Public Health and Wellbeing Regulations Sunset Review

Regulatory impact statement
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In accordance with the Victorian guide to regulation, the Victorian Government seeks to ensure that proposed regulations are well-targeted, effective and appropriate, and impose the lowest possible burden on Victorian businesses and the community.

The regulatory impact statement (RIS) process involves an assessment of regulatory proposals and allows members of the community to comment on proposed regulations before they are finalised. Such public input provides valuable information and perspectives and improves the overall quality of regulations.

The Public Health and Wellbeing Regulations 2019 (the proposed regulations) replace the Public Health and Wellbeing Regulations 2009 (the current regulations). A copy of the proposed regulations is published with this RIS.

Public comment is invited on the proposed regulations and RIS. Please note that all comments and submissions received will be treated as public documents.

Comments and submissions should be received by the Department of Health and Human Services no later than 5.00 pm, Monday 30 September 2019.

The Engage Victoria website is the preferred method for receiving submissions. Submissions can also be received by emailing the department <phwa.enquiries@dhhs.vic.gov.au>, or post, marked ‘Submission to the Review of the Public Health and Wellbeing Regulations 2009’ and addressed to:

Chief Health Officer  
Regulation, Health Protection & Emergency Management  
Department of Health and Human Services  
GPO Box 4057  
Melbourne VIC 3001

Copies of the RIS and proposed regulations can also be obtained from the Engage Victoria website <https://engage.vic.gov.au/>.
Executive summary

Overview and purpose

Victorians enjoy one of the highest standards of health and wellbeing in the developed world. This could not be achieved without laws and regulations that protect and promote public health and wellbeing.

The Act and Regulations

The Public Health and Wellbeing Regulations 2009 (the current regulations) were made under the Public Health and Wellbeing Act 2008 (the Act). The purpose of the Act is to provide a legislative framework that promotes and protects public health and wellbeing in Victoria.

As set out in the Act, the aim of the regulations is to achieve the highest attainable standard of public health and to prevent disease and illness while minimising costs for regulated industries. Public health regulations provide a framework for businesses, councils and individuals in the practical application of the Act.

The current regulations include several regulatory areas, and the subject matter varies widely. In some ways these regulatory areas are distinct in their nature; however, their overall objective gives effect to the Act.

The current regulations are due to expire on 15 December 2019. New regulations are needed to replace them.

The regulatory impact statement

The purpose of this regulatory impact statement is to provide information and analysis to review how these regulations, and any proposed changes, will affect Victorian business and the Victorian community and contribute to the effective operation of the regulatory framework for public health.

The regulatory impact statement provides an opportunity for public consultation on the proposed regulations.

This regulatory impact statement and the proposed regulations are set out according to either how the regulations are administered or the regulation’s purpose in the Act. These are broadly grouped into:

- regulations administered by councils: vector-borne infectious disease control, registered premises infection control, aquatic facilities
- regulations administered by the department: cooling tower systems, Legionella risks in certain premises (water delivery systems), pest control
- regulations related to managing and controlling infectious diseases, micro-organisms and medical conditions: infectious disease notifications, closed court orders for prescribed diseases, immunisation and exclusions – schools and childcare, escort agencies providing information to sex workers and clients
- other provisions: prescribed senior officers, tissue donations, consultative councils.

In most cases the regulatory impact statement considers and analyses three regulatory options: to remove all regulation, to remake the current regulations without change, or to strengthen the requirements set out in the current regulations. The extent of the analysis of the regulatory options varies but is consistent with the need for regulatory change. In most cases the recommended option for each regulatory area is to strengthen the current regulations.

A table summarising, at a high-level, the proposed options to change the regulations is located at the end of the executive summary. For specific details on each regulatory option, please refer to the relevant chapter.
Impact of the proposed regulations

On business

The businesses with requirements under the current regulations include:

- **Aquatic facilities**: operators of aquatic facilities must adhere to water quality standards to create environments and behaviours within aquatic facilities that prevent the risk of spreading infectious diseases.

- **Cooling tower system operators**: cooling tower system must be registered under the Act, and the regulations require operators to maintain and test systems to manage public health risks and specific remediation measures when Legionella bacteria are detected.

- **Pathology services and medical practitioners**: pathology services (laboratories) and medical practitioners (doctors) must notify the department if they suspect or detect certain diseases or conditions.

- **Pest control operators**: pest control operators must qualify and obtain a licence to provide services for the commercial application of pesticides.

- **Registered premises operators**: hair, beauty, tattooing and skin-penetration businesses must register their premises with local government and adhere to standards and requirements to prevent the transmission of infectious diseases.

- **Other regulated businesses** with requirements under the regulations include, but are not limited to, escort agencies, operators of water delivery systems and owners and occupiers of premises containing possible vector-borne risks.

Local government continues to have significant administrative responsibility for many of these regulations and the impacts of their regulatory role is also considered.

On the Victorian population

The main benefits of the regulations are improved public health outcomes across Victoria from avoided illnesses and outbreaks, as well as improved oversight of businesses providing services with infection control risks. There is limited direct evidence of the benefits of the regulations; however, the department believes that the cost will be more than offset by benefits in the form of:

- **Improved health outcomes** in the Victorian population from avoiding illness that would have occurred in the absence of regulations that improve infection controls.

- **Avoided outbreaks and the associated loss of economic activity** due to both the closure of a business or the location and reputational impacts associated with outbreaks.

In the event of an outbreak, the regulations minimise the adverse impacts of an outbreak by providing an efficient and effective response framework by both regulated industries and government.

On regulated areas

Across the regulated areas the regulatory impact statement concludes that a continuation of the current general arrangements (with amendments to better target regulation) provides greater benefits than reducing or removing requirements, and that all parts of the regulatory regime contribute to the framework that aims to achieve the highest attainable standard of public health in preventing disease and illness.

The significant changes to the existing arrangements, in terms of expected additional costs, proposed in the new regulations are:

- **Aquatic facilities**: The new regulations, generally welcomed by stakeholders in preliminary consultation, propose additional requirements to the regulations to address new and emerging trends, technologies and practices that pose risks to public health if not adequately managed. Changes proposed include broadening the definition of an aquatic facility to accommodate new and emerging facility types (such as spray parks and small-scale swim schools), updating standards and requirements to improve risk management, and introducing registration requirements and penalties to facilitate compliance. These changes are expected to add costs to the
existing aquatic facility sector and expand the number of businesses and facilities that are required to comply with the requirements.

- **Pest control**: A move towards a national framework for harmonised training and licensing requirements has been widely canvassed nationally and accepted as necessary by occupational users of agricultural and veterinary chemicals. To achieve harmonised requirements across Australian jurisdictions, the requirements in Victoria for a new or renewed pest control licence are proposed to be changed to include specific qualification requirements for certain types of work – such as eradicating timber pests. National harmonisation is expected to bring benefits to the Victorian economy by allowing businesses (such as agriculture pesticide businesses) to more easily operate across jurisdictional borders.

- **Vector-borne infectious disease control**: How diseases spread across Victoria is changing along with climate and population changes and the proposed changes facilitate responsiveness to these issues. The new regulations will reduce the risk of vector-borne infectious diseases by broadening the scope of infectious disease control to include control of defined disease vectors, not just mosquitoes, to provide for control of emerging and potential vector-borne disease risk. The requirements would also be expanded to allow authorised officers to provide written directions to directors or owner-operators and occupiers to remove breeding sites.

Changes proposed in the new regulations will mean some sectors incur minor additional costs through the following activities:

- **Consultative councils**: Implement the Targeting zero review findings to disband two councils and replace them with a new Victorian Perioperative Consultative Council.

- **Cooling tower systems**: Additional testing notification requirement (in line with Australian Standards); a new offence relating to tampering with or falsifying water samples; and changes to improve clarity and consistency.

- **Immunisation and exclusion – schools and childcare**: Updates to diseases and exclusion periods in children’s service centres and primary schools; requirements for immunisation to be included as part of municipal public health plans; and changes to improve clarity.

- **Notifications of infectious diseases**: Amendments to improve the accuracy or timeliness of data that notifications provide or to clarify ambiguities in the regulations.

- **Registered premises**: A new offence for false advertising in relation to registration; requiring notices to be displayed; simplification and amendments to hygiene requirements; expanding record-keeping requirements for skin penetration businesses (from only tattooing and body piercing) and providing approved information to clients.

- **Legionella risks in certain premises (water delivery systems)**: Clearly defining the places where the regulations apply to better reflect the risk profile of Legionella; and a new offence relating to tampering with or falsifying water samples.

There are no changes proposed to the following regulations: closed court orders for prescribed diseases; escort agencies providing information to sex workers and clients; Chief Health Officer delegations for prescribed senior officers; and, tissue donation.

**Elements not considered in the regulatory impact statement**

**The Public Health and Wellbeing Act**

The requirements under the Act are not the subject of this review, only the details set out in the regulations. During the process of the review and consultation it is likely that potential improvements to the Act may be identified, but that is not the focus of this regulatory impact statement.

**Regulations relating to prescribed accommodation**

Regulations relating to prescribed accommodation will not be considered within this regulatory impact statement (regulations 13 to 27). Separate new regulations relating to prescribed accommodation will be made in 2020. In the
interim, the operation of the prescribed accommodation regulations will be extended in their current form for 12 months to allow further time for review and consultation.

The extension of the prescribed accommodation regulations provides an opportunity to separate regulations relating to prescribed accommodation from the other regulations made under the Public Health and Wellbeing Act 2008. It is intended that the extended prescribed accommodation provisions will be contained in the renamed 'Public Health and Wellbeing (Prescribed Accommodation) Regulations 2009' and will operate separately from the proposed Public Health and Wellbeing Regulations 2019.

Prescribed accommodation regulations are particularly complex as they impact on a range of portfolios, sectors and stakeholders. This includes (but is not limited to) the interface with other legislative schemes that oversee rooming houses, labour hire, the visitor economy and international student accommodation. In undertaking preliminary consultation, the department recognised that more time is needed to review the prescribed accommodation regulations to give due consideration to these complex cross-government issues.

**Regulations relating to HIV testing**

The Victorian Parliament recently passed the Public Health and Wellbeing Bill 2019 to repeal provisions in the Public Health and Wellbeing Act 2008 that set out outdated requirements relating to HIV testing. As a result, the prescribed regulations relating to HIV testing will not be required to be remade. For this reason, no analysis of this regulation has been included in this regulatory impact statement.

**Implementation and evaluation**

Implementation of the Public Health and Wellbeing Regulations 2019 will encompass a multifaceted approach to support awareness and compliance. Key components of implementation involve various communication channels and tools to create awareness of the changes, guidance to help understanding and compliance monitoring activities. The approach to regulatory compliance will remain broadly consistent with current practice, with a focus on educating regulated entities about the key changes.

Evaluation will play a key role to measure the effectiveness of the Public Health and Wellbeing Regulations 2019 and how they result in actions that reduce the transmission of infectious diseases. Importantly, evaluation will also inform continuous regulatory improvement. The department acknowledges that improved data collection will assist in this process and there is a need to identify data gaps and sources to obtain data. Improving data collection methods may need to be developed in consultation with stakeholders. A mid-term review (proposed at five years) will seek to determine whether the regulations are meeting their objectives and can be improved as well as the impact on public, regulated entities and regulators.

**Consultation and comment**

The regulatory impact statement process involves assessing regulatory proposals and allows members of the community to comment on proposed regulations before they are finalised. Such public input provides valuable information and perspectives and improves the overall quality of regulations.

Comments and submissions should be received by the Department of Health and Human Services no later than 5.00 pm, 30 September 2019.
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<th>Brief summary of proposed option</th>
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<tr>
<td>Vector-borne infectious disease control</td>
<td>Powers to authorised officers (local government) to give directions to owners and occupiers of premises to remove conditions conducive to mosquito breeding.</td>
<td>Provide for control of emerging and potential vector-borne disease risk by:</td>
<td>Increased burden for owners and occupiers of premises in Victoria to have a direct duty to eliminate mosquito breeding grounds.</td>
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<td>No specific provision for other vector-borne infectious diseases (such as rats, bird etc.). For these, local government use general nuisance provisions to issue notices and enforce behaviour change but have limited powers.</td>
<td>• broadening the scope of infectious disease control measures to include control of defined disease vectors, not just mosquitoes</td>
<td>Improved infectious disease control through more effective mosquito control measures and addresses the actual and potential spread of vector-borne pathogens including arboviruses.</td>
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<td>Registered premises – infection control</td>
<td>Specify standards and requirements for these businesses, aiming to protect the public from the risk of contracting certain infectious diseases. The prescribed requirements relate to the condition of the premises, the condition of skin-penetrating equipment and other articles used to provide services, practitioner or operator’s personal hygiene, hand-washing facilities and information management.</td>
<td>Minor changes to clarify the requirements and meet emerging trends that may be risks to public health, these include:</td>
<td>Marginally increase costs for some registered premises (some may need to install additional handbasins in some circumstances).</td>
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<td>• creating a penalty for false advertising in relation to registration</td>
<td>Improve health outcomes by improving hygiene and cleanliness practices. Improve information</td>
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| Aquatic facilities              | Defines aquatic facilities and prescribe operational, maintenance and testing requirements for these facilities. These requirements were established to provide the minimum water quality standards required to protect human health. The regulations also specify record-keeping requirements. | Strengthen the existing regulations and propose measures to address new and emerging trends, technologies and practices that may pose a risk to public health. Changes proposed by this option include:  
• broadening the definition of an aquatic facility to accommodate new and emerging trends – such as increased risk of cryptosporidium outbreaks  
• introducing registration requirements (including paying fees to council) and infringement penalties  
• updating standards and requirements to improve risk management to reflect best practice water quality management  
• duty to manage risks in accordance with Water Quality Guidelines  
• risk-based characterisation of aquatic facilities (based on user-profile and number of bathers). | Impact on operators of aquatic facilities to register and adhere to requirements to ensure a higher level of water quality management than what currently occurs by some operators.  
Impact on local government to ensure registration and compliance with the regulations.  
Improve health outcomes significantly by changing behaviours and environments and improving the operation of aquatic facilities. |
| Cooling tower systems           | Require cooling tower system operators to maintain and test the systems to manage public health risks. They also require specific remediation measures when Legionella bacteria are found in cooling tower systems. | Proposed minor amendments to strengthen regulation including:  
• requirement to notify the department upon high concentrations of Legionella  
• a new offence for tampering with or falsifying water samples or test samples | Minor increase in regulatory burden on cooling tower system operators.  
Positively impact on the health outcomes of the Victorian population by reducing the likelihood of legionellosis in the community due to poorly operating cooling tower systems and the |
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| All cooling tower systems must be registered under the Act. | • improving consistency of terminology  
• clarifying disinfection requirements to explicitly require cleaning of the interior of the cooling towers in the system  
• introducing infringement penalties for certain offences. | associated impacts of an outbreak of legionellosis. |
| Requires the responsible person of a water delivery system to manage the risk of Legionella within aged care facilities, health services, health service establishments, registered funded agencies, correctional services and commercial vehicle washes. | Amend some aspects of the current regulations:  
• clearer definition of where regulations apply based on duration of stay  
• a new offence to falsify a laboratory report or tamper with a sample. | Reduced regulatory burden by reducing scope of requirements on some facilities. Expected to maintain health outcomes. |
| Pest control | Prescribe the qualifications required of those who authorise the pesticides and that records are kept in relation to the use of a pesticide. | Amend regulations to adopt the national framework for minimum training and licensing requirements. Requires increased qualification requirements for some pest control operators. | Costs to certain pest control operators that will need to undertake additional training or seek recognition of prior learning and experience. Benefits by removing the burden placed on operators operating across jurisdictions (agricultural pesticide users like crop dusters). |
| Prescribe 62 conditions that must be notified by medical practitioners and 71 that must be notified by laboratories. Provides the legal authority for medical practitioners and laboratories to provide information to the department that might otherwise be considered confidential. All, except anaphylaxis and elevated blood lead levels, are infectious diseases or complications of infectious diseases. | Proposed changes to improve the accuracy or timeliness of data including:  
• changing the timing of the written notice for a notifiable micro-organism from five days to immediately (micro-organisms in food)  
• expanding the information in a written notice of a notifiable micro-organism to provide additional details about the food sample and submitter (micro-organisms in food)  
• introducing infringements for failure to notify  
• prescribing specific anti-microbial resistant organisms or tests results to be notified by pathology services | No quantifiable change in burden for medical practitioners and pathology laboratories. Benefits by improving the public health surveillance system to:  
• respond rapidly to serious or severe cases of disease to protect others  
• detect disease outbreaks in a timely manner and prevent further cases  
• monitor disease epidemiology  
• inform health interventions. |
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<td>Immunisation and exclusions – schools and childcare</td>
<td>Powers to prevent the spread of infectious disease by: • temporary exclusion of children who could infect others • exclusion of children who are at risk of infection • collection of immunisation status certificates.</td>
<td>Proposed changes to: • update diseases and exclusion periods • introduce infringement penalty for failure to exclude in accordance with Schedule 7 • remove the duty of a person in charge of a primary school or children’s services centre to notify the secretary about an ill child.</td>
<td>No quantifiable burden on industry, powers to be exercised on an as-needed basis. Reduce reporting burden on principals. Expected to assist the department to meet the objectives of the regulations pertaining to immunisation and exclusions in high-risk settings of children’s service centres and schools in Victoria.</td>
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<td>Consultative Councils</td>
<td>Set out the types of consultative councils that are in operation.</td>
<td>Retain the following consultative council only: Victorian Perioperative Consultative Council.</td>
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Introduction (and invitation to comment)

Overview

The Public Health and Wellbeing Regulations 2009 (the current regulations) were made under the *Public Health and Wellbeing Act 2008* (the Act) and are due to sunset on 15 December 2019. New regulations are needed to replace them.

The remaking process provides an opportunity to revisit whether regulations are still needed and, if so, whether there are ways to improve them.

Public health regulations provide a framework for businesses, councils and individuals to protect the health and wellbeing of Victorians. Understanding how these regulations, and any proposed changes, will impact on Victorian business and the Victorian community is critical to the effective operation of the regulatory framework.

The current regulations include several regulatory areas, and the subject matter varies widely. In some ways these regulatory areas are distinct in their nature; however, their overall objective gives effect to the Public Health and Wellbeing Act.

To the extent that the regulatory areas are different, the department consulted key stakeholders to ensure any issues were understood and the impact of proposed solutions would be acceptable. This preliminary consultation has informed the proposed regulations and a summary is provided in the ‘Consultation’ chapter.

Purpose and objective

Victorians enjoy one of the highest standards of health and wellbeing in the developed world. This could not be achieved without laws and regulations that protect and promote public health and wellbeing.

The Act

The current regulations were made under the Public Health and Wellbeing Act. The purpose of the Act is to provide a legislative framework that promotes and protects public health and wellbeing in Victoria.

The state has a significant role in promoting and protecting the public health and wellbeing of Victorians.

Public health and wellbeing includes the absence of disease, illness, injury, disability or premature death and the collective state of public health and wellbeing. Public health interventions are one of the ways in which the public health and wellbeing can be improved and inequalities reduced.

The regulations

As set out in the Public Health and Wellbeing Act, the aim of the regulations is to achieve the highest attainable standard of public health and to prevent disease and illness while minimising costs for regulated industries.

Public health regulations provide a framework for businesses, councils and individuals in the practical application of the Act.

The regulatory impact statement

The purpose of this regulatory impact statement is to provide information and analysis to review how these regulations, and any proposed changes, will affect Victorian business and the Victorian community and contribute to the effective operation of the regulatory framework for public health.

The current regulations are due to expire on 15 December 2019. New regulations are needed to replace them.
Preparation of the new regulations

Before new regulations are made, the *Subordinate Legislation Act 1994* requires completion of the following four steps shown in Figure 1.

**Figure 1: The four steps of making new regulations**

- **Preliminary consultation**
  The department undertook preliminary consultation with key stakeholders to inform development of the proposed regulations. The proposed regulations address a range of matters for giving effect to the Act and therefore different stakeholders were engaged on different matters.

  A summary of the preliminary consultation that has occurred is provided in the ‘Consultation’ chapter of this regulatory impact statement.

- **Public consultation**
  This regulatory impact statement has been prepared to meet the requirements of the Subordinate Legislation Act, enabling public consultation on the proposed regulations. The regulatory impact statement presents the range of matters addressed in the proposed regulations in separate chapters. Each chapter includes the regulatory objective for the matters addressed in the chapter, an assessment of the costs and benefits of the proposed regulations and possible alternatives.

  In most cases the regulatory impact statement considered and analysed three regulatory options: to remove all regulation, to remake the current regulations without change, or to strengthen the requirements set out in the current regulations. The extent of the analysis of the regulatory options varies but is consistent with the need for regulatory change. In most cases the recommended option for each regulatory area is to strengthen the current regulations.

  Each of the regulatory areas included within the regulatory impact statement has a specific implementation plan that will support awareness and understanding of any changes, preparedness and compliance. Information about implementing the proposed regulations can be found in the ‘Implementation’ chapter.

  The proposed regulations will operate for up to 10 years. Evaluation has a key role in ensuring the intended improvements of the proposed regulations (appropriately effective and proportionate) are borne out and align with government objectives on an ongoing basis. Each of the regulatory areas included within the regulatory impact statement has a specific evaluation plan. Information about the evaluation, including public consultation, can be found at the end of the regulatory impact statement.

  The proposed regulations are included as an attachment to this document.

- **Consideration of submissions**
  Public comments and submissions will be considered before the new regulations are made.
Final decision
The decision to make or not to make the proposed regulations will be informed by the public comments and submissions received. Notice of the decision will be published as soon as practicable after the decision has been made.

Small business impact and competition assessment
Small businesses may disproportionately experience the impacts from regulatory requirements for a range of reasons, including relatively limited resources to interpret compliance requirements or to keep pace with regulatory changes, and the cumulative effect of different requirements.

Most of the proposed regulations propose simplified and streamlined regulatory definitions and requirements compared with the current regulations, particularly where stakeholder feedback has raised issues about ambiguity of the intention of regulations. Any regulatory proposal needs to be scrutinised carefully to assess whether it is having an adverse impact on the ability of firms or individuals to enter and participate in the market. In line with the Victorian guide to regulation, new legislation (both primary and subordinate) needs to demonstrate that it will not restrict competition, unless benefits of the restriction outweigh the costs and the objectives of the legislation can only be achieved by restricting competition.

In instances where restrictions on competition have been identified, the benefits of the restriction outweigh the costs and the objectives of the legislation can only be achieved by restricting competition. For example, the registration of a premises by local government for the purposes of infection control standards creates an additional cost for starting a health and beauty service business. However, this cost is offset by the reduced risk of disease in the community and the reduced risk of an infectious disease outbreak.

Structure of the regulatory impact statement and the proposed regulations
This regulatory impact statement and the proposed regulations have grouped the regulations according to either how the regulations are administered or the regulation’s purpose in the Act. These are broadly grouped into:

- regulations administered by councils
- regulations administered by the department
- regulations related to managing and controlling infectious diseases, micro-organisms and medical conditions
- other regulations.

Regulations administered by councils
- Vector-borne infectious disease control
- Registered premises – infection control
- Aquatic facilities

Regulations administered by the Secretary to the Department of Health and Human Services
- Cooling tower systems
- Legionella risks in certain premises (water delivery systems)
- Pest control
Management and control of infectious diseases, micro-organisms and medical conditions

- Notifications of infectious diseases, micro-organisms and medical conditions
- Closed court orders for prescribed diseases
- Immunisation and exclusions – schools and childcare
- Escort agencies providing information to sex workers and clients

Other regulatory provisions

- Prescribed senior officers (Chief Health Officer delegations)
- Tissue donations
- Consultative councils.

What isn’t included in this regulatory impact statement

The Public Health and Wellbeing Act

The Public Health and Wellbeing Act is the legislation under which these regulations are made. The matters that can be set out in the regulations are confined to what is required under the Act. The requirements under the Act are not the subject of this review, only the details set out in the regulations. During the process of the review and consultation it is likely that potential improvements to the Act may be identified, but that is not the focus of this regulatory impact statement.

Public Health and Wellbeing Regulations relating to prescribed accommodation

Regulations relating to prescribed accommodation will not be considered within this regulatory impact statement (rr. 13 to 27). Separate new regulations relating to prescribed accommodation will be made in 2020. In the interim, the operation of the prescribed accommodation regulations will be extended in their current form for 12 months to allow further time for review and consultation.

The extension of the prescribed accommodation regulations provides an opportunity to separate regulations relating to prescribed accommodation from the other regulations made under the Public Health and Wellbeing Act 2008. It is intended that the extended prescribed accommodation provisions will be contained in the renamed ‘Public Health and Wellbeing (Prescribed Accommodation) Regulations 2009’ and will operate separately from the proposed Public Health and Wellbeing Regulations 2019.

Public Health and Wellbeing Regulations relating to HIV testing

The Public Health and Wellbeing Act prescribes special requirements for HIV testing and these requirements are included in the 2009 regulations. The need to review and modernise these requirements is an issue that a range of sector stakeholders have been raising for some years. Overwhelmingly, the sector has supported a repeal of relevant sections of the Act relating to pre and post HIV testing. The Victorian Parliament recently passed the Public Health and Wellbeing Bill 2019 to repeal the HIV testing specific provisions (ss. 131 and 132) on the basis that they stigmatise people with HIV and are outdated. As a result, the prescribed regulations will not need to be made.
Invitation to comment

In accordance with the *Victorian guide to regulation*, the Victorian Government seeks to ensure that proposed regulations are well-targeted, effective and appropriate, and impose the lowest possible burden on Victorian businesses and the community.

The regulatory impact statement process involves assessing regulatory proposals and allows members of the community to comment on proposed regulations before they are finalised. Such public input provides valuable information and perspectives and improves the overall quality of regulations.

The Public Health and Wellbeing Regulations 2019 (the proposed regulations) will replace the Public Health and Wellbeing Regulations 2009 (the current regulations). A copy of the proposed regulations is published with this regulatory impact statement.

Public comment is invited on the regulatory impact statement and the proposed regulations.

The consultation period is 60 days. Please note that all comments and submissions received will be treated as public documents.

Submission deadline

Comments and submissions should be received by the Department of Health and Human Services no later than 5.00 pm, Monday 30 September 2019.

How to make a submission

Preferred method

The [Engage Victoria website](https://engage.vic.gov.au) is the preferred method for receiving submissions. The website includes specific questions for each regulatory area and allows for additional feedback to be provided.

Email

If you are unable to use the preferred method above, submissions can be received by emailing the department <phwa.enquiries@dhhs.vic.gov.au>.

Post

If you are unable to use the preferred method above, submissions can be received by post marked ‘Submission to the Review of the Public Health and Wellbeing Regulations 2009’ and addressed to:

Chief Health Officer  
Regulation, Health Protection & Emergency Management  
Department of Health and Human Services  
GPO Box 4057  
Melbourne VIC 3001

Where can I obtain copies of this regulatory impact statement and the proposed regulations?

Copies of this regulatory impact statement and the proposed regulations can be obtained from the [Engage Victoria website](https://engage.vic.gov.au).
How can I be updated on the progress of the review?

Regulations administered by councils
Chapter 1: Vector-borne infectious disease control

Problem analysis

Victoria regulates the control of mosquitoes and other disease vectors to prevent disease transmission to humans. Climate change, urban development and increased global travel are influencing the spread and distribution of disease-causing pathogens and disease vectors.

Pathogens and disease vectors

In Victoria the most common pathogens passed from mosquitoes to humans are viruses such as Ross River virus (RRV), Barmah Forest virus (BFV). The potentially fatal Murray Valley encephalitis virus and West Nile strain Kunjin virus are very rare, but there have been locally-acquired cases reported in the past. Mosquitoes have also been suggested to be one of the possible vectors for Buruli ulcer, caused by the bacterium *Mycobacterium ulcerans*, which is a disease of increasing concern in Victoria.

While mosquitoes are responsible for most vector-borne disease burden in Victoria (also known as arbovirus when related only to transmission by mosquitoes), other organisms may also serve as vectors (for example, flies, rodents or ticks).

Regulations established in 2009 are limited in their scope to the management of breeding mosquitoes capable of transmitting arboviruses. They do not address the broader risk of other pathogens such as bacteria and parasites, adult mosquitoes or other vectors such as rodents and birds and parasites such as ticks.

Spread and distribution risks

Victoria's public health risk posed by vector-borne pathogens is changing. Factors such as climate change, urban development and increased domestic and international travel are influencing the proliferation, spread and geographic distribution of disease-causing pathogens and disease vectors.

With a change in climate, the conditions for the establishment of exotic species of mosquitoes could become more favourable, enabling local transmission of exotic viruses such as dengue, yellow fever, chikungunya and Zika.

Transmission of arboviruses involves a complex ecology between human and animal hosts, vectors and environmental conditions. The department conducts arbovirus surveillance across Victoria using a One Health approach, which recognises the interconnectedness of human health with that of animal health and the environment. RRV is the most commonly reported arbovirus among humans in Australia, averaging 204 cases per year in Victoria. Both RRV and BFV are characterised by joint inflammation and pain, fatigue, muscle aches and rash. Symptoms can last for up to six months. Cases occur particularly around inland waterways and coastal regions. Epidemics occur from time to time and are related to environmental conditions that encourage mosquito breeding such as heavy rainfall, floods, high tides, and temperature. The overuse of water, particularly in rural areas also contributes to mosquito breeding.

Vector control and enforcement

Adult mosquitoes and mosquito breeding grounds require effective control to break the cycle of potential or actual transmission of mosquito-borne disease. Control of mosquitoes can include eliminating mosquito breeding grounds, eradicating adult mosquitoes and abating conditions conducive to mosquito breeding. Control programs currently exist within municipalities across the state and are funded by the department. These activities look to reduce the burden of disease in these areas, reduce the impact and nuisance aspect of mosquitoes, and
additionally provide an early warning system of disease that may become established within human population groups.

The current regulations are limited to preventing mosquito breeding. They neither address other mosquito control practices such as eradicating adult mosquitoes across their full life cycle, or other pests and vectors.

The regulations made under s. 235(a) of the *Public Health and Wellbeing Act 2008* (regulation-making power of nuisance) are limited in scope to the prevention of mosquito breeding. This hinders the enforcement powers of authorised officers in addressing potential or actual public health risks posed by broader vector issues. It is proposed that broader Regulations are added to address control methods, a wider scope (across all potential vectors), and emerging infectious diseases risk.

An example of this vector control and enforcement issue is the experience of local government areas (LGAs) during the 2016–17 RRV outbreak in Victoria where they had no ability to direct or enforce landowners or other government departments to implement control measures against adult mosquitoes when they posed a risk to local communities.

The outbreak period resulted in a 10-fold increase in expected cases of RRV and BFV for this period, with a total of 1,974 human cases of diseases notified to the department. This is likely an underestimate of the actual number of cases occurring in the community at the time, as not all infections are symptomatic, or debilitating, so people do not seek care and are not tested for their infection.

Mosquito breeding and possible mosquito-borne disease is variable and may be contingent on environmental conditions such as heavy rainfall. Typically, mosquito breeding season occurs between November and April each year and is more prevalent after heavy rainfall where water can pool causing mosquito breeding conditions. For example, in 2018 and 2019 to date, there have been minimal notifications of RRV; however, there were 224 notifications of RRV in 2017.

Integrated mosquito management consists of for major principles: Adult mosquito and larval surveillance, source reduction, larval control and adult mosquito control. Both regulatory and non-regulatory measures are used in integrated mosquito management.

**Non-regulatory measures to control mosquito breeding – Victorian Arbovirus Disease Control Program**

As part of the current approach to control mosquito breeding, the department’s Victorian Arbovirus Disease Control Program funds 11 rural and regional councils around $160,000 per year in total, to undertake mosquito surveillance and control measures during mosquito breeding season (typically during the warmer months). The majority of the funded councils are located along the Murray River and coastal regions. Under the program, councils may undertake more rigorous control measures in public areas after heavy rainfall or if there are reports of mosquito-borne disease.

Mosquitoes trapped as part of this surveillance program are submitted to the AgriBio laboratory at the Department of Jobs, Precincts and Regions for mosquito counting and viral testing. The data is reported to the department for monitoring and analysis. Through a Memorandum of Understanding, the department funds the Department of Jobs, Precincts and Regions around $445,225 per year to provide these scientific support services, which includes testing of sentinel chickens as an early warning system for human diseases.

These non-regulatory measures supplement the response-based provisions of the regulations.

**Hazard**

Disease vectors contribute to transmitting infectious disease to humans. The most common vector-borne disease in Victoria is RRV, which is caused by an alphavirus spread by mosquitoes. Other mosquito-borne diseases endemic to Victoria include BFV and Murray Valley encephalitis.

While mosquitoes represent the greatest risk of vector-borne diseases in Victoria, other insects, animals, including birds and rodents serve as vectors of disease. In specific circumstances, control measures, such as removing
mosquito breeding grounds, or the removal of rodents may be required to reduce a risk to public health from a disease vector. The current regulations limit the potential to control the hazard and do not address alternative control practices such as adult mosquito spraying or residual insecticide application.

**Exposure**

As result of favourable environmental conditions, such as a period of heavy rainfall and warm weather, mosquitoes have the potential to become abundant in the environment. There are more than 275 identified mosquito species across Australia, many of which have the potential to carry disease-causing pathogens. All Victorians are at risk of exposure to these diseases as result of unmitigated breeding grounds and the inability to control adult mosquito populations.

There is a constant threat of exotic mosquitoes entering and becoming established in Victoria. Airport incursions occur regularly, introduced through mosquitoes travelling on ships and aircraft at ports of entry to Victoria. These mosquitoes represent a risk to the community of diseases such as dengue (already established in northern Australia), chikungunya, Zika and malaria. In these instances, the department collaborates with Commonwealth agencies to mitigate and control the risk. While these incursions occur regularly, as a result of the control measures implemented, there have no documented instances of transmission of these diseases in Victoria.

Climate change and changing environmental conditions may also contribute to shifts in disease distribution due to changed breeding grounds, changed host populations and, consequently, human exposure. This is most likely to occur in diseases and mosquito species which are endemic to northern Australia migrating south as the climate becomes increasingly warm.

**Vulnerability**

Seasonal influences on mosquito breeding and host populations increase the vulnerability of human populations near breeding grounds during summer and early autumn. Most cases of RRV and BFV occur in these months. Northern border regions and coastal areas of Victoria are the areas where these diseases most commonly occur.

Other environmental conditions contribute to increased risk of exposure to disease vectors. For example, cases of Murray Valley encephalitis have been associated with major flooding events and shifting bird populations acting as amplifying hosts. Climate and associated changing environmental conditions contribute to this increased risk.

Public health interventions are directed to these areas. A number LGAs are funded by the department to undertake mosquito surveillance and control measures during the arbovirus season.

**Objectives of the regulations**

The objective of the current regulations is to prevent the spread of mosquito-borne diseases by controlling mosquito breeding.

**Requirements of the regulations**

The regulations relate to s. 235(a) of the Public Health and Wellbeing Act, which relate to preventing and abating nuisances.

The regulations aim to remove conditions conducive to mosquito breeding by giving powers to authorised officers to give written directions to owners and occupiers of premises to remove these conditions. The regulations require the person to comply with the direction given to them.

**How the current regulations operate**

As an example, a person may contact a council complaining about conditions at a neighboring property causing the breeding of mosquitoes such as stagnant water in a bucket or wheelbarrow. In response, an environmental health officer (authorised officer) who has the knowledge and skills to assess mosquito breeding grounds would
investigate the matter. Should the environmental health officer confirm there are conditions conducive to mosquito breeding, they would likely advise the owner or occupier of the property to remove stagnant water within a specified time frame. This could be a verbal direction or a written direction at the discretion of the environmental health officer.

Generally, the owner or occupier would comply, and the matter would be resolved without any cost impact. Enforcement such as a prosecution would only be considered for deliberate noncompliance or as a last resort.

