Legionella Prevention

Toolbox Talk

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Definition and Examples

Legionella is:

- a severe form of pneumonia
- usually caused by infection
- often times caught by inhaling the bacteria from soil or water
- more dangerous for people with a weakened immune system, like smokers, senior citizens or people that already have health issues

Symptoms of legionella include fever, headaches, chest pain, muscle aches, coughing, being out of breath, nausea and mental issues like confusion.

Risks of Legionella

Next to the risks of the symptom's legionella disease brings with it, there are also some long-term risks that can be caused by legionella. Some long-term risks are:

- risk of memory loss
- risk of fatigue
- risk of difficulty in concentrating
- and even risk of post-traumatic stress disorder (which can be caused by traumatic events like suffering from a life-threatening disease)

Recognising Risk Factors

There are multiple risk factors for Legionella. Buildings that have one of the following issues, have a higher risk factor:

- cold and hot water systems
- water systems with evaporative cooling towers or condensers
- natural springs
- plant systems
- other systems like spa pools, jacuzzis, humidifiers, fountains, water features and any other systems or equipment that reaches temperatures between 20 and 45 degrees Celsius

High-risk places for Legionella

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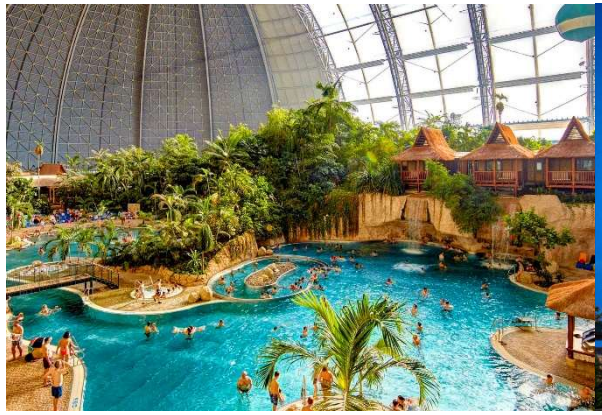
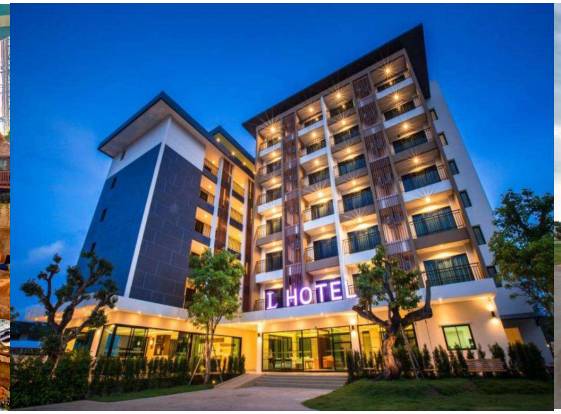
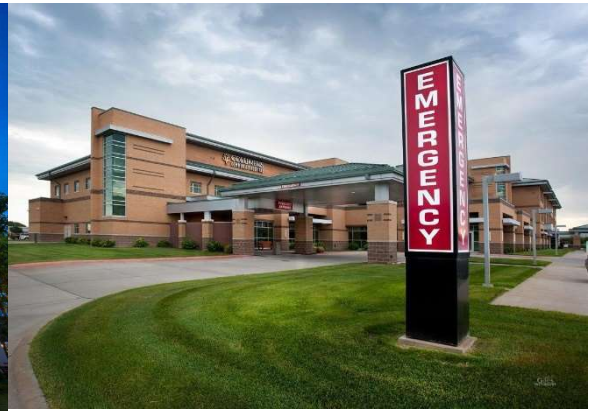
Water must be checked for Legionella every six months, but some high-risk institutes are subjected to stricter regulations. These institutes include:

- Healthcare institutions like hospitals, health centres and retirement homes
- Swimming pools and their services like saunas and wellness centres
- Places to stay like hotels, campsites and resorts







