

Legionnaires' Disease:

Managing the Health Risk Associated with
Cooling Towers

Government Response

July 2000

Acknowledgments

*Legionnaires' Disease: Managing the Health Risk Associated with Cooling Towers.
Government Response*

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Introduction

The Bracks Government health policy for a sustainable healthy future for Victoria recognises the need to adopt policies that take into account social and environmental health impacts and acknowledges that management of the environment is an important part of public health protection and health promotion.

The Government's major commitment to improving the management and control of Legionnaires' disease is consistent with this policy.

Whilst *Legionella*, the causative organism of Legionnaires' disease, is most commonly associated with cooling towers, there have been instances when it has been transmitted by other warm water systems, such as spas.

In 1979, Legionnaires' disease was proclaimed as a notifiable infectious disease in Victoria, requiring all cases to be notified to the then Health Department Victoria. This requirement was continued under the Health (Infectious Diseases) Regulations 1990, which incorporates the *Guidelines for the Control of Legionnaires' Disease* (1989) referred to as the 'Guidelines'.

The Guidelines were written in a style which is not prescriptive and which was originally intended to provide guidance only. Registration of cooling towers is not required under the current Regulations and there is no requirement for audit and inspection of these systems.

Legionella Working Party

In December 1999, the Minister for Health, the Honourable Mr John Thwaites, established a Legionella Working Party to advise the Government on the enforcement of best practice for the maintenance of cooling towers to reduce the risk of Legionnaires' disease. The working party was also asked to review the roles and responsibilities of relevant agencies.

The working party was chaired by Associate Professor Christopher Fairley, Department of Epidemiology and Preventive Medicine, Monash Medical School. It included representatives of the Municipal Association of Victoria, local government, the Australian Institute of Environmental Health, the Victorian Employers' Chamber of Commerce and Industry and government agencies.

At the request of the Government, the working party was subsequently asked to review the experience of the recent Melbourne Aquarium outbreak in making its final recommendations.

The Government also consulted on these matters with engineers, the water treatment industry, microbiology experts, the Plastics and Chemicals Industry Association, the Property Council of Australia, the Building Control Commission, suppliers of equipment for cooling tower treatment and key trade unions.

The working party reported in June 2000. Seven broad strategies were recommended and eight specific actions were proposed. The Government's response to the recommendations is set out in the following table.

Legionella Working Party Recommended Actions	Government Response
(i) Establish a comprehensive register of cooling towers, as part of a risk management strategy under the Building Control Commission as a component of the existing buildings surveillance systems.	<ul style="list-style-type: none">• Agreed. Establish a comprehensive register of cooling towers, as part of a risk management strategy, by amendment of the <i>Building Act 1993</i>, to augment existing building systems, and legislative controls on plumbing work generally.
(ii) Require all registered premises to develop and implement risk management programs for the control of <i>Legionella</i> . Actions required under the programs to be documented and detailed in the <i>Annual Essential Services Report</i> , currently required by the Building Control Commission, which should be available for review by accredited inspectors.	<ul style="list-style-type: none">• Agreed.
(iii) Require audits of risk management programs for the control of <i>Legionella</i> of all registered premises on a regular basis, funded by industry, as a component of the existing Building Control Commission requirement for an audit of the <i>Annual Essential Services Report</i> .	<ul style="list-style-type: none">• Agreed. Audits to be conducted on an annual basis

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(iv) Provide for inspections to be undertaken by Government on the basis of risk to the community as well as through information received through audit or to assist in outbreak investigation.	• Agreed.
(v) Provide an enhanced technical advisory and outbreak investigation service for the control of <i>Legionella</i> through the Department of Human Services.	• Agreed.
(vi) Undertake cost recovery of recommendations (i), (iv) & (v) through registration fees payable by the registered premises to the Building Control Commission.	• Agreed.
(vii) Extend the requirements of the <i>Building Act 1993</i> and Building Regulations 1994, to enable the elements of the proposed approach to be actioned as quickly as possible for all buildings.	• Agreed.
(viii) Upgrade existing systems which do not meet the <i>Australian and New Zealand Standard (AS/NZS 3666)</i> to require fitting of drift eliminators and automated biocide dosing and automated bleed off systems to all cooling towers.	• Undertake further consultation with industry to assess the impact of requiring the upgrading of existing systems which do not meet the <i>Australian and New Zealand Standard (AS/NZS 3666)</i> to require automated biocide dosing and bleed off systems and the fitting of drift eliminators

New Approach to Managing Cooling Towers

The Government is committed to a new approach to minimise the risk of Legionnaires' disease. This will require legislative amendments, improved regulations, an education campaign and an improved investigation service for the control of *Legionella*.

The Government will introduce tougher regulations and will ensure that the Guidelines become enforceable regulations. Improved standards for the control of *Legionella* will be implemented through appropriate health and building regulations to improve procedures and to strengthen maintenance, testing, education and training, and sanctions for non-compliance.

Register of Cooling Towers

The Government will establish a comprehensive register of cooling towers as part of a risk management strategy. This will be achieved by amendment of the Building Act 1993.

The register will enable identification of cooling towers, which will:

- Improve investigation of sources linked to cases of Legionnaires' disease, and prevent outbreaks spreading further.
 - Enable owners, operators, tenants and those servicing cooling towers to be targeted with information and education.
- and
- Enable auditing of cooling towers.

