

# *Legionella* risk and risk management in health and aged care facilities

Evidence based risk assessment and management



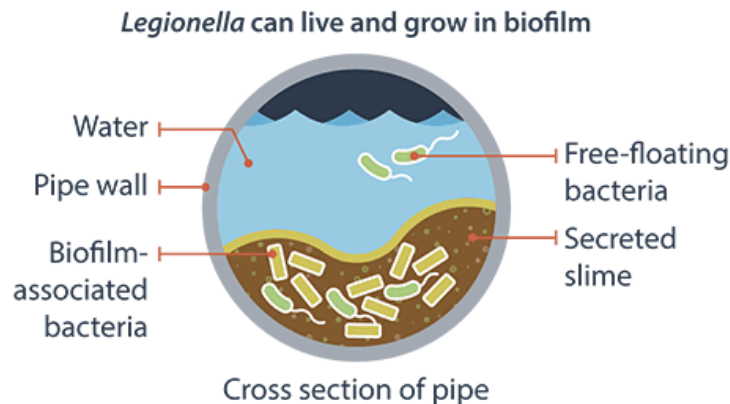
Government  
of South Australia

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SA Health

# *Legionella* a quick introduction

- > A type of bacteria: rod-shaped, 0.3–0.9µm wide and approximately 1.3µm long
- > *Legionella pneumophila* serogroup 1 (Lp1) causes most cases of waterborne Legionnaires' disease
- > Severe pneumonia sometimes resulting in death
- > Lives and grows in complex microbial slimes (biofilms) on surfaces in natural and constructed aquatic environments
- > Must get deep into the lung of a susceptible person to cause disease



# Legionellosis cases notified in South Australia

Year	Lp1 cases	Other Legionella notifications	Total
2102	12		
2013	24	36	60
2014	21	23	44
2015	12	16	28
2016	8	19	27
2017	23	17	40
<b>TOTAL</b>	<b>100</b> - mean 16.7 p.a.		

# Lp1 found in water samples collected during case investigations

Year	Hospital	Residential aged care facility	Private home	Cooling tower	Work place	Other
2012		1 CDWD	1 shower		1 CDWD	
2013		1 basin 1 various hot and cold outlets	1 kitchen tap 1 kitchen tap, bath, shower	1	1 CDWD, basin	1 inter-state train toilet basin
2014		1 hot and cold outlets	1 kitchen tap, shower	2	1 basin	1 nebuliser
2015			1 shower, bath			
2016			1 shower			1 home spa 1 campervan cold tap
2017				2	1 basin, sink, shower	1 home spa
<b>TOTALS</b>	<b>0</b>	<b>4 (16.6%)</b>	<b>6 (25%)</b>	<b>5 (20.8%)</b>	<b>4 (16.6%)</b>	<b>5 (20.8%)</b>

CDWD = chilled drinking water dispenser

South Australia  
**South Australian Public Health (Legionella)  
Regulations 2013**

under the South Australian Public Health Act 2011

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- 6 Register of high risk manufactured water systems
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- 9 Commissioning of high risk manufactured water systems
- 10 Plans and manuals relating to high risk manufactured water systems to be kept readily accessible etc
- 11 High risk manufactured water systems to be operated and maintained by competent persons
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- 17 Responses to detection of Legionella
- 18 Determinations and approvals
- 19 False or misleading statement
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- 21 Fees