The current regulations are response orientated. Complaints and conditions conducive mosquito breeding may be more prevalent after heavy rainfall periods.

Options

- Option 1: Retain the current regulations without changes
- Option 2: Amend some aspects of the current regulations
- Option 3: Remove or reduce the requirements of the current regulations

Option 2 aims to ensure disease vectors, including mosquitoes, are appropriately managed based on their potential future or unknown risk.

Option 1: Retain the current regulations without changes

Remaking the regulations without change would not address controlling emerging vector-borne disease risks.

Authorised officers at the local government level would continue to have powers to give written directions to owners and occupiers of premises, requiring them to remove any condition conducive to mosquito breeding (arbovirus). They would continue to have no authority to order more effective treatments, such as adult mosquito control and residual insecticide treatment of areas of land or buildings.

In addition, this option would not protect the community against the emerging threat that mosquitoes or other disease vectors pose in the context of climate change and exotic incursions. Managing an effective response to an exotic mosquito interception or local transmission of disease, particularly in an urban environment, requires rapid and extensive property access and the ability to provide clear and concise directives. Within the limitations of the current regulations, the potential risk posed by mosquitoes and other disease vectors cannot be managed across their respective lifecycles placing the Victorian community at risk of transmission.

Option 2: Amend some aspects of the current regulations

An emerging risk of vector-borne disease warrants a strengthening of regulations to build on infectious disease control measures.

Mosquito control

This approach would redefine current terms to better define the public health risk and mosquito control measures. This option will:

- replace the term ‘arbovirus infection control’ with ‘vector-borne infectious disease control’ and broaden the scope of infectious disease control to include other pathogens spread by mosquitoes, not just viruses
- consider all mosquitoes as having the potential to transmit disease, to ensure nuisance mosquitoes are still appropriately managed based on their potential future or unknown risk, and provide protection against emerging threats
- establish obligations on owners and occupiers of premises to eliminate mosquito breeding grounds and abate conditions conducive to their establishment
• provide authority for orders to be given requesting owners and occupiers of premises to eliminate any mosquito breeding ground and/or take steps to eradicate adult mosquitoes on their land.

**Control of disease vectors other than mosquitoes**

This approach would also provide for control of emerging and potential vector-borne disease risk. In addition to the above changes to strengthen mosquito control, option 2 would also:

• broaden the scope of infectious disease control measures to include control of defined disease vectors, not just mosquitoes
• define ‘disease vector’ so that an animal, including a bird or insect, can be the subject of infectious disease control
• give powers to the Chief Health Officer to issue a disease vector control notice to address an existing material public health risk caused by a disease vector
• give powers to authorised officers (appointed by a local council and other authorised officers) to control disease vectors when a disease vector control notice has been issued.

It would be expected that such a notice would be applied in circumstances where a transmission risk is known to be present in an animal, such as the transmission of psittacosis from infected birds, where transmission to humans is actively occurring within the affected community. A further example is a rodent infestation causing an increase in human disease of Leptospirosis in a particular community or area. In this instance a disease vector control notice can be issued to explicitly order the removal of the source of the public health risk. The impact of these examples would be similar to mosquito control activities, as the public health risk is comparable.

**Infringement penalties**

To address the gap between existing measures to achieve compliance such as education, notices and prosecution, it is intended that offences be enforced by way of an infringement notice, also known as infringement offences. This approach provides a proportionate and graduated response and a practical means of addressing noncompliance (including public health risk). It is expected that education and assisted compliance (making sure regulated entities are aware of, and understand, the requirements) will form the primary means of achieving compliance with the regulations. Please see chapter 13 for a list of proposed infringement offences.

**Option 3: Remove or reduce the requirements of the current regulations**

Removing or reducing requirements in the regulations would limit the ability of state and local governments to address the risk of vector-borne disease.

Removing or reducing the powers of authorised officers to give written directions to prevent mosquito breeding would limit the ability to control transmission of vector-borne diseases.

The general nuisance provisions in the Public Health and Wellbeing Act would become the mechanism relied upon by local government authorised officers to address vector-borne diseases. This will likely result in inconsistent application of the provisions and would contribute to an increased incidence of mosquito-borne diseases.

Section 61 of the Public Health and Wellbeing Act makes it an offence for a person to cause a nuisance or knowingly allow or suffer a nuisance to exist on, or emanate from, any land owned or occupied by that person. The nuisance provisions are broad and may constitute a range of matters of things which are, or are liable to be, dangerous to health or offensive. For example, noise or emissions and animals capable of carrying a disease transmissible to human beings. Because the nuisance provisions are purposely broad in nature and lack specificity, time is often required to investigate, gather suitable evidence and determine whether a nuisance exists, and if so, the appropriate response.

Currently, r. 12 ‘Prevention of mosquito breeding’ clarifies that conditions conducive to the breeding of mosquitoes are a nuisance. This is because mosquitoes may be vectors of arbovirus and a public health risk. This regulation removes the need to establish a nuisance in certain circumstances and enables authorised officers to promptly address conditions that may be a public health risk through a direction.
Impact analysis
This section considers the impact of the three options posed above.

Avoided burden of disease
In Victoria, infectious diseases caused by arboviruses spread by mosquitoes include RRV, BFV, West Nile strain Kunjin virus and Murray Valley encephalitis.

Mosquitoes have also been suggested to be one of the possible vectors for Buruli ulcer.

There is also an increasing risk of exotic species of mosquitoes potentially establishing in Victoria and transmitting exotic viruses such as dengue, yellow fever, chikungunya and Zika.

While mosquitoes are responsible for most vector-borne disease burden in Victoria, other organisms may also serve as vectors (for example, flies, rodents or ticks).

Each of the options will variably affect the burden of disease as outlined below.

Option 1: Retain the current regulations without changes
If the current regulations are remade with no changes, improvements in the management of public health and public health risk would not be expected. This option does not provide for improved infectious disease control through more effective mosquito or vector control measures, nor does it address the actual or potential spread of vector-borne pathogens other than arboviruses. Additionally, option 1 does not provide for managing emerging threats posed by exotic mosquito incursions and local transmission of disease from exotic pathogens.

Authorised officers would continue to lack authority to order more effective treatments across the full lifecycle of mosquitoes in line with integrated mosquito management guidelines collectively established by local and state governments.

Option 2: Amend some aspects of the current regulations
Option 2 provides for improved infectious disease control through more effective mosquito control measures and addresses the actual and potential spread of vector-borne pathogens including arboviruses. This option also provides for managing emerging threats posed by exotic mosquito inception and local transmission of disease from exotic pathogens.

This option provides authorised officers with more authority, enabling them to direct effective treatment actions across the full lifecycle of mosquitoes in line with integrated mosquito management guidelines. Additionally, it provides authority to address risks posed by other vectors, not just mosquitoes.

Option 2 also provides for improved infectious disease control from vectors other than mosquitoes and provides greater benefit. Option 2 also provides for improved infectious disease control from vectors other than mosquitoes and provides greater benefit. The broader powers enable a more targeted and rigorous response to vector-borne infectious disease outbreaks, which are designed to minimise the transmission of infectious disease to humans. Additionally, this option better aligns with the precautionary and primacy of prevention principles under the Public Health and Wellbeing Act. The public health benefits and associated reduction in infectious diseases outweigh any increase in cost.

Avoided impacts of an outbreak
The proposed regulations establish mechanisms for controlling adult mosquitoes, mosquito breeding grounds and other disease vectors to reduce the potential for vector-borne infectious disease outbreaks in Victoria.

The proposed regulations will help improve awareness of vector-borne infectious disease risks in Victoria and build statewide capacity to implement appropriate vector control measures. The changes will also ensure owners and occupiers of premises have a duty of care to eliminate mosquito breeding grounds and authorised officers have the powers they need to enforce appropriate mosquito control measures.
Additional powers will also enable the department to intervene in controlling vectors other than mosquitoes to improve the response to actual or potential impacts of a vector-borne disease outbreak.

**Costs for industry to implement the regulations**

The department currently funds mosquito prevention and control programs across the state in collaboration with local government authorities in vulnerable areas across the state. This practice will be strengthened by greater regulatory support and transparency, allowing for activities to continue in new areas without a direct cost to the owner or occupiers of premises in Victoria.

It is proposed that owners and occupiers of land in Victoria will have a duty of care to control and manage the breeding of mosquitoes on their properties. This requirement will involve limiting conditions on the premises that are conducive to the establishment of mosquito breeding. For example, removal of water-holding containers such as large tyres and plastic containers.

For example, in an urban setting, removal of water holding containers such as large tyres and pot plants which harbour container-breeding mosquito species, that are known to spread disease. In an agricultural setting, these requirements would strengthen the duty of care that land owners have for appropriate water management practices. These include irrigation methods, adopting modern principles, sustainable water management practices, and limiting the conditions for pooling of water/preventing large bodies of standing water. These activities directly contribute to the reduction in mosquito breeding areas at no discernible financial cost to the owner or broader communities.

However, this option may impose some small additional costs for property owners to eradicate adult mosquitoes or any other identified disease vector. However, costs will be variable and difficult to quantify. They are influenced by factors such as the incidence of mosquitoes and other identified disease vectors, weather conditions such as rainfall and identified public health risk.

As an example, if the Chief Health Officer issues a disease vector control notice, a council authorised officer may need to respond by issuing a direction to abate certain conditions or eradicate the disease vectors on the premises. There may be some costs on a property owner to comply with a direction. This could involve engaging the services of a licensed pest control operator to eradicate the identified disease vectors, estimated at between $100 to $500.

**Cost for government to enforce the regulations**

Local governments are unlikely to incur additional enforcement costs as they already employ authorised officers who carry out nuisance investigations and enforcement. This option aligns with existing response processes such as receiving a complaint, investigating the matter, issuing a direction and following up on compliance.

There may be legal costs for local governments if enforcement action leads to prosecution.

The department already supports local governments to provide education and health promotion activities aimed at eliminating mosquito breeding grounds and potential disease outbreaks.

Government departments, authorities, agencies and other organisations with responsibilities managing public land and waterways will be subject to the proposed regulations. As highlighted above, the duty of care is largely associated with improved water management and land use practices and can be achieved at a minimal cost.

As a part of the implementation the department will work with these stakeholders to review the integrated mosquito management guidelines to ensure the guidelines are effective.

**Option 3: Remove or reduce the requirements of the current regulations**

If the current regulations are removed or reduced, councils could incur additional enforcement costs. This is because their investigations of nuisance associated with mosquito breeding may need to be more extensive to make a case of nuisance under the general nuisance provisions of the Public Health and Wellbeing Act. The additional burden on councils could lead to less effective enforcement action, resulting in reduced mosquito control and an increased likelihood of mosquito-borne disease outbreaks. Additionally, local and state governments will have no ability to control emerging mosquito-borne disease risks, and risk associated with other disease vectors.
Proposed approach

Option 2: Amend some aspects of the current regulations

Based on the above impact analysis the preferred option is option 2: Amend some aspects of the current regulations.

This option will strengthen the regulations to build on infectious disease control measures.

In addition, this option is expected to benefit the people of Victoria by providing improved infectious disease control through more effective mosquito and other disease vector control measures. This will address the actual and potential spread of vector-borne pathogens including arboviruses and help manage emerging threats posed by exotic mosquito inception and potential local transmission of disease from exotic pathogens.

This option is also expected to benefit the Victorian community by providing authorised officers with additional clarity around the management of mosquito across the full lifecycle and adding the ability to address other disease vectors. Overall, this will enable authorised officers to reduce the risk to public health in the Victorian community.
Chapter 2: Registered premises – infection control

Problem analysis

Certain non-healthcare-related industries and services have the potential to expose the public to communicable diseases and infection. Examples include beauty therapies, cosmetics application, colonic irrigation, hairdressing, tattooing, and skin-penetrating procedures.

The requirements in the regulations provide for a registration process and minimum standards. These are designed to ensure:

- premises, skin-penetrating items and other equipment are in good condition
- hygiene and hand-washing facilities are available
- the type of information provided and kept supports infection prevention and control.

It is essential that procedures involving skin penetration, and therefore risk of blood contamination, are undertaken safely. Ear and nose piercing are examples of the most common forms of body modification, or the physical altering of one’s appearance for cosmetic purposes, involving skin penetration.

Hazard

Unsafe and unhygienic practices in hair, beauty and skin-penetration businesses can expose clients to infections. Any breach of the integrity of skin increases a person’s vulnerability to infection because pathogens can enter the body through cuts, abrasions or lesions, or through sharp or abrasive objects penetrating the skin. Some procedures may put clients at risk of conditions such as head lice or fungal infections.

A more serious risk is the potential for a blood-borne disease such as hepatitis B, hepatitis C or HIV to spread through blood-to-blood contact from procedures that pierce the skin such as piercing and tattooing.

Exposure

The common element in the five classes of business required to be registered under the Public Health and Wellbeing Act 2008 is that people are exposed to the penetration of the skin either routinely when seeking services for tattooing, skin penetration or beauty therapy, or accidentally during colonic irrigation and hairdressing. Ear and nose piercing are examples of the most common forms of body modification involving skin penetration. Any breach of the skin gives rise to vulnerability to infection, particularly where blood is drawn. Common complications from piercing and other body modification procedures include localised or systemic infection, excessive scarring, excessive bleeding and reactions to materials inserted for piercings or implantations.

Vulnerability

There may be limited specific vulnerabilities identified for customers of these premises. Vulnerable groups in general are more likely at risk but there are no specific vulnerable groups targeted by registered premises regulations.

Further details on specific risks associated with different types of services in registered premises can be found in the appendix.
Industry trends

The tattooing, body piercing, hairdressing and beauty service industries have all expanded over the past five years. The hairdressing and beauty service industry in Australia is forecasted to grow at an annualised rate of 1 per cent over the next five years, reaching revenues of $5.2 billion in 2023.¹ The sector is expected to continue to grow over the next 10 years due to cultural trends such as:

- the increasing popularity of these high-value services
- growing image consciousness among men
- the increasing popularity of male-only barbers and salons
- growth in household discretionary income
- an increasing trend in health consciousness.

IBISWorld’s industry reports consider the hairdressing and beauty service industry to be in a mature phase. Revenue is expected to grow at the same pace as the economy, with significant price-based competition limiting profitability. The market share concentration is low, and the industry is highly fragmented, with numerous, small independent operators. Wages are the highest share of costs for the industry (57.3 per cent);² purchases of products and tools represent the second highest share of costs (21.1 per cent).³

Emerging beauty and health services

The expansion of the beauty and cosmetic industry has also seen the emergence of certain cosmetic procedures and extreme body modification practices. The issues associated with these emerging treatments and practices are discussed below, including considerations of an appropriate regulatory framework and the limited scope of the regulatory impact statement, further information on the scope of infection control standards for registered premises can be found in the appendix.

How will the regulations respond to emerging issues such as high-risk cosmetic treatments and extreme body modification practices?

What is the issue?

There is a range of emerging cosmetic procedures and other high-risk practices that are not clearly regulated by the current legal framework, but that pose risks and concerns to consumers and regulators. These include, but are in no way limited to, cosmetic procedures involving blood products or restricted substances, the use of lasers, subdermal implants and extreme body modification, and are frequently not performed by registered health practitioners. They are sometimes undertaken in registered premises but are not explicitly included as covered by registered premises regulations. There have been suggestions received about how the Public Health and Wellbeing Regulations could potentially address this issue, including whether the business premises where these procedures are carried out be subject to registration under the Public Health and Wellbeing Act.

What is currently covered by registered premises?

The scope of the application of registered premises is primarily set out in the Act rather than the regulations. The Act establishes that registration applies to businesses conducting beauty therapy, hairdressing, skin penetration and tattooing, amongst others. In the Act, the definitions of skin penetration, beauty therapy and hairdressing all specifically exclude any surgical or medical procedure. Surgical or medical procedures are defined as performed by a registered medical practitioner or a nurse or midwife, or by a person under the supervision of a registered medical practitioner or a nurse or midwife. This exclusion reflects that the infection control risks associated with the procedures are subject to other regulatory controls that are more appropriate to the risks involved (for example, health practitioner regulation under the Health Practitioner Regulation National Law (Victoria) Act 2009).

¹ IBISWorld Industry Report S9511, Hairdressing and Beauty Services in Australia, November 2017
² Ibid.
³ Ibid.
Who regulates registered premises for what purpose?
Councils regulate registered premises under the Act for the purposes of infection control and minimising the risk of disease transmission. The Public Health and Wellbeing Regulations set out the registration requirements and require compliance with infection control standards. Environmental health officers operate from local councils and are responsible for conducting inspections of premises; they are trained in infection control standards. They do not assess the risk of harm from surgical or medical procedures.

What other considerations do we need to address?
Suggested changes to the scope of the application of registered premises to explicitly capture these high-risk practices would require amendment to the Act rather than the Regulations. This would impose an obligation on business to comply with standards and requirements that apply to registered premises to regulate their conduct.

However, the challenge with amending the legislation to attempt to capture these high-risk practices is that consideration would need to be given to identifying the appropriate target for regulatory intervention. This could be the registered premises, but could also be the high-risk procedure, the conduct of the service provider, or the safety of products and equipment.

In some cases, it may be necessary to determine who is best placed to regulate and enforce these practices or operators. For example, environmental health officers may not be the most appropriate agent to undertake risk assessments for the use of lasers or intense light sources in beauty therapy. The department considers that national bodies such as the Therapeutic Goods Administration would be best placed to regulate unauthorised use of unlicensed products, and multiple overlapping regulators may be involved in other scenarios.

Who else may be involved in regulating these practices?
Many other regulators and legislative frameworks are engaged in the oversight of safety standards of specific procedures or the operation of their providers, or the products involved. Regulations and legislative frameworks may encompass private hospitals, medicines and poisons, radiation safety, as well as national regulatory and professional bodies such as the Therapeutic Goods Administration.

The Health Complaints Commissioner has a key role in regulating general health services. A code of conduct sets standards for all general health service providers not regulated by Australian Health Practitioner Regulation Agency and provides grounds for the Health Complaints Commissioner to take action against those who are not compliant. For example, the Health Complaints Commissioner has issued prohibition orders against cosmetic service providers regarding cosmetic surgical procedures.

What can we do in the draft regulations?
It is noted that the regulatory uncertainty in relation to the capturing of certain high-risk procedures may in part be due to the definitions in the Public Health and Wellbeing Act, which is outside the scope of this review of the regulations.

In the consultation process, the department is seeking comment in relation to these current exposure draft regulations rather than this specific issue.

It is intended that, in the first instance, these regulations will provide clarity about the scope of registration, advertising and information provision to clients that will address some of these concerns about regulating these procedures while further work is undertaken.

What next?
As these practices and the ways in which they are undertaken are continually evolving, following the remaking of the regulations, the department will examine appropriate legislative options to respond to these emerging issues. As part of this, the department will consider the roles and functions of the overarching regulatory and oversight mechanisms that operate in this domain. The department will also investigate whether existing systems and guidance could be strengthened to better support compliance and enforcement, provide clear avenues for recourse.
and to reinforce safeguards. The department is committed to continue investigating these matters further and consult with key stakeholders.

Objective of the regulations

The objective of the regulations is to create environments and behaviors that prevent infectious disease being transmitted within Victorian personal care and body art businesses through prescribing standards and requirements for these businesses.

These regulations contribute to achieving the highest attainable standard of public health and preventing disease and illness. There are various other regulators involved in regulating health and beauty services in Victoria, further information on these are in the appendix.

Requirements of the regulations

These regulations relate to:

- Divisions 3 and 4 of Part 6 of the Public Health and Wellbeing Act, including ss. 68 and 69, which provide for the following classes of businesses to be registered with local government:
  - beauty therapy, colonic irrigation, hairdressing, skin penetration, tattooing
  - other businesses, as prescribed in the regulations, that pose a risk to public health (currently no other businesses are prescribed)
- s. 235(c) of the Act, which allows for regulations to be made in respect of certain registered premises matters.

Businesses conducting services specified in the Act must be registered with the local council covering where the premises are located.

The regulations specify standards and requirements for these businesses, aiming to protect the public from the risk of contracting certain infectious diseases. The prescribed requirements relate to the condition of the premises, the condition of skin-penetrating equipment and other articles used to provide services, practitioner or operator’s personal hygiene, hand-washing facilities and information management. To help businesses to comply with the regulations, the department publishes the *Infection prevention and control guidelines for hair, beauty, tattooing and skin penetration businesses*.

The regulations exempt certain businesses because the infection control risk of these businesses is regulated through the professional standards maintained by health practitioners (such as doctors), health services regulations and other regulatory agencies. More details about the history of the regulation and the approach of other jurisdictions is outlined in the appendix.

Options

- Option 1: Retain the current regulations without changes
- Option 2: Amend some aspects of the current regulations
- Option 3: Remove or reduce the requirements of the current regulations

The options under consideration are constrained by the requirements in the Act. The Act requires certain classes of businesses to be registered for the purposes of managing the risks to public health.
Option 1: Retain the current regulations without changes

The regime provides oversight of infection control risks in registered premises and a mechanism to intervene in the event of an outbreak or evidence of noncompliance and increased risks to public health.

The regulations specify standards and requirements for these businesses, aiming to protect the public from the risk of contracting certain infectious diseases.

The regulations exempt certain businesses because the infection control risk of these businesses is regulated through other policy mechanisms described above. More details about the history of the regulation and the approach of other jurisdictions is outlined in the appendix.

Minimum standards to address infection control risks of registered premises

There are currently 11,244 registered premises within Victoria across 79 councils. Of these, 4,875 have ongoing registration, while the remaining 6,369 premises are subject to periodic renewal. The Act requires higher risk businesses including tattooing and body piercing services to renew their registration at least every three years however, most councils under powers in the Act require annual renewal and perform annual compliance inspections before approving renewals.

The current regulations require the operator of a registered premises to ensure it is kept in a clean, sanitary and hygienic condition. This is assessed and registered by the relevant local council.

Cleaning and sterilisation

The Health guidelines for personal care and body art industries provide advice on infection prevention and control measures recommended for these industries. The regulations stipulate:

- Any article must be clean before it is used on a person or sterilised if used for the purposes of skin penetration.
- Any articles that have penetrated the skin or been contaminated with blood must be destroyed or disposed of immediately or sterilised before reuse.

Sterilisation is defined in the regulations as being thoroughly cleaned and rinsed then sterilised through: steam at a specified pressure and for a specified length of time; dry heat at a specified temperature and time; or taken from a sealed container that bears a label stating that the contents are sterile.

Personal hygiene and hand-washing facilities

The regulations require that anyone undertaking activities requiring registration or similar must be in a ‘clean condition’ and not have any ‘exposed cuts, abrasions or wounds’ before carrying out the process. All staff within a registered premises must have easy access to hand-washing facilities. The department’s Infection control guidelines for hair, beauty and skin penetration industries provide detailed recommendations regarding hand hygiene including when it is appropriate to use an alcohol-based hand rub. These recommendations are guidance only.

Information to be provided and stored

As part of enhancing public awareness of infection risks, clients who receive tattooing, ear piercing, body piercing, or any other skin-penetration procedure must be provided with written information about the risk of infectious diseases associated with the process that is accurate and not misleading.

Businesses that provide tattooing or body piercing must ensure the name, address and telephone number of each client is recorded and stored at the premises for 12 months following the procedure. These record-keeping requirements are designed to support contact tracing in the event that a blood-borne illness is linked to the premises.
Reduced requirements for registrations of hair and makeup businesses

In 2014 the Public Health and Wellbeing Act was amended to allow businesses providing only hairdressing and temporary makeup application services to obtain ‘ongoing’ registration. This reflected the lower risk for infectious disease transmission associated with these businesses.

Hair and makeup businesses are still required to comply with health and hygiene standards in the regulations, and compliance is still monitored and enforced by local councils. However, the premises are registered only once before starting operations with subsequent inspections conducted by councils based on their assessment of risk.

Regulations provide oversight of infection control risks in registered premises

The regulations provide a broad range of powers for local government oversight such as the power of entry, and the power to enforce breaches.

For low-risk settings, this allows for local government regulators to intervene early to direct businesses to put in place the infrastructure and practices generally understood to decrease risk.

For higher risk settings, the additional requirement for periodic renewal of registration provides the opportunity for local government regulators to ensure these businesses are maintaining good practices, continuing the practice of sterilising or disposing of contaminated supplies, providing information and keeping records.

Regulations provide an avenue for remedial action following infection or outbreak

The regulations also provide a method of recourse that local government can use to have the Chief Health Officer exercise their powers to take actions to prevent public health risks. The removes the need for local governments to engage and justify intervention with the department.

Local governments are well placed to make decisions about infection control in their municipality. Environmental health officers have a strong understanding of local factors and have ongoing relationships with businesses and facilities through their municipalities.

Option 2: Amend some aspects of the current regulations

The department considers that, while the existing system provides an effective approach to controlling infection risks in registered premises, there are opportunities to clarify the requirements and meet emerging trends that may be risks to public health.

A total of 85 per cent of environmental health officers who responded to a stakeholder survey said improvements could be made to the registration process, in particular promoting the fact that councils assess infection control standards as part of registration, and this is not an endorsement of the practice or practitioner.

The measures listed in Table 2.1 are expected to require minor changes to practice, either to improve the ability of local government regulators to enforce good practice, or to align with contemporary infection control practices.

Table 2.1: Proposed regulatory amendments

<table>
<thead>
<tr>
<th>Proposed amendment</th>
<th>The purpose of the proposed amendment is…</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1 Create a penalty for false advertising in relation to registration</td>
<td>...to discourage the misuse of registration to imply that registration provides an assessment or endorsement of practices, or the quality of practices of a business beyond the scope of infection control.</td>
</tr>
<tr>
<td>2.2 Require a notice about the scope of registration be displayed (registration applies to infection control standards)</td>
<td>...to further clarify that registration is an endorsement of the businesses’ infection control standards and not of the standards or safety of the procedures undertaken by the business.</td>
</tr>
<tr>
<td>2.3 Simplify the requirements relating to access to hand-washing facilities and clarify</td>
<td>...to provide greater clarity regarding the intention of regulations.</td>
</tr>
<tr>
<td>Proposed amendment</td>
<td>The purpose of the proposed amendment is...</td>
</tr>
<tr>
<td>-----------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>that best practice infection control for personal service hygiene requires the use of drinking water.</td>
<td></td>
</tr>
<tr>
<td>2.4 Amend time and temperature specifications for dry heat sterilisation</td>
<td>… to align with national standards and provide more flexibility for businesses using dry heat sterilisation.</td>
</tr>
<tr>
<td>2.5 Require records of skin penetration (expansion from only tattooing and body piercing)</td>
<td>… to improve public health outcomes due to increased capacity to conduct contact tracing in the event of a blood-borne illness, or of an outbreak.</td>
</tr>
<tr>
<td>2.6 Amend the requirement to provide information to clients about the risks and safeguards associated with the process so that it is in a form approved by the Secretary. (tattooing, ear piercing, body piercing or other skin penetration process).</td>
<td>… to ensure that information provided to clients is accurate, consistent and not misleading.</td>
</tr>
<tr>
<td>2.7 Introduce infringement penalties for certain offences</td>
<td>… to address the gap between existing measures used to achieve compliance and to provide a proportionate response to address noncompliance (including public health risk) in certain situations.</td>
</tr>
<tr>
<td>2.8 Introduce exemption to registration for mobile cosmetic application services other than the principle place of business</td>
<td>… to minimise additional burden for low public health risk services that are already subject to requirement at the principal place of business.</td>
</tr>
</tbody>
</table>

2.1 Create a penalty for false advertising in relation to registration

Following consultation, stakeholders raised concerns about the advertising practices of registered premises. The concern is that some premises may mislead or imply that registration provides an assessment and endorsement of practices, or of the quality of practices beyond the scope of infection control.

There is currently a regulation relating to advertising and prescribed accommodation. It is proposed that a similar provision be made for registered premises, such that a proprietor or occupier of a registered premises must not state or cause to be stated in any advertisement, notice or sign issued or put up in relation to the business, that the premises were registered or approved for any class of business other than that set out on the certificate of registration. The penalty associated with a breach of this requirement is proposed to be 20 penalty units and be enforceable by local government. This will provide an appropriate disincentive, proportionate to the average size of the businesses in this industry.

2.2 Require a notice about the scope of registration be displayed (registration applies to infection control standards)

Further to this, it is proposed that a new regulation be included to require a notice to be displayed on the premises that sets out that the registration applies to infection control standards and not to the standards or safety of the procedures undertaken. This provides greater clarity for the consumer.

2.3 Clarify the requirements relating to access to hand-washing facilities

The regulations set out requirements for hand-washing facilities at registered premises – that they must be ‘easily’ accessible to staff. Consultation has identified that the term ‘easily’ is subject to interpretation and dispute. There have been anecdotal reports by local government that some businesses consider communal existing hand washing facilities to meet the requirements of easily accessible hand washing. In some cases, these facilities may be a long distance away from the activities of the registered premises, and it is unlikely these are sufficiently utilised as part of hygiene requirements.
While local government makes the assessment of accessible hand-washing facilities, considering the procedures and design of the premises, the department’s infection control guidelines recommend that hand washing facilities should be placed: where staff work and where procedures are performed; where staff clean equipment and instruments; and, in or close to toilets.

To provide greater clarity to operators and regulators, it is intended that the regulation relating to hand-washing facilities sets out simply that they are ‘accessible’. The department has also identified that best practice infection control should require the use of drinking water to be used for personal service hygiene. This is assumed to be already in place in most registered premises. These two requirements more closely align the intention of the regulations with their purpose.

2.4 Amend time and temperature specifications for dry heat sterilisation

As an addition to the process of dry heat sterilisation, it is proposed to align the regulations with current Australian Standards about sterilising reusable medical devices (for which sterilisation of instruments used in body piercing or tattooing premises must comply).

These changes are to require sterilisation to include (excerpt from regulations):

Thoroughly cleaned and rinsed, then sterilised using dry heat:

<table>
<thead>
<tr>
<th>Proposed</th>
<th>Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) at 160°C for a minimum of 120 minutes</td>
<td>at 160°C for a minimum of 120 minutes</td>
</tr>
<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>(ii) at 180°C for a minimum of 60 minutes</td>
<td></td>
</tr>
</tbody>
</table>

Complying with the Australian Standards for reprocessing medical devices (AS/NZS 4185 and AS/NZS 4187) is not specified in the regulations. However, particular physical parameters (time/temperature/pressure relationships) are specified. These must be met for sterilisation to be achieved. The change proposed to the dry heat sterilisation parameters will bring the regulations in line with those currently specified in the Australian Standards. As such, it will offer proprietors who use a dry heat sterilisation method another time and temperature specification that can be used for sterilising instruments and equipment.

2.5 Require records of skin penetration (expansion from only tattooing and body piercing)

Only tattooing and body piercing services must currently maintain client records. However, like tattooing, skin-penetration procedures also carry a risk of infectious diseases. Record keeping enables contact tracing to occur in the case of any incidence of disease.

Case study illustrating the use of records to determine a public health response

‘John’, 50-year old man, presented to his general practitioner with complaints of ‘dark’ urine. The general practitioner, suspecting possible liver disease, ordered blood tests. The results suggested a hepatitis C infection – a blood-borne virus transmissible via skin penetration.

The department was notified of the test results, as required by the Public Health and Wellbeing Regulations. Once informed, the department’s Communicable Disease Prevention Team carried out interviews with John to identify the possible risk factors that could have led to his infection. During the interview John revealed that he had received a tattoo in the previous year.

The Public Health and Wellbeing Regulations require premises providing tattooing services to maintain records of procedures performed on clients for a period of 12 months.

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4 Infection prevention and control guidelines for hair, beauty, tattooing and skin penetration industries, Department of Health and Human Services, April 2019
Environmental health officers visited the premises and determined that the premises had demonstrated infection prevention and control measures to satisfactory levels. The record keeping at the premises was also reviewed to ensure that, if it had been required, other clients could have been contacted.

It is intended that regulations be amended to also capture all businesses involving skin penetration. Ear-piercing and dry needling would be exempted from this because these businesses are considered lower risk skin-penetration practices adequately managed by existing infection control standards.

2.6 Amend requirement to provide information to clients about risks and safeguards associated with the process (such as skin penetration) so that it is in form approved by the Secretary

The regulations currently require that before the process, the proprietor or occupier at a registered premises that provides tattooing, ear piercing, body piercing, or other skin penetration process must provide written information to the client about the transmission of infectious disease. The proprietor or occupier must also take reasonable steps to ensure the information is not misleading. This information supports informed consent by the client.

It is intended that the regulations be amended to require the provision of written information to be in a form approved by the Secretary to the department. This will:

- ensure accurate information about the infection control risks and safeguards associated with the process is provided to clients
- provide clarity and certainty to proprietors and occupiers about the type of information that must be provided to clients
- ensure consistent messaging and information.

On the basis the proposed amendment is designed to ensure the provision of accurate information to clients, it is intended that the current requirement to ensure the information is not misleading is removed.

2.7 Introduce infringement penalties for certain offences

To address the gap between existing measures to achieve compliance (such as education and notices) and prosecution, it is intended that certain offences be enforced by way of an infringement notice, also known as infringement offences). This approach provides a proportionate and graduated response and a practical means of addressing noncompliance (including moderate levels of public health risk). For example, where lower level approaches have not been effective, and prosecution is not a proportionate response. Please see chapter 13 for a list of proposed infringement offences.

As is currently the case, education, routine monitoring and assisted compliance (making sure businesses are aware of, and understand, the requirements) will form the primary means of achieving compliance with the regulations.

2.8 Introduce exemption to registration for mobile cosmetic application services other than the principal place of business

This amendment will remove duplicative regulatory burden on mobile cosmetic application services, considered to be low risk services in the Act, that are already subject to registration requirements at the principal place of business. This exemption is based on the service not providing skin penetration or tattooing.

Option 3: Remove or reduce the requirements of the current regulations

In the absence of regulations, people would most likely continue to access services for hair, beauty and skin penetration in Victoria, using premises that advertise themselves to be competent. In the absence of minimum standards for registration, market forces (such as reputation to provide for customer referrals and repeat business), common law (such as negligence for poor-quality work resulting in loss) and after-the-fact interventions by the
department would continue to provide incentives for operators to maintain some form of standards to address infection control risks so that they may remain commercially viable.

There would also be a negative licensing system in effect where premises that are discovered to be a risk to public health are shut down, via the Chief Health Officer, to prevent further impacts on public health. For issues with certain service providers in a premises, there may be additional recourse options available through the Health Complaints Commissioner or the Australian Health Practitioner Regulation Agency.

There are increased risks to public health with operating such a system. These relate to reduced minimum standards, impeded oversight of ongoing operations and ineffective remedial actions. The department expects that such a system would lead to an increase in infectious diseases from these personal service businesses and that the department would have less ability to respond in the event of an infection or outbreak.

**Reduced minimum standards to address infection control risks of registered premises**

Infection control regulations have been in place in Victoria since the 1800s; for example, there was the Royal Commission into the Sanitary Condition of Melbourne in 1890. As such, it is expected that the general population would expect, and businesses would provide, minimum conditions for services in registered premises. However, over time standards often decrease, particularly for low-profit services where there would be a chance to increase profits by decreasing resources spent on best practice infection control processes.

The practice of cleaning items before use would most likely continue, as this is an observable requirement to maintain the reputation of a business conducted at a registered premises. However, requirements for articles intended for penetrating the skin may not be adequately followed because it is difficult to observe the sterilisation process and would require clients to adequately understand and assess this process. However, the department is aware that some businesses do demonstrate hygiene and cleanliness by opening sealed packets of supplies in front of clients before performing skin-penetration services. The regulations state that any article to be used for skin penetration must be sterile at the time of use and any article used that penetrates the skin or is contaminated with blood be disposed of immediately or sterilised before reuse. In a negative licensing situation, there would be reduced incentives to undertake thorough sterilisation, beyond what is observable to the client, and avoid intentionally destroying or disposing of materials that could be reused to reduce material costs.

