

Guidance Note regarding Legionella Pneumophila and Legionnaires Disease

The University of London employs water hygiene specialists to undertake water treatment and routine sampling of water quality. Currently the specialist contractor is Thames Water.

The following note has been prepared by the University in consultation with Thames Water and is issued as guidance in the event of Legionella Pneumophila bacteria being found to exist in water services within University buildings. Although control measures should be put in place to reduce any risks from legionellosis, healthy individuals are generally strong enough to prevent any threat from Legionnaires Disease (see Higher Risk categories).

Background

In July 1976, members of the American Legion attending a convention at the Bellevue Stratford Hotel in Philadelphia were affected by a flu-like illness. Of the two hundred and twenty one people affected, thirty four died. The organism responsible for causing this illness was identified and named as Legionella Pneumophila, which also gave the disease its name Legionnaires' Disease.

To date more than thirty species of legionella have been identified, and at least fourteen serogroups of Legionella Pneumophila. The pontiac subtype (Mab2) of Legionella pneumophila serogroup one is responsible for more than 90% of infections.

To date the only identified route of infection for the disease is through the inhalation of water droplets containing the Legionella Pneumophila bacteria deep into the lungs. The available evidence suggests, however, that as few as 5% of those exposed to the bacteria in such a way go on to contract the Disease (although some may develop the related, but usually non-fatal, Pontiac or Lochgoilhead fevers).

It is believed that there may be as many as 200 to 300 cases of Legionnaires Disease per year but the majority of these are thought to be travel-related i.e.: contracted in a foreign holiday resort only for the symptoms to present themselves on the travellers return to this country.

Habitat

Legionella is ubiquitous and it is possible that a substantial proportion of the population has already been exposed to, and therefore developed a resistance against, the infection. It is found widely distributed in natural environments and man-made systems. Legionella has the ability to colonise man-made systems, which often provide ideal conditions (nutrient and temperature) for proliferation. Infection by Legionella cannot be transmitted from person to person.

The number of organisms required to cause infection is not known, but it will vary according to age, health and other predisposing factors.

Water Storage and Distribution Systems

The isolation of Legionella from a system does not necessarily mean that the disease will manifest itself. However, if the contaminated water within the system becomes an aerosol, the risk will be greatly increased. It is therefore important that if any man-made system is likely to generate an aerosol, jet or mist, measures are taken to minimise the chances of legionella colonising in the water reservoirs, storage tanks and other systems serving them.

The presence of harmful bacteria (including legionella) is therefore of prime importance to building engineers and managers. These organisms can be controlled by careful control of temperature and by the use of biocides. The detection and identification of legionella species is important in the initial assessment of the water system, and subsequent monitoring to any treatment processes.

Higher Risk Categories

An important variable is the susceptibility of the individual exposed to the bacteria where a number of pre-disposing factors have been identified:

Age – the most vulnerable age range group is between 50 and 59,

Sex – males are three times more likely to contract the Disease than females,

Existing Respiratory Disease – such as asthma and bronchitis,

Illness – particularly diabetes, cancer and alcoholism,

Smoking – through the impairment of normal lung function,

Immuno-suppressant treatment – chemo – and radiotherapy.

University of London Estates Division Statement

The University carries out a number of tests and inspections of water services. The aim is to ensure that water services comply with relevant statutory requirements so as to minimise any potential hazards and risk to building occupants. In some cases this work is undertaken by third party maintenance contractors.

Depending on the building and internal services installed, the tests and inspection may vary slightly. However the basic format will be the same and includes a risk assessment and such tasks as recording water tank temperatures, shower and tap descaling, annual inspection of water services, cleaning of water heaters and storage containers and

randomly sampling of 3 water quality. The above is carried out in accordance with the recommendations issued by the HSE under ACOP L8 The Control of Legionella Bacteria in Water Systems.

The bacteria Legionella is frequently found in water system. In the event of bacteria being discovered the following procedures will apply

- (1) The building occupier will be informed.
- (2) An immediate clean and disinfection of the cold water supply tank and associated down services. Also a pasturation of the domestic hot water system will be carried out in accordance with ACOP L8.
- (3) Further sampling of water will be carried out following the work described in (2) above.
- (4) Depending upon the location and nature of the outbreak, certain individual occupations within a building may need to be relocated elsewhere, preferably within the building.
- (5) The senior physician at the Central Institutions Health Service will be informed as to the nature of the outbreak, type of bacteria discovered and will consider with Estates staff the need for any further action.
- (6) Any occupant considered to be “at risk” will be informed as a precaution to seek early medical advice in the event of feeling unwell, particularly in relation to colds/flu symptoms. Those in the higher risk categories should also seek medical advice if they are feeling unwell.
- (7) The building occupier will be informed when all work is completed and further water analysis has produced a negative result.

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