Schedule 1—Fees

Schedule 3—Transitional provisions

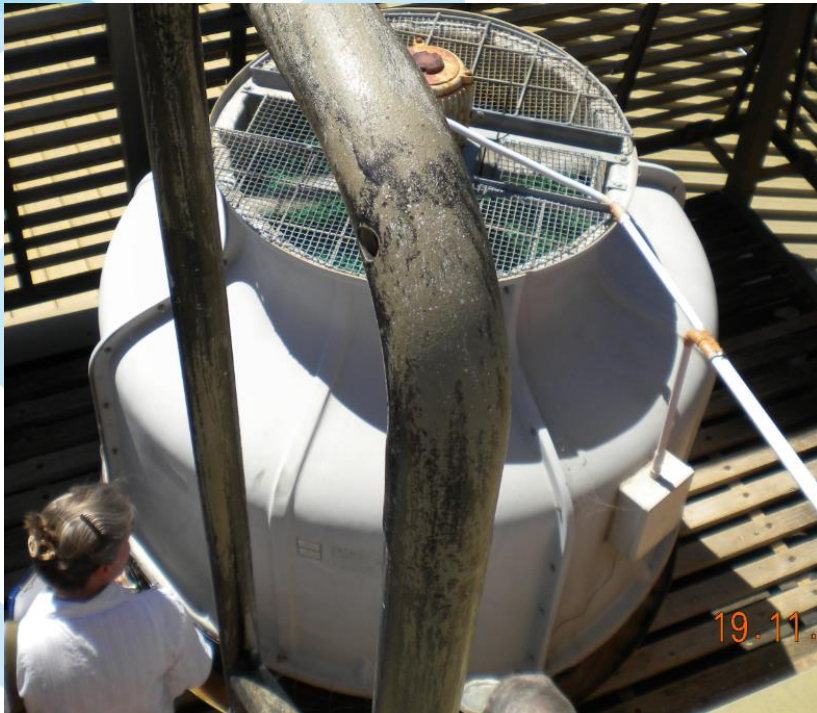
Part 2—Transitional provisions

- 2 Interpretation
- 3 Registration of high risk manufactured water system
- 4 Determinations under regulation 8(2) of revoked regulations
- 5 Approvals of maintenance programs or decontamination procedures
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Legislative history

# Current South Australian regulations

Cooling towers – regulations mostly effective – deviate unnecessarily from AS/NZS3666 – issues arise during heat waves.



19.11.16



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Legislative history

# Current South Australian regulations

- > Focus on warm water systems – ineffective prescriptive requirements
- > Promotes rinse and repeat approach to *Legionella* detection in water samples





## The blinkered approach

- > Focus on warm water systems
- > Storage  $\geq 60^{\circ}\text{C}$ , 6 monthly decontamination by pasteurisation or hyper chlorination, monthly temperature measurements, monthly physical inspection to examine cleanliness?????
- > What about – incoming water quality, cold and hot water, commissioning, installed equipment (ice machines / water chillers / dental chairs), exposure control, residual disinfection.....?



## Possible / proposed future directions

- > Regulatory focus on premises that provide accommodation/services to high risk populations.
- > Risk assessment and management planning approach
- > Improved responses to detections of *Legionella* – escalation of requirements for ongoing detections
- > Independent inspection regime – review of entire framework



# enHEALTH Legionella Guidelines and template



The template cover has a dark blue trapezoidal header with the text "Risk-management plan for LEGIONELLA CONTROL" and "in the operation and maintenance of the water systems of Facility-name". Below this are three input fields for "Facility-name", "Facility-address", and "Responsible-person". A "Revision-history" table follows, with columns for "Revision", "Comments", "Date", and "Initials". The table contains four rows of placeholder data. At the bottom, it says "Section Break (Next Page)".

Revision	Comments	Date	Initials

## Fact or fiction?

- > Legionella in healthcare is a serious public health risk
- > The greatest *Legionella* risk in healthcare is in warm water
- > *Legionella* does not colonise cold water pipework
- > Testing water for *Legionella* is a form of risk management
- > The most likely source of *Legionella* infection in healthcare is aerosol generated from basins and showers
- > Stagnation promotes *Legionella* growth in plumbing

*Known  
knowns,  
known  
unknowns,  
and unknown  
unknowns*



**DON'T  
PANIC  
JUST  
PLAN  
IT**



**Do it  
yourself**

## Recommendations for healthcare facility management

- > Consider *Legionella* at the design and commissioning stages
- > Having a plan will greatly improve the outcome if there is a LD case or cases associated with a healthcare facility
- > Use and follow the enHealth guidelines and template to develop and implement a risk management plan internally
- > Don't rely on contractors and 'experts' – facility staff and management should develop, own and implement their own risk management plans
- > Don't sample and test unless you have a plan to respond to *Legionella* detection.



# **Government of South Australia**

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