The requirements for easily accessible hand-washing facilities may not be as closely followed. Putting hand-washing facilities in place requires additional upfront costs to modify a premises beyond a standard retail or commercial fit out, or the operator may not understand the public health risk and consider the risk of infection to be so minor that existing hand-washing facilities (such as communal bathroom washing facilities) can be used, in contradiction to the department's best practice guidelines.

**Impeded oversight of businesses providing services with infection control risks**

Without a mechanism for local government to enforce standards provided by the regulations (minimum standard requirements must be met to receive registration), there would be limited ability for a local government to intervene to halt poor infection control practices until after these practices have adversely impacted on several peoples' health and a connection had been made to the business as the source.

Without a standardised register against a premises, there is also the risk that certain operators could phoenix their operations (create a new company to continue the business of a company that has been liquidated to avoid paying liabilities). They would do this to continue conducting a business with poor infection control standards at the detriment of the broader public.

**Impeded or ineffective remedial action following infection or outbreak**

Without the direction to retain information records, there is a reduced ability to inform clients about a potential blood-borne disease transmission risk, or the spread of other diseases. Information records are an important part of the contact tracing process. Without these records, the department must rely on broader public communication methods such as requesting potential clients come forward or seek testing. Both are less effective methods than being able to directly contact the client.
Impact analysis

The section reviews the regulatory options described above and identifies the benefits from preventing disease and the costs to stakeholders to maintain and enforce the options described. For clarity, some technical details relating to the impacts are contained in the appendix sections at the end of the chapter.

These options will be assessed against four criteria:

- health impacts associated with the spread of infectious disease (weighted 40 per cent)
- potential economic impacts due to the reputation of registered premises (weighted 10 per cent)
- cost of the regulations on the industries regulated by registered premises (weighted 40 per cent)
- costs to local government to enforce the regulations (weighted 10 per cent).

These weightings reflect the importance of public health in the objectives of the Act and equally weight the benefits and costs. All options have been assessed against a base case of no regulations.

Impacts of option 1: Retain the current regulations without change

There is an inherent infectious disease risk associated with the services of registered premises and contribute to the burden of disease in Victoria. The potential impacts from infectious diseases are outlined below. Following this, the costs and impacts of the regulations are outlined.

Burden of disease

Infection prevention and control is important so that registered premises do not transmit a disease or infection to employees or clients. Infections result from cross-contamination, which happens when the equipment and the premises are not kept clean and/or sterile. The business must ensure that clients and employees are safe from infection. The cost of having good infection control practices is small compared with the cost of infecting someone. A theoretical example is outlined below.

The department estimates the average costs for skin infections for a patient in Victoria as follows:

- Treating a simple skin infection is estimated to cost $101 and occurs in about one in 1,000 services.
- Treating a moderate skin infection is estimated to cost $3,552 and occurs in about one in 10,000 services.
- Treating a severe skin infection is estimated to cost $13,734 and occurs in about one in 100,000 services.\(^5\)

The impact of skin infections could be higher if there are medical complications or if a person or carer is required to take time off work to recover from an infection.

The department does not have evidence of the actual rate of infection in registered premises. This a theoretical example of the potential burden of disease and how reducing regulations by removing minimum standards demonstrates the potential broader public health costs. Using generalised risk management ratings, the department estimates the likelihood of infection from a service at a registered premises to be 0.1 per cent for a simple skin infection, 0.01 per cent for a moderate skin infection and 0.001 per cent for a severe skin infection. This risk may be higher for services such as tattooing and colonic irrigation or lower for hairdressing and general nail salon services. Types of risks are outlined in the appendix.

The department’s estimates of the potential burden of disease in a single year are shown in Table 2.2.

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\(^5\) Details on how burden of disease has been calculated and assumptions can be found in Appendix: [Burden of disease](#)
Table 2.2: Burden of disease – theoretical example in Victorian context

<table>
<thead>
<tr>
<th>Item</th>
<th>Number or cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registered premises – both ongoing (low risk) and periodic (high risk)</td>
<td>11,244</td>
</tr>
<tr>
<td>Services per year (assume 10 per premise per day)</td>
<td>41,040,600</td>
</tr>
<tr>
<td>Number of simple skin infections (0.1 per cent chance per service)</td>
<td>41,041</td>
</tr>
<tr>
<td>Treatment cost</td>
<td>$101</td>
</tr>
<tr>
<td>Burden per year from a simple skin infection</td>
<td>$4,145,101</td>
</tr>
<tr>
<td>Number of moderate skin infections (0.01 per cent chance per service)</td>
<td>4,104</td>
</tr>
<tr>
<td>Treatment cost</td>
<td>$3,552</td>
</tr>
<tr>
<td>Burden per year from a moderate skin infection</td>
<td>$14,577,621</td>
</tr>
<tr>
<td>Number of severe skin infections (0.001 per cent chance per service)</td>
<td>410</td>
</tr>
<tr>
<td>Treatment cost</td>
<td>$13,734</td>
</tr>
<tr>
<td>Burden per year from a severe skin infection</td>
<td>$5,636,516</td>
</tr>
<tr>
<td>Total burden of skin infections from services</td>
<td>$24,359,238</td>
</tr>
<tr>
<td>Net present value</td>
<td>$24,359,238</td>
</tr>
</tbody>
</table>

Extrapolating this calculation over 10 years provides a net present value figure:

**Total net present value of potential burden of disease from registered premises in Victoria (over the next 10 years):** $243,908,822 over 10 years (in 2019 dollars)

The costs attributed to the current regulations (option 1) relate to efforts, above what would be undertaken in the base case (absence of regulations), to ensure cleanliness, sterilisation and that information is provided and stored. These costs can be broken down into:

- costs to industry to meet these requirements (Table 2.3)
- costs for local government to regulate registered premises
- fees paid by industry (a requirement of the Act).

An indicative impact assessment for industry to meet these requirements is as follows.

Table 2.3: Current regulations (option 1) – description of impact

<table>
<thead>
<tr>
<th>Risk</th>
<th>Type of registration</th>
<th>Requirement</th>
<th>Additional effort required above the base case (removal of regulations)</th>
<th>Estimated impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Both low and high risk</td>
<td>Ongoing and periodic</td>
<td>Provide prescribed information at registration of business.</td>
<td>All additional effort.</td>
<td>Minor time cost to fill out the registration form – 2 minutes to complete basic personal information at initial application.</td>
</tr>
</tbody>
</table>

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6 Details on how burden of disease has been calculated and assumptions can be found in the appendix: Burden of disease, and additional details in the technical appendix.
<table>
<thead>
<tr>
<th>Risk</th>
<th>Type of registration</th>
<th>Requirement</th>
<th>Additional effort required above the base case (removal of regulations)</th>
<th>Estimated impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Both low and high risk</td>
<td>Ongoing and periodic</td>
<td>Premises must be kept in a clean, sanitary and hygienic condition.</td>
<td>Nil.</td>
<td>Nil.</td>
</tr>
<tr>
<td>Both low and high risk</td>
<td>Ongoing and periodic</td>
<td>Easily accessible hand-washing facilities are available for use by staff.</td>
<td>Install hand-washing facilities if considered not to be accessible.</td>
<td>Majority of premises – expected negligible impact because hand-washing facilities are generally installed in the main business area. Minority of premises – installation of additional accessible hand-washing facilities. Cost dependent on existing plumbing and premises design.</td>
</tr>
<tr>
<td>Both low and high risk</td>
<td>Ongoing and periodic</td>
<td>Persons engaged in providing a service is in a clean condition (including hands) and has no exposed cuts, abrasions or wounds.</td>
<td>Nil.</td>
<td>Nil.</td>
</tr>
<tr>
<td>High risk</td>
<td>Periodic</td>
<td>Skin-penetrating equipment must be:</td>
<td>Provide evidence of equipment being sterile, disposed of and cleaned.</td>
<td>Majority of premises – expected negligible impact. Minority of premises – increased cost for equipment sterilisation, disposal and cleaning.</td>
</tr>
<tr>
<td>High risk</td>
<td>Periodic</td>
<td>Written information, that is not misleading, must be provided directly to the client about the transmission of infectious diseases associated with the process.</td>
<td>All additional effort.</td>
<td>All high-risk premises (6,369 premises as at February 2018) – production and provision of materials directly to client. Minor cost to print information and provide to client. Information expected to be sourced from the department or from accurate publicly available resources.</td>
</tr>
<tr>
<td>High risk</td>
<td>Periodic</td>
<td>Every client’s name, address and telephone number are recorded and stored at the premises for 12 months.</td>
<td>All additional effort.</td>
<td>All premises conducting tattooing must complete a client detail form and maintain a register. Minor time cost to record information into register.</td>
</tr>
</tbody>
</table>

The costs of administering the requirements of the Act and the regulations for registered premises are borne by local government, with partial cost recovery from the regulated industry.

Based on surveys of local government, the department estimates the minimum costs for the regulatory regime as:

**Total net present value minimum costs for local government to regulate registered premises (over the next 10 years): $15,529,633**

Fees for 12 local government municipalities across Victoria were sampled for both low and high-risk services, and the mid-point was used as the average fee. Numbers of registered premises were collected from a census of all local governments in Victoria. A further survey of environmental health officers estimated the time allocated to
inspections, renewals, compliance and public awareness activities. Data on wages and inflation is estimated using applicable sources from the Australian Bureau of Statistics.\(^7\)

The department estimates that approximately 89 per cent of these costs are recovered through fees on industry. Specific circumstances within a local government municipality will vary depending on the approach and decisions of the local government – the fees charged, and the intensity of regulation will vary across municipalities. The department estimates the fees charged for registered premises as:

**Total net present value of fees for registered premises, charged by local government and paid by industry (over the next 10 years): $13,974,881**

It is important to note that these fees are paid by industry as part of requirements in the Act to be registered by local government. That is, it is the Act that imposes this cost on business. These costs are not attributed to the regulations but are provided for reference and in recognition of the contribution of industry towards the functioning of the regulatory regime. Local government information was acquired using the same sources for the costs to local government. Data on wages and inflation is estimated using applicable sources from the Australian Bureau of Statistics. Industry-specific trend information was sourced from an industry research report by IbisWorld.\(^8\)

**Impacts of option 2: Amend some aspects of the current regulations**

The expected costs and benefits to clarify and amend the existing requirements (option 2) are shown in Table 2.4.

<table>
<thead>
<tr>
<th>Proposed amendment</th>
<th>Benefit</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2.1 Create a penalty for false advertising in relation to registration</strong></td>
<td>Improved public awareness of the scope of the regulations, so that customers understand registration is a requirement and not a marker of quality of procedures beyond the scope of infection control.</td>
<td>The cost of 20 penalty units upon breach of the regulations ($3304.40 as at 1 July 2019). The number of premises currently undertaking false advertising in relation to registration is currently unknown.</td>
</tr>
<tr>
<td><strong>2.2 Require a notice about the scope of registration be displayed (registration applies to infection control standards)</strong></td>
<td>Improved public awareness of the scope of the regulations, to further clarify that registration is a requirement and not a marker of quality of procedures beyond the scope of infection control.</td>
<td>Negligible cost to display a notice, intended to be rolled out upon renewal of premises at the discretion of local government.</td>
</tr>
<tr>
<td><strong>2.3 Simplify the requirements relating access to hand-washing facilities and clarify that best practice infection control for personal service hygiene requires the use of drinking water.</strong></td>
<td>Better hygiene practices by businesses.</td>
<td>Majority of premises – expected no impact. Minority of premises – installation of accessible hand-washing facilities. Cost dependent on existing plumbing and premises design and functions, estimated at between $500 to $2000.</td>
</tr>
<tr>
<td><strong>2.4 Amend time and temperature specifications for dry heat sterilisation</strong></td>
<td>Improved standards for infection control, in line with national standards and more flexibility for businesses using dry heat sterilisation.</td>
<td>Reduces costs for businesses using dry heat processes for sterilisation.</td>
</tr>
</tbody>
</table>

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\(^7\) More information about how the costs for government to regulate registered premises were calculated can be found in Appendix: Cost for government.

\(^8\) Details on how fees for industry have been calculated can be found in Appendix: Cost for industry.
<table>
<thead>
<tr>
<th>Proposed amendment</th>
<th>Benefit</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2.5 Require records of skin penetration (expansion from only tattooing and body piercing)</strong></td>
<td>Improved public health outcomes due to increased capacity to conduct contact tracing in the event of a blood-borne illness, or of an outbreak.</td>
<td>Cost for all premises conducting skin penetration – complete a client detail form and maintain a register. Minor time cost to record information into the register, estimated to be 2 minutes per client to record basic personal information. Potential privacy impacts for customers who want to use these services without providing these client details.</td>
</tr>
<tr>
<td><strong>2.6 Amend the requirement to provide information to clients about the risks and safeguards associated with the process so that it is in a form approved by the Secretary. (tattooing, ear piercing, body piercing or other skin penetration process).</strong></td>
<td>Ensure the provision of accurate information about the transmission of infectious disease. This may save some businesses from designing their own form.</td>
<td>Negligible cost to provide information in a form approved by the Secretary to clients.</td>
</tr>
<tr>
<td><strong>2.7 Introduce infringement penalties for certain offences</strong></td>
<td>Addresses the gap between existing measures to achieve compliance. Provides proportionate response and a practical means of addressing noncompliance (including public health risk) and encouraging compliance.</td>
<td>Proprietors who receive an infringement notice will incur the cost burden. However, is expected that: • infringements can be used where there are compelling grounds, such as where lower level approaches have not been effective or moderate levels of risk • compliance will continue to be primarily achieved through education, compliance monitoring and assisted compliance. The department expects that the quantum of noncomplying proprietors that would receive infringements is expected to be relatively low.</td>
</tr>
<tr>
<td><strong>2.8 Introduce exemption to registration for mobile cosmetic application services other than the principal place of business</strong></td>
<td>Reduce burden for low public health risk services that are already subject to requirement at the principal place of business.</td>
<td>Reduced regulatory burden for low risk registered premises that conduct mobile cosmetic application services, in addition to services at their principal place of business.</td>
</tr>
</tbody>
</table>

The total net present value of fees and local government costs are expected to be broadly similar to option 1. Registered premises without accessible handwashing facilities and registered premises that conduct skin penetration without recording client details would incur additional costs. It is not expected that costs to local government will change significantly.

**Impacts of option 3: Remove or reduce the requirements of the current regulations**

There are increased risks to public health with operating such a system. These relate to reduced minimum standards, impeded oversight of ongoing operations and ineffective remedial actions. The department expects that such a system would lead to an increase in infectious diseases from these businesses and that the department would have less ability to respond in the event of an infection or outbreak.
Reduced minimum standards to address infection control risks of registered premises

Infection control regulations have in place in Victoria since the 1800s; for example, there was the Royal Commission into the Sanitary Condition of Melbourne in 1890. As such, it is expected that the general population would expect, and businesses would provide, minimum conditions for services in registered premises. However, over time standards often decrease, particularly for low profit margin services where there would be a chance to increase profits by decreasing resources spent on best practice infection control processes.

The practice of cleaning items before use would most likely continue, as this is an observable requirement to maintain the reputation of a business conducted at a registered premises. However, requirements for articles intended for penetrating the skin may not be adequately followed because it is difficult to observe the sterilisation process and would require clients to adequately understand and assess this process. However, the department is aware that some businesses do demonstrate hygiene and cleanliness by opening sealed packets of supplies in front of clients before performing skin-penetration services. The regulations state that any article to be used for skin penetration must be sterile at the time of use and any article used that penetrates the skin or is contaminated with blood be disposed of immediately or sterilised before reuse. In a negative licensing situation, there would be reduced incentives to undertake thorough sterilisation, beyond what is observable to the client, and avoid intentionally destroying or disposing of materials that could be reused to reduce material costs.

Impeded oversight of businesses providing services with infection control risks

Without a mechanism for local governments to enforce standards provided by the regulations (minimum standard requirements must be met to receive registration), there would be limited ability for a local government to intervene to halt poor infection control practices until after these practices have adversely impacted on several peoples’ health and a connection had been made to the business as the source.

Impeded or ineffective remedial action following infection or outbreak

Without the direction to retain information records, there is a reduced ability to inform clients about a potential blood-borne disease transmission risk, or the spread of other diseases. Information records are an important part of the contact tracing process. Without these records, the department must rely on broader public communication methods such as requesting potential clients come forward or seek testing. Both are less effective methods than being able to directly contact the client.

As most premises have already fitted hand-washing facilities, removing this regulation may gradually see new businesses not install hand-washing facilities in line with best practice infection control practices.

Over time, the absence of regulations would adversely contribute to poor public health outcomes in the population. Hand hygiene is considered one of the most important infection control measures for reducing the spread of infection. While removing the regulations may not immediately increase public health outcomes, it would be expected to gradually result in worse health outcomes through a greater burden of illness from infections, gastroenteritis and other diseases associated with poorer hygiene and sanitation. This would be expected to have cost impacts for the population through increased expenditure for health costs and lost output from absences from being unable to work. At the extreme end of the scale, there would also be increased outbreaks of illness in the community that may require intervention by the Chief Health Officer and the shutdown of specific businesses until hygiene and sanitation can be improved.

Avoided economic impacts from an outbreak attributed to a registered premises

The benefits of avoided outbreaks are expected to contribute to avoided reductions in economic activity due to the reputation impacts of outbreaks. The hairdressing and beauty services industry faces a high level of competition due to the large number of existing businesses. These businesses compete on price, service, reputation and loyalty. There is anecdotal evidence that there are businesses that seek registration by local government to provide clients with a signal that the business is adhering to minimum standards of service relating to infection control and hygiene.
Conversely, actions by government (either state or local government) regarding outbreaks associated with a registered premises can have a negative economic impact. Given the variability of the practices of individual businesses, premises fit-out and services provided, an estimate is unlikely to provide an accurate representation of the economic costs for a registered premises associated with an outbreak; however, these costs are expected to be relatively high for the business and local community. Other similar businesses may also be affected if public trust in registered premises is reduced.

For example, in recognising the potential economic impacts, the City of Melbourne employs several environmental health officers to respond to potential outbreaks (including food safety). This highlights the potential reputational impacts and subsequent loss of tourism for the City of Melbourne if the municipality was associated with a high number of outbreaks.

**Lower costs for registered premises**

As noted above, registered premises spend upwards of $1.5 million per year complying with the regulations. In the absence of regulations, the department expects that most would maintain similar standards; however, a minority of registered premises may opt for lower costs by reducing these standards. There would be fewer costs associated with registration and reporting.

Option 3 (removing all regulation) would most likely see increased outbreaks attributed to registered premises and consequently increased economic impacts (decreased avoided economic impacts). Options 1 and 2 are expected to decrease economic impacts (increase avoided economic impacts).

**Proposed approach**

In option 3 (the base case), removing regulations relating to registered premises is expected to have a negative impact in Victoria by increasing the burden of disease from registered premises. Adopting the base case option will potentially:

- negatively impact on the Victorian population by increasing the likelihood of infections from services in registered premises
- negatively impact on the Victorian economy by increasing the likelihood of an outbreak of infection from services in registered premises in a population centre, causing closure of businesses and potentially affecting the reputation of similar businesses across Victoria
- positively impact on the operations of registered premises in the short term because there is greater flexibility to reduce servicing and hygiene standards (within a margin that is hard to identify by consumers). It would also positively impact on local government in the short term it would have greater flexibility to allocate other services instead of the regulation of registered premises (however, local government recover a majority of regulatory costs through registration fees, this is outlined in the appendix).

In options 1 and 2, both maintaining the current regulations and amending the regulations would be expected to have a positive impact on the health outcomes of the Victorian population by reducing the likelihood of infections from services in registered premises from poor hygiene and cleanliness practices. By reducing ambiguity, option 2 is expected to be marginally better at improving health outcomes and improving hygiene and cleanliness practices. Both would have a positive impact on Victoria by providing regulatory oversight mechanisms to reduce the economic impacts of an outbreak and mitigate the potential reputation impacts for other similar businesses.

However, options 1 and 2 would have a negative impact the operations of registered premises, which in the absence of regulations may choose less rigorous cleaning and hygiene practices. Option 2 is expected to marginally increase costs for registered premises relative to option 1 due to increased requirements for certain skin penetration operations and a minority of operators that may need to install additional accessible handwashing facilities.

As outlined in the impact assessment, the following criteria are used to assess the options:
• health impacts associated with the spread of infectious disease (weighted 40 per cent)
• potential economic impacts due to the reputation of registered premises (weighted 10 per cent)
• cost of the regulations on the industries regulated by registered premises (weighted 40 per cent)
• costs to local government to enforce the regulations (weighted 10 per cent).

These weightings reflect the importance of public health in the objectives of the Act and equally weight the benefits and costs. Multiplying the scores (−10 to +10) by the weightings gives a total possible score between −10 and +10 for each option (see Table 2.5).

Table 2.5: Analysis of options regarding regulating registered premises

<table>
<thead>
<tr>
<th>No.</th>
<th>Option</th>
<th>Health impacts Score / weight</th>
<th>Potential economic impacts Score / weight</th>
<th>Cost for registered premises Score / weight</th>
<th>Cost for local government Score / weight</th>
<th>Total (range: −10 to +10)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Retain the current regulations without changes</td>
<td>+6 / 0.4</td>
<td>+5 / 0.1</td>
<td>−4 / 0.4</td>
<td>−2 / 0.1</td>
<td>1.1 (2.4 + 0.5 + −1.6 + −0.2)</td>
</tr>
<tr>
<td>2</td>
<td>Amend the regulations</td>
<td>+8 / 0.4</td>
<td>+5 / 0.1</td>
<td>−5 / 0.4</td>
<td>−2 / 0.1</td>
<td>1.5 (3.2 + 0.5 + −2 + −0.2)</td>
</tr>
<tr>
<td>3</td>
<td>Base case – remove or reduce regulations</td>
<td>0 / 0.4</td>
<td>0 / 0.1</td>
<td>0 / 0.4</td>
<td>0 / 0.1</td>
<td>0</td>
</tr>
</tbody>
</table>

The department expects that, in the absence of regulations, the burden of disease would increase under option 3. Option 1 would maintain the existing level of disease burden, and option 2 would be expected to reduce the disease burden. Due the devolved nature of this regulation as well as the inability to attribute population health disease burden to specific registered premises, the department does not have accurate estimates of the level of improvement that option 2 would provide. However, option 2 is expected to improve clarity of the requirements for registered premises and the public and increase the regulatory burden in certain circumstances.

The department’s preferred option is option 2: Amend some aspects of the current regulations.

This maintains the structure of the existing system, with strengthened requirements and amendments to improve the clarity and intention of the regulations.

This option builds on and enhances the current regulatory framework regarding registered premises. The department considers that the public health benefits of infection control and the avoided economic impact and public confidence contribute positively to Victoria.
Appendix

Risks associated with each type of registered premises

Beauty therapy procedures

Infections such as staphylococcal, herpes virus and fungal infections may be spread during beauty therapy procedures that do not involve skin penetration such as:

- facials and cosmetic application—reusing cloths or equipment and not cleaning equipment in between clients can lead to skin infections
- hair removal – reusing equipment can spread infections; there’s potential for blood-borne viruses if blood is drawn
- eyelash extensions and tinting – failure to use an aseptic non-touch technique may increase the risk of conjunctivitis
- manicures and pedicures – poorly cleaned, disinfected or sterilised instruments or equipment can lead to fungal, yeast and bacterial infections. Foot spas used in pedicures have been associated with a bacterial outbreak of non-tuberculous mycobacteria.

There is potential for cross-contamination between clients if body fluids are captured on equipment and not effectively removed. It is essential that staff understand the principles of infection prevention and control to ensure diseases are not spread during the procedures they undertake. There have been cases of *Staphylococcus aureus* after receiving fake eyelashes and an outbreak of cutaneous infections caused by *Mycobacterium fortuitum* after using whirlpool foot baths for pedicures.

Beauty therapy case study

<table>
<thead>
<tr>
<th>A mother contacted a council regarding her daughter, who had had eyelash extensions. Over the weekend, a rash appeared around the eyes, and on Monday she was diagnosed with a bacterial skin infection.</th>
</tr>
</thead>
<tbody>
<tr>
<td>The council’s environmental health officer inspected the premises, finding:</td>
</tr>
<tr>
<td>• The processes did not allow staff to access a hand wash basin.</td>
</tr>
<tr>
<td>• The equipment washing area was unclean.</td>
</tr>
<tr>
<td>• The technician’s process was unsatisfactory.</td>
</tr>
<tr>
<td>• There were poor infection control procedures.</td>
</tr>
<tr>
<td>• The technician’s process may have contaminated the eyelash before it was applied.</td>
</tr>
<tr>
<td>Following the inspection, the environmental health officer determined that enforcement action was needed. The business was prevented from undertaking its eyelash application process until the environmental health officer were satisfied that infection control procedures were in place.</td>
</tr>
<tr>
<td>The environmental health officer worked with the business to ensure it complied and developed long-term improvements in its procedures.</td>
</tr>
<tr>
<td>The environmental health officer continued to have ongoing regular visits to the premises to ensure compliance with the Public Health and Wellbeing Regulations.</td>
</tr>
<tr>
<td>If regulations regulating registered premises were not in place, the council would not have had powers to enter, inspect, or to provide directions to remedy the infection control issues in the premises.</td>
</tr>
</tbody>
</table>

Tattooing and other skin penetration

Tattooing and other skin-penetration procedures (body piercing, tongue splitting, scarification, beading) all have the potential to draw blood and risk transmission of hepatitis B, C and HIV through blood-to-blood contact.

There are no public health reporting requirements for infectious complications associated with tattooing. The most common complications resulting from tattooing are skin infections and allergic reactions to the ink. In a systemic review of tattoo-associated bacterial infections bacterial contamination of tattoo inks, inappropriate hygiene
measures within tattoo parlours and non-medical wound care were identified as the major risk factors for tattoo-related infections. Contaminated tattoo ink can cause illness and was linked to an outbreak of skin infections caused by *Mycobacterium chelonae*, a non-tuberculous mycobacterium, in New York.

The tattoo removal process has potential for local allergic reactions, paradoxical darkening of tattoos and surface changes on the skin such as scarring.

**Hairdressing**

Although the risk is minimal, unsafe or unhygienic practices such as not cleaning equipment in between clients can lead to skin infections on the scalp, face and neck such as impetigo (‘school sores’) and fungal infections such as tinea capitis and ringworm. Using contaminated razors and scissors poses a small risk of blood-borne virus transmission.

**Colonic irrigation**

Colonic irrigation involves cleansing the entire colon from the rectum to the caecum through administering water, herbal solutions, enzymes or other substances. Clients are at risk of infection due to: inadequately cleaned and disinfected or sterilised equipment; equipment failures relating to heating and backflow of fluids; and physiological impacts.

**History of regulation**

**Regulatory powers administered by local government**

Victoria’s 79 local councils monitor and enforce health and hygiene standards on registered premises to prevent and control infectious disease risk. In early 2018 there were 11,244 registered premises under the Public Health and Wellbeing Act.

Environmental health officers within local councils carry out measures to protect public health, including administering and enforcing relevant legislation. The role entails a broad spectrum of public health issues including food safety, public health nuisances and implementing disease control. Many of these measures to protect public health are enforced by the Public Health and Wellbeing Act and the Public Health and Wellbeing Regulations.

Councils generally inspect premises for compliance before issuing or renewing registration. Councils have the power to issue, refuse, renew, suspend or cancel registration and authorised officer powers to enter, inspect and close premises and to take samples.

**Infection control standards in registered premises**

Standards and requirements for registered premises are set out in the regulations for the:

- condition of a premises
- condition of equipment (including sterilisation requirements)
- personal hygiene of staff (no exposed cuts, abrasions or wounds)
- use and accessibility of hand-washing facilities
- provision of infectious disease information to clients (skin-penetration businesses only)
- retaining of client records (tattooing and skin-penetration businesses only) – details such as names and addresses must be available in case clients need to be followed up.

**Infection control guidelines**

The Department of Health and Human Services’ *Infection control guidelines for hairdressing, beauty therapy and skin penetration businesses* provide guidance for the sector. The guidelines assist the hair care, beauty tattooing and skin-penetration industries to comply with the Public Health and Wellbeing Act and associated regulations.
It is not intended to replace industry-specific guidelines or codes of practices and does not cover every new treatment but provides general infection control advice. The guidelines should be used as a guide to comply with hygiene standards for premises and as a reference tool for people associated with the industry, including environmental health officers in local government.

Figure 2.1 shows the current regulatory regime for registered premises in Victoria.
Figure 2.1: The current regulatory regime for registered premises in Victoria

Premises of certain business must be registered with Council

Higher Risk Services
- Skin penetration
- Tattooing
- Beauty therapy
- Colonic irrigation

Lower Risk Services
- Application of cosmetics
- Hairdressing

Additional standards for skin penetration, tattooing or body piercing
- Skin penetrating equipment must be:
  - sterile
  - disposed or sterilised if contaminated
  - cleaned before use
- Written information, that is not misleading, must be provided directly to the client about the transmission of infectious diseases associated with the process
- Every client’s name, address and telephone number is recorded and stored at the premises for 12 months

Standards
- Premises must be kept in a clean, sanitary and hygienic condition
- Easily accessible hand washing facilities are available for use by staff
- Persons engaged in providing a service is in a clean condition (including hands) and has no exposed cuts, abrasions or wounds

Register on a periodic basis (no longer than 3 years) unless the business is prescribed as an exempt business

Register on an ongoing basis
**Scope of infection control standards for registered premises**

Many new services offered in the beauty industry increasingly blur the line between 'beauty therapy' and health treatments. For example, many hairdressing and beauty services have expanded to include laser hair removal, microdermabrasion, chemical peels and dermal fillers. Details about emerging practices and overlaps within the regulatory environment include body modification, medical supervision and lasers.

**Body modification**

Evolving practices of businesses increases public health risk and individual health risk due to the lack of regulation of these practices. The current regulations focus on the infection control risks, not the risks associated with the procedures themselves.

Reflecting on the 2018 survey of environmental health officers, respondents reported receiving only eight enquiries regarding emerging procedures (body modification and platelet risk plasma therapy, for example). Officers provided data that only five such premises were registered in 2018.

**Medical supervision and the interaction with registered premises**

Some practices within these industries are undertaken by registered healthcare professionals and are therefore regulated by professional bodies outside of the public health framework. Many procedures, however, are performed by people who are not regulated by certified professional bodies. Additionally, developments in information technology have resulted in some providers implementing medical supervision in an entirely remote capacity via online communication tools, limiting the extent of effective input by medically trained staff.

Further, some salons and 'skin clinics' have relationships with local plastic surgeons, general practitioners and dermatologists to assist in providing these procedures; for example, Botox injections. This trend can result in a complex intersection of regulations and regulatory authorities and cause confusion about roles, responsibilities and requirements.

**Lasers used for health services**

In Victoria there are no requirements for laser operators to be trained, and those who are, have often only completed short courses in laser safety that are run by the manufacturer of the laser device as a prerequisite for liability cover. Under the regulations, local government environmental health officers are assessing the infection control risk of laser and intense pulsed light treatment that is assessed. Local government staff are not trained or qualified to assess radiation safety or risk. This can cause confusion for the public because there is often an assumption that if a premises is registered with council, then all risks relating to procedures have been assessed by that council.

Lasers and intense pulsed light treatments have been used for cosmetic purposes for decades. Due to initially high setup costs the practice was predominately available through medical practitioners, but recent technological advancements have seen prices for basic machines drop significantly. Consequently, beauty therapy premises have been entering the market and using laser intense pulsed light for a widening range of treatments. This change in business dynamics has coincided with an increased demand for tattoo removal services, resulting in the proliferation of specialised laser clinics.

**Approaches in other Australian jurisdictions**

While sharing some similarities, the approach to registered premises differs significantly between the states.

**New South Wales**

Only skin-penetration businesses are required to notify the local government authority for the area in which the premises are located. These include acupuncture, tattooing, ear-piercing, hair removal or the penetration of a mucous membrane) and includes any procedure declared by the regulations to be a skin-penetration procedure. This does not include:
any procedure carried out by a registered health practitioner or by a person acting under the direction or supervision of a registered health practitioner, in the course of providing a health service

any procedure declared by the regulations not to be a skin-penetration procedure

hairdressing and other body decorating and grooming practices that do not deliberately pierce the skin.

Colonic lavage is declared to be a skin-penetration procedure, while laser hair removal is declared not to be a skin-penetration procedure.

**Queensland**

Queensland separates ‘higher risk’ and ‘non-higher risk’ personal appearance services. Higher risk personal appearance services include body piercing, implants, scarification, tattooing and tattoo removal.

Non-higher risk personal appearance services include ear and nose piercing (with a gun), hairdressing, beauty therapy (facial or body treatments, application of cosmetics, manicure or pedicure, application or mending artificial nails and epilation including by electrolysis or hot or cold wax).

Higher risk personal appearance services must register with the local council and pay a fee, while non-higher risk personal appearance services are only required to notify council within 30 days of opening. All businesses must comply with relevant legislation. Queensland requires operators undertaking higher risk activities to have an infection control qualification.

Lasers are regulated under the *Radiation Safety Act 1999*.

**Western Australia**

Similar to New South Wales, in Western Australia, businesses proposing to perform skin-penetration procedures are required to notify the local government of their registered trading name and business address, and the types of procedures they are planning to perform. Skin penetration in Western Australia is defined as a procedure that incorporates the skin being cut, punctured, torn or shaved or a mucous membrane being cut, punctured or torn including tattooists, body piercers, acupuncturists and beauty therapists performing waxing, shaving, tweezing and electrolysis. Medical practitioners, dentists, a person under the supervision of a medical practitioner, podiatrists, nurses and any others registered with the Australian Health Practitioner Regulation Agency are exempt from registration with council. The *Radiation Safety (General) Regulations 1983* are used to regulate lasers.

**South Australia**

Unlike Victoria, there are no provisions in the South Australian legislation that require certain premises to be registered due to public health concerns. Instead, there is a general duty under the *South Australian Public Health Act 2011* to prevent or minimise any harm to public health resulting from business activities. Some South Australian councils require certain business to be registered; others do not. There does not appear to be a consistent approach. The *Guideline on the safe and hygienic practice of skin penetration* assists relevant authorities and operators of premises where the practice of skin-penetration procedures such as acupuncture, tattooing, micropigmentation, body piercing, waxing, electrolysis, manicures, pedicures and other hair removal/beauty therapies are undertaken. For the purposes of this guideline, skin-penetration practices may include any process, whether intentionally or otherwise, that involves the shaving, piercing, cutting, puncturing or tearing of the skin or a mucous membrane.

**Tasmania**

Under the *Public Health Act 1997*, the director, by public notice, may require that any premises or class of premises in which a ‘specified public health risk activity’ (any activity that may result in disease transmission) is carried out must be registered. An application to register can be lodged with the relevant council and accompanied with the applicable council fee. In addition to premises registration, operators are required to obtain a licence from council. There is no minimum competency required to obtain a licence. Using a laser for hair removal or skin rejuvenation is regulated under the *Radiation Protection Act 2005*. There are guidelines for tattooing, acupuncture and ear and
body piercing, with enforceable provisions under Public Health Act 1997 as well as recommendations and
 guidance.

**Other regulators involved in regulating health services in Victoria**

When responding to public complaints, or as part of the inspection process, environment health officers may
conclude that the issue is out of the scope of the Public Health and Wellbeing Regulations. During 2018, council
officers referred matters to a number of agencies including the following:

**Victoria Police**

There are additional legal requirements to protect young people in relation to tattooing, scarification, tongue
splitting, branding, beading and body piercing. Victoria Police enforces the Summary Offences Act 1966. It states:

- A person must not perform tattooing, scarification, tongue splitting, branding, beading and intimate body piercing
  on people under the age of 18 years.
- A body piercer must not perform non-intimate body piercing on someone under the age of 16 years without the
  consent of a parent or guardian.
- A body piercer must not allow a person under the age of 16 years to perform intimate body piercings.

