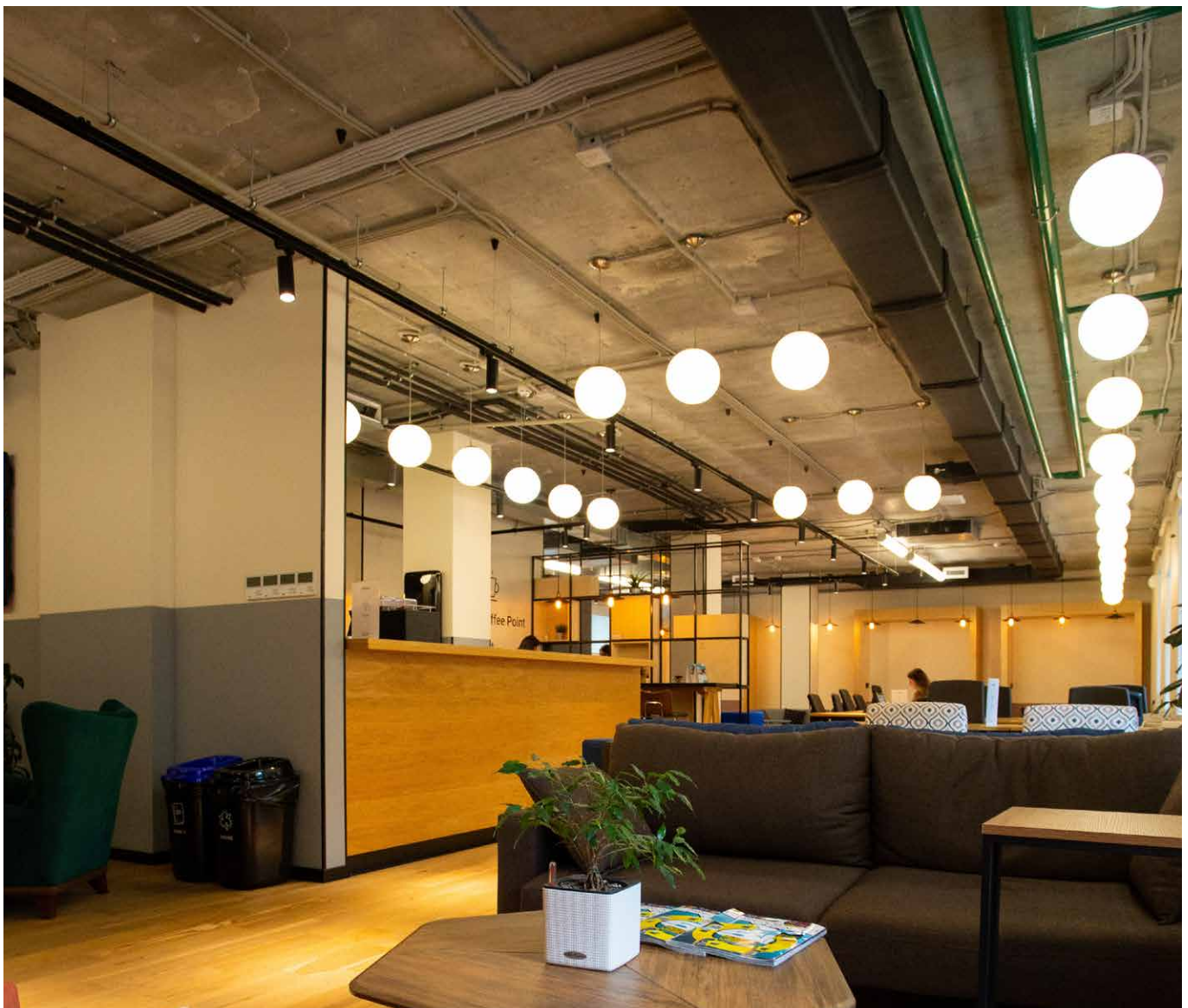
## 4. Who is responsible for managing Legionella risks in buildings?

Section 22 of the ACoP/L8 identifies:

“This Approved Code of Practice applies to the control of legionella bacteria, in any undertaking involving a work activity managed by you or on your behalf. It applies to premises controlled in connection with a trade, business, or other undertaking where water is used or stored; and where there is a means of creating and transmitting water droplets (aerosols) which may be inhaled, causing a reasonably foreseeable risk of exposure to legionella bacteria.”

Therefore, duty holders could and will extend to owners, employers, and people in control of premises (e.g. landlords, landlord’s agents and tenants) where water systems are used that could pose a potential risk from Legionella.

In the instance where the duty holder has control over all the water systems and services, they will be wholly responsible for meeting the obligations placed upon them. Where, for example in multi-occupied premises, different people have responsibility for different parts of the water systems and services, they will have the responsibility to safely manage the parts of that water system and service under their control.



## 5. How often should Legionella risk assessments be conducted?

Once responsibility for a relevant water system/service has been assumed, duty holders should carry out a risk assessment to identify the possible risks, prior to implementing any formal health and safety management system for that water system.

