

Legionella: what is the risk?

By Claire Deegan¹

The risk of Legionella in the dental practice should not be taken lightly. As a practice support manager, quite often I am asked by dentists why they need a Legionella Risk Assessment and why those staff who have a responsibility for the management and control of Legionella need to receive training.

Legionnaires' disease

Legionella is a micro-organism, a bacterium (like Norovirus, *E. coli*, Hepatitis A, *Cryptosporidium* and *Pseudomonas*): a potential water contaminant, responsible for claiming millions of lives every year worldwide. Legionella pneumophila causes Legionnaires' disease (a type of fatal pneumonia). This bacterium makes its way into a susceptible host's respiratory system through small droplets of contaminated water that has been inhaled.

You may be familiar with how Legionnaires' Disease was first discovered. In 1976 at an American Legion Convention in Philadelphia, the first identified and recorded outbreak claimed 34 lives. Legionella outbreaks continue to increase, with 400-550 cases being reported in recent years in England and Wales alone. However, it is thought that one third of these reported cases were contracted outside of the UK.

Legionella in the dental practice

The first confirmed case of Legionella in a dental practice was as recent as 2012, where an 83-year-old woman who attended her dental practice in Italy later died from Legionnaires' disease, the source being traced back to the dental practice. Three individual samples were taken from the dental unit water lines and

water pump and this confirmed conclusively the presence of the bacterium.

Everyone is potentially susceptible to Legionella. The highest at risk are those over 45-years-old (gulp!), smokers and drinkers, those with impaired immunity and patients who may be suffering from respiratory or kidney disease. Confirmed cases, usually through testing a urine sample, can be treated effectively with a course of antibiotics.

What do we need to know?

As dental care professionals we need to be aware that Legionella thrives between 20°C to 45°C but is at its happiest and most virulent at 37°C. Stagnant water grows great biofilms. A biofilm is a layer of bacteria, usually forming on the inside of pipework (water lines) and surfaces. This is why it is so important to purge your dental unit water lines (DUWLs) for two minutes at the start of the day and 20-30 seconds in between patients. This habit alone has been shown to decrease the levels of bacteria by up to 70%!

The science bit

When bacteria multiply they secrete polysaccharides, which act as a 'glue', and this helps the bacteria to attach to pipe walls. Protozoa will then feed on the biofilm (layer of bacteria) and the Legionella bacteria penetrate the protozoa, living and multiplying inside it.

Where's the problem?

In dentistry, water that is contaminated with organic matter grows much better biofilms, which help the Legionella bacteria to feed and grow. This is why it is imperative that dental equipment is fitted with anti-retraction valves to help limit that contamination.

What do we need to do?

To comply with CQC (England only) Regulation 15 outcome 10, a Legionella risk assessment needs to be completed by a competent person. A competent person is defined as being a member of the Legionella

Control Association category A. The Legionella risk assessment needs to be reviewed regularly, and/or, reassessed if systems change. Records of the monitoring and management control of Legionella need to be retained as evidence for at least five years. This includes:

1. The names and positions of those responsible for performing various tasks under the written scheme
2. A Legionella Risk Assessment and written scheme of actions and control measures
3. Details of any precautionary measures that have been carried out
4. Staff that have a responsibility for the management and control of Legionella need to receive appropriate training to support them in their role.

Further information on compliance

- Health and Safety Executive. *Legionnaires' disease. The control of legionella bacteria in water systems. Approved code of practice and guidance*, 4th edition. 2013. Available at: <http://www.hse.gov.uk/pubns/books/l8.htm> (accessed April 2014).
- Department of Health. *Decontamination in primary care dental practices*. 26 March 2013. Available at: <https://www.gov.uk/government/publications/decontamination-in-primary-care-dental-practices> (accessed April 2014).
- Health and Safety Executive. *Control of Legionella in hot and cold water systems in care services/settings using temperature*. September 2012. Available at: http://www.hse.gov.uk/foi/internalops/sims/pub_serv/07-12-07/index.htm (accessed April 2014).

Claire Deegan works for DBG who have been supporting practices with training and compliance for 25 years. DBG offers bespoke training in Legionella and COSHH to meet Care Quality Commission (CQC) (England) regulations. Call DBG on 01606 861950.

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