**Australian Health Practitioner Regulation Agency (AHPRA)**

AHPRA’s operations are governed by the Health Practitioner Regulation Law, and its role is to support the 15
National Boards responsible for regulating health professions. The primary role of the National Boards is to protect
the public by setting standards and policies all registered health practitioners must meet, including for infection
control.

**Health Complaints Commissioner**

The Health Complaints Commissioner is an independent and impartial service that resolves complaints about
health care and the handling of health information in Victoria. The Health Complaints Commissioner can also
investigate matters and review complaints to help health service providers improve the quality of their service. Any
health service provider, whether it is an organisation or person, can be investigated by the Health Complaints
Commissioner. This includes both registered and ‘general’ or ‘non-registered’ providers. These providers can also
be required to be registered under the Public Health and Wellbeing Regulations.

General health service providers are those who are not legally required to be registered under national health
practitioner regulation law. The ‘general code of conduct’ became Victorian law on 1 February 2017. The code sets
standards for general health providers and extends to registered providers operating outside their area of
registration. Any breach of this code may be grounds for a complaint to the Health Complaints Commissioner and a
formal investigation. The Health Complaints Commissioner can issue prohibition orders including interim
prohibitions order pending full investigation. Prohibition orders in force in other states and territories will be
recognised in Victoria.

**Consumer Affairs Victoria**

Consumer Affairs Victoria is responsible for enforcement and compliance with consumer laws in Victoria.

Under the Australian Consumer Law, certain consumer guarantees apply automatically, including that a service will
be performed with due care and skill. If it is not, the consumer is entitled to a remedy, usually a replacement or
refund. The type of remedy depends on whether the problem is classified as ‘major’ or ‘minor’. A problem must be
‘major’ or unable to be fixed before the consumer can ask the business for a refund. It is a ‘major problem’ if a
service is not performed with due care and skill and either:

- a reasonable consumer would never have bought the service had they known beforehand about the problem,
  (for example, paid for acrylic nails if they knew they would fall off in half an hour)
• the service has not achieved what the service is normally supposed to do, and this problem cannot be fixed quickly or easily, or
• the supply of the service has created an unsafe situation.

If a consumer has an issue with the quality of a service provided from a registered premises or safety issues unrelated to infection control or health service provision, Consumer Affairs Victoria may be the appropriate regulator.

Additional regulators that environmental health officers have referred to include WorkSafe Victoria, the Environment Protection Agency and the Dispute Settlement Centre of Victoria.

Burden of disease

The regulations aim to reduce the public’s exposure to infectious diseases described in the ‘Problem analysis’ section above. All people potentially harbour infectious micro-organisms. As such, it must be assumed that all blood and body fluids/substances are potentially infectious.

The estimated disease burden to Victoria’s medical system, from the status quo regulations relating to registered premises, from infections arising in registered premises is estimated at $24,359,238 per year.

Standard precautions are the work practices required to achieve a basic level of infection prevention and control. Standard precautions aim to minimise and, where possible, eliminate the risk of infection, particularly those caused by blood-borne viruses.

The following are theoretical examples of the types health interventions that would be required if someone was to need treatment for a skin infection from a registered premises. These costs are not exhaustive and are approximate costs for the health system, which may be borne by the individual or taxpayers more broadly. The costs are generalised; the costs for an individual would reflect their personal circumstances, the treatment required, and other related factors including government subsidies. Table 2.6 represents the estimated costs for burden of disease in the theoretical status quo.

Table 2.6: Estimated costs for burden of disease

Simple skin infection

<table>
<thead>
<tr>
<th>Type of medical intervention</th>
<th>Quantity</th>
<th>Per unit cost$</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pharmaceuticals</td>
<td></td>
<td>$25.78</td>
<td>$25.78</td>
</tr>
<tr>
<td>General practitioner visit</td>
<td>2</td>
<td>$37.60</td>
<td>$75.20</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>$100.98</td>
</tr>
</tbody>
</table>

Moderate skin infection

<table>
<thead>
<tr>
<th>Type of medical intervention</th>
<th>Quantity</th>
<th>Per unit cost</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pharmaceuticals</td>
<td></td>
<td>$51.45</td>
<td>$77.23</td>
</tr>
<tr>
<td>General practitioner visit</td>
<td>2</td>
<td>$37.60</td>
<td>$75.20</td>
</tr>
<tr>
<td>Public hospital admission – cellulitis without catastrophic or severe complications (same day)$\textsuperscript{10}</td>
<td>1</td>
<td>$3,400</td>
<td>$3,400.00</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>$3,552.43</td>
</tr>
</tbody>
</table>

$\textsuperscript{9}$ [Pharmaceutical Benefits Scheme](http://www.pbs.gov.au); [Medicare Benefits Schedule](http://www.mbsonline.gov.au), Department of Health, Australia

Severe skin infection

<table>
<thead>
<tr>
<th>Type of medical intervention</th>
<th>Quantity</th>
<th>Per unit cost</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pharmaceuticals</td>
<td></td>
<td>$73.56</td>
<td>$121.45</td>
</tr>
<tr>
<td>General practitioner visit</td>
<td>3</td>
<td>$37.60</td>
<td>$112.80</td>
</tr>
<tr>
<td>Public hospital admission – cellulitis with catastrophic or severe complications (5 days)</td>
<td>1</td>
<td>$4,500</td>
<td>$4,500.00</td>
</tr>
<tr>
<td>Public hospital admission – other skin grafts and debridement procedures with complications (5 days)</td>
<td>1</td>
<td>$9,000.00</td>
<td>$9,000.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>$13,734.25</strong></td>
</tr>
</tbody>
</table>

Note that these do not reflect individual patient experiences, and the disease burden will depend on several factors. Also, these cost estimates do not reflect the complete burden of disease associated with lost income from absences from work, as well as possible reduced quality of life while managing the impact over a prolonged period.

Applying these costs to a theoretical example of possible infection rates as a proportion of total services by registered premises in Victoria provides an indication about the potential burden of disease that is mitigated by enforcing minimum standards.

**Total net present value of potential burden of disease from registered premises in Victoria (over the next 10 years): $243,908,822 over 10 years (in 2019 dollars)**

This is calculated using the following assumptions:

- Number of registered premises increases by 1 per cent per year.
- Assumes each premises provides 10 services each day each year (in practice this may be higher for low-risk premises and lower for high-risk premises and the number of services per day would depend on the type of service, consumer demand and the number of staff).
- Chance of simple skin infection per service: 0.1 per cent chance per service (one in 1,000 services).
- Chance of moderate skin infection per service: 0.01 per cent chance per service (one in 10,000 services).
- Chance of severe skin infection per service: 0.001 per cent chance per service (one in 100,000 services).
  - Note the percentage probability assumed here does not reflect actual practices at registered premises in Victoria and is used for theoretical purposes only. This also assumes the same chance of infection per service apply to both low and high-risk registered premises (in practice this may be lower for low-risk premises and higher for high-risk premises).
- Assumes no improvement in practice or technology, and that the cost of treatment per year only increases by the rate of inflation (assumed at 3 per cent per year).

**Costs for industry to implement the regulations**

There are costs for industry to adhere to the regulations. These relate to the requirements relating to the requirements for cleanliness, sterilisation, information provision and record keeping. Implementing each of these depends on the local government requirements and the class of registered premises.

The estimated total cost to Victorian businesses for registration fees per year is $1,395,675 (10-year projection is outlined further below).

Costs are assessed over a 10-year period because the regulations would sunset in 2029. All figures are expressed in 2019 dollars, with future costs discounted by 4 per cent per annum to determine their value in 2019 dollars.
Size of industry

The number of registered premises is estimated at 11,244. Of these, 4,875 are ongoing registrations (hairdressers and low-risk health operations), and 6,369 higher risk operations that are registered on a periodic basis (up to a maximum of three years). These numbers are from a survey of all 79 councils conducted by the department in February 2018.

The number of registered premises is predicted to grow by 1 per cent per annum, reflecting the forecast of a business research firm.\(^{11}\)

Operator turnover (when an operator exits the market and a new one enters) is estimated at 12.5 per cent (the average for Australian businesses). This exit rate could be higher because the industry is made up of small businesses and the barriers to entry and exit are low.

Costs of becoming registered for industry

Local government has discretion to charge a fee to register premises. These costs are not attributable to the regulations because these requirements are set out in the Act. Specific inclusions in applications specified in the regulations are minimal.

From a sample of 10 local government fee schedules available online, these fees range between $65 and $380, with an estimated median point of $200. However, this fee may be varied over time because some local governments do not state the fee online, instead providing a fee estimate following an inspection to ensure the business is registering for the applicable risk category.

While not included in the burden of registration relating to the regulations, there is a cost of $13,974,881 (in 2019-dollar terms) over the next 10 years for businesses to register their premises with the relevant local government municipality in Victoria. Further details of this estimate are outlined in the technical appendix.

Costs for local government to enforce the regulations

Most of the costs to enforce the regulations are borne by local government. This includes to register businesses and to monitor and enforce compliance with the regulations.

Fees are charged to recover a proportion of these costs, with additional costs covered by other local government funding sources such as rates charged to ratepayers. These are outlined above as a cost on business.

The estimated total cost to local government per year for registering premises is $1,550,948 per year.

The main cost to local governments to enforce the regulations is environmental health officers’ time to inspect and approve applications for registration, respond to complaints and undertake proactive compliance and enforcement activities. At the discretion of each local government, the municipality may choose to conduct more rigorous or frequent inspections and annual compliance processes as needed, but these are not prescribed by the regulations.

Based on a sample of local government environmental health officers undertaken for the impact assessment, the costs are estimated as:

- number of registered premises in Victoria: 11,244 (4,875 ongoing and 6,369 periodic)
- average time allocated for an initial inspection: up to two hours (reported average was 1.87 hour)
- average time allocated for annual inspection: one hour (reported average was one hour)
- estimated time allocation for travel, administration, responding to complaints, public education and capacity building: one hour per premise per year
- average labour cost (per hour): $46.60 per hour ($1,771 per week, assuming 38 hours per week, before taxes, excluding superannuation)\(^{12}\)
- 75 per cent loading for overheads: $81.55 per hour.


\(^{12}\) Occupational & Environmental Health Professionals, ANZSCO ID 2513, <https://joboutlook.gov.au>
Estimated minimum annual regulatory administration cost

Periodic (higher risk premises)
- New inspections per year: 6,369 × 12.5% (exit/entry rate) = 796
- Total cost for new inspections: 796 × (1.87 × $81.55) = $129,848
- Annual inspections per year: 6,369 – 796 (for new inspections) = 5,573
- Total cost for annual inspections: 5,573 × (1 × $81.55) = $454,478
- Total cost per year: new and annual inspection costs = $584,326

Ongoing (lower risk premises)
- New inspections per year: 4,875 × 12.5% (exit/entry rate) = 609
- Total cost per year: 609 × (1 × $81.55) = $49,664

Both ongoing and periodic
- Estimated time allocation for travel, administration, responding to complaints, public education and capacity building: 11,244 × (1 × $81.55) = $916,958

Cost over 10 years
- Growth of hairdressing and beauty therapy businesses per year: 1 per cent
- Business exit/entry rate per year: 12.5 per cent
- Estimated wage inflation rate per year: 3 per cent
- Discount rate per year: 4 per cent

Total net present value cost of the current regulations for local government over 10 years is estimated at: $15,529,633

This is an estimate of the burden on local governments to operate the regulations for registered premises. Local governments can recover costs through fees on businesses. However, based on the department's estimates, local governments, on aggregate, are expected to recover only 89 per cent of the $15.53 million via fees, with the remainder of costs generally covered by other funding sources.
Technical appendix

Ten-year costing estimates for industry and local government

Tables 2.7–2.9 should be considered alongside the discussion in the chapter. These calculations are estimates for this regulatory impact statement and are based on best-effort assumptions but should not be considered exhaustive. These estimates are based on surveys of local government officers and departmental estimates. For more accurate and relevant information for a specific municipality, please refer to information released by the relevant local government.

Table 2.7: Estimated fees for registered premises charged by local government and paid by industry in Victoria

<table>
<thead>
<tr>
<th>Item</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
<th>Year 6</th>
<th>Year 7</th>
<th>Year 8</th>
<th>Year 9</th>
<th>Year 10</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fee (estimated average)</td>
<td>200</td>
<td>206</td>
<td>212</td>
<td>219</td>
<td>225</td>
<td>232</td>
<td>239</td>
<td>246</td>
<td>253</td>
<td>261</td>
<td>66,634</td>
</tr>
<tr>
<td>Periodic registration (high risk)</td>
<td>6,369</td>
<td>6,433</td>
<td>6,497</td>
<td>6,562</td>
<td>6,628</td>
<td>6,694</td>
<td>6,761</td>
<td>6,828</td>
<td>6,897</td>
<td>6,966</td>
<td>15,314,672</td>
</tr>
<tr>
<td>Cost per year for inspections</td>
<td>$1,273,800</td>
<td>$1,325,134</td>
<td>$1,378,537</td>
<td>$1,434,092</td>
<td>$1,491,866</td>
<td>$1,552,009</td>
<td>$1,614,555</td>
<td>$1,679,622</td>
<td>$1,747,310</td>
<td>$1,817,727</td>
<td>$16,779,954</td>
</tr>
<tr>
<td>Ongoing registration (low risk)</td>
<td>4,875</td>
<td>4,924</td>
<td>4,973</td>
<td>5,023</td>
<td>5,073</td>
<td>5,124</td>
<td>5,175</td>
<td>5,227</td>
<td>5,279</td>
<td>5,332</td>
<td>51,003</td>
</tr>
<tr>
<td>Ongoing expected exit/entry rate (low risk)</td>
<td>609</td>
<td>615</td>
<td>622</td>
<td>628</td>
<td>634</td>
<td>640</td>
<td>647</td>
<td>653</td>
<td>660</td>
<td>666</td>
<td>6,375</td>
</tr>
<tr>
<td>Cost per year for new ongoing (low risk)</td>
<td>$121,875</td>
<td>$126,787</td>
<td>$131,896</td>
<td>$137,211</td>
<td>$142,741</td>
<td>$148,494</td>
<td>$154,478</td>
<td>$160,703</td>
<td>$167,180</td>
<td>$173,917</td>
<td>$1,465,282</td>
</tr>
<tr>
<td>Total cost</td>
<td>$1,395,675</td>
<td>$1,451,921</td>
<td>$1,510,433</td>
<td>$1,571,304</td>
<td>$1,634,627</td>
<td>$1,700,503</td>
<td>$1,769,033</td>
<td>$1,840,325</td>
<td>$1,914,490</td>
<td>$1,991,644</td>
<td>$16,779,954</td>
</tr>
<tr>
<td>Net present value</td>
<td>$1,395,675</td>
<td>$1,396,078</td>
<td>$1,396,480</td>
<td>$1,396,883</td>
<td>$1,397,286</td>
<td>$1,397,689</td>
<td>$1,398,092</td>
<td>$1,398,496</td>
<td>$1,398,899</td>
<td>$1,399,303</td>
<td>$13,974,881</td>
</tr>
</tbody>
</table>

Table 2.8: Estimated minimum costs for local government to regulate registered premises in Victoria

<table>
<thead>
<tr>
<th>Item</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
<th>Year 6</th>
<th>Year 7</th>
<th>Year 8</th>
<th>Year 9</th>
<th>Year 10</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Periodic registration (high risk)</td>
<td>796</td>
<td>804</td>
<td>812</td>
<td>820</td>
<td>828</td>
<td>837</td>
<td>845</td>
<td>854</td>
<td>862</td>
<td>871</td>
<td>8,329</td>
</tr>
<tr>
<td>Cost per year for inspections</td>
<td>$129,848</td>
<td>$135,081</td>
<td>$140,525</td>
<td>$146,188</td>
<td>$152,079</td>
<td>$158,208</td>
<td>$164,584</td>
<td>$171,216</td>
<td>$178,116</td>
<td>$185,295</td>
<td>1,561,139</td>
</tr>
</tbody>
</table>

Public Health and Wellbeing Regulations Sunset Review: regulatory impact statement Page 53
### 10-year estimates for burden of disease in Victoria (theoretical example)

**Table 2.9: Burden of disease – theoretical example in Victorian context**

<table>
<thead>
<tr>
<th>Item</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
<th>Year 6</th>
<th>Year 7</th>
<th>Year 8</th>
<th>Year 9</th>
<th>Year 10</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registered premises – both ongoing (low risk) and periodic (high risk)</td>
<td>11,244</td>
<td>11,356</td>
<td>11,470</td>
<td>11,585</td>
<td>11,701</td>
<td>11,818</td>
<td>11,936</td>
<td>12,055</td>
<td>12,176</td>
<td>12,297</td>
<td>117,637</td>
</tr>
<tr>
<td>Services per year (assume 10 per premise per day)</td>
<td>41,040,600</td>
<td>41,451,006</td>
<td>41,865,516</td>
<td>42,284,171</td>
<td>42,707,013</td>
<td>43,134,083</td>
<td>43,565,424</td>
<td>44,001,078</td>
<td>44,441,089</td>
<td>44,885,500</td>
<td>429,375,480</td>
</tr>
<tr>
<td>Simple skin infection (0.1 per cent chance per service)</td>
<td>41,041</td>
<td>41,451</td>
<td>41,866</td>
<td>42,284</td>
<td>42,707</td>
<td>43,134</td>
<td>43,565</td>
<td>44,001</td>
<td>44,441</td>
<td>44,885</td>
<td>429,375</td>
</tr>
</tbody>
</table>

**Item**

- **Periodic annual (high risk)**
  - Year 1: 5,573
  - Year 2: 5,629
  - Year 3: 5,685
  - Year 4: 5,742
  - Year 5: 5,799
  - Year 6: 5,857
  - Year 7: 5,916
  - Year 8: 5,975
  - Year 9: 6,035
  - Year 10: 6,095
  - Total: 58,306

- **Cost per year for annual inspections**
  - Year 1: $454,478
  - Year 2: $472,794
  - Year 3: $491,847
  - Year 4: $511,669
  - Year 5: $532,289
  - Year 6: $553,740
  - Year 7: $576,056
  - Year 8: $599,271
  - Year 9: $623,422
  - Year 10: $648,545
  - Total: $5,464,110

- **Ongoing registration (low risk)**
  - Year 1: 4,266
  - Year 2: 4,309
  - Year 3: 4,352
  - Year 4: 4,395
  - Year 5: 4,439
  - Year 6: 4,484
  - Year 7: 4,528
  - Year 8: 4,574
  - Year 9: 4,619
  - Year 10: 4,666
  - Total: 44,632

- **Ongoing expected exit/entry rate (low risk)**
  - Year 1: 609
  - Year 2: 615
  - Year 3: 621
  - Year 4: 627
  - Year 5: 634
  - Year 6: 640
  - Year 7: 646
  - Year 8: 653
  - Year 9: 659
  - Year 10: 666
  - Total: 6,371

- **Cost per year for new ongoing**
  - Year 1: $49,664
  - Year 2: $51,665
  - Year 3: $53,748
  - Year 4: $55,914
  - Year 5: $58,167
  - Year 6: $60,511
  - Year 7: $62,950
  - Year 8: $65,486
  - Year 9: $68,126
  - Year 10: $70,871
  - Total: $597,101

- **Estimated time allocation for travel, administration, responding to complaints, public education and capacity building**
  - Year 1: $916,958
  - Year 2: $953,912
  - Year 3: $992,354
  - Year 4: $1,032,346
  - Year 5: $1,073,950
  - Year 6: $1,117,230
  - Year 7: $1,162,254
  - Year 8: $1,209,093
  - Year 9: $1,257,820
  - Year 10: $1,308,510
  - Total: $11,024,428

- **Average labour cost × 75 per cent loading**
  - Year 1: $81.55
  - Year 2: $84.00
  - Year 3: $86.52
  - Year 4: $89.11
  - Year 5: $91.79
  - Year 6: $94.54
  - Year 7: $97.37
  - Year 8: $100.30
  - Year 9: $103.31
  - Year 10: $106.40

- **Total cost**
  - Year 1: $1,550,948
  - Year 2: $1,613,452
  - Year 3: $1,678,474
  - Year 4: $1,746,116
  - Year 5: $1,816,485
  - Year 6: $1,889,689
  - Year 7: $1,965,844
  - Year 8: $2,045,067
  - Year 9: $2,127,483
  - Year 10: $2,213,221
  - Total: $18,646,779

- **Net present value**
  - Year 1: $1,550,948
  - Year 2: $1,551,396
  - Year 3: $1,551,843
  - Year 4: $1,552,291
  - Year 5: $1,552,739
  - Year 6: $1,553,187
  - Year 7: $1,553,635
  - Year 8: $1,554,083
  - Year 9: $1,554,531
  - Year 10: $1,554,980
  - Total: $15,529,633
<table>
<thead>
<tr>
<th>Item</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
<th>Year 6</th>
<th>Year 7</th>
<th>Year 8</th>
<th>Year 9</th>
<th>Year 10</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment cost</td>
<td>$101</td>
<td>$104</td>
<td>$107</td>
<td>$110</td>
<td>$114</td>
<td>$117</td>
<td>$121</td>
<td>$124</td>
<td>$128</td>
<td>$132</td>
<td>$49,835,811</td>
</tr>
<tr>
<td>Moderate skin infection (0.01 per cent chance per service)</td>
<td>4,104</td>
<td>4,145</td>
<td>4,187</td>
<td>4,228</td>
<td>4,271</td>
<td>4,313</td>
<td>4,357</td>
<td>4,400</td>
<td>4,444</td>
<td>4,489</td>
<td>42,938</td>
</tr>
<tr>
<td>Treatment cost</td>
<td>$3,552</td>
<td>$3,659</td>
<td>$3,768</td>
<td>$3,881</td>
<td>$3,998</td>
<td>$4,118</td>
<td>$4,241</td>
<td>$4,369</td>
<td>$4,500</td>
<td>$4,635</td>
<td></td>
</tr>
<tr>
<td>Burden per year</td>
<td>$14,577,621</td>
<td>$15,165,099</td>
<td>$15,776,253</td>
<td>$16,412,036</td>
<td>$17,073,441</td>
<td>$17,761,500</td>
<td>$18,477,289</td>
<td>$19,221,924</td>
<td>$19,996,567</td>
<td>$20,802,429</td>
<td>$175,264,159</td>
</tr>
<tr>
<td>Severe skin infection (0.001 per cent chance per service)</td>
<td>410</td>
<td>415</td>
<td>419</td>
<td>423</td>
<td>427</td>
<td>431</td>
<td>436</td>
<td>440</td>
<td>444</td>
<td>449</td>
<td>4,294</td>
</tr>
<tr>
<td>Treatment cost</td>
<td>$13,734</td>
<td>$14,146</td>
<td>$14,570</td>
<td>$15,008</td>
<td>$15,458</td>
<td>$15,921</td>
<td>$16,399</td>
<td>$16,891</td>
<td>$17,398</td>
<td>$17,920</td>
<td></td>
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<tr>
<td>Burden per year</td>
<td>$5,636,516</td>
<td>$5,863,668</td>
<td>$6,099,973</td>
<td>$6,345,802</td>
<td>$6,601,538</td>
<td>$6,867,580</td>
<td>$7,144,344</td>
<td>$7,432,261</td>
<td>$7,731,781</td>
<td>$8,043,372</td>
<td>$67,766,834</td>
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<tr>
<td>Total burden of skin infections from services</td>
<td>$24,359,238</td>
<td>$25,340,915</td>
<td>$26,362,154</td>
<td>$27,424,549</td>
<td>$28,529,758</td>
<td>$29,679,507</td>
<td>$30,875,591</td>
<td>$32,119,878</td>
<td>$33,414,309</td>
<td>$34,760,905</td>
<td>$292,866,804</td>
</tr>
<tr>
<td>Net present value</td>
<td>$24,359,238</td>
<td>$24,366,264</td>
<td>$24,373,293</td>
<td>$24,380,324</td>
<td>$24,387,357</td>
<td>$24,394,392</td>
<td>$24,401,428</td>
<td>$24,408,467</td>
<td>$24,415,508</td>
<td>$24,422,551</td>
<td>$243,908,822</td>
</tr>
</tbody>
</table>
Chapter 3: Aquatic facilities

Victoria regulates aquatic facilities, such as public swimming pools, to minimise the spread of illness. Our aquatics industry is constantly evolving with changes to the regulations necessary to address new and emerging trends, technologies and practices that pose a potential threat to public health.

Problem analysis

Victoria regulates aquatic facilities to manage the risk of illness associated with publicly accessible swimming pools. The current regulations aim to minimise the spread of infectious diseases by setting minimum water quality standards. Over the past 10 years there has been an increase in the number of outbreaks of cryptosporidiosis linked to regulated aquatic facilities.

Hazard

Aquatic facilities have been associated with cases and outbreaks of illness due to harmful micro-organisms. These harmful micro-organisms can be introduced from faecal matter or the environment. In addition to gastrointestinal illness, exposure to water in aquatic facilities presents other potential health risks including skin and respiratory infections. Aquatic facilities can amplify illnesses affecting the community, with the risk of passing on illness increased if pool water is not properly treated or if the aquatic facility is not well managed. The World Health Organization’s 2006 Guidelines for safe recreational water environments provides a comprehensive list of the microbial risks to users.

The regulations manage public health risks from bacteria and viruses but are not designed to address public health risks from persistent pathogens such as Cryptosporidium. The risk of infection from bacteria and viruses in pool water is generally managed with routine disinfection using chlorine or bromine, combined with ongoing filtration, attentive maintenance and effective faecal incident response policies. Operators of aquatic facilities would generally remove faecal matter and appropriately disinfect pools regardless of requirements in the regulations, but a majority may not do this to the same standard as currently set out in the regulations and guidelines.

Outbreaks related to swimming pools

Contaminated pool water in aquatic facilities can be the source of illness that affects a community. Each year, sporadic outbreaks of illness are associated with aquatic facilities, with widespread outbreaks of illness affecting multiple regions of Victoria detected every three to four years. Further details of a large outbreak related to aquatic facilities are outlined in this chapter. Of all the microbiological hazards, Cryptosporidium is responsible for the most outbreaks of illness associated with aquatic facilities.

Swallowing pool water contaminated with Cryptosporidium oocysts (the infectious form of Cryptosporidium) can lead to illness, commonly presenting as gastroenteritis. Enteric symptoms usually include watery diarrhoea associated with cramping abdominal pain, dehydration, weight loss, fever, nausea and vomiting. Symptoms can last for four to 21 days. Less commonly the infection may involve the lungs, gall bladder and pancreas. Beyond the usual supporting care for people with gastroenteritis, there is no specific treatment for cryptosporidiosis. The impact of illness on an individual can range from mild to severe; the cost to the economy is detailed in the appendix. Internationally, outbreaks of cryptosporidiosis have resulted in deaths, most notably the largest documented

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outbreak in US history – the 1993 Milwaukee cryptosporidiosis outbreak. This resulted in 403,000 people falling ill and 69 deaths, mostly among the elderly and immunocompromised people.\textsuperscript{14}

**Exposure**

Exposure generally occurs when someone ingests water that has been contaminated by the hazard. The Department of Health and Human Services provides guidance on preventing protozoa contamination within aquatic facilities through the ‘Healthy Swimming’ campaign and faecal incident response policies. Some aquatic facilities install additional treatment processes to remove or inactivate protozoa; however, the effectiveness of these treatment processes depends on a range of factors that influence pathogen inactivation including the design of the facility, the capability of the system, treatment system maintenance and the operation of the facility.\textsuperscript{15}

Sport and Recreation Victoria has a competitive process for funding new pools or upgrades to existing pools. This process includes a range of funding criteria that encompass pool safety. Applications for constructing an aquatic facility must comply with the Building Regulations for the relevant local government authority to issue a certificate of occupancy as part of planning approval processes. These processes may consider factors that influence the spread of pathogens. There are incentives for aquatic facility operators to:

- maintain water treatment plants
- attend to water quality
- adjust pool chemistry
- record water test results
- undertake remedial action.

Failure to maintain these could lead to poor water quality, reduced bather amenity and reputational impacts.

**Vulnerability**

The following user groups are likely to develop more serious illness if they contract disease such as cryptosporidiosis from aquatic facilities:

- the elderly, young children and pregnant women who may be more susceptible to dehydration resulting from diarrhoea
- immunocompromised people who are at risk of serious or life-threatening illness.

Examples of people with weakened immune systems include:

- AIDS patients
- cancer and transplant patients who are taking immunosuppressive drugs
- those with inherited diseases that affect the immune system.

A high proportion of children use public aquatic facilities (59 per cent of people with swimming pool memberships are children).\textsuperscript{16} Young children are more likely to contract cryptosporidiosis than the broader population. Analysis of Victorian case notifications from 2009 to 2018 identified higher case numbers in young children, particularly those under five years of age (over 27 per cent of all case notifications over the 10-year period, Figure 3.1\textsuperscript{17}). Young children have a higher risk of infection from waterborne pathogens due to their:

- immature immune systems
- tendency to spend longer periods in the pool
- likelihood of ingesting more pool water

\textsuperscript{14} Corso et al. 2003, ‘Costs of Illness in the 1993 waterborne Cryptosporidium outbreak, Milwaukee, Wisconsin’, Emerging Infectious Disease, vol. 9, no. 4, United States Centers for Disease Control and Prevention

\textsuperscript{15} More details on the risk categorisation of aquatic facilities is in the appendix.

\textsuperscript{16} Life Saving Victoria, Aquatics and Recreation Victoria 2018, Victorian public pools state of the sector report 2017–2018, Victoria

\textsuperscript{17} Department of Health and Human Services (Victoria). Interactive infectious disease surveillance reports, Victoria
• engaging in activities that lead to water ingestion (for example, splashing, diving or water play).

Young children are also prone to introducing faecal contaminants into the pool due to their poor hygiene, reduced continence and use of ineffective swim nappies.

Figure 3.1: Laboratory-confirmed cryptosporidiosis cases notified to the department by age group, Victoria, 2009 to 2018

A multifaceted approach to reducing illness associated with public aquatic facilities

Public aquatic facilities are important for maintaining and promoting active lifestyles. Outbreaks of illness in public aquatic facilities can be debilitating for those affected (particularly the vulnerable), time-consuming and costly to manage, so prevention efforts are preferred. The department takes a multifaceted approach to prevent outbreaks including:

Regulatory framework – public health and wellbeing legislation with a focus on minimum water quality requirements.

Risk management – disease surveillance, guidance and response protocols to manage water quality and responding to incidents affecting water quality. These include Water quality guidelines for public aquatic facilities – managing public health risks, Cryptosporidiosis outbreaks in aquatic facilities – prevention and response plan and incident response protocols.

Leadership and education – working with other Australian health regulators, keeping abreast of emerging issues, promoting improved facility design and promoting community awareness through the ‘Healthy Swimming’ education campaign.

Stakeholder engagement – working collaboratively with aquatic facility designers and operators, local government, industry associations and other government departments.

The regulation review presents an opportunity to address issues that have been identified through stakeholder consultation with the aquatics industry, facility operators, local government, industry associations, health regulators and water quality specialists.

18 Aquatic facility outbreak is defined as two or more unrelated cases of cryptosporidiosis who swam at the same facility during their incubation period (one to 12 days) and where the onsets of illness were less than 28 days apart.
Emerging issues that may contribute to increased disease burden

The following issues are emerging concerns that may adversely contribute to increasing the disease burden associated with aquatic facilities. These issues are broader than the scope of the regulations, but regulatory options must consider that future risks associated with aquatic facilities are likely to be higher than in the past 10 years.

Climate change – a warmer climate

Outbreaks of illness associated with aquatic facilities, particularly cryptosporidiosis, are expected to increase with climate change as patronage increases on hot days. In addition to increasing demand for access and the availability of aquatic facilities for public use, climate change may also affect the availability of water and energy. The water restrictions imposed on aquatic facilities during the millennium drought led the aquatics industry to find novel solutions to conserve water. This included many facilities exploring options to use alternative water supplies within their facilities including rainwater for irrigation, showers and topping up pools. Some facilities treated and reused filter-backwash water. These initiatives have the potential to increase public health risk. Furthermore, as energy costs increase and incentives to reduce energy use (carbon footprints) continue, some aquatic facilities may consider switching off pool treatment systems when the facility is closed rather than leaving them to run overnight. This potentially results in poorer quality water and therefore increases the risk to public health.

In the absence of regulations, the trends of climate change and higher energy cost could act as an incentive for lower standards particularly for small private operators of aquatic facilities.

Technology changes and applications – interactive water features

Interactive water features, also known as ‘active water spaces’, ‘spray parks’, ‘water parks’ or ‘splash pads’, have gained popularity in recent years, with some local government areas installing them. These interactive water features have several features:

• they are generally located in a public space (such as a park or square) and are managed by a local council.
• they are free to access and are often unfenced
• they provide children (and adults) with the opportunity to interact with water features such as fountains, spray nozzles, slides and showers
• there may or may not be a pool of water associated with the facility (many are ‘zero depth’ and based on soft rubberised matting)
• the water is generally drained off the surface, collected, treated and reused at the facility.

In 2017 the department conducted a spray park survey, which 28 of Victoria’s 79 local councils completed. The survey identified that 15 of the 28 councils had interactive water features in their local government area. Most were operated by local council staff, with monitoring and inspections conducted infrequently.

Limited data is available on the contribution of interactive water features such as spray parks to waterborne illness in Victoria. In 2012 a gastroenteritis outbreak was linked to an interactive water feature in Seville, Victoria. Fifteen children who had used the interactive water feature became ill with vomiting and diarrhoea of unknown cause. Faecal indicator bacteria were identified in water samples taken from the facility during the investigation, and operational, maintenance and hygiene issues were identified.

In Western Australia, a five-year-old child contracted a Pseudomonas infection resulting in partial blindness. The infection allegedly occurred when the child visited an interactive water feature with suspected poor water quality. An investigation of the water quality at the spray park determined the facility was noncompliant with the state-based regulations, resulting in a period of shut down. The water supply system required disinfection and treatment upgrades to be installed.

Following this incident, health regulators from New South Wales and South Australia amended their aquatic facility legislation to include the regulation of interactive water features within the scope of their legislation to manage the potential public health risks. These facilities present unique challenges in the maintenance of water quality and management of public health risk. In general, these facilities exhibit the following features:
• they can be susceptible to a high level of chemical, physical and microbiological contamination from the environment including stormwater runoff, birds, animals and footwear
• they are used almost exclusively by children and often do not have easily accessible hygiene and toilet facilities
• water is extensively sprayed and aerosolised, making incidental and intentional ingestion and inhalation of water more likely
• they are often unstaffed during operating hours, meaning contamination and other maintenance incidents can go unnoticed and unaddressed.

Interactive water features do not usually contain a pool of water; therefore they do not meet the current definition of an aquatic facility under the Victorian regulations while still posing a public health risk to users.

Technology changes and applications – lagoons including surf parks

Lagoon pools with recirculating water supplies are an emerging type of aquatic facility. A number of these facilities have been proposed in Australia with one currently in construction in Victoria. Lagoon pools can be differentiated from natural water bodies or natural lagoons as they are artificially constructed and have water recirculated within the system. Lagoon pools may include cable parks if the water within that system is recirculated and treated. Lagoon pools may also be identified as surf pools or surf parks which rely on wave technology as an artificial means to generate waves for users to surf and recreate. There is limited information available on the public health risks associated with these lagoons. Users are typically immersed in recirculating water that is likely to be ingested and inhaled by users.

In 2018 a surfer visiting a cable park and surf resort in Texas died from an infection with the environmental pathogen *Naegleria fowleri*. *Naegleria fowleri* infection is very rare but often fatal and requires water containing the pathogen to be inhaled through the nasal cavity.

The *Model Aquatic Health Code* published by the US Centers for Disease Control and Prevention has termed these facilities as ‘special use aquatic venue’ due to an inability for these facilities to meet existing design standards. However, specific requirements for these types of facilities are yet to be developed by the Centers for Disease Control and Prevention. These types of aquatic facilities will be captured in the proposed definition of aquatic facilities which is consistent with the approach taken in Western Australia.