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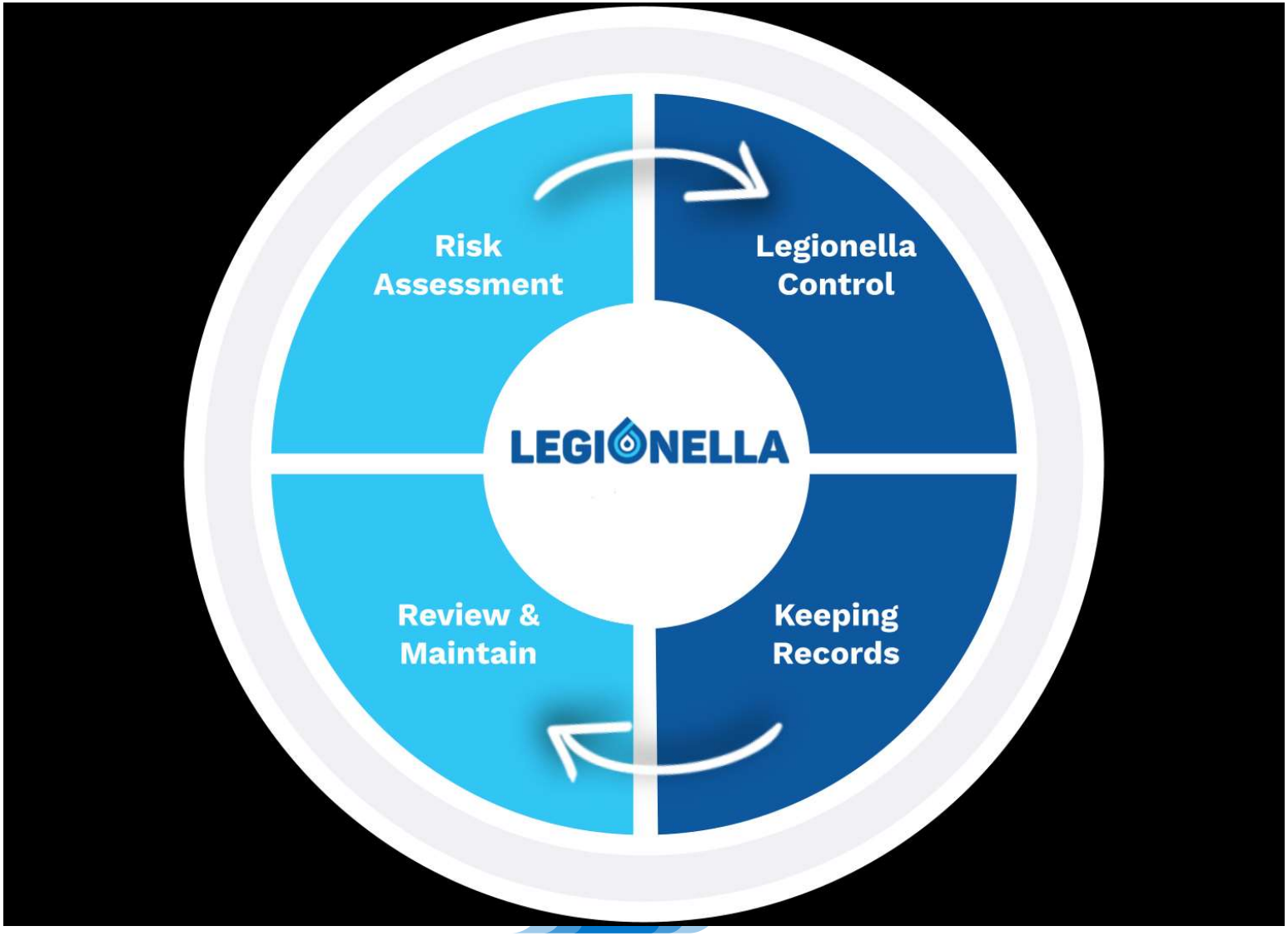
Contaminated Water

Sources of Contaminated Water; pay attention!

- Cooling systems/water towers
- Showers
- Decorative fountains
- Humidifiers
- Respiratory therapy equipment
- Whirlpool spas/hot tubs
- Ice machines
- Potting soil
- Recirculating water supply systems
- Air conditining units
- Mist sprays in grocery store produce departments


Risk Assessment
Legionella Control
LEGIONELLA
Review & Maintain
Keeping Records

Maintenance

Preventive maintenance is an important measure to assure reliable and safe operation of the cooling system. The operation and maintenance manual/logbook should include a detailed maintenance schedule, listing the various time intervals when the system plant and water quality should be checked, inspected, overhauled or cleaned and disinfected.

The completion of every task should be recorded by the plant operatives/ contractors.

