

# L

## egionella

Legionnaires' Disease, often known as Legionella, is named after pneumonia like infection which affected a number of American ex-servicemen who were attending a Legionnaires conference in Philadelphia in 1976. The Legionellosis bacterium was found to be breeding in the cooling tower of the hotels' air conditioning system, which then spread it through the entire building. As a result more than 200 people were infected and 34 died. There have been numerous cases of the disease around the world since then.

Legionella pneumophila is an extremely common aquatic organism that is found naturally in rivers, lakes and reservoirs, although usually in low numbers. The danger lies in purpose built water systems such as cooling towers, evaporative condensers, whirlpool spas and even shower heads. The bacteria thrive in warm environments from 25 to 45 °C but with an optimum around 35 °C.

The disease is an infection of the lungs contracted by breathing in water droplets containing the bacteria. It is a potentially fatal form of pneumonia which can affect anybody, but which principally affects those who are susceptible because of age, or illness. It has been estimated that about 5-10% of pneumonia cases may be caused by Legionella. It is not a statutory notifiable disease in the UK so firm statistics are difficult to come by but the generally accepted figure seems to currently run at around 2000 cases per annum of which up to 20% may be fatal.

Legionnaires' disease has not been created by the modern workplace but has been around for a long time. There are some aspects of modern buildings that create an opportunity for infection. However by applying good practice and implementing robust maintenance systems and controls Facility Managers can stop their building from adding to the statistics.

Growth of Legionella bacteria may be prevented by avoiding water temperatures between 20oC and 45oC and by avoiding water stagnation. Care should be taken to avoid use of materials in the system that can harbour or provide nutrients for bacteria and to keep the system clean. Where it is appropriate and safe to do so a suitable water treatment programme should be maintained and maintenance regimes should ensure that the system operates safely and correctly.

*The HSE publish a range of guidance notes on Legionella including Legionnaires Disease – A Guide for Employers which can be downloaded from [www.hse.gov.uk/pubns/iacl27.pdf](http://www.hse.gov.uk/pubns/iacl27.pdf)*

*Technical guidance is available from CIBSE, notably the book "A Guide to Legionellosis - operation and maintenance" ISBN: 086022547X which is available from their bookshop at [www.cibse.org](http://www.cibse.org)*