Technology changes and applications – floatation tanks

Floatation tanks (also referred to as sensory deprivation tanks or isolation pods) are heated, highly saline, fluid-filled enclosed tanks designed for individual therapeutic use. The fluid consists of a near-saturated solution of water and Epsom salt (magnesium sulphate). The fluid may or may not be treated with a chemical disinfectant and is circulated through a filter only when the tank is not occupied. Additional treatment such as ultraviolet (UV) disinfection may also be installed as part of the treatment process. The saline solution is generally changed every six to 12 months due to the large amount of salt required to prepare the fluid.

It is unclear whether floatation tank use poses a risk to public health. This device is used by multiple people and without proper disinfection or recycling of water may spread disease and negatively impact on public health outcomes. To date there have been limited studies on the health risks associated with these tanks. Western Australia incorporates floatation tank regulation in their aquatic facility legislation. New South Wales has drafted guidance for managing floatation tanks. There is uncertainty whether floatation tanks meet the current definition of an aquatic facility; however, due to the unique water chemistry it is unlikely floatation tanks would comply with the current regulations. There are currently no nationally or internationally accepted standards for managing water quality risk in floatation tanks.

Potential degradation of water treatment – ageing infrastructure

In a review of the Sport and Recreation Victoria database in 2016, 153 facilities were found to be 26 years old or older. More than half of the aquatic and recreation centres in Victoria are likely to need repair or upgrading. The

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The age of these facilities presents an ongoing challenge for facility operation, maintenance and compliance with legislation. As facilities age, there is a greater chance that aging infrastructure, that is not rejuvenated or enhanced, may not effectively disinfect the water in an aquatic facility.

**Objectives of the regulations**

The regulations are intended to address the risks to public health associated with aquatic facilities, which provide conditions for spreading disease and illness. The public nature of many aquatic facilities increases the risk that these facilities can cause large outbreaks of disease.

**Requirements of the regulations**

As both the specific hazards and the vulnerable population cannot be controlled for, the public health intervention focuses on the possible exposure from water in aquatic facilities.

The regulations define aquatic facilities and prescribe operational, maintenance and testing requirements for these facilities. These requirements were established to provide the minimum water quality standards required to protect human health. The regulations also specify record-keeping requirements.

The requirements relating to these facilities are made under the general provisions of s. 232 of the *Public Health and Wellbeing Act 2008* and the management and control of infectious disease, micro-organisms and medical conditions under s. 238 of the Act. Where required, authorised officers also use their powers under the Act to monitor and enforce compliance with the regulations.

The Act allows Victoria’s Chief Health Officer to authorise departmental or local government environmental health officers to investigate, eliminate or reduce a risk to public health. These powers can be applied to managing public health incidents in aquatic facilities when required.

**Options**

This section outlines options to address the overarching regulatory objectives to minimise risks to public health associated with aquatic facilities. Due consideration is given to the principles of the Act including evidence-based decision making, the precautionary principle, primacy of prevention, accountability, proportionality and collaboration in assessing these options. Furthermore, stakeholder feedback identified the following key outcomes to be addressed in the options:

- **reduction** of public health harm
- **risk-based** regulation where premises are regulated in accordance with their respective public health risk profile (the risk profile is influenced by the type of activity and the visitors such as vulnerable populations including children and immunocompromised people)
- **clarification** on the scope of aquatic facility definition, roles and responsibilities and the expectations of the responsible person
- **agility** to encompass emerging risks associated with novel facilities.

**Regulatory frameworks in other Australian jurisdictions**

Experience from Australia and international jurisdictions suggests that effectively regulating and managing pathogens (including *Cryptosporidium* risk) in aquatic facilities requires a multifaceted risk management approach that involves:

- good facility design and construction to facilitate hygiene and reduce faecal contamination
- optimal hydraulic design for effective water circulation and turnover
• robust multiple treatment barriers, recognising no single barrier is effective against all pathogens
• effective surveillance and monitoring
• adequate incident response policies
• proactive health protection messaging to promote hygienic practices among patrons
• technically competent operators.

The regulation of aquatic facilities is varied across Australia; however, there is consistent acknowledgment of the need to address the burden of disease associated with aquatic facilities.

In Australia, each jurisdiction is in different stages of reviewing existing guidance and legislation to better address public health risks in aquatic facilities. Some jurisdictions such as Western Australia, New South Wales and South Australia have prescriptive regulations that outline requirements in the relevant Act and regulations, while Queensland and the Northern Territory rely on guidance to inform their aquatics industry. The mix of regulatory instruments (for example, legislation, regulations, orders and guidelines) differs between jurisdictions.20

However, key features in other frameworks that do not currently exist in Victoria include:

• interactive water features (including spray parks and interactive fountains) – these facilities have been linked to outbreaks of illness, particularly among young children (Western Australia and New South Wales have included interactive water features in their legislation to help reduce the risk of cryptosporidiosis outbreaks)
• a requirement for aquatic facilities to be registered through local councils
• an approval process for all aquatic facilities, which includes criteria outside of public health
• requirements of pool users.

Queensland and the Northern Territory detail in guidance the water quality and record-keeping parameters for public aquatic facilities in their jurisdictions. The remaining states and territories detail the water quality, operational and record-keeping requirements in their respective public health legislation.

Key differences in the Victorian regulatory requirements in comparison with other jurisdictions include:

• disinfection requirements for outdoor pools – with/without cyanuric acid
• bromine levels in indoor pools
• no requirement for continuous online water quality monitoring.

Coordination and delegation models for regulating aquatic facilities

In Victoria, the state and local governments are jointly responsible for regulating aquatic facilities.

Delegated decentralisation to local government has been the preferred model. This provides benefits to the community through timely response, improved service areas and coverage of the regulatory requirements. Environmental health officers provide services to areas within set geographical areas. They take a collaborative approach and have established relationships with operators of aquatic facilities through regulating other public health risks (such as prescribed accommodation and food safety requirements).

There are risks with a non-prescriptive decentralised approach led by local government. For example, there may be limited capacity to collect systematic data on the nature and extent of compliance problems. There is also potential conflict of interests for councils that monitor compliance on aquatic facilities that are run and owned by the same council. There may be varied interpretations and application of the definition by councils, such as only applying the regulation definition ‘publicly accessible’ pools to include pools and spares in hotels, motels and other like contexts, but to exclude pools found in apartment buildings.

The department could play a greater role by centralising the regulation of aquatic facilities, similar to the approach used for cooling towers across Victoria; however, the advantages and benefits of decentralisation would be lost. The department considers local government to be best placed to engage in ongoing discourse and training with aquatic facility operators and to improve practices and compliance over time alongside the other public health risks that environmental health officers deal with on a regular basis. Regarding potential conflicts of interest, councils

20 Refer to the appendix regarding regulatory arrangements in Australian jurisdictions.
have duties and obligations under legislation through the *Local Government Act 1989* that governs their operations and performance reporting, and have mechanisms for transparency under the *Freedom of Information Act 1982*.

The department continues to play a role as a central coordination body. The department provides information dissemination and parameters for priority state programs that have benefits beyond individual communities (such as identifying the emerging risk of *Cryptosporidium*). The department develops and sets minimum standards for water quality that provide a proportional response to the health risks associated with aquatic facilities in the broader context of public health risks in Victoria.

### Consultation

The department has undertaken extensive consultation with the aquatics sector, local government, other government departments and health regulators nationally and internationally to understand the effectiveness of the current regulations and emerging issues. These discussions have helped shape the policy options to improve how public health risks can be managed through regulation.

Consultation began in 2017 and was designed to ensure views, concerns and feedback of key aquatics industry stakeholders were heard and considered as part of the review process. The focus of the targeted consultation process is to engage the parties who are most likely to be directly affected by changes to the regulations.

The department undertook targeted engagement with key stakeholders in addition to publishing the *Public aquatic facilities – Public Health and Wellbeing Regulations 2009 sunset review discussion and option paper* in July 2018.

Feedback to date has been grouped into seven key areas of improvement:

1. **Public health harm reduction**: Extend the scope of the regulations to address the broader range of potential pathogens (including *Cryptosporidium*).
2. **Regulated premises**: Clarify aquatic facility definitions, include emerging risks from interactive water features and consider applying the regulations to privately owned (but publicly accessible) aquatic facilities. There is no requirement in the regulations for aquatic facility operators to notify or register with the department or local government and therefore the precise number, location and type of public aquatic facilities regulated in Victoria is unknown.
3. **Responsible person**: Clarify the definition and regulatory responsibilities for regulators and regulated premises and include competency-based requirements. Under the currently regulatory framework, there are scenarios where the council would serve as the owner, operator, regulator and investigator of an aquatic facility (for example, during a cryptosporidiosis outbreak at a large community aquatic facility).
4. **Risk-based regulation**: Shift from a ‘one size fits all’ regulatory framework to a risk-based categorisation of aquatic facilities that is proportionate to the facility risk profile (risk factors such as ‘bather load’, vulnerable populations and facility-specific factors).
5. **Incorporate operational guidelines**: To support the change in scope and inclusion of a risk-based approach, the regulations should incorporate (by reference) guidelines as the ‘reasonable steps’ for maintaining water quality.
6. **Inspection and enforcement**: Both the department and local government have limited regulatory tools to monitor and enforce compliance with the regulations. The department currently has no visibility into the level of regulatory activity being undertaken by councils in relation to aquatic facilities or into the level of compliance among facilities. For example, there is currently no requirement for facilities to report serious incidents (for example, loose faecal incidents, treatment barrier failures or pathogen detection) to the department or to local government. Because the role of local government as a regulator is not specifically defined in the regulations, councils may choose to scale back on costly, non-mandated regulatory activities like aquatic facility inspections and water testing.
7. **Design principles**: The regulations do not include measures to prevent contamination such as building design to facilitate pre-swim showers to address bather shedding risks.

This consultation feedback informs the four options considered in this regulatory impact statement:
• Option 1: Retain the current regulations without changes
• Option 2a: Strengthen the regulatory requirements to address public health risks
  – Option 2b: Strengthen the regulatory requirements to address public health risks including registration of all aquatic facilities
• Option 3: Remove the current regulations.

**Option 1: Retain the current regulations without changes**

This option retains the existing regulations and regulatory framework with no changes to the regulatory requirements. Aquatic facilities will continue to have operational requirements to ensure consistency in routine water treatment to manage water quality risks.

Public health risks from Cryptosporidium continue to be addressed proactively by the aquatics industry, with guidance provided by local government and the department. Record-keeping requirements would ensure local government has access to treatment and verification records during compliance inspections.

The department in conjunction with Queensland Health have developed *Water quality guidelines for public aquatic facilities – managing public health risks* (water quality guidelines). The purpose of these guidelines is to assist organisations and aquatic facilities to reduce risks to public health. These guidelines also provide advice to local and state government environmental health officers to help fulfil their regulatory and advisory roles.

In these guidelines, there are recommended approaches to manage public health hazards, including developing a water quality risk management plan, treatment processes and validation requirements; water circulation and turnover times; managing water balance; monitoring, verification and record keeping; healthy swimming practices, incident response procedures; and operator training.

Aquatic facility operators are expected to adhere to and implement the processes and standards outlined in these guidelines. Local government regulators are expected to regulate aquatic facilities which can be supported by the use of these guidelines.

**Disease burden and outbreaks not addressed by the current regulations**

The number of cryptosporidiosis cases notified to the department each year highlights the significance of this illness and its impact on the Victorian population. The number of cryptosporidiosis cases in 2017 and 2018 represented the third most commonly notified gastrointestinal infection in Victoria (Figure 3.2).

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22 The number of cases of cryptosporidiosis reported to the department does not reflect the actual number of cases of cryptosporidiosis in the Victorian community. It is likely that the actual number of cryptosporidiosis cases in the community is 10-fold higher. Source: Padiglione A, Fairley CK 1998, ‘Early detection of outbreaks of waterborne gastroenteritis’, *Water*, vol. 25, no. 6, pp. 11–15.
Option 2a: Strengthen requirements to manage public health risks

This option strengthens the existing regulations and proposes measures to address new and emerging trends, technologies and practices that may pose a risk to public health. Changes proposed by this option include broadening the definition of an aquatic facility to accommodate new and emerging trends, updating standards and requirements to improve risk management, requirements for all aquatic facilities to adhere to Water Quality Guidelines (published on the department’s website), risk-based characterisation of aquatic facilities and introducing registration requirements and infringement penalties to facilitate compliance.

Definition of aquatic facility

The proposed regulations would clarify the definition of an aquatic facility to address ambiguity and include emerging types of aquatic facilities to ensure local government and aquatic facilities have clear accountability of their responsibilities. This option would detail the types of facilities that are defined as an ‘aquatic facility’. Examples of facilities and the associated risk categories are described in Table 3.1; this is not an exhaustive list of the types of facilities.

Table 3.1: Aquatic facility risk categories including examples

<table>
<thead>
<tr>
<th>Low- to medium-risk facilities(^{23})</th>
<th>High-risk facilities</th>
</tr>
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<tbody>
<tr>
<td>Residential apartment pools</td>
<td>Spas</td>
</tr>
<tr>
<td>Diving pools</td>
<td>Interactive water features</td>
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<tr>
<td>Lap pools (25 m and 50 m pools)</td>
<td>Wading pools</td>
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<tr>
<td>Gym pools</td>
<td>Learn-to-swim pools</td>
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<tr>
<td>Resort pools</td>
<td>Program pools</td>
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<tr>
<td>Holiday park pools</td>
<td>Hydrotherapy pools</td>
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<tr>
<td>Motel pools</td>
<td>School pools</td>
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<tr>
<td>Theme park wave pools</td>
<td>Water slides</td>
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<tr>
<td></td>
<td>Shallow-depth interactive play pools</td>
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<tr>
<td></td>
<td>Pools used by incontinent people</td>
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<tr>
<td></td>
<td>Aged care facilities</td>
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<tr>
<td></td>
<td>Retirement village pools</td>
</tr>
<tr>
<td></td>
<td>Lagoons with unrestricted access</td>
</tr>
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</table>

\(^{23}\) Low- to medium-risk facilities may be classed as high-risk depending on the visitors and the types of activities carried out at that facility.
The scope of public aquatic facilities is interpreted in various ways by different local governments, with some choosing not to regulate aquatic facilities available to discrete user groups such as hotel and motel pools, hydrotherapy pools and swim schools. In practice, this means that the 300 council-owned pools are consistently subject to the regulations; however, bodies of water with similar characteristics and subsequent risks to public health are not currently subject to inspection and compliance oversight by local government. At a minimum, there are 82 school and university pools and 184 Learn to Swim schools currently within the scope of the regulations that may not be actively regulated by local government. Additional facilities that would be regulated would include pools in hotels and motels, as well as pools in apartment complexes. The department estimates that there are upwards of 250 hotels and motels with pools across Victoria. Apartment complexes with pools would further increase this total; however, the department does not have accurate figures on the number of pools in apartment complexes. These facilities would be listed in the expanded definition with minimum requirements for local governments to oversee compliance with the regulations.

In recent years ‘interactive water features’, also known as ‘active water spaces’, ‘spray parks’, ‘water parks’ and ‘splash pads’ have gained popularity, with a number of councils installing these facilities. These facilities are increasingly being linked to outbreaks of illness. These interactive water features are currently outside the scope of the current regulations. Regarding emerging facilities, there are a number of Lagoon pools with recirculating water supplies proposed in Australia with one currently in construction in Victoria, the department does not have a reliable estimate of how many of these facilities will be constructed in the future; however, these are identified as an emerging health risk and would be captured in the proposed regulations. Western Australia and New South Wales have included ‘interactive water features’ within the scope of their regulations; other jurisdictions are currently reviewing aquatic facility regulations and guidance to include ‘interactive water features’.

The proposed regulations would broaden the scope of aquatic facilities to include a definition for ‘interactive water feature’. Currently there is no register of these types of premises, so the department does not have an estimate of how many additional aquatic facilities would be covered under the expanded definition.

**Clarity on roles and responsibilities and strengthen penalties and infringements**

The responsible person of an aquatic facility would be clarified to enable consistent oversight of aquatic facilities. Local government authorised officers are responsible for responding to public health risks associated with aquatic facilities. Local government officers, in many cases, may also be interpreted as the ‘responsible person’ for managing aquatic facilities. In some cases, in the current definition of a responsible person of an aquatic facility, it may not be clear as to who is the responsible person.

A new definition of ‘aquatic facility operator’ would provide greater clarity as to who is responsible for complying with requirements in the regulations. This will mean local government authorised officers and aquatic facilities would be better placed to oversee and ensure compliance, consequently contributing to reduce public health risk from aquatic facilities.

The proposed changes also include the introduction of infringement notices as an additional tool for local government to effectively respond to public health risks for high-risk facilities to facilitate compliance. Introducing infringements provides local governments with flexibility in overseeing compliance in an approach that aligns with other jurisdictions including New South Wales and Western Australia.

**Requirement to manage pathogenic micro-organisms in water**

**Standards and requirements for aquatic facilities**

This option retains existing regulations prescribing the standards and requirements for aquatic facilities but expands these requirements to a larger number of facilities with similar risk profiles. Compliance with these standards and requirements would continue to provide consistency across the industry for managing the risk of infection from exposure to pathogens in aquatic facilities. The regulations would, however, be strengthened by key changes including:

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• a new requirement for aquatic facilities to manage pathogen risks. This is to address emerging issues such as the risk of cryptosporidium outbreaks that are not adequately addressed under the existing regulations.
• a new requirement for high-risk aquatic facilities to register with their local council. This is to provide local council with an up-to-date list of aquatic facilities with potential risks to public health and provide a mechanism for compliance through inspections and adherence to minimum standards. This would better address the public health risks and remove ensure all aquatic facilities with similar risk burdens are regulated in the same manner.

Duty to minimise risks
This option would require new obligations on aquatic facility operators. The regulations would require an aquatic facility operator to manage the risks to human health arising from pathogenic micro-organism in the aquatic facility in accordance with the regulations and the water quality guidelines.

As described in option 1, water quality guidelines are published on the department's website and are designed to assist organisations and aquatic facilities reduce risks to public health.

Microbiological quality of aquatic facility water
Regulations dealing with microbiological quality of water would be remade, replacing ‘thermotolerant coliforms’ with ‘Escherichia coli’. This considered to be a minor technical change to align with Australian and international naming conventions. This change would not have a practical impact on aquatic facilities operators.

Outbreak response provisions
This requirement would relate to the requirement to manage pathogenic micro-organisms in the water. Currently the regulations set out the obligations of an aquatic facility operator in the event of a case or outbreak of legionellosis. The regulations would be broadened to provide for other infectious disease cases or outbreaks.

If the department or council notifies an operator that the water is suspected or implicated as a source of infection, the obligations under option 2a would require:
• the operator to provide a sample of the water to a laboratory within 24 hours to test for the pathogenetic micro-organism
• the operator provide the test results to the Secretary to the department or council authorised officer within 24 hours of receiving the laboratory report
• disinfect the aquatic facility in accordance with any directions given by the secretary to the department or council.

Cryptosporidium risk
Outbreaks of cryptosporidiosis linked to aquatic facilities are an ongoing public health issue in Victoria, and a variety of factors can influence the incidence and severity of an outbreak. Experience from Australia and overseas suggests that the effective regulation and management of Cryptosporidium risk in aquatic facilities requires a multifactorial approach. Cryptosporidium is difficult to detect through sampling, therefore a specific incidence or suspected outbreak response plan for Cryptosporidium is outlined in the water quality guidelines.

Categorisation and registration of aquatic facilities
To provide for proportional regulation that is consistent with public health risk, the proposed regulations would prescribe category 1 and category 2 aquatic facilities.

Category 1 aquatic facilities are higher risk due to the types of activity carried out and a greater burden of disease based on user profile (vulnerable groups such as children and immunocompromised people).

Category 2 aquatic facilities present a lower public health risk; however, may still host large numbers of bathers, which presents an increased public health risk.

The proposed criteria and requirements for category 1 and category 2 are outlined in Table 3.2.
Table 3.2: Proposed criteria and requirements for category 1 and category 2

<table>
<thead>
<tr>
<th>Category</th>
<th>Criteria</th>
<th>Proposed requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category 1</td>
<td>A category 1 aquatic facility is:</td>
<td>Category 1 aquatic facilities are required to:</td>
</tr>
<tr>
<td></td>
<td>a) used by the public, whether free of charge or on payment of a fee; or b) is used in association with a class or program that is offered free of charge or on payment of a fee; or c) provided at an early childhood service, school or other educational institution; or d) is located at any of the following premises— a public hospital; a multipurpose service; a denominational hospital; a private hospital; a privately operated hospital within the meaning of the Health Services Act 1988.</td>
<td>• register annually with council • manage risks in accordance with the regulations and Water Quality Guidelines • maintain the current water quality requirements in the regulations • at the discretion of Council may be subjected to an inspection for water quality compliance • maintain records • respond to suspected or implicated cases or outbreaks of illness associated with microbiological hazards linked to the aquatic facility • be subjected to improvement notices, enforcement orders and penalties regarding noncompliance.</td>
</tr>
</tbody>
</table>

Category 2 | A category 2 aquatic facility is located in: a) residential apartment complex; or b) the premises of a hotel or motel or hostel. | Category 2 aquatic facilities are required to: |
| | | • manage risks in accordance with the regulations and Water Quality Guidelines • maintain the current water quality requirements in the regulations • maintain records • respond to suspected or implicated cases or outbreaks of illness associated with microbiological hazards linked to the aquatic facility • at the discretion of Council may be subjected to an inspection for water quality compliance • be subjected to the nuisance provisions of the regulations. |

Higher risk category 1 aquatic facilities would be included in the scope of the registered business provisions of the Act by prescribing aquatic facilities to be a class of business that poses a risk to public health under s. 68(f). This option would effectively strengthen local government’s ability to regulate and oversee compliance with the regulations with powers of entry and stronger legal footing to investigate and understand public health risks associated with these facilities.

Categorisation based on risk profile would provide a proportionate and targeted approach. The risk classification by category would provide requirements that to ensure treated water reaches all areas of the facility and that polluted water is removed efficiently thereby reducing the pathogen risk of the aquatic facility. This is particularly relevant for vulnerable groups in our community such as young children, the elderly and people with low immunity; as such, facilities where it is expected to have a high proportion of these vulnerable groups would be high risk aquatic facilities.

The categorisation of aquatic facilities according to risk is consistent with the approach taken in other jurisdictions, bringing Victoria in closer alignment with the legislative framework in Western Australia, New South Wales and the

25 The functions of a multipurpose service are the provision of any or a combination of the following— (a) public hospital services; (b) health services; (c) aged care services; (d) community care services; and further criteria as defined in the Health Services Act 1998.
guidance provided in Queensland and internationally in the *Model Aquatic Health Code* published by the US Centers for Disease Control and Prevention.

All aquatic facilities would continue to be subject to the prescribed standards and requirements to manage inherent public health risks associated with aquatic facilities. This option introduces a requirement for category 1 aquatic facilities to be registered with the local council with prescribed standards and requirements for aquatic facilities is to be a condition of registration. Category 2 facilities would be regulated for the first time in Victoria; however, compared with category 1 present a lower public health risk and would be exempt from registration. Local governments would have limited powers to oversee compliance and may choose to use nuisance provisions to investigate potential public health risks associated with category 2 aquatic facilities. The framework used to register category 1 aquatic facilities cannot be applied to category 2 aquatic facilities. To do so would require amendments to the Act, which is outside the scope of this review.

The proposed regulations prescribe the items to be included in registration applications for category 1 aquatic facilities including the type of aquatic facility.

**Responding to microbiological noncompliance**

This option includes a requirement for aquatic facility operators to notify the council if a sample of water taken from the aquatic facility and delivered to a laboratory for testing does not comply with the microbiological parameters. Where an aquatic facility fails to meet the regulatory requirements in three successive microbiological samples, the facility would be ordered to close until actions have been taken to mitigate the risk to public health, such as intensive disinfection through hyperchlorination.

**Option 2b: Strengthen the regulatory requirements to manage public health risks, including registration for all facilities**

This option is an extension of option 2a. It considers the potential public health risk associated with all public aquatic facilities and would require all facilities to be registered with local government (in option 2a, only category 1 aquatic facilities would be registered).

This would expand registration and inspection beyond the aquatic facilities to include pools in residential apartment buildings (owned and maintained via owners corporations) and hotel and motel pools.

This approach would provide consistent application of all regulatory requirements across all aquatic facilities (similar bodies of water with similar pathogen risks). While this approach manages public health risk, there would be a significant increase in the number of aquatic facilities registered. These bodies of water can contain the same pathogens that cause illness, but there may not be the associated vulnerable populations using these additional facilities. As such, this option is not aligned with the proportionality principle of the Act and would require significant resourcing from local governments, which may not be warranted for lower risk facilities.

**Option 3: Remove the current regulations**

Removing or reducing requirements in the regulations would result in inconsistent approaches across aquatic facility operators and lead to an increase in illness and outbreaks related to pathogens in aquatic facilities.

Without regulations, the Act provides provisions relating to nuisances, which are reactive and general in nature. The Act does not provide prescriptive guidance about acceptable water quality and managing suspected or implicated outbreaks in aquatic facilities. Addressing poor water quality standards and managing outbreaks would be highly difficult in this context.

The regulations outline minimum requirements to assist aquatic facilities in managing complex water chemistry. In the absence of regulations or aquatic facility operational requirements outlined in option 1, the management of public health risks would likely vary from facility to facility, reflecting the varied experiences of operators, the age and efficacy of the existing treatment processes, and the financial capacity for the operator to proactively manage pathogen risks in water.
The aquatics industry has self-regulatory mechanisms to review and audit pool safety and water quality. These are paid services that base their water quality and public health criteria on the existing regulations. In the absence of regulations, criteria used by industry to review pool water quality may vary or diminish.

The reliance of co-regulation through other legislative frameworks would not address public health risks associated with aquatic facilities. For example, the construction of aquatic facilities requires local governments to issue a certificate of occupancy for aquatic facilities with the requirements pertaining to the Building Regulation requirements. These do not include public health risks or water quality requirements.

**Impact analysis**

In the absence of regulations, the department expects there would be reduced cleaning and maintenance in aquatic facilities (below the standards set by the current regulations). As such there would be, on average, more infectious micro-organisms in the water, and more users of aquatic facilities would get ill and the likelihood of outbreaks of infectious diseases due to aquatic facilities would increase. This would increase the overall disease burden in Victoria from using aquatic facilities. There will be more discussion of these impacts in option 3.

Based on consultations with industry, the analysis below assumes that operators, in aggregate industry would undertake 80 per cent of the testing requirements set out in the regulations if the regulations were not in place. This would reflect that situation where some operators undertake less than the minimum in the regulations (due to reasons such as lack of awareness, costs, and operational pressures). The options below will be compared with the status quo, option 1, due to the difficulty of estimating the base case of no regulation.

**Option 1**

**Potential outcomes of option 1**

- The regulations continue to manage public health risks from bacteria and virus; however, the regulations do not adequately address pathogens such as *Cryptosporidium*, and outbreaks of cryptosporidiosis continue to be associated with aquatic facilities.

Option 1 does not address the risk of cryptosporidiosis arising from aquatic facilities.

Figure 3.3 shows the laboratory-confirmed cryptosporidiosis cases notified to the department from 2009 to 2018. This depicts the levels of cryptosporidiosis affecting the Victorian community throughout the year. Each year, sporadic outbreaks of illness are associated with aquatic facilities and are typically detected in the warmer first six months of the year. The phenomenon of widespread outbreaks of illness affecting multiple regions of Victoria are detected every three to four years, as observed in 2009, 2013 and 2017.
The current regulations do not focus on preventing pool contamination, and aquatic facilities are not required to address potential risk of outbreaks by pathogens such as Cryptosporidium. Aquatic facilities could therefore be compliant with the regulations but still be the source of an outbreak of illness.

In 2013, Victoria experienced a prolonged period of outbreaks of cryptosporidiosis across the state with 1,261 confirmed cases notified to the department. The majority of these cases occurred during the summer months, with 921 cases notified between 1 January and 20 June 2013. Of these 921 cases, 433 were investigated and 244 were linked to 39 outbreaks. These outbreaks were traced back to 39 aquatic facilities (associated with a total of 48 outbreaks) in metropolitan Melbourne and regional Victoria (Table 3.3).

Table 3.3: Types of aquatic facilities associated with outbreaks, and facilities with repeat outbreaks in the 2013 cryptosporidiosis outbreak period

<table>
<thead>
<tr>
<th>Number</th>
<th>Community aquatic and recreation facility</th>
<th>Large facility with interactive water features</th>
<th>Private swimming school</th>
<th>Outdoor facility (including one caravan park)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of outbreaks associated with these facilities</td>
<td>29</td>
<td>7</td>
<td>10</td>
<td>2</td>
<td>48</td>
</tr>
<tr>
<td>Number of facilities with repeat outbreaks</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>0</td>
<td>9</td>
</tr>
</tbody>
</table>

Most outbreaks were linked to community aquatic and recreation facilities (64 per cent), followed by private swimming schools (21 per cent), large aquatic centres with interactive water features (10 per cent) and two outbreaks associated with outdoor aquatic facilities (5 per cent). Not only do these facilities have outbreaks, these same facilities have repeated outbreaks following an initial outbreak. The repeat outbreaks are likely to occur due to increased cryptosporidiosis higher patronage numbers and/or the vulnerability of users. These types of aquatic facilities are identified as ‘high-risk’ facilities in other jurisdictions such as Western Australia and New South Wales.

Option 1 has the following positives and negatives associated with the approach.

- The regulations continue to limit outbreak response provisions to Legionella bacteria, which is not typically the pathogen of concern associated with aquatic facilities.
• The definitions used to inform how the regulations are applied continue to be ambiguous, resulting in poor understanding among local government regulators and aquatic facilities in the need to comply with the regulations.

• All aquatic facilities will be regulated in the same manner regardless of the risk profile to ensure compliance with the regulations.

• Local government continues to manage public health risks relating to aquatic facilities; however, they may not be aware of the number of aquatic facilities in their municipality, particularly those that are potentially high-risk.

• Local government would have scant data about aquatic facility compliance given there is no requirement for aquatic facilities to report regulatory compliance results. This means that it is difficult for local government to allocate resources to address compliance as the quantum of risk is unquantified.

• In the absence of prescriptive compliance expectations for co-regulators, inspection frequencies and regulatory oversight will continue to be inconsistent across the state and do not reflect a strategic risk-based approach.

• The frequency of local government compliance inspections of council-owned aquatic facilities are currently low, with an average of 1.61 inspections conducted per council-owned facility in 2017–18. Local government has indicated that the frequency of inspections is likely to decrease in the absence of legislative requirements to undertake compliance activities.

• Regulators have limited regulatory tools to monitor or enforce compliance with the regulations.

• The current definition of ‘aquatic facility’ will not adapt to evolving technologies (such as the popularity of ‘interactive water features’) and changing industry practices.

This option is not aligned with the principles of the Act or with other jurisdictions and fails to adequately address the burden of disease, particularly the risks associated with vulnerable people.

Cost to industry to implement the regulations

The costs attributed to the current regulations (option 1) relate to efforts, above what is undertaken in the absence of regulations, to test for minimum standards in terms of water quality and testing. The department does not have figures on the level of compliance by industry. As such the costs below assume full compliance, in implementing the option there may be a degree of noncompliance.

Each facility has a testing cost burden of $94,415 over the 10 years (in 2019 dollars), and there are 300 aquatic facilities that must undertake this testing.

Total costs for industry to implement option 1: $29,705,414 over 10 years (in 2019 dollars), with the cost to be apportioned to the regulations (20 per cent of this total) being $5,941,083 over 10 years (in 2019 dollars).

Cost to government to implement the regulations

The costs of administering the regulations for registered premises are borne by local government. Based on surveys of local governments and departmental estimates, the minimum costs for inspections and compliance would be as follows:

Total net present value minimum costs for local government to regulate aquatic facilities (over the next 10 years): $734,903

These estimates are based on regulating registered premises. Aquatic facilities are regulated by the same workforce (environmental health officers) and are expected to follow similar processes of risk assessment and compliance operations. Local governments own and operate many aquatic facilities in Victoria, and it is expected that the costs to regulate these facilities is resourced through revenue activities; however, specific funding is determined by the individual local government (such as fees to use aquatic facilities).


27 Details on how costs for industry to implement the regulations has been calculated can be found in Appendix: Costs for industry

28 Details on how costs for government to implement the regulations has been calculated can be found in Appendix: Costs for government
Options 2a and 2b

Potential outcomes of option 2a

The potential outcomes of option 2a, compared with the current regulations (option 1) are:

- less disease burden associated with aquatic facilities
- more consistency with regulatory requirements in other Australian states and territories
- more consistency in how the legal obligations of aquatic facilities are applied and enforced – authorised officers will have clarity of the enforcement process and stronger requirements to investigate and manage aquatic facility noncompliance
- proportionality in regulation through applying risk-based approaches to managing risk
- extended training for authorised officers and others involved in aquatic facilities management (this could be addressed during a 12-month transition period where aquatic facilities and local government can work together with support from the department to comply with the new regulations, which will be enforceable from 15 December 2020)
- the need for some local governments to add resources (staff, databases and so on) to adequately manage their regulatory obligations
- temporary closures of aquatic facilities by councils when investigating repeated noncompliance (however, with greater emphasis on prevention and up-stream controls, temporary closures may decrease over time)
- indirect impact that may see operators, who now must comply with regulations, who maintain a pool choose not to because of compliance costs.

Potential outcomes of option 2b

The potential outcomes of option 2b, compared with the current regulations (option 1) are:

- less disease burden associated with aquatic facilities
- more inconsistency with the regulatory requirements of other Australian states and territories
- more consistency in how the legal obligations in aquatic facilities are applied and enforced
- clarity of the enforcement process among authorised officers and stronger requirements to investigate and manage aquatic facility noncompliance
- less focus from local governments on higher risk facilities due to requirements to register both category 1 and category 2 facilities
- extended training for authorised officers and others involved in aquatic facilities management (this could be addressed during a 12-month transition period where aquatic facilities and local government work together with support from the department to comply with the new regulations, which will be enforceable from 15 December 2020)
- the need for some local governments and aquatic facilities to allocate more resources to regulating aquatic facilities (staff, databases and so on) to properly manage their regulatory obligations
- indirect impact of placing increased burden on small hotels and motel operators, which may find compliance costs too high to continue to offer a pool as part of their facilities.

Cost to industry to implement the regulations

Each facility has a testing cost burden of $94,415 over the 10 years (in 2019 dollars). While these costs are prescribed in the regulations, it is expected that aquatic facility operators would undertake most of these tests with a similar frequency in the absence of the prescribed requirements. The department estimates, based on industry consultation, that the regulations increase the burden of testing on aquatic facilities in Victoria and that only 80 per cent of testing would occur in the absence of regulations, as operators may prioritise other business pressures over addressing public health risks.
If the scope of the regulations (as outlined in option 1) increases the number of facilities regulated from 300 to 566, there would be an additional burden of $28,517,197 over 10 years (in 2019 dollars) associated with testing, with the additional cost of the regulations (20 per cent of this total) being $5,703,439.49 over 10 years (in 2019 dollars). This is the incremental additional increase in costs associated with option 2.

Combined with the costs in option 1, there would be a total cost of $11,644,522 over 10 years (in 2019 dollars). This is the total cost of option 1, plus the incremental increase in cost from option 2, over 10 years. Under the proposed expansion of the regulations to require registration, local governments would have discretion to charge a fee to register an aquatic facility.

The cost charged would be expected to broadly match the cost of current registered premises registration, the midpoint of which has been estimated at $200 (further details of this estimation is in the ‘Registered premises’ chapter). However, this could be higher if local governments decide that aquatic facilities need additional separate assessment processes on top of standard registered premises assessments that require a higher fee to be charged.