Maintenance

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Treatment / Remedial options

- Monitor temperatures; 20-45^{o}C = risk range
- Every 2 weeks - heat water to 60^{o}C for 5 mins
- Add disinfectants / Chloros as advised
- Empty out the water system, thoroughly clean & refill with fresh water every month
- Clean and disinfect spray heads every month
- Flush rarely-used outlets weekly
- Arrange for removal of “dead-legs”
- Arrange for samples to be taken if risk exists (sampling is NOT a control measure – it takes 10 days for results to be sent through – it monitors whether your controls work)

(Source: University of Sheffield - Legionella Awareness for Departmental representatives)

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Maintenance

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General monitoring

All water services should be routinely checked for temperature, water demand and inspected for cleanliness and use. Ideally, the key control parameters should be monitored by a building management system, if one is present. This will allow early detection of problems in maintaining the control regime.

The frequency of inspection and maintenance will depend on the system and the risks it presents. All the inspections and measurements should be recorded and should include:

- the name of the person undertaking the survey, their signature or other identifying code, and the date on which it was made. Computer records are acceptable
- a simple description and plan of the system, and its location within and around the building. This should identify piping routes, storage and header tanks, hot water storage heaters and relevant items of plant, especially water softeners, filters, strainers, pumps and all water outlets
- records of any untoward incidents (e.g. a pump failure or monitoring results that are out of range) and any remedial actions taken

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INSTRUCTIONMOVIE

(clickable image)

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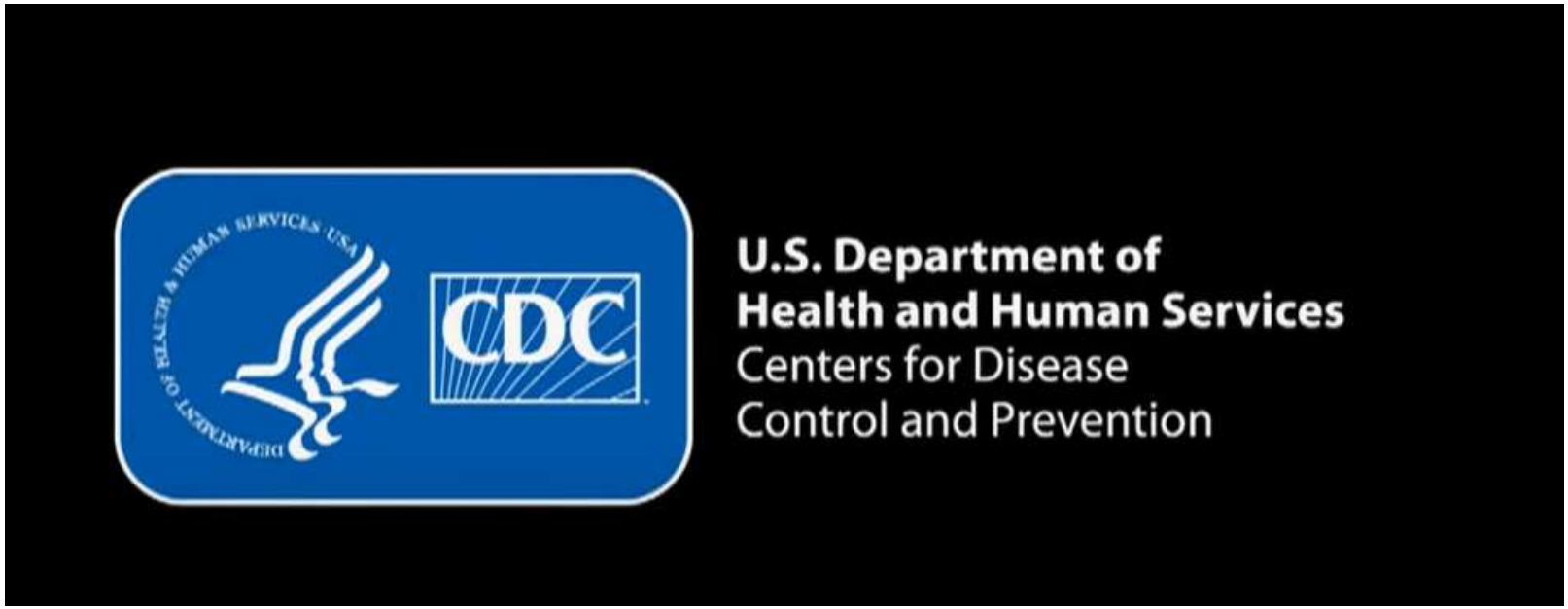
How to Make a Sampling Plan for Legionellosis Outbreak investigations



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Top Ten Tips *(WeL Inspection, the Netherlands)*

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1. Work risk-driven with respect to legionella management
2. Take a look at combining inspections, for example, stocktaking and condition monitoring
3. Ascertain if taking measurements are necessary, and if so, measure on the most hazardous points
4. No risk means no extra measures are necessary
5. Involve your advisor in the prioritizing of actions that need to be carried out
6. Calculate the payback period to prevent unnecessary long management
7. Think about small scale management
8. Choose thermostat faucets that lower risks
9. Keep blueprints up to date and make sure that you have all of the building-related fills
10. Make sure that maintenance and management are carried out in the right manner and ask advice about the aspects of sustainability

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ISO 11731:2017

ISO 11731:2017 specifies culture methods for the isolation of Legionella and estimation of their numbers in water samples.