Your risk assessment should be reviewed regularly, including any management and communication procedures as needed, and particularly if you believe the current document may no longer be valid or up to date.

The ACoP/L8 also identifies specific occasions when your risk assessment should be considered for review, this covers:

- “(a) changes to the water system or its use;
- (b) changes to the use of the building in which the water system is installed;
- (c) the availability of new information about risks or control measures;
- (d) the results of checks indicating that control measures are no longer effective;
- (e) changes to key personnel;
- (f) a case of legionnaires’ disease/legionellosis associated with the system.”

As with all risk assessment they need to be kept up-to-date and relevant to your current circumstances. Many organisations, based on historic system information and performance data have identified a frequency where they can review their Legionella risk assessment(s) in a timely and proactive fashion knowing that, notwithstanding the changes identified above, they have effective control of their water services.

Appendix 2.1 of HSG 274 Parts 1 and 2 provide further information on “Legionella Risk Assessment”.





## 6. What are the recommended control measures for managing Legionella?

The technical guidance provided by the HSG 274 series of documents, gives detailed information on what the recommended control measures are. These in turn should be incorporated into your written scheme and informed through your risk assessment findings and historic performance data. Therefore investing in your risk assessor and risk assessment process is a key element of your management.

Broadly, control measures can be divided into 4 main elements:

- 1. Physical condition of the system** – which should cover accessibility, internal and external structural condition (damage, corrosion, leaks, etc.) as well as cleanliness (e.g. scaling and fouling).
- 2. System operation** – including aspects of temperature, aerosol production, usage and water quality.
- 3. Water treatment** – for a number of systems, temperature as a control measure is not an option (e.g. evaporative cooling systems and spa pools) as they will normally operate in the 20°C to 50°C temperature range. These systems will require other controls in the form of water treatment to control the microbiological risk. Some hot and cold water systems, particularly in large or complex buildings can also struggle to achieve effective control through temperature alone and employ a water treatment regime. Typically, these systems will require additional testing, inspection and monitoring to determine and maintain the levels of control.
- 4. Documentation/Record keeping** – Including risk assessment, written scheme and the results of all testing, inspection, and monitoring. Your water management systems should be designed and reviewed to provide you with the control and performance information to comply with your legal requirements.

In combination, all the above needs to be tailored to each of the specific systems you have responsibility for and managed to provide the dutyholder with the information they need to demonstrate the active management of the water systems under their control.

Appendix 2.2 of HSG 274 Parts 1 and 2 provide further information on “Legionella Written Control Scheme”.



## 7. What are the responsibilities for landlords, building owners and tenants regarding Legionella?

Where you have a responsibility for a whole water system or service the duties are straightforward. Where properties or the water systems and services are shared, the management responsibilities can be more complicated and require a greater degree of collaboration.

In residential accommodation, it is the landlord who has the legal duty to ensure that the risk of exposure of tenants to Legionella is properly assessed and controlled, where they have control of the premises/responsibility for the water systems. This duty extends to residents, guests, tenants, and customers.

In the scenario where a managing/letting agent is used, who has responsibility for maintenance and safety checks (including the risk from Legionella) it should be clearly specified in the management contract. If no such contract/agreement is in place, or does not specify who has responsibility, the duty is placed on whoever has control of the premises and the water system within it.

In multi-occupied or shared work premises (such as offices or retail premises), the person who has control of premises for work-related activities or the water systems in the building, has responsibility to those who are not their employees, but who use those premises.

Where tenants have space in a multi-occupied building and aspects of water systems or services under their control, there will be a shared responsibility (landlord/landlord's agent for the core service and the tenants for the systems/services in their demised areas). This can mean there are several dutyholders in one building, and a clear agreement and understanding of each party's responsibilities should be identified through an explicit agreement, such as a contract or tenancy agreement.

Good co-operation and communication are required to make sure all parties are co-ordinating their activities as needed to best effect. For example, in some premises where relatively simple water systems and services are installed, the landlord/landlord's agent could take responsibility for providing a risk assessment and implementing the controls, making sure all the information is available to all relevant parties. In other instances, both landlord/landlord's agent and the tenant may have to provide separate risk assessments, schemes of control and inspections, testing and monitoring for the systems and services under their control.



## 8. What are the reporting requirements for cases of Legionnaires' disease in the UK?

Under RIDDOR (The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013), Legionella is a reportable disease. Therefore, dutyholders (e.g. the employer or those in control of work premises), need to report to the HSE any cases of legionellosis, where, they have been notified to you by a doctor, and/or if the affected employee's current job involves work on or near systems located at a workplace, which are likely to be a source of contamination.

Through the Health Protection (Notification) Regulations 2010, Legionnaires' disease is a notifiable disease in England and Wales. It has been notifiable in Scotland since before 2010. As a result of this, health professionals must inform local health protection teams of suspected cases of Legionnaires' disease. This in turn helps epidemiologists track cases, as they are reported, to identify outbreaks or clusters of the disease. Such reporting of cases could see the HSE or local authority officers visit workplaces/the employer of the infected person as part of their investigation.



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