Development of Risk Management Programs

Building owners will be required to develop and implement risk management plans to ensure that appropriate action is taken to minimise the risk of *Legionella*. This will be a condition of registration, and will be achieved through an amendment to the *Building Act 1993*. These plans will be documented and implementation records will be made available for audit by independent auditors or public health inspectors. Templates will be produced by the Department of Human Services to assist building owners in their responsibilities. This will include guidance on the use and role of *Legionella* testing.

Audit of Risk Management Programs

The Building Regulations 1994 will be amended to require risk management programs to be regularly audited. Audits will be undertaken on an annual basis to ensure that risk management programs are in place and working effectively. Provision for the accreditation of auditors will be provided through an amendment to the *Building Act 1993*.

Random and Targeted Inspections

The Health (Infectious Diseases) Regulations 1990 will be amended to provide for public health officers of the Department of Human Services, in conjunction with local government, to undertake inspections of cooling towers. This will include examination of records, physical examination of facilities and equipment, and bacteriological and chemical testing. Inspections will be undertaken on a random basis, to follow-up adverse audit reports or complaints, or as part of an outbreak investigation. Their purpose will be to provide additional safeguards to ensure regular maintenance and treatment of cooling towers.

Expert Support

An enhanced technical advisory and outbreak investigation service for the control of *Legionella*, managed by the Public Health Division of the Department of Human Services, will also be introduced and will be funded by registration fees in the longer term. This is necessary to provide professional advice and support to building owners, local government, inspectors and the wider community.

Automated Biocide Dosing and Drift Eliminators

The Legionella Working Party recommended that all cooling towers be fitted with autodosing disinfection systems and drift eliminators to minimise the spread of aerosols.

These safety measures are already required for all new cooling towers to meet *Australian and New Zealand Standard (AS/NZS 3666)*. The Government is undertaking further consultation with industry to assess the impact of requiring automated biocide dosing and bleed off systems to be installed in existing cooling towers within one year, and the fitting of drift eliminators within five years. The cost of these measures is estimated on average to be \$1300 per cooling tower for the fitting of

automated biocide dosing and bleed off systems, and an average of \$1500 per cooling tower for the fitting of drift eliminators.

Health Regulations

The current Guidelines will be strengthened and presented as enforceable regulations. This will require amendment of the Health (Infectious Diseases) Regulations 1990. Key elements will include:

- Water quality and treatment frequency
- Frequency of maintenance by water treatment companies
- Frequency and methods of cleaning of cooling towers
- Frequency of testing for total bacteria
- Use of testing for *Legionella*
- Follow-up actions required if detection of *Legionella* or high total bacterial counts
- Disinfection of system during periods of disuse
- Decontamination of cooling towers in the event of outbreaks or notification of Legionnaires' disease
- Maintenance and availability of records
- Autodosing and drift eliminators (subject to consultation with industry)
- Relocated cooling towers to meet requirement of the *Australian and New Zealand Standard (AS/NZS 3666)*
- Regulations for warm water systems and spa pools.

Education, Training and Standard Setting

In addition to the regulatory approaches, the Government will begin immediately on the following initiatives to educate and enhance knowledge about managing the risks of Legionnaires' disease. The Department of Human Services will take a lead role in the coordination of cooperative arrangements with other government agencies, industry and unions to provide:

- Information to improve understanding amongst manufacturers and installers of cooling towers; owners, managers and employees of premises with cooling towers; cooling towers operators; service contractors; State and local government personnel; and the general public. This will include a number of public forums as well as distribution of printed material.
- Training for owners, operators, service contractors, building surveyors and environmental health officers in areas such as risk management planning and auditing.
- Templates for the implementation of risk management plans in collaboration with building owners.
- Industry codes of practice for water treatment in collaboration with industry.

Development of the standards, education and training will require the involvement of the Department of Human Services, the Building Control Commission, the Plumbing Industry Commission, the Victorian WorkCover Authority, local government and relevant sections of industry and unions.

Target Dates for Implementation

The target dates for implementation of the Government's regulatory proposals concerning cooling towers are:

- Consultation with small business on automated biocide dosing and bleed off systems and drift eliminators until end of September 2000.
- Regulatory Impact Statement for new Health (Infectious Diseases) Regulations affecting cooling towers to be released by the end of September 2000.
- Consultation period for Regulatory Impact Statement for the new Health (Infectious Diseases) Regulations affecting cooling towers until the end of October 2000.
- New Health (Infectious Diseases) Regulations affecting cooling towers to be in place by January 2001.
- The Regulatory Impact Statement for Building Regulation amendments will be developed in conjunction with legislative changes to the *Building Act 1993*.

Expected Outcomes of New Approach

The Government's new approach is expected to significantly reduce the incidence of Legionnaire's disease. The benefits of this expected outcome include:

- Reducing avoidable illness, disabilities and death.
- Securing savings in health care costs of treating those infected with *Legionella*.
- Reducing sick leave, lost economic output and consequential costs.
- Reducing concern and anxiety in the community and the workplace.
- Reducing the risk of litigation and increased insurance premiums to building owners.
- Maintaining public confidence in the effectiveness of Government in protecting public health.

The Government considers that the costs to industry are reasonable in relation to the expected reductions in the impact of Legionnaires' disease in the community. The recommendations provide for stronger enforcement of existing and proposed regulations and more effective risk management and outbreak investigation.

Spa issues

The public health requirements for public spa pools are contained in the Health (Infectious Diseases) Regulations 1990, and the referenced document, the *Water Purification Standards for Public Swimming Pools and Spa Pools* (1990). These requirements will be reviewed and updated as part of the general review of the Health (Infectious Diseases) Regulations, which is commencing immediately. It is expected that a Regulatory Impact Statement for the specific changes to the Regulations will be ready by early 2001.