These methods are applicable to all kinds of water samples including potable, industrial, waste and natural waters. These methods can be used for water related matrices, e.g. biofilms, sediments, etc.

Not all Legionella species are culturable; therefore, the methods described in this document do not recover all species of Legionella.

Life-saving Advice

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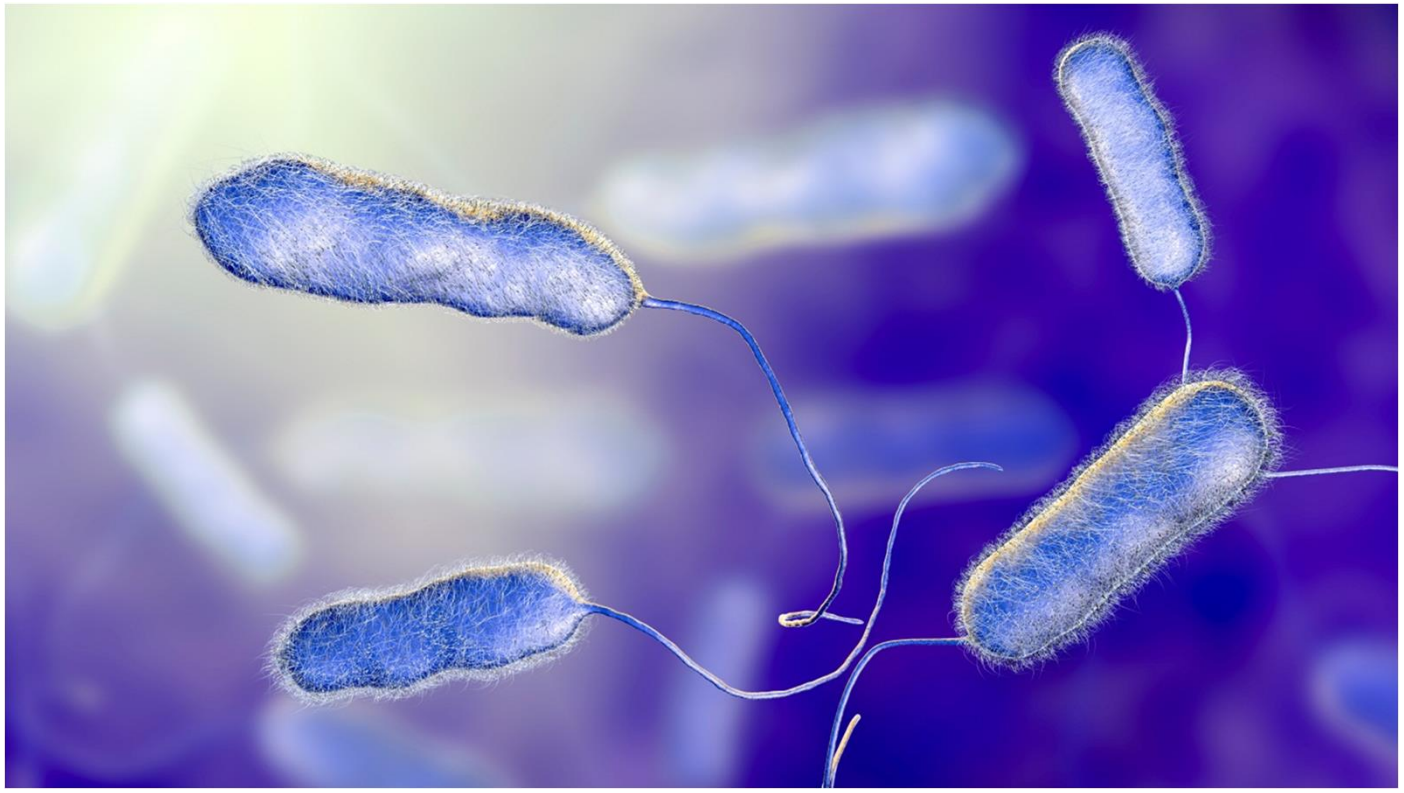
Learn to eliminate risks!



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