**Total net minimum cost for industry of requiring registration of aquatic facilities in Victoria (over the next 10 years): $1,360,984 (in 2019 dollars)**

### Cost to government to implement the regulations

The costs of administering the regulations for registered premises are borne by local government, with partial cost recovery from the regulated industry. Based on surveys of local governments and departmental estimates, the minimum costs for the proposed regulatory regime would be as follows:

**Total net present value minimum costs for local government to regulate aquatic facilities as registered premises (over the next 10 years): $1,386,518 (in 2019 dollars)**

The department estimates that approximately 89 per cent of these costs would be recovered through fees on industry (based on cost recovery for other registered premises), as outlined above. Specific circumstances within a local government municipality will vary depending on the approach and decisions of the individual local government (fees charged). The intensity of regulation would vary across municipalities.

### Option 3

In the absence of regulations for aquatic facilities, the department expects that the practice of cleaning and maintaining aquatic facilities would most likely continue, as this is an observable requirement to maintain reputation and standards expected of aquatic facilities. However, these standards may be gradually reduced because it is difficult for customers to observe the microbiological quality of swimming water and to understand the effectiveness of the treatment processes. There are also negative incentives, up to a point, regarding the use of chemicals such as chlorine to clean water. These chemicals reduce micro-organisms; however, some facilities may choose not to use chemicals to ‘enhance’ the swimming experience. As such, there would be less incentive to undertake thorough disinfection beyond what is observable to clients. Operators might avoid intentionally hyperchlorinating or reduce operating hours to undertake cleaning and consequently reduce costs to run the facility.

As most aquatic facilities already have adequate cleaning and filtration systems, it is predicted that removing regulation would gradually see new businesses not install high-quality systems to meet best practice infection control practices.

Over time, the absence of regulations would adversely contribute to poor public health outcomes. While removing the regulations may not have an immediate negative impact on public health outcomes, it would be expected to result in worse health outcomes through a greater burden of illness such as gastroenteritis and other diseases associated with poor water quality. This would be expected to have cost impacts for the population through

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29. Details on how costs for industry to implement the regulations has been calculated can be found in Appendix: Costs for industry.
30. Details on how costs for registration has been calculated can be found in the appendix.
31. Details on how costs for government to regulate registered premises were calculated can be found in Appendix: Costs for government.
increased expenditure for health costs and lost output from work absences. At the extreme end of the scale, there would also be increased outbreaks of illness in the community that may require intervention by the Chief Health Officer and the shutdown of specific aquatic facilities until water quality can be improved.

**Potential outcomes of option 3**

The potential outcomes of option 3 are as follows:

- Removing or reducing prescriptive requirements related to maintaining water quality to protect public health would lead to variability in water quality and, while difficult to quantify, it is reasonably foreseeable that the burden of disease in the community associated with aquatic facilities would increase. There are widely documented cases from Victoria, nationally and internationally on the association of recreational water and disease.32
- The public health risks associated with aquatic facilities would be further exacerbated with climate change and population densification, resulting in increased patronage at facilities.
- Local government would have limited powers to manage public health risks associated with aquatic facilities. In the absence of prescriptive requirements and enforcement provisions, authorised officers lack powers of entry and tools to direct corrective actions to immediately cease harm. Therefore, the ability for authorised officers to manage public health risks in response to an outbreak or suspected outbreak would be compromised.
- In the absence of regulatory requirements, the aquatics industry would need to take greater responsibility to understand and mitigate public health risk. For example, the absence of prescriptive water quality requirements would result in greater flexibility to manage water quality. However, this could also result in inadequate or no treatment measures being applied and inconsistencies in water quality across the sector. The department’s published guidance for aquatic facilities could help operators minimise the public health risks; however, there would be no requirement for facilities to adopt the guidelines.
- Consistency in how local government assess public health risks relating to water quality would be difficult to apply in the absence of specific water quality parameters and detailed regulatory oversight and inconsistency may increase without regulation. The requirements of aquatic facilities should be consistent and predictable to avoid confusion and to create a stable regulatory environment and foster business confidence. The regulatory approach should be applied consistently across regulated parties with like circumstances.
- Public complaints about aquatic facilities would be more difficult for local government and the department to manage in the absence of legislation including clear powers of enforcement.
- There is a greater risk of aquatic facilities adopting inadequate treatment systems and products that use chemicals that are not approved by the Australian Pesticides and Veterinary Medicines Authority for use in aquatic facilities. These chemicals have the potential to be harmful to human health. Aquatic facility managers and operators are not typically trained or required to have specialist expertise in appropriate water quality treatment. Using treatment systems or chemicals that are unsafe or not approved for use in public aquatic facilities may result in poor water quality or exposing bathers to chemicals not intended for swimming pools. This circumstance is likely to increase in the absence of regulation.
- There could be a lack of impartial specialist expertise from councils to support the aquatics industry to build a knowledge base about treatment processes. This could result in aquatic facilities investing significant expenditure on treatment systems that do not meet their requirements.
- There may be insufficient records available to verify adequate treatment. This would hinder the ability to determine whether water quality is or was appropriately managed to protect public health.
- There are short-term benefits for aquatic facility operators as no regulation would provide discretion to allocate resources to other amenities in the facility or reduce entry fees as a consequence of reducing spending on cleaning and maintenance. Reducing entry costs may make entering aquatic facilities an economically viable

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See the appendix for departmental estimates on the total burden of disease associated with aquatic facilities in Victoria.
option for more people in Victoria, even when considering the potential greater health risks that swimming in water with potentially higher pathogen contamination.

This option is inconsistent with each of the principles of the Act and with the regulatory approaches adopted in other jurisdictions, resulting in increased burden of disease associated with aquatic facilities. It is important to acknowledge that aquatic facilities provide important environments for teaching safety skills around water. It is therefore paramount that the community can be confident that the aquatic facilities they use to learn to swim and other water safety skills would not cause illness.

**Burden of disease**

The department estimates that, at a minimum, the potential burden of disease of gastroenteritis in Victoria under option 1 were pursued (status quo) as a result of exposure to aquatic facilities (estimated as a probability infection as a consequence of visiting) over theoretical 10 years is:

**Total net present value of potential burden of disease from gastroenteritis as a result of exposure to aquatic facilities in Victoria: $25,383,314 over 10 years (in 2019 dollars)**

Option 1 would maintain this existing level of disease burden which doesn’t address pathogens such as *Cryptosporidium*. Options 2a and 2b would be expected to reduce the disease burden by increasing the number of bodies of water that fall under the regulations (and ensure that minimum standards are enforced). The department does not have accurate estimates of the level of improvement that option 2 would provide; however, it is expected to provide minimum standards and mechanisms to address potential burdens of disease from bodies of water (that would be then considered aquatic facilities) that were previously unregulated from an infection control perspective.

In the absence of regulations, the department expects that the burden of disease would increase under option 3.

With reduced cleaning and maintenance in aquatic facilities (below the standards set by the current regulations) there would be more infectious bacteria in the water, and more users of aquatic facilities would get ill. This would increase the overall disease burden in Victoria from using aquatic facilities.

**Proposed approach**

Adopting option 3 (the base case, removing or reducing the regulations for aquatic facilities) would potentially have:

- a negative impact on the health of the Victorian population by increasing the likelihood of infectious disease in the community due to poorly maintained aquatic facilities
- a negative impact on the Victorian economy in the event of an outbreak due to the possible closure or reduction in facility operations to prevent further infections
- a positive impact on the operations of aquatic facility operators in the short term by providing greater flexibility to reduce servicing and maintenance standards
- a positive impact on the costs of local government in the short term, by reducing the requirements to meet their regulatory obligations.

Option 1 maintains the current burden of disease and water quality standards in public aquatic facilities. Whereas options 2a and 2b are expected to have a positive impact on health outcomes of the Victorian population by reducing the likelihood of infectious disease in the community due to poorly maintained aquatic facilities and the associated impacts of an outbreak attributed to an aquatic facility.

By increasing the level of oversight and regulation of aquatic facilities, option 2 (both 2a and 2b) is expected to improve health outcomes more significantly than option 1 by changing behaviours and environments and improving the operation of aquatic facilities (regarding water quality management).

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33 Details on how burden of disease has been calculated can be found in the appendix.
The requirement for aquatic facilities to manage pathogen risks in option 2 are expected to have a positive impact in Victoria by reducing the economic costs of an outbreak of infectious disease and assist in reducing the reputational risk of exposure sites in the event of an outbreak.

Option 2 (both 2a and 2b) would be expected to improve health outcomes; however, the quantum of the increase is unable to be reliably estimated; however, because Cryptosporidium is currently not addressed, there is expected to be improved outcomes for Victorians as a consequence of regulating.

There is a limited evidence in Victoria for the precise number of infections from aquatic facilities in both options 1 and 2; however, as outlined above there is a case for addressing Cryptosporidium risks.

Both options would require operators to ensure a higher level of water quality management than what may occur in the absence of regulations. Option 2 (both 2a and 2b) is expected to increase costs for aquatic facility operators relative to option 1 by increasing the number of operators required to adhere to the regulations as well as placing more specific requirements on these operators. Option 2b would have a much larger impact on operators in Victoria than 2a due to the expanded scope. However, it is unclear whether this would have a subsequent improvement in public health outcomes. The additional costs associated with 2b, particularly registration of all aquatic facilities, it expected to outweigh the potential public health benefits.

These qualitative criteria have been scored in absolute terms in Table 3.4, with a score between −10 and +10.

Given the focus on the public benefits of the regulations and the Act, the health impacts have weighted important (0.4) alongside the potential economic impacts of an outbreak (0.1). The impacts on aquatic facility operators has been weighted as important due to the potential impact on their day-to-day operations (0.4), and to a lesser degree the associated impact on local government (0.1). Multiplying the scores (−10 to +10) by the weightings gives a total possible score between −10 and +10 for each option.

**Table 3.4: Analysis of options regarding the regulation of aquatic facility operators**

<table>
<thead>
<tr>
<th>Option</th>
<th>Health impacts</th>
<th>Potential economic impacts</th>
<th>Cost on aquatic facility operators</th>
<th>Cost on local government</th>
<th>Total (range: −10 to +10)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Retain the current regulations without changes</td>
<td>+4 / 0.4</td>
<td>+4 / 0.1</td>
<td>−3 / 0.4</td>
<td>−3 / 0.1</td>
</tr>
<tr>
<td>2a</td>
<td>Strengthen the regulatory requirements to address public health risks</td>
<td>+7 / 0.4</td>
<td>+7 / 0.1</td>
<td>−5 / 0.4</td>
<td>−6 / 0.1</td>
</tr>
<tr>
<td>2b</td>
<td>Strengthen the regulatory requirements to address public health risks including registration of all aquatic facilities</td>
<td>+7 / 0.4</td>
<td>+7 / 0.1</td>
<td>−9 / 0.4</td>
<td>−9 / 0.1</td>
</tr>
<tr>
<td>3</td>
<td>Remove the current regulations</td>
<td>0 / 0.4</td>
<td>0 / 0.1</td>
<td>0 / 0.4</td>
<td>0 / 0.1</td>
</tr>
</tbody>
</table>

Based on the above impact analysis the department’s preferred option is option 2a: Strengthen the regulatory requirements to address public health risks.
Appendix

Risk categorisation of aquatic facilities

Recreation in any aquatic environment will have potential risks due to the communal, shared aquatic environment. Public aquatic facilities are more likely to have an increased number of users, which consequently increases the level of risk.

The types of aquatic facilities currently accessible to the Victorian public are varied. A range of factors will affect water quality including the operation, maintenance, size, age, visitation and user demographics of the pool. The US Centers for Disease Control and Prevention and Western Australia Health$^{34}$ have characterised the risk associated with different types of aquatic facilities using two key factors: the type of visitation and vulnerability of users.

The level of risk of an aquatic facility is determined with considerations relating to the type of activity carried out at the facility and the vulnerability of users. For example, a residential swimming pool used by a family would have low public health risk, whereas a residential swimming pool used for a commercial business to run a private swim school would have a high level of risk. A swim school with scheduled classes would have increased patronage from members of the public, with vulnerable groups such as children attending who are more susceptible to serious illness if exposed to poor water quality.

The risk profile and operational and maintenance regime of a residential apartment lap pool would be different, for example, from a toddler pool. Toddler pools are more likely to be contaminated with faecal matter due to low continence rates in young children and the likelihood of young children wearing swim nappies that leak. Table 3.5 provides a summary of the types of aquatic facilities and the corresponding risk categories as taken from the Water quality guidelines for public aquatic facilities – managing public health risks.

Table 3.5: Aquatic facility risk categories

<table>
<thead>
<tr>
<th>Low- to medium-risk facilities$^{35}$</th>
<th>High-risk facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Residential apartment pools</td>
<td>• Spas</td>
</tr>
<tr>
<td>• Diving pools</td>
<td>• Interactive water features</td>
</tr>
<tr>
<td>• Lap pools (25 m and 50 m pools)</td>
<td>• Wading pools</td>
</tr>
<tr>
<td>• Gym pools</td>
<td>• Learn-to-swim pools</td>
</tr>
<tr>
<td>• Resort pools</td>
<td>• Program pools</td>
</tr>
<tr>
<td>• Holiday park pools</td>
<td>• Hydrotherapy pools</td>
</tr>
<tr>
<td>• Motel pools</td>
<td>• School pools</td>
</tr>
<tr>
<td>• Theme park wave pools</td>
<td>• Water slides</td>
</tr>
<tr>
<td></td>
<td>• Shallow-depth interactive play pools</td>
</tr>
<tr>
<td></td>
<td>• Pools used by incontinent people</td>
</tr>
<tr>
<td></td>
<td>• Aged care facilities</td>
</tr>
<tr>
<td></td>
<td>• Retirement village pools</td>
</tr>
<tr>
<td></td>
<td>• Lagoons with unrestricted access</td>
</tr>
</tbody>
</table>

Some aquatic facilities install additional treatment processes to remove or inactivate Cryptosporidium, such as UV disinfection. The effectiveness of treatment depends on several factors including hydraulic design to treat full flow, the design capability of the treatment system and the operation and maintenance of the treatment systems.


$^{35}$ Low- to medium-risk facilities may be classed as high-risk depending on the visitors and the types of activities carried out at that facility.
In 2010 the Municipal Association of Victoria published *Public Health Wellbeing Act 2008: Guidance manual for local government authorised officers* to support local government to interpret and implement the regulations. Despite this guidance being available, consultation feedback highlighted the inconsistency in the interpretation of the regulations by different local government areas.

**History of regulation**

Infectious disease regulations have historically included requirements for maintaining water quality in publicly accessible aquatic facilities.

**Implementing the current regulations**

**Role of local government**

The obligation to comply with the regulations sits with the responsible person who owns, manages or controls the aquatic facility. There is no specific requirement for local government to register or monitor the compliance of aquatic facilities, and regulatory surveillance and compliance monitoring at aquatic facilities varies greatly between local government authorities. Some councils allocate resources to routinely inspect aquatic facilities to monitor compliance, while other councils take a complaints-based approach and check compliance – for example, checking compliance with testing and record-keeping requirements when investigating complaints or suspected outbreaks at aquatic facilities.

The local government performance reporting framework was introduced in the 2014–15 financial year. The framework requires all councils to report on the quality of services, including aquatic facilities, in their annual performance reporting. The inspection reporting component only applies to council-owned or managed aquatic facilities, and over the past three financial years the average number of health inspections carried out on each council aquatic facility were 1.68 in 2014–15, 1.68 in 2015–16 and 1.71 in 2016–17. The distribution of council-run aquatic facilities across Victoria ranges from none in one council area to 13 in a non-metropolitan council. Most councils have between two and six council-run aquatic facilities in their local government area, which account for 200 (or 72 per cent) of the 278 council-run aquatic facilities.

**Role of the Department of Health and Human Services**

The Water Unit within the department’s Health Protection Branch develops policy and guidance relating to aquatic facilities and supports local government in administering the legislation.

To support the operation and management of public aquatic facilities, the department publishes guidance for local government and the aquatics industry. The *Pool operators’ handbook* is the reference for aquatic facility operators and is also used by local government environmental health officers to inform their compliance activities. The handbook has been replaced with the water quality guidelines.

Departmental divisional public health officers liaise directly with local government to manage public health risks associated with aquatic facilities and work closely with the Communicable Disease Prevention and Control Unit to coordinate the investigation of notifiable communicable diseases. This includes suspected cryptosporidiosis outbreaks linked to aquatic facilities.

Once outbreaks are linked to aquatic facilities, the department works with local government and the implicated aquatic facility to ensure corrective actions are promptly taken to mitigate the risk of *Cryptosporidium*. For example, when an outbreak of cryptosporidiosis is linked to an aquatic facility, the department notifies the local government environmental health area and will request that the operator takes corrective actions, which may include a reactive hyperchlorination to disinfect the facility as outlined in the department’s *Cryptosporidiosis outbreak prevention and response plan*. High levels of chlorine are required to inactivate *Cryptosporidium*. The hyperchlorination response procedure is generally conducted overnight and may require the facility to close early, or open late the next day.

The department, supported by international evidence from bodies such as the US Centers for Disease Control and Prevention, urges people to shower with soap before swimming, the US Water Quality and Health Council in a 2012 survey found 44 percent of people do not believe it is necessary to shower before going in the pool and only 32 percent of respondents surveyed say they always shower before swimming. A thorough shower with soap helps remove perspiration, body oils, cosmetics and traces of urine and faecal matter on the body and does not introduce them into the water in an aquatic facility. Since 2013 the department has developed an extensive ‘Healthy Swimming’ campaign designed to address public health risks from bather shedding and to influence behaviour change for bathers to carry out key steps for healthy swimming including pre-swim showers.

Regulatory arrangements in Australian jurisdictions

The regulatory approach to manage public health risks associated with public aquatic facilities varies across Australian states and territories. The public health aspects of aquatic facilities are typically covered in public health legislation for each Australian jurisdiction except Queensland and the Northern Territory. A summary of the public health legislation and guidance for each of the Australian jurisdictions is provided below. Some of the key differences in the regulation of aquatic facilities between Victoria and the other jurisdictions have been highlighted in Table 3.6.

Table 3.6: Key differences in aquatic facility regulations compared with Victoria

<table>
<thead>
<tr>
<th>Jurisdiction</th>
<th>Key differences in comparison with Victoria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australian Capital Territory</td>
<td>• Regulations only cover territory-owned public pools</td>
</tr>
</tbody>
</table>
| New South Wales       | • Local councils maintain a register of public pools in their area  
                       | • Pools must be fitted with an automated disinfectant dosing system  
                       | • The definition of ‘swimming pool’ includes residential pools used for commercial purposes, splash parks and interactive fountains |
| Northern Territory    | • No specific regulations in place but reference made to territory-based guidance |
| Queensland            | • Local councils can make local laws to regulate aquatic facilities |
| South Australia       | • Water quality standards are maintained through specific requirements for pool operators  
                       | • Obligations of the public include:  
                       |   ▪ a person must not enter a public swimming pool or spa pool if:  
                       |     ▪ the person is suffering from an open wound or sore  
                       |     ▪ the person knows or has reasonable cause to suspect that he or she is suffering from a notifiable condition that could be transmitted to others in the pool  
                       |     ▪ the person or any clothing that he or she is wearing is not reasonably clean  
                       | • Pools must be fitted with an automated disinfectant dosing system |
| Tasmania              | • Councils must monitor water quality in accordance with relevant guidelines  
                       | • ‘Recreational water’ includes both natural bodies of water and aquatic facilities  
                       | • Annual reporting to the Department of Health regarding facilities and sampling results |
| Western Australia     | • Prescriptive criteria that go beyond public health risks include pool design, treatment, treatment and operator competencies  
                       | • Aquatic facilities are registered and their risk classified from level 1 to 4  
                       | • Local council environmental health officers must inspect aquatic facilities and take water samples monthly  
                       | • There is a general provision for pool users relating to hygiene and use of facilities  
                       | • The regulations cover splash parks and temporary inflatables |

37 The source documents of the regulations and guidelines for Australian jurisdictions are outlined in the appendix.
Regulators of aquatic facilities

Other aspects of risk outside of public health are managed by the following agencies using the appropriate legislation and guidance. These operate in parallel to the regulations. Design standards and workplace obligations contribute to improve health outcomes although they do not directly address water quality risks nor do they prescribe requirements to manage water quality for aquatic facility operators.

Victorian Building Authority

The Victorian Building Authority oversees the Building Act 1993 and the Building Regulations 2018, which prescribe requirements for the design, construction and installation of swimming pools, spas and their safety barriers. A building permit is required to ensure the construction of swimming pools complies with the Building Act, regulations, national construction code and relevant Australian Standards.

WorkSafe

Occupational health and safety is governed by WorkSafe under the Occupational Health and Safety Act 2004 and is monitored and enforced by WorkSafe Victoria. WorkSafe’s constructive compliance strategy uses a combination of incentives and deterrents to improve workplace health and safety. WorkSafe is also responsible for the Dangerous Goods Act 1985, which applies to aquatic facilities due to the on-site handling and storage of dangerous chemicals such as chlorine.

Life Saving Victoria

Life Saving Victoria is the peak water safety body in Victoria that oversees the Platinum Pool Program – an industry self-regulation scheme that assesses compliance with criteria set out in the Guidelines for safe pool operation (GSPO). The GSPO is the authoritative document guiding pool managers in the safe operation of aquatic facilities and includes guidance for facility design, general operations, technical operations, first aid and supervision, low-patronage pools and programs. Life Saving Victoria is currently working with Emergency Management Victoria to develop a Victorian code of practice to address public pool safety and preventable deaths.

Other agencies

Sport and Recreation Victoria

Sport and Recreation Victoria works closely with local government and the industry and sport sector to develop community infrastructure including aquatic and recreation centres and upgrades to existing community aquatic facilities.

Australian jurisdictions’ legislation, key policies and guidance

Table 3.7 outlines the legislation, key policies and guidance for aquatic facilities in other Australian jurisdictions.

Table 3.7: Legislation, key policies and guidance in other Australian jurisdictions

<table>
<thead>
<tr>
<th>Jurisdiction and responsible department</th>
<th>Legislation</th>
<th>Key policies and guidance</th>
</tr>
</thead>
</table>
### Jurisdiction and responsible department

<table>
<thead>
<tr>
<th>Jurisdiction and responsible department</th>
<th>Legislation</th>
<th>Key policies and guidance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ministry of Health</td>
<td>Public Health Regulations 2012</td>
<td></td>
</tr>
<tr>
<td>Queensland Health</td>
<td>Public Health Act 2011</td>
<td>Standard for the operation of swimming pools and spa pools in South Australia (2013)</td>
</tr>
<tr>
<td>South Australia</td>
<td>Public Health Act 2011</td>
<td>Guideline for the inspection and maintenance of swimming pools and spa pools in South Australia (2013)</td>
</tr>
<tr>
<td>SA Health</td>
<td>Public Health (General) Regulations 2013</td>
<td></td>
</tr>
<tr>
<td>Western Australia</td>
<td>Health (Miscellaneous Provisions) Act 1911</td>
<td>Health (Aquatic Facilities) Regulations 2007</td>
</tr>
<tr>
<td>Department of Health</td>
<td>Public Health Act 2016</td>
<td>Code of practice for the design, operation, management and maintenance of aquatic facilities (2015)</td>
</tr>
<tr>
<td></td>
<td>Health (Aquatic Facilities) Regulations 2007</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(all regulations under review)</td>
<td></td>
</tr>
<tr>
<td>Tasmania</td>
<td>Public Health Act 1997</td>
<td>Recreational water quality guidelines 2007</td>
</tr>
<tr>
<td>Northern Territory</td>
<td>Public and Environmental Health Act 2016</td>
<td></td>
</tr>
<tr>
<td>ACT Health</td>
<td>Public Pools Act 2015</td>
<td></td>
</tr>
</tbody>
</table>

### Burden of disease

There are several illnesses that can be acquired from contaminated water in aquatic facilities. For example, there is a risk of gastroenteritis from swallowing water in an aquatic facility that is contaminated with faecal matter (for example, cryptosporidiosis is a parasitic infection that commonly presents as gastroenteritis). The regulations aim to reduce the potential exposure to the public to infectious diseases described in the problem section above. In a general sense, these risks are low, but these are facilities frequently used by the general population.

Table 3.8 shows theoretical examples of the types of health interventions required to treat gastroenteritis. Symptoms of watery diarrhoea, cramping, abdominal pain, vomiting and fever can last for anywhere from four to 21 days. There is no specific treatment other than supportive care. The costs below are not exhaustive and are approximate costs for the health system, which may be borne by the individual or taxpayers more broadly. The costs are generalised: the costs for an individual would reflect their personal circumstances, including the treatment required, and other related factors.
Table 3.8: Approximate costs to treat gastroenteritis

**Simple gastroenteritis**

<table>
<thead>
<tr>
<th>Type of medical intervention</th>
<th>Quantity</th>
<th>Per unit cost</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pharmaceuticals</td>
<td></td>
<td></td>
<td>$28.22</td>
</tr>
<tr>
<td>General practitioner visit</td>
<td>1</td>
<td>$37.60</td>
<td>$37.60</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td>$65.82</td>
</tr>
</tbody>
</table>

**Moderate gastroenteritis**

<table>
<thead>
<tr>
<th>Type of medical intervention</th>
<th>Quantity</th>
<th>Per unit cost</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pharmaceuticals</td>
<td></td>
<td></td>
<td>$28.22</td>
</tr>
<tr>
<td>General practitioner visit</td>
<td>2</td>
<td>$37.60</td>
<td>$75.20</td>
</tr>
<tr>
<td>Public hospital admission – other infectious and parasitic diseases without complications – same-day admission</td>
<td>1</td>
<td>$4,244</td>
<td>$4,244.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td>$4,347.42</td>
</tr>
</tbody>
</table>

**Severe gastroenteritis**

<table>
<thead>
<tr>
<th>Type of medical intervention</th>
<th>Quantity</th>
<th>Per unit cost</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pharmaceuticals</td>
<td></td>
<td></td>
<td>$28.22</td>
</tr>
<tr>
<td>General practitioner visit</td>
<td>3</td>
<td>$37.60</td>
<td>$112.80</td>
</tr>
<tr>
<td>Public hospital admission – infectious and parasitic diseases with severe or moderate or catastrophic complications</td>
<td>1</td>
<td>$14,426.00</td>
<td>$14,426.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td>$14,567.02</td>
</tr>
</tbody>
</table>

Note that these do not reflect individual patient experiences, and the disease burden will depend on several factors. Also, these cost estimates to not reflect the complete burden of disease associated with lost income from absences from work, as well as possible reduced quality of life while managing the impact of a disease over a prolonged period.

Applying these costs to a theoretical example of possible infection rates as a chance per visitor to an aquatic facility in Victoria provides an indication about the potential burden of disease that is mitigated by enforcing minimum standards.

**Burden of disease of gastroenteritis in Victoria over 10 years**

The department estimated, based on the current regulations (option 1) the potential burden of disease that may be present in Victoria based on acquiring an illness due to contaminated water in an aquatic facility. This is estimated as follows:

Total net present value of potential burden of disease from gastroenteritis in Victoria: $25,383,314 over 10 years (in 2019 dollars)³⁸

³⁸ Further details on the burden of disease estimation can be found in the technical appendix.
This is calculated using the following assumptions:

- The number of aquatic facilities increases by 1 per cent per year (forecast from revenue growth 2014 to 2019).
  - 566 aquatic facilities is used as the current number of facilities. The current regulations broadly target the 300 council-owned facilities; however, all 566 facilities have the characteristics associated with impacting on the burden of disease in Victoria (open to the public and high numbers of visitors from the general population).
- The number assumes each aquatic facility has 100 visitors each day each year (in practice this may be higher or lower depending type of service, time of year, consumer demand and the number of staff).
- The chance of simple gastroenteritis per visit: 0.1 per cent chance per visit (one in 1,000 visits).
- The chance of moderate gastroenteritis per visit: 0.01 per cent chance per visit (one in 10,000 visits).
- The chance of severe gastroenteritis per visit: 0.001 per cent chance per visit (one in 100,000 visits).
  - Note the percentage chance assumed here does not reflect actual practices at aquatic facilities in Victoria and is used for theoretical purposes only.
- The number assumes no improvement in practice or technology (in either risk reduction at aquatic facilities or in medical treatment, and that the cost of treatment per year only increases by the rate of inflation (assumed at 3 per cent per year).

**Costs for local government**

The main cost to local government to enforce the regulations is the time environmental health officers take to inspect aquatic facilities, respond to complaints, undertake proactive compliance and for enforcement activities. At the discretion of each local government, the municipality may choose to conduct more rigorous or frequent inspections and annual compliance processes as needed, but these are not prescribed by the regulations.

Based on a sample of local government environmental health officers undertaken for the impact assessment, and industry numbers from Aquatics and Recreation Victoria, the costs are estimated as follows:

- number of council-owned aquatic facilities in Victoria: 300
- average time allocated for an initial inspection: up to two hours (reported average was 1.87 hour for other registered premises)
- average time allocated for annual inspection: one hour (reported average was one hour for other registered premises)
- estimated time allocation for travel, administration, responding to complaints, public education and capacity building: one hour per premise per year
- average labour cost (per hour): $46.60 per hour ($1,771 per week, assuming 38 hours per week, before taxes, excluding superannuation)
- 75 per cent loading for overheads: $81.55 per hour.

There are also a number of hotels, motels and similar accommodation with pools that would be covered by the new regulations. The department does not have data on the geographic placement of these pools across Victoria; however, it is expected that these would be more likely concentrated around key areas for tourism and not evenly distributed across the state. These additional facilities are not included in the estimated costs for local government; however, because these would be captured in the regulations, it would be expected that councils with high levels of tourism activities would have an increased number of aquatic facilities that would require registration and inspection to ensure compliance.

**Cost over 10 years**

- Growth of the number of aquatic facilities per year: 1 per cent
- Estimated wage inflation rate per year: 3 per cent
- Discount rate per year: 4 per cent (real)

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39 Occupational & Environmental Health Professionals, ANZSCO ID 2513 [https://joboutlook.gov.au/]
Costs for industry

The prescribed requirements relating to water testing for industry are shown in Table 3.9.

**Table 3.9: Prescribed requirements relating to water testing for industry**

<table>
<thead>
<tr>
<th>Test</th>
<th>Frequency</th>
<th>Tests per year</th>
<th>Cost per test</th>
<th>Total cost per year per aquatic facility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Free chlorine and total chlorine</td>
<td>Four-hourly, four times daily</td>
<td>1,460</td>
<td>$2.76 (five minutes)</td>
<td>$4,029.60</td>
</tr>
<tr>
<td>Free bromine and total bromine</td>
<td>Four-hourly, four times daily</td>
<td>1,460</td>
<td>$2.76 (five minutes)</td>
<td>$4,029.60</td>
</tr>
<tr>
<td>Total alkalinity</td>
<td>Weekly</td>
<td>52</td>
<td>$2.76 (five minutes)</td>
<td>$143.52</td>
</tr>
<tr>
<td>Cyanuric acid (if required)</td>
<td>Monthly</td>
<td>12</td>
<td>$2.76 (five minutes)</td>
<td>$33.12</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>2,984</strong></td>
<td></td>
<td><strong>$8,235.84</strong></td>
</tr>
</tbody>
</table>

| 20 per cent of the cost of testing attributable to the cost of implementing the water testing requirements (department estimate) | $1,647.17 |

Cost per test is assumed as an estimate of the time it takes for aquatic facility staff to take a test. It assumes the cost of time is the minimum hourly wage of $18.93 plus 75 per cent loading for overhead and on-costs – $33.13 per hour. Based on consultations with industry, tests are assumed to take five minutes per test; however, some facilities use automatic testing facilities that lower this ongoing cost (but have a higher upfront capital cost and associated maintenance).

Informed by advice from industry, the department believes that, in the absence of regulations, the industry would continue to conduct testing. However, it is likely that some operators (either due to lack of awareness, cost pressures or an active business strategy) would choose to undertake less testing. Previously unregulated operators may undertake even less testing. During the regulatory impact statement process in 2009 for the former regulations, industry feedback supported maintaining the current testing arrangements (in contrast with the proposed approach to reduce testing requirements from four-hourly to daily).

Based on this, the department considers a conservative estimate to be that testing intensity across the industry would be 80 per cent of the total cost, and therefore 20 per cent of the cost of testing should be attributable to the cost of implementing the water testing requirements of the regulations.

Total costs for industry to implement water testing: $29,705,414 over 10 years (in 2019 dollars), with the cost to be apportioned to the regulations (20 per cent of this total) being $5,941,083 over 10 years (in 2019 dollars).40

While these costs are prescribed in the regulations, it is expected that aquatic facility operators would undertake most of these tests with a similar frequency in the absence of the prescribed requirements. The department estimates that the regulations increase the burden of testing on aquatic facilities in Victoria and that only 80 per cent of testing would occur in the absence of regulations, as operators may prioritise other business pressures over addressing public health risks.

Further to water-testing requirements, there are general obligations for operators to maintain parameters for the microbiological quality of aquatic facility water. There are no prescribed testing requirements, but the operator must ensure water is maintained within set parameters. These parameters represent the standard that these facilities should be operating at in the absence of regulations and are not expected to impose additional regulatory burden.

There are actions that operators must take if water quality does not meet standards. These are broadly expected to align with actions that would be best practice for industry, including corrective actions and reviewing the water risk.

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40 Details on how water testing costs have been calculated and assumptions can be found in the technical appendix.
quality management plan. The one additional burden would be notifying the local council within 24 hours; however, this cost is expected to be a minimal cost if it occurs.

There would also be increased costs for pools operated by hotels, motels and similar accommodation. Depending on the operating model and size of the business, these costs could vary. However, the department estimates that the costs of testing water would be broadly similar as the current prescribed requirements above ($8,235 per facility per year). Informed by industry feedback, the department estimates that a majority of the testing is already undertaken by these facilities as part of managing the amenity of water and in line with customer expectations of for accommodation to be presented in a clean and hygienic manner.

These costs may be proportionally more burdensome for smaller operators to conduct the same tests and ensure water quality standards. These operators may, on balance, choose to reduce the period of time that they operate pools, such as only opening access to the public during summer periods.

**Avoided economic impacts**

There have been observable reputational impacts for aquatic facility operators and related businesses in the event of an outbreak being linked to an aquatic facility. If the department or the Chief Health Officer announces that an outbreak has occurred, there is a noticeable behaviour change by the public in response, that patronage decreases at the aquatic facility even after the public health risk has been reasonably addressed and the facility is reopened.

To shut down an aquatic facility to undertake hyperchlorination can have a large impact on the operations of these businesses during peak periods in summer, particularly for seasonal facilities that shut down during the colder seasons. This business cost could equal the entry fees for hundreds or potentially thousands of visitors depending on the time of year and the length of closure required.

**Case study of the costs associated direction to undertake hyperchlorination**

Following confirmed cases of cryptosporidiosis linked to visits to an aquatic facility, the operator was directed to undertake hyperchlorination as soon as practical (within 24 hours). The impacts at the facility were as follows:

- more than 400 learn to swim lessons cancelled with less than 24 hours’ notice for customers
- more than 50 staff either did not work or had shift work rescheduled
- one pool was closed for 36 hours, impacting on swimming lessons, lap swimming public, squad training and club activities
- all other pools were closed for 20 hours.

This aquatic facility estimated that closure, administration, treatment and community engagement costs were $14,000 more than if they had done nothing in response to the confirmed cases of cryptosporidiosis.

The potential economic loss from an outbreak is an incentive for aquatic facility operators to minimise the risk of an outbreak from their facility. However, because the risk of an outbreak is low, an operator may undervalue the risk that it would occur until after it has occurred. This undervaluation of risk is most likely amplified because the negative impacts of illness may only affect people visiting the facility and not the operator directly. The aquatic facility may not be identified as the source, further reducing the chance that reputational forces self-regulate operators.

