

Fact Sheet

Guidance for relevant authorities: responding to *Legionella* detection in warm water and cooling water systems

The detection of *Legionella* in warm water systems or cooling water systems indicates a potential failure of the risk management regimes. *Legionella* in a warm water system indicates a potentially serious risk to the health of people exposed to aerosols generated by the system.

This fact sheet has been developed to assist relevant authorities to meet their obligations to ensure appropriate action is taken by regulated system owners in response to the detection of *Legionella*.

Detection of *Legionella* in water samples collected from warm water systems and cooling water systems

The *South Australian Public Health (Legionella) Regulations 2013* (the Regulations) require system owners to notify the relevant authority (i.e., the local council) within 24 hours of the receipt of a report of *Legionella* detection in a regulated system. The notifiable *Legionella* detection levels in water samples are:

- > warm water systems ≥ 10 cfu/mL.
- > cooling water systems ≥ 1000 cfu/mL.

The relevant authority must notify SA Health of any such notification within 24 hours. Upon the receipt of a notification, it is the relevant authority's responsibility to ensure that appropriate actions are taken to mitigate associated public health risks.

Monitoring and responding to notifications of *Legionella* detection

The response required by system owners upon receipt of a report of *Legionella* detection is detailed in schedule 4 of The Guidelines for the Control of *Legionella* in Manufactured Water Systems in South Australia (the Guidelines).

The Regulations require high risk manufactured water systems which are known to be colonised with notifiable levels of *Legionella* to be immediately decontaminated or shut down pending decontamination. Relevant authorities should ensure that prescribed decontamination procedures as described in the Guidelines are followed unless an alternative method has been approved by the Minister for Health and Wellbeing.

The relevant authority must confirm that the immediate responses required by schedule 4 of the Guidelines have been implemented to prevent human aerosol exposure when a report (verbal or written) of notifiable *Legionella* detection is received by a system owner or responsible person.

Notifications should be provided to SA Health using the current form and completed in full within 24 hours of the notification, along with a copy of the official laboratory certificate of



analysis (if available). Care should be taken to ensure system owners have completed notification forms correctly.

Relevant authorities should thoroughly scrutinise all notifications to ensure that appropriate public health protection responses have been carried out to address both the presence of *Legionella* in the water system and protect public health while this work is undertaken.

Relevant authorities should maintain and regularly assess a register of all notifications so that systems subject to repeated *Legionella* detections can be easily identified. Following the receipt of a notification and after conducting further investigation, the relevant authority should assess the risk and determine an appropriate response.

Relevant authorities are responsible for ensuring:

- > that systems have been immediately isolated, shut down and decontaminated.
- > that system owners undertake requisite investigations and implement corrective actions as necessary (e.g., to reduce the likelihood of recurrence).
- > the protection of public health and compliance with the Regulations.

Due to the presence of highly susceptible people, operators of care facilities have a heightened duty to minimise *Legionella* related public health risks associated with their water distribution systems.

The relevant authority may, in some circumstances, as a reasonable public health protection measure, determine that the system or its management presents an unacceptable public health risk. In this case, the owner could be requested or ordered to shut down the system or take additional precautions until the system owner can demonstrate that the system is safe to recommission. This may include the use of proprietary devices or chemical treatment to reduce immediate risks to health whilst robust monitoring and management procedures are implemented.

Post decontamination verification sampling

Whenever *Legionella* is detected, thorough investigations should be conducted to identify and rectify any controllable factors that may have resulted in the colonisation. Decontaminating the system alone is only part of the response as *Legionella* control requires ongoing management.

Verification samples should be collected and tested for *Legionella* 3-7 days following the completion of the decontamination procedure. Additionally, the monitoring and maintenance regime should be reviewed, and opportunities identified to ensure the regime is robust and effective. The relevant authority should review all investigations initiated by the facility, and satisfy themselves that the risk is being monitored and managed effectively.

Ongoing *Legionella* notification

In determining an appropriate response to *Legionella* detection in systems with a history of ongoing *Legionella* colonisation and/or poor compliance, consideration should be given to:

- > the vulnerability of exposed populations.
- > the system's compliance history.
- > the presence and adequacy of post decontamination microbiological sampling regimes.
- > the system's previous *Legionella* notification history.
- > the ability or otherwise of the system owner to determine the cause of and resolve ongoing issues through in house expertise or external consultants.
- > the presence and adequacy of system monitoring regimes and associated corrective actions.
- > the documentation and efficacy of previous system decontaminations.
- > the quality and compliance of system plans, records and manuals.
- > local factors (e.g., recent system modifications, environmental parameters or changes in system ownership or responsible person etc.).

- > conducting a full inspection of the system including further water sampling (with costs recovered from the system owner if considered appropriate).

If the system has been recently inspected by an independent inspector, the inspection report should be thoroughly scrutinised. If there are any questions as to the quality or content of the report the relevant authority should consider contacting the independent inspector and conducting a thorough assessment of the system if they believe the level of risk requires it.

Regulatory inspection and sampling frequency

The Regulations require relevant authorities to cause an inspection of all registered high risk manufactured water systems at least once every 12 months. Systems returning repeated *Legionella* detections and those that are identified as being non-compliant with the Regulations may require additional inspections. The compliance frequency should be reviewed to determine the degree of risk and the adequacy of remedial responses undertaken by the system owner.

Although the Regulations require at least two water samples to be collected from a warm water system in conjunction with an annual inspection, this level of sampling is a minimum and collection of a greater number is permitted. Relevant authorities should ensure that sufficient samples are collected in accordance with the size, complexity, and degree of risk of the system.

Risk Management

System owners should be encouraged to ensure all components of their water system are assessed and risks relating to *Legionella* growth are identified. Components may include chilled water dispensers, ice machines, dental chairs, decorative fountains, misters, and therapeutic devices containing water such as humidifiers.

This is particularly important in systems with a history of ongoing *Legionella* colonisation and/or poor compliance or for systems installed in areas frequented by people at high risk of *Legionella* infection.

These components should be effectively maintained, through the development of an appropriate monitoring and maintenance regime, to ensure the risks are controlled. Some factors that should be considered, assessed, monitored, and managed are:

- > **water temperatures** - identifying areas of possible heat transfer between hot/warm and cold-water pipes, solar pre-heating systems or direct sun exposure of pipes and location of pipes in hot areas such as roof spaces.
- > **water flow** - including frequency of outlet use and possible areas of water stagnation including obsolete pipe work or “dead legs”.
- > **water quality** - including whether there is any residual disinfection from the water supply and presence of nutrients and biofilm.
- > **system configuration** - backflow prevention and anti-microbial and anti-corrosion systems, programs, and measures.
- > **system sampling** - microbial and chemical sampling programs and verification.

For more information

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