

# Control of Legionella Bacteria During and After the COVID-19 Pandemic

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## Advice

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This advice is aimed at employers or those in control of places of work. It highlights the requirement to continue managing *Legionella* control to avoid the potential for Legionnaires' disease. This disease can be fatal and hospitalization is generally required to treat symptoms. With the health service currently dealing with a public health emergency, it is vital that employers take appropriate action to maintain and operate their water systems especially wet cooling systems, so far as reasonably practicable, during this public health emergency.

### Background

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Because of the current situation with COVID-19 many places of work such as hotels, leisure facilities, offices, dental clinics and hairdressers have had to temporarily close with only essential businesses staying open. In many cases, the closure may have occurred overnight or at very short notice. Essential businesses such as healthcare facilities and nursing homes may find that their primary focus is on current issues. In addition, employers may have concerns about allowing water system contractors on site due to the current situation. As a result, the control of *Legionella* bacteria may not be deemed a priority and control measures may be neglected, however, it is vital that so far as reasonably practicable that control measures are still maintained.

### What is Legionnaires' disease?

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Legionnaires' disease is a potentially fatal form of pneumonia. People may become infected when they breathe in tiny water droplets (aerosols) or droplet nuclei (particles left after the water has evaporated) contaminated with elevated concentrations of *Legionella* bacteria. *Legionella* bacteria grow best between temperatures of 20°C–45°C with optimum growth temperature being 35°C–40°C. High temperatures (minimum 60°C) kill the bacteria. Legionnaires' disease can affect anyone. People with immunosuppressed systems, the elderly or people suffering from respiratory problems may be particularly vulnerable.

### Where are the bacteria found?

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*Legionella* bacteria are found in low numbers in natural aquatic environments, for instance, lakes, rivers and ground water. As a result, it is virtually impossible to prevent *Legionella* bacteria entering man-made water systems. In low numbers, the bacteria are generally considered harmless. With the correct conditions, for example, warm water, the presence of microorganisms and nutrients in the water or materials such as rust, the bacteria can grow and multiply to high levels, which increase the risk of exposure. The bacteria tend to grow in biofilms (slime).

Biofilms are likely to form on surfaces where there is low water flow or water is allowed to stagnate. Low or no water flow and stagnation can occur during temporary water system closures.

### Where may potential sources of aerosols be encountered?

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The following is a non-exhaustive list of potential sources of aerosols, which may contain *Legionella* bacteria:

- wet cooling systems for example, cooling towers and evaporative condensers;
- spa pools;
- showers, taps and toilets;
- machine cooling systems for example, in lathes and plastic injection moulding machines;
- spray booth water curtains;
- humidifiers in food cabinets and factories;
- ornamental fountains and water features;
- dust suppression systems such as those used in construction, cement and waste recycling industries;
- horticultural misting systems, lawn sprinklers;
- clinical humidifiers;

- firefighting systems for example, sprinklers and hose reels; and
- vehicle washes and power hoses.

## Prevention of Legionnaires' disease during the COVID-19 Pandemic

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- Identify key workers who carry out safety critical activities and plan for what should happen if they become ill or have to self-isolate. This may involve providing additional instruction, information and training to other employees and familiarizing them with the *Legionella* control plan and the required controls and checks to be carried out.
- Ensure that the controls identified in the *Legionella* control plan are adhered to, so far as reasonably practicable, for example, flushing of outlets, continued chemical dosing of evaporative cooling systems and so on. Controls may need to be adapted due to changing circumstances. Changes to control should be proportionate to risk and based on a review of the risk assessment.
- For premises with simple water systems, which have had to shut down, such as small shops and hairdressers, if access is still permitted, then extended weekly flushing of all outlets will assist in maintaining microbiological control.
- Ensure that employees and contractors adhere to the Government's Public Health Guidelines regarding social distancing, hand washing and other recommended measures.
- Where employees or contractors operate alone, ensure that there is an appropriate lone working policy in place, for example, use of a monitored personal alarm or a designated phone call check.
- In the event it is no longer feasible to continue ongoing control, water systems should be safely shutdown. In general, water systems should be left filled with water and not drained down. With large water systems, residual water or moisture will remain within the system if drained and biofilm can develop where there are pockets of water or high humidity. The water in the system helps to avoid other problems associated with systems drying out, including failure of tank joints and corrosion in metal pipework.
- Where wet cooling systems are being shut down, competent advice should be obtained prior to shutdown. Proper decommissioning (draining, sealing and addition of desiccant) may be required in order to minimise the *Legionella* risk when put back into service.
- If a building's use is changed, for example to add extra capacity for hospitals or provide accommodation for key workers, then the risk assessment and control measures should be reviewed by a competent person.

## Prevention of Legionnaires' disease after the COVID-19 Pandemic

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- If the water system has been managed and controlled in line with the *Legionella* control plan during the pandemic, the system can continue to be used as is.
- Water systems, which have been shut down, have had low water usage, or modified control regimes during the pandemic, may result in an increased risk of *Legionella* bacteria being present. Such systems may have been out of use for a significant time and in most cases cannot simply be used straight away. The system may require recommissioning as if new (that is thorough flushing, cleaning and disinfection and/or controlled flushing of outlets such as taps, showers and toilets) prior to return to use and reopening of the building. Risk assessment review and water testing should also be considered as part of the recommissioning plan. The services of a competent person may be required to provide further advice.
- Wet cooling systems, which have been shut down, will require recommissioning by a competent person prior to re-use.

## Further Information

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- European Study Group for Legionella Infections - [Guidance for Managing Legionella in Building Water Systems During the COVID-19 Pandemic](#).
- Health and Safety Authority - [Legionella Control in Water Cooling Towers Information Sheet](#).
- Health Protection Surveillance Centre - [National Guidelines for the Control of Legionellosis in Ireland, 2009](#).
- Health Protection Surveillance Centre - [Checklist for Hotels and Other Accommodation Sites Including Hostels](#).
- Health Protection Surveillance Centre - [Checklist for Hostels and Day Care Centres Providing](#)

Accommodation for People who are Homeless.

- Health Protection Surveillance Centre – [Checklist for the Prevention of Legionnaires' Disease in Leisure Centres](#).
- Health and Safety Executive (UK) – [Legionnaires' Disease Technical Guidance](#) (HSG274).
- European Centre for Disease Prevention and Control - [European Technical Guidelines for the Prevention, Control and Investigation of Infections Caused by \*Legionella\* species](#).