In the absence of the regulations, the department would continue to respond and make announcements relating to outbreaks. It is expected that the regulations contribute to economic activity by reducing the number of outbreaks and by providing a level of confidence for the public that, in the event of an outbreak, the impact is minimised.
Technical appendix

Ten-year costing estimates for industry and local government relating to registration

Tables 3.10–3.13 should be considered alongside the discussion in the chapter. These calculations are estimates for this regulatory impact statement and are based on best-effort assumptions but should not be considered exhaustive. These estimates are based on surveys of local government officers and departmental estimates relating to registered premises.

Table 3.10: Fees for registering aquatic facilities that are charged by local government and paid by industry

<table>
<thead>
<tr>
<th>Item</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
<th>Year 6</th>
<th>Year 7</th>
<th>Year 8</th>
<th>Year 9</th>
<th>Year 10</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fee (estimated average)</td>
<td>$200</td>
<td>$206</td>
<td>$212</td>
<td>$219</td>
<td>$225</td>
<td>$232</td>
<td>$239</td>
<td>$246</td>
<td>$253</td>
<td>$261</td>
<td>–</td>
</tr>
<tr>
<td>Estimated number of aquatic facilities</td>
<td>566</td>
<td>572</td>
<td>577</td>
<td>583</td>
<td>589</td>
<td>595</td>
<td>601</td>
<td>607</td>
<td>613</td>
<td>619</td>
<td>5,922</td>
</tr>
<tr>
<td>Cost per year</td>
<td>$113,200</td>
<td>$117,762</td>
<td>$122,508</td>
<td>$127,445</td>
<td>$132,581</td>
<td>$137,924</td>
<td>$143,482</td>
<td>$149,265</td>
<td>$155,280</td>
<td>$161,538</td>
<td>$1,360,984</td>
</tr>
<tr>
<td>Net present value</td>
<td>$113,200</td>
<td>$117,762</td>
<td>$122,508</td>
<td>$127,445</td>
<td>$132,581</td>
<td>$137,924</td>
<td>$143,482</td>
<td>$149,265</td>
<td>$155,280</td>
<td>$161,538</td>
<td>$1,360,984</td>
</tr>
</tbody>
</table>

Table 3.11: Minimum costs for local government to regulate aquatic facilities as registered premises

<table>
<thead>
<tr>
<th>Item</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
<th>Year 6</th>
<th>Year 7</th>
<th>Year 8</th>
<th>Year 9</th>
<th>Year 10</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimated number of aquatic facilities</td>
<td>566</td>
<td>572</td>
<td>577</td>
<td>583</td>
<td>589</td>
<td>595</td>
<td>601</td>
<td>607</td>
<td>613</td>
<td>619</td>
<td>5,922</td>
</tr>
<tr>
<td>Cost per year</td>
<td>$92,315</td>
<td>$96,035</td>
<td>$99,905</td>
<td>$103,931</td>
<td>$108,120</td>
<td>$112,477</td>
<td>$117,010</td>
<td>$121,725</td>
<td>$126,631</td>
<td>$131,734</td>
<td>$1,109,882</td>
</tr>
<tr>
<td>Estimated time allocation for travel, administration,</td>
<td>$46,157</td>
<td>$48,017</td>
<td>$49,953</td>
<td>$51,966</td>
<td>$54,060</td>
<td>$56,238</td>
<td>$58,505</td>
<td>$60,863</td>
<td>$63,315</td>
<td>$65,867</td>
<td>$554,941</td>
</tr>
<tr>
<td>responding to complaints, public education and capacity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>building</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average labour cost × 75 per cent loading</td>
<td>$81.55</td>
<td>$84.00</td>
<td>$86.52</td>
<td>$89.11</td>
<td>$91.79</td>
<td>$94.54</td>
<td>$97.37</td>
<td>$100.30</td>
<td>$103.31</td>
<td>$106.40</td>
<td></td>
</tr>
<tr>
<td>Total cost</td>
<td>$138,472</td>
<td>$144,052</td>
<td>$149,858</td>
<td>$155,897</td>
<td>$162,180</td>
<td>$168,715</td>
<td>$175,515</td>
<td>$182,588</td>
<td>$189,946</td>
<td>$197,601</td>
<td>$1,664,823</td>
</tr>
</tbody>
</table>
### Table 3.12: Costs for industry – water quality testing costs for aquatic facilities

<table>
<thead>
<tr>
<th>Item</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
<th>Year 6</th>
<th>Year 7</th>
<th>Year 8</th>
<th>Year 9</th>
<th>Year 10</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquatic facilities</td>
<td>300</td>
<td>303</td>
<td>306</td>
<td>309</td>
<td>312</td>
<td>315</td>
<td>318</td>
<td>322</td>
<td>325</td>
<td>328</td>
<td>3,139</td>
</tr>
<tr>
<td>Tests per year</td>
<td>2,984</td>
<td>2,984</td>
<td>2,984</td>
<td>2,984</td>
<td>2,984</td>
<td>2,984</td>
<td>2,984</td>
<td>2,984</td>
<td>2,984</td>
<td>2,984</td>
<td>29,840</td>
</tr>
<tr>
<td>Cost per test</td>
<td>$2.76</td>
<td>$2.84</td>
<td>$2.93</td>
<td>$3.02</td>
<td>$3.11</td>
<td>$3.20</td>
<td>$3.30</td>
<td>$3.39</td>
<td>$3.50</td>
<td>$3.60</td>
<td>$32</td>
</tr>
<tr>
<td>Cost per year per facility</td>
<td>$8,236</td>
<td>$8,483</td>
<td>$8,737</td>
<td>$9,000</td>
<td>$9,270</td>
<td>$9,548</td>
<td>$9,834</td>
<td>$10,129</td>
<td>$10,433</td>
<td>$10,746</td>
<td>$94,415</td>
</tr>
<tr>
<td>Cost per year for all facilities (300 in year 1)</td>
<td>$2,470,752</td>
<td>$2,570,323</td>
<td>$2,673,907</td>
<td>$2,781,666</td>
<td>$2,893,767</td>
<td>$3,010,386</td>
<td>$3,131,704</td>
<td>$3,257,912</td>
<td>$3,389,206</td>
<td>$3,525,791</td>
<td>$29,705,414</td>
</tr>
<tr>
<td>Net present value</td>
<td>$2,470,752</td>
<td>$2,570,323</td>
<td>$2,673,907</td>
<td>$2,781,666</td>
<td>$2,893,767</td>
<td>$3,010,386</td>
<td>$3,131,704</td>
<td>$3,257,912</td>
<td>$3,389,206</td>
<td>$3,525,791</td>
<td>$29,705,414</td>
</tr>
<tr>
<td>Estimated proportion of costs attributable to the regulations, above testing undertaken by aquatic facilities in the absence of regulation (20 per cent)</td>
<td>$494,150</td>
<td>$514,065</td>
<td>$534,781</td>
<td>$556,333</td>
<td>$578,753</td>
<td>$602,077</td>
<td>$626,341</td>
<td>$651,582</td>
<td>$677,841</td>
<td>$705,158</td>
<td>$5,941,0823</td>
</tr>
</tbody>
</table>

### Ten-year costing estimates for theoretical burden of disease in aquatic facilities in Victoria

### Table 3.13: Burden of disease – theoretical example in Victorian context

<table>
<thead>
<tr>
<th>Item</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
<th>Year 6</th>
<th>Year 7</th>
<th>Year 8</th>
<th>Year 9</th>
<th>Year 10</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquatic facilities – registered premises</td>
<td>566</td>
<td>572</td>
<td>577</td>
<td>583</td>
<td>589</td>
<td>595</td>
<td>601</td>
<td>607</td>
<td>613</td>
<td>619</td>
<td>5,922</td>
</tr>
<tr>
<td>Visits per year (assume 100 people per facility per day)</td>
<td>20,659,000</td>
<td>2,086,559</td>
<td>2,107,425</td>
<td>2,128,499</td>
<td>2,149,784</td>
<td>2,171,282</td>
<td>2,192,994</td>
<td>2,214,924</td>
<td>2,237,074</td>
<td>2,259,444</td>
<td>40,206,985</td>
</tr>
<tr>
<td>Item</td>
<td>Year 1</td>
<td>Year 2</td>
<td>Year 3</td>
<td>Year 4</td>
<td>Year 5</td>
<td>Year 6</td>
<td>Year 7</td>
<td>Year 8</td>
<td>Year 9</td>
<td>Year 10</td>
<td>Total</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
<td>----------</td>
<td>--------</td>
</tr>
<tr>
<td>Simple (0.1 per cent chance per visit)</td>
<td>20,659</td>
<td>2,087</td>
<td>2,107</td>
<td>2,128</td>
<td>2,150</td>
<td>2,171</td>
<td>2,193</td>
<td>2,215</td>
<td>2,237</td>
<td>2,259</td>
<td>40,207</td>
</tr>
<tr>
<td>Treatment cost</td>
<td>$66</td>
<td>$68</td>
<td>$70</td>
<td>$72</td>
<td>$74</td>
<td>$76</td>
<td>$79</td>
<td>$81</td>
<td>$83</td>
<td>$86</td>
<td>$755</td>
</tr>
<tr>
<td>Burden per year</td>
<td>$1,359,775</td>
<td>$141,457</td>
<td>$147,158</td>
<td>$153,089</td>
<td>$159,258</td>
<td>$165,676</td>
<td>$172,353</td>
<td>$179,299</td>
<td>$186,525</td>
<td>$194,041</td>
<td>$2,858,632</td>
</tr>
<tr>
<td>Moderate (0.01 per cent chance per visit)</td>
<td>2,066</td>
<td>209</td>
<td>211</td>
<td>213</td>
<td>215</td>
<td>217</td>
<td>219</td>
<td>221</td>
<td>224</td>
<td>226</td>
<td>4,021</td>
</tr>
<tr>
<td>Treatment cost</td>
<td>$4,347</td>
<td>$4,478</td>
<td>$4,612</td>
<td>$4,751</td>
<td>$4,893</td>
<td>$5,040</td>
<td>$5,191</td>
<td>$5,347</td>
<td>$5,507</td>
<td>$5,672</td>
<td>$49,838</td>
</tr>
<tr>
<td>Burden per year</td>
<td>$8,981,335</td>
<td>$934,328</td>
<td>$971,982</td>
<td>$1,011,153</td>
<td>$1,051,902</td>
<td>$1,094,294</td>
<td>$1,138,394</td>
<td>$1,184,271</td>
<td>$1,231,997</td>
<td>$1,281,647</td>
<td>$18,881,302</td>
</tr>
<tr>
<td>Severe (0.001 per cent chance per visit)</td>
<td>207</td>
<td>21</td>
<td>21</td>
<td>21</td>
<td>21</td>
<td>22</td>
<td>22</td>
<td>22</td>
<td>22</td>
<td>23</td>
<td>402</td>
</tr>
<tr>
<td>Treatment cost</td>
<td>$14,567</td>
<td>$15,004</td>
<td>$15,454</td>
<td>$15,918</td>
<td>$16,395</td>
<td>$16,887</td>
<td>$17,394</td>
<td>$17,916</td>
<td>$18,453</td>
<td>$19,007</td>
<td>166,995</td>
</tr>
<tr>
<td>Burden per year</td>
<td>$3,009,401</td>
<td>$313,068</td>
<td>$325,685</td>
<td>$338,810</td>
<td>$352,464</td>
<td>$366,668</td>
<td>$381,445</td>
<td>$396,817</td>
<td>$412,809</td>
<td>$429,445</td>
<td>$6,326,610</td>
</tr>
<tr>
<td>Total burden of illness from visits</td>
<td>$13,350,511</td>
<td>$1,388,854</td>
<td>$1,444,824</td>
<td>$1,503,051</td>
<td>$1,563,624</td>
<td>$1,626,638</td>
<td>$1,692,191</td>
<td>$1,760,387</td>
<td>$1,831,330</td>
<td>$1,905,133</td>
<td>$28,066,543</td>
</tr>
<tr>
<td>Net present value</td>
<td>$13,350,511</td>
<td>$1,335,436</td>
<td>$1,335,821</td>
<td>$1,336,207</td>
<td>$1,336,592</td>
<td>$1,336,978</td>
<td>$1,337,363</td>
<td>$1,337,749</td>
<td>$1,338,135</td>
<td>$1,338,521</td>
<td>$25,383,314</td>
</tr>
</tbody>
</table>
Regulations administered by the Secretary to the department
Chapter 4: Cooling tower systems

Problem analysis

Victoria regulates cooling tower systems to manage the risk of legionellosis. All cooling tower systems must be registered with the department under the Act. Cooling towers are a common source of legionellosis – a serious and sometimes fatal disease in humans. Over the past 10 years there has been an increase in reported cases of legionellosis beyond what would be expected relative to population growth.

Hazard

Cooling towers systems are frequently associated with outbreaks of legionellosis (also known as legionnaires’ disease) for two reasons:

• they provide water temperatures that favour the proliferation of *Legionella pneumophila* bacteria
• the cooling process causes water to ‘aerosolise’ (form very small droplets), enabling the Legionella bacteria to enter the human respiratory system, resulting most commonly in pneumonia.

While most people exposed to Legionella bacteria do not get sick, for some, exposure to Legionella bacteria may result in illness or death. Twenty-six people died from legionellosis in Victoria between 2009 and 2018.

Exposure

People living and working near cooling tower systems cannot avoid being exposed to aerosolised water emitted from cooling towers that may contain the Legionella bacteria. Cooling tower systems are used for air-conditioning purposes in office buildings, shopping centres and other premises, and in factories and other industrial sites that require cooling. As at 1 January 2019, there are 2,859 registered cooling tower systems on 1,702 sites throughout Victoria.

Vulnerability

In most cases, people who become ill from exposure to Legionella bacteria are those who are already at increased risk of illness such as the elderly, smokers and people with weak immune systems or underlying chronic illnesses. In Victoria, an estimated 93 per cent of people with legionellosis end up in hospital.

Exposure to Legionella bacteria in places with high concentrations of at-risk people (for example, hospitals and aged care facilities) has significantly higher infection and fatality rates.

See the appendix for a [history of cooling tower regulation in Victoria](#).

Objective of the regulations

The objective of the regulations is to reduce the risk of Legionella bacteria in cooling tower systems and consequently the risks to human health from legionellosis.

The regulations contribute to minimising the impact of legionellosis on Victorians by reducing illness in the community and reducing service disruptions that impact on the community and businesses.
Requirements of the regulations

The regulations relate to s. 236 of the Public Health and Wellbeing Act 2008, which allows for certain matters in respect of cooling tower systems to be prescribed. The Act also establishes a mandatory framework for regulating cooling tower systems that requires:

- registration of cooling tower systems
- development of risk management plans
- auditing of those risk management plans.

The regulations require cooling tower system operators to maintain and test the systems to manage public health risks. The regulations also require specific remediation measures when Legionella bacteria are found in cooling tower systems.

Options

- Option 1: Retain the current regulations without changes
- Option 2: Amend some aspects of the current regulations
- Option 3: Remove or reduce the current regulations

The options under consideration are constrained by the requirements in the Act. The Act requires cooling tower systems to be registered for the purposes of controlling legionellosis.

Option 1: Retain the current regulations without changes

All cooling tower systems must be registered with the department under the Act, and are required to comply with the current regulations setting out the following obligations from operators of cooling tower systems:

1. Cooling tower systems are maintained and tested as described in the regulations, unless it is shut down or is otherwise not in use.

2. The water in the cooling tower system is continuously treated with one or more biocides to effectively control the growth of micro-organisms, including Legionella. It must also be treated with a bio-dispersant, and other chemicals to minimise fouling, formation of scale and corrosion.

3. A chlorine-compatible bio-dispersant is added to the recirculating water of the system and the system is disinfected, cleaned and re-disinfected:
   (a) immediately before initial start-up following commissioning or any shut-down period of more than a month
   (b) at least every six months.

4. The system is inspected at least monthly to ensure it is operating without defects.

5. The water in the system is tested by a laboratory for heterotrophic colony count (HCC) at least monthly and for Legionella every three months.

6. Maintenance and testing records are kept for 12 months and can be produced for an authorised officer from the department on request.

7. The regulations require that action is taken in response to an HCC result of more than 200,000 colony forming units per millilitre (CFU/mL) or to the detection of Legionella in a sample taken from the cooling tower system.
Option 2: Amend some aspects of the current regulations

Proposed amendments to strengthen regulation

1. Include an additional requirement of the cooling tower system owner to notify the Secretary when testing returns a result above the threshold in the Australian Standards (in addition to the existing requirement to notify the Secretary when three consecutive tests show Legionella of any level)

This would increase the surveillance capacity of the department. It would also provide a greater response framework upon detection. It is likely that, upon notification, the department would advise the operator to take the precautionary step to disinfect the cooling tower system. It is not expected that there will be many such notifications, but the increased awareness of these outlying events could subsequently reduce the incidence of legionellosis.

2. Ensure the integrity of the monitoring system by introducing offences relating to tampering with or falsifying water samples or laboratory reports for test samples from cooling tower systems

While the department has no hard evidence that there has been tampering of water samples or falsifying laboratory reports, there have been anecdotal reports that the practice may occur.

Since the detection of Legionella currently in the proposed regulations triggers a mandatory series of responses by the responsible person, it has been suggested to the department that this creates an incentive to tamper with a sample to not trigger the mandatory responses.

By creating a clear offence provision, there will be deterrent to this possible practice. Given there is no hard evidence, it could be expected that there would be a small increase in the number of detections of Legionella bacteria detected in cooling tower systems that would not be reported otherwise.

It is difficult to estimate what impact such a measure may have but as a minimum it is expected that this measure would provide greater confidence in the monitoring and response system.

3. Improve clarity of meaning and consistency of use regarding terminology used throughout the regulations

Improved clarity and consistency could be achieved by:

- using consistent terminology when referring to ‘samples’ that clarify that testing is required of recirculated water in cooling towers
- referring, where relevant, to ‘cooling tower systems’ rather than ‘cooling towers’ to ensure that testing and regulatory requirements are applied in reference to the entire system rather than a part of the system.

Consistent application of terminology will remove uncertainty and confusion from potentially ambiguous elements of the current regulations. This could improve stakeholder understanding and application of the regulations, contributing to improved outcomes relating to Legionella bacteria in cooling towers.

4. Clarifying disinfection requirements to explicitly require cleaning of the interior of the cooling towers in the system

The proposed regulations tighten the current regulations reference to cleaning of the system. It proposes a requirement to clean the interior of the cooling tower system as part of the mandatory disinfection process. This clarification of regulatory expectations should make a modest improvement in the quality of the disinfection process.

5. Introduce infringement penalties for certain offences

To address the gap between existing measures to achieve compliance such as education, notices and prosecution, it is intended that certain offences be enforced by way of an infringement notice, also known as infringement offences. This approach provides a proportionate and graduated response and a practical means of addressing noncompliance (including moderate levels of public health risk). For example, where lower level approaches have not been effective, and prosecution is not a proportionate response. Please see chapter 13 for a list of proposed infringement offences.
As is currently the case, education, routine monitoring and assisted compliance (making sure businesses are aware of, and understand, the requirements) will form the primary means of achieving compliance with the regulations.

**Option 3: Remove or reduce the current regulations**

Removing or reducing requirements in the regulations would result in confusion and uncertainty for cooling tower system operators and almost certainly lead to a further increase in legionellosis from cooling towers systems.

No regulation, supported by information and awareness campaigns by the department, is a potential option. The regulations could be removed in favour of relying on reputational effects and post-infection legal action by impacted individuals to act as controls on the risk of legionellosis from cooling tower systems. However, these controls are relatively weak, and their effect is significantly delayed.

A lack of regulation would not be sufficiently replaced by market forces and would increase the risk of Legionella bacteria in cooling tower systems, impede the ability for the department to detect Legionella bacteria, and impede remedial action following a detection.

**Lack of prevention**

The absence of regulations means that any action taken to protect people from Legionella bacteria in cooling tower systems can only occur following illness, rather than preventing illness, as is currently the case. Building operators would have existing liabilities under general consumer protections; however, this recourse would only be possible after an outbreak of legionellosis.

The lack of regulations may contribute to a perception that the risk of Legionella within cooling tower systems is not serious. This would likely lead to reduced preventative action taken by the person responsible for the cooling tower systems to manage the risk of Legionella bacteria. Cooling tower systems can be expensive to maintain, and adequate maintenance incurs a cost that may not be a prioritised by the building operator with competing fiscal demands.

Reduced or removed preventative action would lead to increased outbreaks of legionellosis.

**Impeded ability to detect Legionella bacteria**

Without regulation, the department would no longer have the specific power to require a water sample to be taken from the cooling tower systems if it is suspected or implicated as the source of infection of legionellosis.

**Impeded or ineffective remedial action following detection**

In the absence of regulations there would be no requirement for remedial action to prevent further infection if Legionella bacteria was detected in a sample taken from a cooling tower system. The department would continue to provide best practice guidelines to owner/operators of cooling tower systems to provide guidance about appropriate measures to control the risk of Legionella bacteria.

In the absence of regulations, thorough disinfection of the cooling tower systems may not be undertaken or may not be undertaken within the 24-hour period currently specified which puts those exposed to the system at greater risk of exposure to Legionella bacteria.

**Public expectation**

The final consideration is whether the removal of Legionella regulation would meet public expectations that government manages this public health risk. Outbreaks of Legionella have been associated with significant media attention and public demands for intervention and action by government. In responding to potential outbreaks, the department considers there is a heightened reaction (relative to the number of people identified as contracting legionellosis) to the real or potential health impacts of an outbreak of legionnaires’ disease. Academic literature theorises that this is because the risk cannot be assessed by the public and the hazard is invisible. It is likely that
shifting the regulations to focus solely on the most vulnerable populations or the highest risk cooling towers would not be sufficient to address the expectations of the public in the event of an outbreak.

Impact analysis

In the absence of regulations, the department expects that a majority of cooling tower operators would continue to provide a majority of the maintenance and testing required by the regulations. In a survey of providers of cooling tower maintenance and servicing the respondents advised that a majority of cooling tower operators engaged providers to undertake more stringent services (servicing programs A, B or C) compared with the minimum requirements of the regulations (servicing program D). These four programs are outlined in the current regulations and are discussed in more detail in the appendix. However, if the regulations were removed, it would be expected that some of the operators currently undertaking servicing program D, would choose to undertake less servicing and maintenance, choosing to allocate resources to other costs associated with building operation and maintenance. As a consequence, the department expects that the likelihood of Legionella bacteria being present in cooling tower systems and the risk of an outbreak of legionellosis due to cooling tower systems would increase in the absence of regulations.

The section below reviews the regulatory options described above and identifies the benefits from preventing burden of disease and the costs to stakeholders to maintain and enforce each of the options for regulating cooling towers.

Burden of disease of the status quo

The department has estimated the total potential burden of disease from legionellosis (from Legionella pneumophila) below. The department is unable to accurately estimate the proportion attributable to cooling tower systems versus other sources; however, cooling tower systems are the most widely known source of legionellosis.41

This disease burden for a theoretical 10 years is an estimate of the current burden in Victoria and is associated with the disease burden from option 1, the status quo. It has been estimated based on the 10-year average of the current burden in Victoria. The department expects that the total disease burden would marginally decrease in option 2 and increase in option 3 (the removal of regulations) – this is further discussed for each option in the impact analysis.

The total potential burden is as follows:

Total net present value of potential burden of disease from legionellosis (from Legionella pneumophila) in Victoria: $90,599,902 over 10 years (2019 to 2029, in 2019 dollars)

Details on how burden of disease has been calculated can be found in the appendix.

Each of the options outlined below contributes to the expected likelihood of Legionella bacteria being present in cooling tower systems and the chance of this being aerosolised and infecting the population with legionellosis. There are expected to be economic costs associated with outbreaks of legionellosis due to cooling tower systems. While the benefits of avoiding outbreaks cannot be accurately quantified, a further discussion is contained in the appendix.

Option 1: Retain the regulations without changes

Remaking the regulations without change would not address the unexplained increase in legionellosis.

41 Ten questions concerning the aerosolization and transmission of Legionella in the built environment, Building and Environment 123 (2017) pp. 684–695
While the department considers the current regulatory system to be effective in preventing and responding to Legionella in cooling tower systems, there has been an increase in reported cases beyond what would be expected relative to population growth over the past 10 years. A continuation of the existing regulations, unchanged, would most likely see this trend continue.

This increase has come about in spite of a 32 per cent decrease in the number of cooling towers in Victoria over the past 10 years (see appendix for more information) and a 38 per cent decrease in detection of Legionella bacteria in the remaining cooling towers over the same time (see the appendix for more information on the number of cooling towers).

Fewer cooling towers and less Legionella in cooling towers should result in fewer cases of legionellosis; however, this has not been the case. Victorian notifications relative to population size has more than doubled, with an increase from 0.88 per 100,000 people in 2009 to 1.88 per 100,000 people in 2018. For more information see ‘Notification rate of legionellosis’ in the appendix.

It is important to note that legionellosis is still not a common disease and remains comparatively less prevalent in the nine years since 2009 (1.32 per 100,000 population) compared with the 2000–2009 period (1.98 per 100,000 population) and below the Australia-wide five-year average (1.6 per 100,000 population, 2013–2017). For more information see ‘Comparison with other jurisdictions’ in the appendix.

Contributing factors to the increase in reported cases in Victoria most likely include:

- improved reporting of cases by medical practitioners and laboratories resulting from improved awareness
- demographic and population behaviour changes including:
  - an ageing population contributing to a larger number of more vulnerable Victorians in the community
  - increased density of the urban population resulting in more people living in and around areas with cooling towers
  - increased travel between countries resulting in Legionella acquired overseas being notified in Victoria
- increased Legionella in the environment separate from cooling tower systems.

For a full explanation of these contributing factors see ‘Contributing factors to increased legionellosis’ in the appendix.

In addition, there has been an unexplained worldwide increase in legionellosis. Similar to the trend in Victoria, the Centers for Disease Control in the United States has observed an increase in the rate of reported legionellosis of nearly five and a half times between 2000 and 2017 (contrasted with the threefold increase in Victoria). In this report it was noted that ‘it is unclear whether this increase represents test artefact (due to increased awareness and testing), increased susceptibility of the population, increased Legionella in the environment, or some combination of factors’. This is further supported by increased reporting of legionellosis in other developed countries. A 2015 study of Legionella in Europe found there was an increase across the region between 2011 and 2015. In 2015 there was a notification rate of 1.4 per 100,000 population, which was the highest rate ever recorded.

This increase in the number of cases has been seen in many parts of the world, but there is no clear evidence yet to explain this increase. The experience globally, without clear explanation for the reason, makes it difficult for regulators to target potential reforms.

The benefits and costs of option 1, relative to a base case having no regulations, are described qualitatively in Table 4.1.

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42 National Center for Immunization and Respiratory Diseases, Division of Bacterial Diseases. <https://www.cdc.gov/>
43 Ibid.
### Table 4.1: Cost-benefit analysis of option 1

<table>
<thead>
<tr>
<th>Current regulations</th>
<th>Benefit</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>The system is maintained and tested as described in the regulations, unless it is</td>
<td>Reduced likelihood of Legionella bacteria being present in the system.</td>
<td></td>
</tr>
<tr>
<td>shut down or is otherwise not in use.</td>
<td>Stagnant water due to the lack of water circulation in parts of the</td>
<td></td>
</tr>
<tr>
<td>system is likely to result in solids in the system settling out as sludge. This may</td>
<td>Resource cost (either time or cost to outsource) to conduct maintenance.</td>
<td></td>
</tr>
<tr>
<td>encourage the formation of biofilm. Lack of circulation will also almost certainly</td>
<td>Specific cost depends on a range of site-specific variables.</td>
<td></td>
</tr>
<tr>
<td>mean that any biocides or other chemicals being added will not reach all parts of the</td>
<td>Servicing must be performed by personnel with a much higher degree of</td>
<td></td>
</tr>
<tr>
<td>system.</td>
<td>knowledge than is required for an inspection. Typically, a service would include:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• a check of the water quality, including parameters such as pH,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>conductivity and biocide levels</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• refilling of chemical dosing tanks</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• removal of empty tanks</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• a check of all dosing and control equipment, including timers, pumps</td>
<td></td>
</tr>
<tr>
<td></td>
<td>and tubing (this should involve a calibration check on the pumps and</td>
<td></td>
</tr>
<tr>
<td></td>
<td>resetting, if necessary, against desired parameters)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• inspection of the wetted components and general integrity of the</td>
<td></td>
</tr>
<tr>
<td></td>
<td>system</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• corrosion checks.</td>
<td></td>
</tr>
<tr>
<td>The water in the cooling tower system is continuously treated with one or more</td>
<td>Reduced likelihood of environmental contamination that provides</td>
<td></td>
</tr>
<tr>
<td>biocides to effectively control the growth of micro-organisms, including</td>
<td>nutrients that can encourage more rapid bacterial growth of Legionella</td>
<td></td>
</tr>
<tr>
<td>Legionella. It must also be treated with a bio-dispersant, and other chemicals to</td>
<td>bacteria. The introduction of high levels of solids will also reduce</td>
<td></td>
</tr>
<tr>
<td>minimise fouling, formation of scale and corrosion.</td>
<td>the effect of biocides. The site should be inspected to identify</td>
<td></td>
</tr>
<tr>
<td></td>
<td>potential nutrient sources.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Resource cost (either time or cost to outsource) to conduct treatment.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Specific cost depends on a range of site-specific variables.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Treatment of the cooling tower system for control of corrosion, scale</td>
<td></td>
</tr>
<tr>
<td></td>
<td>formation and fouling, and to minimise microbiological growth (ensuring</td>
<td></td>
</tr>
<tr>
<td></td>
<td>that it remains at safe levels).</td>
<td></td>
</tr>
<tr>
<td>A chlorine-compatible bio-dispersant is added to the recirculating water of the</td>
<td>Reduced likelihood of Legionella bacteria being present in the system.</td>
<td></td>
</tr>
<tr>
<td>system and the system is disinfected, cleaned and re-disinfected:</td>
<td>Resource cost (either time or cost to outsource) to conduct treatment,</td>
<td></td>
</tr>
<tr>
<td>• immediately before initial start-up following commissioning or any shut-down</td>
<td>as well as the relevant chemicals.</td>
<td></td>
</tr>
<tr>
<td>period of more than a month</td>
<td>The chemical program must incorporate use of:</td>
<td></td>
</tr>
<tr>
<td>• at least every six months.</td>
<td>• a corrosion and scale inhibitor</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• at least one biocide (preferably two, used in rotation)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• a bio-dispersant to help remove any biofilm in the system.</td>
<td></td>
</tr>
</tbody>
</table>

\[46\] Details on how cost for industry to implement the regulations has been calculated can be found in Appendix: cost for industry.
The system is inspected at least monthly to ensure it is operating without defects.

<table>
<thead>
<tr>
<th>Current regulations</th>
<th>Benefit</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ensure that a cooling tower system is operating without defects, reducing the likelihood of Legionella bacteria being present in the system.</td>
<td>Resource cost (either time or cost to outsource) to conduct inspections. Inspection means simple monitoring of key components such as:</td>
<td></td>
</tr>
<tr>
<td>• an observation of water clarity</td>
<td>• an observation of water clarity</td>
<td></td>
</tr>
<tr>
<td>• a check that the chemical dosing devices are operating.</td>
<td>• a check that the chemical dosing devices are operating.</td>
<td></td>
</tr>
<tr>
<td>It is expected that a nontechnical person with minimal training can do the inspections.</td>
<td>It is expected that a nontechnical person with minimal training can do the inspections.</td>
<td></td>
</tr>
<tr>
<td>Inspections should be frequent. Where problems are noted, they need to be reported to the responsible person, who can then authorise remedial works.</td>
<td>Inspections should be frequent. Where problems are noted, they need to be reported to the responsible person, who can then authorise remedial works.</td>
<td></td>
</tr>
<tr>
<td>The water in the system is tested by a laboratory for heterotrophic colony count (HCC) at least monthly and for Legionella every three months.</td>
<td>Testing for Legionella requires samples to be:</td>
<td></td>
</tr>
<tr>
<td>• taken in containers as described in AS2031</td>
<td>• taken in containers as described in AS2031</td>
<td></td>
</tr>
<tr>
<td>• collected as described in AS/NZS 3666.3</td>
<td>• collected as described in AS/NZS 3666.3</td>
<td></td>
</tr>
<tr>
<td>• stored and transported as described in AS/NZS 3896 (Waters – Examination for Legionella spp. including Legionella pneumophila). This standard requires that the samples be transported to the testing laboratory as soon as possible and then analysed in accordance with AS/NZS 3896. The testing is much more sophisticated for Legionella than for HCC, and results can take up to 10 days.</td>
<td>• stored and transported as described in AS/NZS 3896 (Waters – Examination for Legionella spp. including Legionella pneumophila). This standard requires that the samples be transported to the testing laboratory as soon as possible and then analysed in accordance with AS/NZS 3896. The testing is much more sophisticated for Legionella than for HCC, and results can take up to 10 days.</td>
<td></td>
</tr>
<tr>
<td>Maintenance and testing records are kept for 12 months and can be produced for an authorised officer from the department on request.</td>
<td>Cost to store records on site; however, in some circumstances, they may be stored off site – for example, a property manager may hold the records on behalf of a building owner.</td>
<td></td>
</tr>
<tr>
<td>Provides an identifiable audit trail associated with the history of actions taken to reduce Legionella bacteria in the cooling tower system. Helps the department to identify outbreak sources when required.</td>
<td>Provides an identifiable audit trail associated with the history of actions taken to reduce Legionella bacteria in the cooling tower system. Helps the department to identify outbreak sources when required.</td>
<td></td>
</tr>
<tr>
<td>The regulations require that action is taken in response to an HCC result of more than 200,000 colony forming units per millilitre (CFU/mL) or to the detection of Legionella in a sample taken from the cooling tower system.</td>
<td>Cost associated with responding to the result. Specific response depending on site variables but is likely to include water treatment with chemicals and further monitoring and sampling.</td>
<td></td>
</tr>
<tr>
<td>Provides minimum obligations in response in the event of an HCC above a threshold. Subsequent actions are likely to reduce the presence of Legionella bacteria in the cooling tower system.</td>
<td>Provides minimum obligations in response in the event of an HCC above a threshold. Subsequent actions are likely to reduce the presence of Legionella bacteria in the cooling tower system.</td>
<td></td>
</tr>
</tbody>
</table>

Based on the number of cooling tower systems in Victoria (December 2018) the cost to undertake the minimum requirements of the regulations relating to maintenance equates to $10,386,747 over one year or $99,486,525 over the 10 years of the regulations (in 2018 dollars).

**Option 2: Amend the regulations**

An increase in legionellosis warrants a modest strengthening of regulations to build on prevention efforts.

The current regulations provide the department with the authority to undertake action when Legionella is detected. In 2017 the department ordered that cooling tower systems on 90 sites be disinfected in response to seven
separate outbreaks of legionellosis. The number of cooling tower systems required to be disinfected in 2017 was unusually high. A large proportion of the disinfections related to a specific outbreak of legionellosis associated with the Melbourne central business district. The outbreak occurred in the lead up to a holiday period where high volumes of people were expected to travel to the Melbourne CBD. As such, these disinfections were undertaken without prior sampling to avoid delays and mitigate the risk of a major outbreak as soon as possible. Given that a single cooling tower system has previously been linked to 127 cases in Victoria (Melbourne Aquarium in 2000), preventive measures are favoured over responsive measures. The 2017 response provides an excellent example of how the current regulations facilitate preventative measures. It is important that preventative efforts continue to be supported by regulations to address the rise in legionellosis cases.

While the potential contributing factors outlined above (changes to reporting behaviour, changes to population composition, density and behaviour) cannot be addressed by this particular regulation, the increase in legionellosis cases does warrant a thorough re-examination of the existing regulations with a view to identifying potential improvements.

