

Legionella Factsheet – introduction

Introduction

Legionella is found in low numbers naturally in water sources such as rivers, lakes and reservoirs. It is a tough bacteria and can be found in water of temperatures between 6°C to 60°C though its favoured temperature is 20°C to 45°C. It is dormant but viable below 20°C and killed above 60°C. As well as temperature legionella needs nutrients to multiply such as scale, biofilms, algae and other bacteria.

It was first identified in 1976 after many cases of pneumonia in attendees of an American Legion Convention – the previously unknown bacteria found in lungs was subsequently named as *Legionella pneumophila*.

The illness

The infection is caught by the inhalation of droplets of infected water deep into lungs and sometimes by the ingestion of contaminated water; it is not spreadable from person to person.

It will affect people differently, some barely showing any symptoms at all. Typically the infection will begin with flu like symptoms (nausea, headache, muscle pain etc), sometimes developing into severe stomach upsets and some occasionally causing confusion and delirium. From initial exposure, the incubation period is typically 3-6 days and if caught early enough, it is treatable with antibiotics.

Legionella is more likely to infect heavy drinkers, smokers, the immuno-compromised, and the elderly and for reasons not fully understood, men. In some of the larger outbreaks, the fatality rate can be between 10 and 20%.

Guidance & legislation

The HSE produce several documents that guide the management and control of legionella in water systems – the most important one is 'The control of legionella bacteria in water systems; Approved Code of Practice and guidance'. This includes the following paragraphs which show the relevance of legionella management and control for all commercial premises and organisations;

18 This Approved Code of Practice applies to the control of legionella bacteria in any undertaking involving a work activity and 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 which may be inhaled, thereby causing a reasonably foreseeable risk of exposure to legionella bacteria.

19 A reasonably foreseeable risk of exposure to legionella bacteria exists in:

(a) water systems incorporating a cooling tower;

(b) water systems incorporating an evaporative condenser;

(c) hot and cold water systems; and

(d) other plant and systems containing water which is likely to exceed 20°C and which may release a spray or aerosol (i.e. a cloud of droplets and/or droplet nuclei) during operation or when being maintained.

Prosecutions do not necessarily have to follow an outbreak; sometimes an organisation can be prosecuted by not having sufficient management or risk assessment in place. Typically the following regulations are used to prosecute;

- Health & Safety at work Act 1974
- COSHH Regulations 1999
- Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995 (RIDDOR)
- Notification of Cooling Towers and Evaporative Condensers Regulations 1992
- The Safety Representatives and Safety Committees Regulations 1977
- The Health and Safety (Consultation with Employees) Regulations 1996

The management and control of legionella in water systems has a multi-barrier approach. A good risk assessment is needed to identify both the risks posed by the system (& potential users). The risk assessment will guide both improvements to reduce the risk, management to control the risk and if needed, monitoring strategy. The HSE states that a competent person should be used to advise the organisation on its duties.

A logbook should be kept to collate all information relating to the organisation and legionella management. The logbook should be reviewed periodically and updated as necessary. This should contain the risk assessment, identification of the responsible person, improvement works, schematic diagrams, normal operations, emergency actions, contacts, corrective actions and monitoring results/data.