Refinements to the regulations and strengthening of some requirements specified within the regulations has the potential to assist the department, cooling tower owners and other stakeholders to better understand and meet their obligations. This in turn has the potential to impact on the trend of increasing incidence of legionellosis. While these refinements to the regulations will not directly address the likely causal factors behind the increase, these could help stabilise the rates of increase of legionellosis cases, avoiding further increases.

Consultation with cooling tower owners undertaken by the department in mid-2018 identified several requirements of the regulations that could benefit from clarification or strengthening. These are considered to be very modest changes to the status quo but, would contribute to reducing the risk of legionellosis from cooling towers, and provide a framework for action if Legionella bacteria is detected.

The benefits and costs for option 2, relative to the status quo, are described qualitatively in Table 4.2.

Table 4.2: Cost-benefit analysis of option 2 – amend the regulations

<table>
<thead>
<tr>
<th>Proposed amendment</th>
<th>Benefit</th>
<th>Cost</th>
</tr>
</thead>
</table>
| Include an additional requirement of the cooling tower owner to notify the Secretary when testing returns a result above the threshold in the Australian Standards (in addition to the existing requirement to notify the Secretary when three consecutive tests show Legionella of any level). | This would increase the surveillance capacity of the department. It would provide a greater response framework upon detection.  
It is expected that a higher number of directions to disinfect would occur than under the existing regulation, subsequently reducing the prevalence of Legionella bacteria in cooling tower systems. | It is likely that, upon notification, the department would advise the operator to take the precautionary step to disinfect the cooling tower system. |
<p>| Ensure the integrity of the monitoring system by introducing offences relating to tampering with or falsifying water samples or laboratory reports for test samples from cooling tower systems. | It is expected that this measure would provide greater confidence in the monitoring and response system and would be expected to contribute to a reduction in the impact of legionellosis outbreaks. | Because this creates a disincentive to tamper or falsify, it would be expected that there would be an increase in the number of notifications of Legionella bacteria detected in cooling tower systems that would not be reported otherwise. |
| Improve clarity of meaning and consistency of use regarding terminology used throughout the regulations. Using consistent terminology when referring to ‘samples’ that clarify | Consistent application of terminology will remove uncertainty and confusion from potentially ambiguous elements of the current regulations. This could improve stakeholder | Due to the current ambiguity, there may be instances where cooling tower system operators do not take specific actions. Removing this ambiguity may increase the burden on some |</p>
<table>
<thead>
<tr>
<th>Proposed amendment</th>
<th>Benefit</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>that testing is required of recirculated water in cooling towers. Referring, where relevant, to ‘cooling tower systems’ rather than ‘cooling towers’ to ensure that testing and regulatory requirements are applied in reference to the entire system rather than a part of the system.</td>
<td>understanding and application of the regulations, contributing to improved outcomes relating to Legionella bacteria in cooling towers.</td>
<td>operators in line with expected obligations for operating cooling tower systems.</td>
</tr>
<tr>
<td>Clarifying disinfection requirements to explicitly require cleaning of the interior of the cooling towers in the system. The proposed regulations tighten the current regulations reference to cleaning of the system. It proposes the requirement to clean the interior of the cooling towers as part of the mandatory disinfection process.</td>
<td>Improved consistency and therefore a uniform standard across industry which should result in cleaner towers and therefore a potential modest reduction in detection of Legionella and legionellosis cases.</td>
<td>This is a modest clarification and so we expect the impact to be negligible.</td>
</tr>
<tr>
<td>Introduce infringement penalties for certain offences</td>
<td>Address the gap between existing measures to achieve compliance. Provides proportionate response and a practical means of addressing noncompliance (including public health risk)</td>
<td>Cooling tower operators who receive an infringement notice will incur the cost burden. It is expected that:  • these compliance measures can be used where there are compelling grounds, such as where lower level approaches have not been effective or moderate levels of risk  • compliance will continue to be primarily achieved through education, compliance monitoring and assisted compliance.  The department expects that the quantum of infringements issued to be relatively low.</td>
</tr>
</tbody>
</table>

The overall cost of option 2 would be similar to option 1, the status quo. However, due to the increased regulatory burden associated with these changes, it is estimated that cooling tower operators on aggregate would have costs increase with a range of 1–3 per cent of the total burden.

This would be a cost increase of between $103,867 and $311,602 per year spread across all cooling tower system operators in Victoria. Based on the current 2,859 registered sites in Victoria this would be an average increase in costs of between $36.33 and $109 per cooling tower in operation per year.

As such the cost to undertake the minimum requirements of option 2 regulations relating to maintenance equates to between $10,490,614 and $10,698,348 across one year.
Proposed approach

Break-even analysis to assess options for regulation

The department has used break-even analysis (BEA) to assess each option for cooling tower regulations and determine the preferred option. BEA is a useful technique when the key benefits of options can be identified (for example, reduced burden of disease) and a unit of benefit can be valued (for example, using the value of a statistical life and cost of a hospitalisation\(^{46}\)), but it is very difficult to quantify how many units of benefit each option will generate (for example, how many deaths or hospitalisations would be avoided). The steps of a BEA are:

1. identifying, quantifying and valuing the costs of each option
2. estimating the value of a unit of benefit
3. discussing whether each option would achieve enough benefit to ‘break even’.

BEA can only be used to assess whether an option breaks even. It cannot be used to compare options.

The department has estimated the cost of option 1 as $99.5 million (present value) from 2019 until the regulations sunset in 2029. The department has estimated that option 2 is costlier and that the present value costs than option 1, with present value costs of $1–3 million higher for the 10 years from 2019. Both options have small unquantified costs that are not considered as part of this analysis.

These costs are relative to the base case of no regulations. Workings for these cost estimates are in the appendix.

The purpose (benefits) of cooling tower regulations is to minimise the burden of legionellosis. The department has estimated the burden of legionellosis from cooling tower systems to be $124.8 million over 10 years. This estimate represents 27 deaths, 729 hospitalisations and 51 cases where hospitalisation was not required. More than 90 per cent of the estimated burden is from deaths even though there are far more hospitalisations than deaths. This is because the burden of a death is much greater than the burden of a hospitalisation. In the department’s view, the burden of disease would be much higher than $124.8 million under the base case of no regulations. Further details on the calculations for these benefits estimates are in the appendix.

Using the above estimates:

- Option 1 would break even if there was a reduction in the burden of disease equivalent to at least 22 deaths, relative to the base case.
- Option 2 would break even if there was a reduction in the burden of disease equivalent to at least 23 deaths, relative to the base case.\(^{47}\)

The department is confident that both options 1 and 2 would break even (Table 4.3).

The burden of disease would likely be much higher under the base case of no regulations (option 3). The department expects this approach would potentially:

- negatively impact on the Victorian population by increasing the likelihood of legionellosis in the community
- negatively impact on the Victorian economy by increasing the likelihood of an outbreak of legionellosis in a population centre, causing closure of facilities and potentially affecting reputation of collocated businesses
- positively impact on the operations of cooling tower system operators in the short term because there would be more flexibility to reduce servicing and maintenance standards.

Table 4.3 Break-even analysis of options for the regulation of cooling tower systems

\(^{46}\) For further details on this concept, refer to the Best Practice Regulation Guidance Note: Value of statistical life <https://www.pmc.gov.au/sites/default/files/publications/Value_of_Statistical_Life_guidance_note.pdf>, Office of Best Practice Regulation, Commonwealth

\(^{47}\) Both of these break-even analysis estimates are based on a proportionate reduction in deaths, hospitalisations and cases not requiring hospitalisation.
<table>
<thead>
<tr>
<th>Option</th>
<th>Quantifiable costs over 10 years</th>
<th>Break even analysis – benefits</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Retain the current regulations without changes</td>
<td>$99,486,525</td>
<td>21.5 deaths</td>
<td>Likely to reduce by at least 21 deaths</td>
</tr>
<tr>
<td>2. Amend the regulations</td>
<td>$100,481,390– $102,471,121</td>
<td>21.7–22.2 deaths</td>
<td>Likely to reduce by at least 22 deaths</td>
</tr>
<tr>
<td>3. Base case – remove or reduce regulations</td>
<td>$0</td>
<td>0</td>
<td>–</td>
</tr>
</tbody>
</table>

Both options 1 and 2 (maintaining the current regulations and amending the regulations) would be expected to positively impact on the health outcomes of the Victorian population by reducing the likelihood of legionellosis in the community due to poorly operating cooling tower systems and the associated impacts of an outbreak of legionellosis.

The department prefers option 2 to option 1 because, by reducing ambiguity, option 2 is expected to be marginally better at improving health outcomes. Both would have a positive impact by reducing the economic impacts of an outbreak of legionellosis and the stigmatisation of certain exposure sites. However, both would have an impact on the operations of cooling tower system operators, who, in the absence of regulations, may choose a less rigorous servicing and maintenance program. Option 2 is expected to marginally increase costs for cooling system tower operators relative to option 1.

Based on the above the preferred option is option 2: amend the regulations.

This option is expected to benefit the people of Victoria by contributing to the prevention and management of legionellosis from cooling towers through increased surveillance capacity, improved clarity of requirements and greater confidence in the compliance and monitoring system. The cost to industry for the additional requirements is considered to be marginally higher and offset by the benefits to industry of clearer regulation, improved health outcomes and reduced likelihood of outbreaks causing negative economic impacts in Victoria.
Appendix

History of regulation

A cooling tower system is a device to lower temperatures, that rejects heat to the atmosphere through the cooling of circulating water. The majority of cooling tower systems are small-scale units used to remove heat from air conditioning systems.

Case notifications of legionellosis slowly increased between 1979 and 2000 in Victoria (with legionellosis first being identified in the 1970s in the United States). This gradual increase is thought to be substantially explained by the rapidly increasing use of cooling towers in air-conditioning systems in large buildings. A major outbreak of Legionella occurred at the Melbourne Aquarium in April 2000, the cause of which was subsequently traced to the cooling tower systems associated with that building’s air conditioning.

In response to the outbreak the Victorian Government strengthened the regulatory framework to improve testing and maintenance standards for cooling tower systems, with the aim of reducing the impact of Legionella on the community. A comprehensive register of cooling tower systems was established, and developing and implementing risk management plans and annual audits became a requirement on those responsible for cooling towers. In addition, the Department of Health and Human Services was given inspection powers and developed an enhanced technical advisory and outbreak investigation service.

These response actions were implemented by the Building Commission (through the Building Act 1993), the Plumbing Industry commission (the Plumbing Regulations 1998) and the Department of Health and Human Services (Health (Legionella) Regulations 2001).

The implementation of the Public Health and Wellbeing Act 2008 and the Public Health and Wellbeing Regulations 2009 consolidated all these controls into one regulatory tool but retained the original intent of the Legionella reforms.

Comparison with other jurisdictions

New York City

In 2015 New York City experienced a similarly large-scale outbreak to the Melbourne Aquarium outbreak of 2000. In 2015 the Bureau of Communicable Disease of the New York City Department of Health and Mental Hygiene detected an abnormal number and distribution of legionellosis cases. This cluster of cases grew into the largest outbreak of legionellosis in the history of New York City (there were two major outbreaks in 2015). These outbreaks were proceeded by reported cases in New York City rising from 47 in 2000 to 438 in 2015 (Figure 4.1).

In response to rising cases of legionellosis, New York State recently introduced a similar regulatory framework to the framework used in Victoria.

The experience of New York City before regulation may illustrate the impacts Victoria could encounter if regulations were to be removed – specifically an increase in the number of legionellosis cases and the likelihood of an outbreak.
Figure 4.1: Reported cases of legionellosis in New York City, 2000–2015

![Graph showing reported cases of legionellosis in New York City from 2000 to 2015]

*Source: The Bureau of Communicable Disease of the New York City Department of Health and Mental Hygiene*

In reviewing the response to the outbreak and increase in legionellosis in New York State, it was noted that ‘while systems were already in place for obtaining and managing clinical data on Legionnaire’s disease diagnoses, there was no analogous system for managing data obtained from environmental sampling activities’. In other words, Legionella could be detected because of cases being reported to health authorities by medical practitioners, but not as a result of bacteria detected in cooling tower systems themselves.

As such, regulations stipulating cooling tower registration, certification, maintenance, inspection and testing requirements was put in place. From these measures, the New York City Department of Health and Mental Hygiene expects that the registration database will allow them to intervene in the operation of cooling towers or building maintenance plans to more effectively prevent disease spread.

This is a contemporary example of another jurisdiction encountering issues with managing legionellosis, which considered the most appropriate response was to introduce registration and prescriptive registration of cooling tower systems like the regulation used in Victoria.

**Other Australian state and territories**

Figure 4.2 shows the rates for legionellosis for all types of Legionella (including *Legionella pneumophila*) for all states and territories in Australia.

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49 Ibid.
New South Wales has comparable population density with Victoria but has a more devolved regulatory regime, with registration of cooling tower systems being a local government function. This approach provides greater flexibility in compliance but is expected to have less statewide consistency compared with Victoria.

As such, the legionellosis case notification rate of 1.8 per 100,000 for New South Wales can be used as benchmark for comparison with the Victorian regulatory approach.

Based on the experience of New York City before introducing cooling tower regulations in 2016, a base case in Victoria would, in the absence of regulations, expect to see a higher rate of legionellosis cases and an increased likelihood of a major outbreak. As such, a comparison rate per 100,000 could be even higher than the experience in New South Wales. Given the complexities of comparing overseas jurisdictions, specifically quantifying how much higher the rate per 100,000, would have significant variability and will not be expressed in a quantitative sense.

However, it is expected that estimates of the burden of disease would likely be higher than the difference between Victoria’s rate and the 1.8 per 100,000 used as comparison.

**Fewer cooling towers**

There are 2,859 registered cooling tower systems on 1,702 sites throughout Victoria (as at 1 January 2019). Most cooling tower systems are located within Melbourne and regional cities; however, systems are also found in rural and remote areas, including dairy farms.

Over the past 10 years, cooling tower system registrations have declined, from 4,192 in 2009 to 2,859 at the beginning of 2019 (Figure 4.3). This may be due to closures of factories and large industrial sites and a shift towards air-based air-conditioning systems that do not pose the risk of legionellosis. However, cooling towers still represent a relatively energy efficient approach and are therefore likely to continue to be used for the foreseeable future.

Since 2002 many operators have chosen to decommission cooling tower systems and install alternative systems. Residential developers appear to prefer to install air-based cooling systems over cooling towers, such as split-systems in individual apartments. This preference may reflect improvements in performance of alternative systems.
rather than risks posed by cooling tower systems. It is expected that the technology improvements offered by alternative systems for temperature control is the main driver of the decrease in cooling tower systems; however, the department does not have a complete picture of the heating, air-conditioning and ventilation industry operations. The costs associated with complying with the regulations are expected to have also contributed to the decline in the number of cooling towers by imposing requirements above what industry may have undertaken in the absence of regulations; however, these are substantially lower than other cost considerations for operators.

**Figure 4.3: Number of registered cooling systems and active sites as at 1 January, Victoria, 2002–2019**

![Graph showing the number of cooling systems and active sites from 2002 to 2019 in Victoria.](image)

*Source: The Department of Health and Human Services, Victorian Government*

**Fewer Legionella detections**

The department undertakes inspections of sites where cooling tower systems are located. During these inspections samples of the water in the cooling tower systems are taken as part of compliance monitoring work. Since 2010, there has been a sustained decline in the detection of Legionella bacteria in these water samples (Figure 4.4). The number of annual detections declined by approximately 38 per cent over the past 10 years, from 45 to 27. This decrease in the number of detections has declined even when the number of cooling tower systems registered has fallen – meaning that even while the percentage of systems sampled has increased and the total number of samples taken has also increased, detections of Legionella has fallen. This demonstrates that the existing cooling tower systems continue to address the risk of Legionella bacteria occurring in these systems and the increase in cases of legionellosis in Victoria could be attributable to other sources of Legionella bacteria.
Notification rate of legionellosis

Under the Public Health and Wellbeing Regulations, laboratories and medical practitioners must immediately notify the Department of Health and Human Services of a legionellosis diagnosis (noting that these notifications do not identify a source). Figure 4.5 shows that the incidence of legionellosis in Victoria has been increasing gradually over the past 10 years. This increase is occurring in both the total notification rate and the rate per 100,000 population (Figure 4.6).

Figure 4.5: Notified cases of legionellosis in Victoria, 2009–2018

Source: The Department of Health and Human Services, Victorian Government
Notifications relative to population size has more than doubled, with an increase from 0.88 per 100,000 people in 2009 to 1.88 per 100,000 people in 2018. The notified cases graph in Figure 4.7 includes all types of Legionella bacteria, which can come from a variety of sources, including hot springs, sea water, woodchips, mulch and soil.

Exposure via cooling towers generally involves a specific type of Legionella bacteria: *Legionella pneumophila*. By reviewing the incidence of legionellosis from *Legionella pneumophila* (Figure 4.8), a sense of the number of cases from cooling towers and warm water delivery systems (see Chapter 5: Legionella risks in certain premises (water delivery systems)) can be gained.
Figure 4.8: Legionellosis due to *Legionella pneumophila* notified cases per 100,000 population, Victoria, 2009–2018

![Graph showing Legionellosis cases per 100,000 population, Victoria, 2009–2018](image)

Source: The Department of Health and Human Services, Victorian Government

Figure 4.8 indicates that the type of *Legionella pneumophila*, the most commonly source found in cooling towers, is also steadily increasing, from 0.58 per 100,000 to 1.41 per 100,000 – an almost trebling of cases. This graph shows that, while other types of Legionella bacteria are also on the rise, the majority of cases remain *Legionella pneumophila* – the likeliest source of which is cooling towers, water delivery systems or other environmental sources. Sources within water delivery systems are described in Chapter 5: Legionella risks in certain premises (water delivery systems).

### Contributing factors to increased legionellosis

#### Improved reporting of legionellosis in Victoria

In 2000 a major outbreak of legionellosis at the Melbourne Aquarium significantly raised public and medical community awareness of legionellosis, with 125 reported cases linked to the aquarium. As a likely result of the increased awareness of the disease in the years following this major outbreak, reporting of cases by medical practitioners and laboratories improved (along with a range of regulatory changes and substantial improvements in the department’s follow-up of reported outbreaks). The department believes that, while there continues to be an element of underreporting of legionellosis, the extent of this underreporting has declined in Victoria following this major event. In other words, reports of disease are not fully indicative of occurrence of disease, therefore the current increase may be, in part, the result of increased reporting rather than significantly more cases.

There is recognition across the literature on Legionella that notifiable disease datasets, such as Victoria’s notification conditions and micro-organisms regulations, only provide an indication of the most severe cases of the disease. A proportion of community-acquired pneumonia cases are likely to be due to undiagnosed legionellosis, and the community-acquired pneumonia screening performed by most hospitals does not include Legionella (although this has started to change in very recent years). Studies quote the proportion of community-acquired pneumonia due to Legionella range from one to 15 per cent of all cases. In Australia, it is estimated that there is a rate of community-acquired pneumonia of 245 per 100,000 population, meaning undiagnosed legionellosis, from any source, could represent an additional burden of disease between 2.5 to 36.8 cases per 100,000 population.

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50 Department of Health 2017, Community-acquired syndromes causing morbidity and mortality in Australia, *Communicable Diseases Intelligence*, vol. 41, no. 1, Commonwealth of Australia
Change in Victorian demographics

Ageing population

Legionellosis is more prevalent in older people (aged over 50) and the elderly (over 85), with more than 70 per cent of infections in Victoria occurring in patients over 50 years of age (Figure 4.9).

Figure 4.9: Legionellosis notifications by median age, Victoria, 2009–2018

Victoria is continuing to experience an increase in the average age of its population. In 1971, eight per cent of Victoria’s population was over the age of 65 years. On the basis of Victorian Government projections, the population over the age of 65 years was estimated to be 14 per cent in 2011. In 2051 the proportion of the population over the age of 65 years is projected to increase to 21.5 per cent. A higher proportion of susceptible people could result in an increase in cases of legionellosis. Regulation of cooling towers cannot prevent an increase in the number of people who are vulnerable to Legionella because of age.

Population density

Victoria has the highest population density of all Australian states (measured by people per square kilometre). In June 2009 Victoria’s population density was 23.9 people per square kilometre. By June 2017 Victoria’s population density had increased to 28 people per square kilometre. This is very high compared with Australia’s population density of 3.2 people per square kilometre. Population density has particularly increased in urban areas, coinciding with the location of cooling towers (for example, at large shopping centres). More people are living and working in and around cooling towers, therefore people are more likely to be exposed to possible infection by Legionella bacteria.

Legionella in return travellers (proportion of total cases)

According to the Australian Bureau of Statistics, Australians are travelling overseas for holidays more than ever, with a 100 per cent increase in the number of short-term resident departures (short trips overseas) in 2016 compared with 2006. Of the 9.8 million Australians who travelled overseas in 2016, 25.5 per cent were from Victoria, with the most popular destinations being New Zealand and Indonesia.

The proportion of *Legionella pneumophila* that can be traced to an overseas source has also increased in the past 10 years. It is worth noting that the source overseas is suspected to be in the built environment in these countries – there is no recorded human-to-human transmission of legionellosis. In 2018, 16 per cent of notifications (14 cases)

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51 Department of Infrastructure, Victoria, 2000
52 Department of Environment, Land, Water and Planning, Victoria, 2016
of legionellosis from *Legionella pneumophila* were acquired overseas (Figure 4.10). Of these 14 cases in 2018, four were acquired in Indonesia and four were acquired in Thailand. The 10-year average between 2009 and 2018 was 11 per cent of total notifications, yet the 10-year average between 1999 and 2008 was one per cent of notifications of legionellosis.

**Figure 4.10: Exposure sources of *Legionella pneumophila*, Victoria, 2009–2018**

More travel by Victorians has resulted in more legionellosis acquired from Legionella bacteria from sources overseas. Legionellosis acquired outside of Victoria cannot be influenced by the Victorian regulations related to Legionella control yet partially contribute to the increase in the case notification rate per 100,000 population in Victoria between 2009 and 2018.

**Reduced detection of Legionella in cooling tower systems**

Sampling of cooling tower systems indicates that there has been a decrease in the detection of Legionella in the existing stock of cooling towers (Figure 4.11). This indicates that the source of community-acquired legionellosis is from another source.
Burden of disease

The impact of legionellosis can be valued by its component costs:

- hospital and medical costs
- the loss of economic output due to absences from work (including carer’s leave)
- the economic impact of a death.

Each regulatory option differs in possible number of cases and subsequent statewide burden of the disease; however, the expected burden of a single case would remain the same regardless of the option.

Key data from the department’s notification system relating to legionellosis is outlined in Table 4.4. This data is used to inform the costs associated with a single case of legionellosis.

<table>
<thead>
<tr>
<th>Type</th>
<th>10-year average (2009–2018)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cases of legionellosis (all types)</td>
<td>77.7</td>
</tr>
<tr>
<td>Proportion of cases hospitalised (%)</td>
<td>93.4</td>
</tr>
<tr>
<td>Cases of legionellosis attributable to <em>Legionella pneumophila</em> (%)</td>
<td>73.5</td>
</tr>
</tbody>
</table>

Hospital and medical costs

Over the past 10 years, most notified cases of legionellosis were hospitalised (all types, including *Legionella pneumophila*). The median length of stay at a hospital was five days. The cost for a hospital stay for respiratory system disorders with ventilator support is estimated at $9,500 per hospitalisation.53

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53 Depending on the specific hospital, year and number of days treated, using the Victorian Weighted Inlier Equivalent Separation casemix funding model.
Post-hospitalisation medical costs incurred are estimated at $811, comprising the estimated costs of prescription medicines received and general practitioner visits following release from hospital. This calculation is derived by updating the estimate from the previous regulatory impact statement for inflation ($657 in 2008). It is assumed that cases that do not require hospitalisation would incur similar post-hospitalisation medical costs.

**Loss of output due to absences and carer’s leave**

The average loss of output due to absence from work assumes that each case of legionellosis required five days’ absence while hospitalised and an additional three weeks (21 days) absence from work while recovering post-hospitalisation (this post-hospitalisation estimate from the previous regulatory impact statement has been assumed to be comparable). This is a total of 26 days absence from work per case of legionellosis.

Table 4.5 shows average annual earnings in Victoria and the comparable daily rate.

**Table 4.5: Average annual earnings in Victoria**

<table>
<thead>
<tr>
<th>Type</th>
<th>May 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average weekly earnings in Victoria</td>
<td>$1,171.90</td>
</tr>
<tr>
<td>Yearly earning as a daily rate</td>
<td>$167.41</td>
</tr>
</tbody>
</table>

These are aggregate figures and do not reflect an individual's circumstances such as work profile of people that are diagnosed with legionellosis (full-time, part-time, casual, unemployed or retired).

**Burden of disease from legionellosis – hospitalisation and non-hospitalisation**

The costs described above are listed in Table 4.6 for cases requiring hospitalisation (Table 4.6a) and non-hospitalisation (6b).

**Table 4.6a: Impact of legionellosis requiring hospitalisation**

<table>
<thead>
<tr>
<th>Risk</th>
<th>Impact</th>
<th>Quantity</th>
<th>Per unit cost</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legionellosis requiring hospitalisation</td>
<td>Absence from work (days)</td>
<td>26</td>
<td>$167.41</td>
<td>$4,352.66</td>
</tr>
<tr>
<td></td>
<td>Public hospital admissions – respiratory system disorders with ventilator support</td>
<td>1</td>
<td>$9,500.00</td>
<td>$9,500.00</td>
</tr>
<tr>
<td></td>
<td>Post-hospitalisation medical costs</td>
<td>1</td>
<td>$811.00</td>
<td>$811.00</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>$14,663.66</strong></td>
</tr>
</tbody>
</table>

**Table 4.6b: Impact of legionellosis not requiring hospitalisation**

<table>
<thead>
<tr>
<th>Risk</th>
<th>Impact</th>
<th>Quantity</th>
<th>Per unit cost</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legionellosis not requiring hospitalisation</td>
<td>Absence from work (days)</td>
<td>26</td>
<td>$167.41</td>
<td>$4,352.66</td>
</tr>
<tr>
<td></td>
<td>Post-hospitalisation medical costs</td>
<td>1</td>
<td>$811.00</td>
<td>$811.00</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>$5,163.66</strong></td>
</tr>
</tbody>
</table>

**Mortalities due to legionellosis**

Over the past 10 years there have been an average of three deaths per year from legionellosis, a 10-year average mortality rate of 3.4 per cent per notifiable case. In line with guidance from the Office of the Commissioner for Better Regulation, a Value of a Statistical Life figure of $4.5 million has been adopted per death.
Burden of disease of legionellosis in Victoria over the theoretical 10 years

The department estimates the potential burden of disease as follows:

**Total net present value of potential burden of disease from *Legionella pneumophila* in Victoria:**
$90,599,902 over 10 years (in 2019 dollars)\(^{54}\)

**Avoided disease burden**

In the absence of the regulations it would be expected that less rigorous requirements would give rise to greater exposure rates to *Legionella pneumophila* and a greater number of cases of legionellosis in Victoria.

Based on the comparison with other Australian state and territories above, the notification rate of notification rate of 1.8 per 100,000 for New South Wales (five-year average to 2017) may be an appropriate benchmark for comparison with the Victorian regulatory approach.

**Legionellosis cases in Victoria using benchmark comparison notification rates per 100,000 population**

The potential difference in the avoided disease burden will use the estimated average rate of 1.8 per 100,000 for New South Wales compared with the 1.6 per 100,000 in Victoria (five-year average to 2017), using actual population figures in Victoria across the past 10 years of the regulation (Table 4.7).

**Table 4.7: Potential avoided disease burden over 10 years from legionellosis, 2019 to 2029.**

<table>
<thead>
<tr>
<th>Measure</th>
<th>Over 10 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Victorian population (combined 2009–2018)</td>
<td>59,189,833</td>
</tr>
<tr>
<td><strong>Victorian benchmark (per 100,000)</strong></td>
<td>1.6</td>
</tr>
<tr>
<td>Expected notified cases</td>
<td>947</td>
</tr>
<tr>
<td><strong>New South Wales benchmark (per 100,000)</strong></td>
<td>1.8</td>
</tr>
<tr>
<td>Expected notified cases</td>
<td>1,065</td>
</tr>
<tr>
<td><strong>Difference</strong></td>
<td>118</td>
</tr>
</tbody>
</table>

In this estimate, it is expected that if Victoria had a more devolved regulatory regime similar to the structure in New South Wales, it could be expected to have an additional 118 notified cases of legionellosis over the past 10 years.

Using the estimates for disease burden and mortalities above, this would equate to additional estimated costs for medical treatment, lost output from work and the losses attributed to the Value of a Statistical Life. The additional burden is shown in Table 4.8.

\(^{54}\) Additional details are outlined in the technical appendix relating to the estimated disease burden.
Table 4.8: Estimated additional disease burden associated with a more devolved regulatory regime

<table>
<thead>
<tr>
<th>Measure</th>
<th>Percentage likelihood</th>
<th>Additional costs associated with an extra 118 cases</th>
<th>Cost per case</th>
<th>Additional burden</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospitalisation for legionellosis</td>
<td>93.4%</td>
<td>110</td>
<td>$14,664</td>
<td>$1,616,111.30</td>
</tr>
<tr>
<td>Non-hospitalisation for legionellosis</td>
<td>6.6%</td>
<td>8</td>
<td>$5,164</td>
<td>$40,214.58</td>
</tr>
<tr>
<td>Mortality (in additional medical treatment)</td>
<td>3.4%</td>
<td>4</td>
<td>$4,500,000</td>
<td>$18,054,000.00</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td><strong>$19,710,325.88</strong></td>
</tr>
</tbody>
</table>

The potential additional burden of disease and mortality of an increased rate of legionellosis from 1.6 to 1.8 per 100,000 is estimated at **$19,710,326 over 10 years.**

**Avoided economic impacts from an outbreak of legionellosis attributed to cooling tower systems**

There have been observable reputational impacts for building operators and collocated businesses following outbreaks being linked to specific cooling tower system sites. In the event that the department or the Chief Medical Officer announces that an outbreak has occurred, there is a noticeable change in public behaviour in response.

A recent example occurred in April–May 2018. The department identified an outbreak of legionellosis where the cases had been in the vicinity of Airport West and Gladstone Park shopping centres during the incubation period. Samples were taken from registered cooling tower systems in the vicinity, which were also disinfected by the cooling tower system operators as a precautionary measure.

In the subsequent weeks, the shopping centre operators advised that there was a significant drop in foot traffic to the shopping centres, which was assumed to be linked to the recent outbreak of legionellosis in the area. This occurred even when the shopping centres were not directly identified as causing the outbreak. There would be merit in monitoring public reaction to impacts of outbreaks, and whether there is observable differences in the length of time that it takes different country cohorts to return to a certain building following an identified outbreak in the area.

To illustrate the potential impact, Victoria has three of the five largest shopping centres in Australia (by annual turnover) with Chadstone, Westgate Fountain Gate and Highpoint Shopping Centre moving an annual turnover of $3.98 billion in 2017.55 An outbreak in a specific high turnover area could have high impacts to the businesses in that area, and this would be amplified if the outbreak was ahead of normally high retail spending such as in December.

The potential economic impact provides a negative incentive to building operators to reduce the risk of Legionella in their cooling tower systems; however, because this is an extreme risk with a low likelihood, it is expected that cooling tower system operators may undervalue the risk that it would occur to their specific building until after the event has occurred. This undervaluation of this risk is most likely amplified because the impacts are likely to fall on people living and working near cooling towers and not just the building operator.

In the absence of the regulations, the department would continue to respond and make announcements relating to outbreaks of Legionella. However, as the regulations are expected to reduce the incidence of Legionella in cooling tower systems, it is expected that the number of outbreaks (and the severity) will also reduce. As such it is expected that the regulations contribute to economic activity by reducing the number of outbreaks and by providing a level of confidence for the public that, in the event of an outbreak, that the impact is minimised.

Costs for industry to implement the regulations

There are quantifiable costs that can be attributed to regulating cooling tower systems. These relate to the requirements relating to risk management plan audits, maintenance and sampling of cooling towers, and actions in response in the event of detection.

The department surveyed cooling tower water treatment providers for breakdowns of costs. The survey has aggregate information for providers that service more than 1,300 cooling tower systems across Victoria, which is around 45 per cent of the total market.

Maintenance of cooling tower systems

Maintenance and cleaning service providers for cooling tower systems were surveyed for the cost of implementing a maintenance regime that is compliant with the regulations.

Guidelines relating to cooling tower systems (A guide to developing risk management plans for cooling tower systems) recommend operational programs. Maintenance and cleaning service providers generally offer services based on the frequency and scope listed in Table 4.9. Program D, the lowest requirements, align with the requirements in the regulations.

Table 4.9: Recommended operational programs for cooling tower systems

<table>
<thead>
<tr>
<th>Program A</th>
<th>Program B</th>
<th>Program C</th>
<th>Program D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weekly inspection</td>
<td>Monthly inspection (2 weeks after service)</td>
<td>Monthly inspection (2 weeks after service)</td>
<td>Monthly service</td>
</tr>
<tr>
<td>Fortnightly service</td>
<td>Monthly service</td>
<td>Monthly service</td>
<td>HCC and Legionella tested monthly</td>
</tr>
<tr>
<td>HCC and Legionella tested at a minimum of once each month</td>
<td>HCC and Legionella tested monthly</td>
<td>HCC tested monthly</td>
<td>HCC tested monthly Legionella tested every 3 months</td>
</tr>
<tr>
<td>Six-monthly cleaning, or more frequently where environmental contamination (for example, dust, soil, building works) is a problem.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

HCC = heterotrophic colony count

Source: A guide to developing risk management plans for cooling tower systems, Department of Health and Human Services, Victoria

Based on the survey results, the average annual costs to undertake the operational programs as per the recommended operational requirements are shown in Table 4.10.

Table 4.10: Surveyed costs of operational programs for cooling tower systems

<table>
<thead>
<tr>
<th>Costs</th>
<th>Program A</th>
<th>Program B</th>
<th>Program C</th>
<th>Program D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average</td>
<td>$7,017</td>
<td>$4,947</td>
<td>$4,000</td>
<td>$3,633</td>
</tr>
<tr>
<td>Minimum</td>
<td>$4,800</td>
<td>$3,900</td>
<td>$3,500</td>
<td>$2,900</td>
</tr>
<tr>
<td>Maximum</td>
<td>$10,000</td>
<td>$6,000</td>
<td>$4,500</td>
<td>$4,500</td>
</tr>
</tbody>
</table>

Note that these values are averages; the site-specific costs depend on a range of other parameters.

Based on the 2,859 cooling tower systems in Victoria at the beginning of 2019, the cost to undertake the minimum requirements of the regulations relating to maintenance equates to $10,386,747 over one year or $99,486,525 over the 10 years of the regulations (in 2018 dollars).

However, a number of operators of cooling tower systems (more than 90 per cent) choose to undertake a maintenance program that is higher than the regulatory minimum, which may indicate that many operators value the benefit of higher levels of inspections, servicing, testing and cleaning than the regulatory minimum.
Annual audit and review of the risk management plan

The annual audit must be conducted by a person independent of those operating and servicing the cooling tower, and they must be certified by the department. Developing and reviewing risk management plans can be undertaken by anyone and is often the water treatment company supplying other services.

The cost to undertake the annual audit and review are generally separated from the cost to undertake the recommended operational programs above; however, these costs are associated with the requirements in the Act.

Routine service

The current regulations require cooling tower systems to be serviced at least once each month to check that the system is operating without defects. The regulations give no details about what should be checked during a service.

There is no requirement for observed deficiencies in the cooling tower system noted on the service report to be addressed; however, if a high heterotrophic colony count (HCC) result or Legionella detection occurs, the deficiency would have to be addressed within 24 hours of notification.

The cost to undertake a routine service is included in the cost to undertake the recommended operational programs above.

Heterotrophic colony count sampling

The regulations currently require the responsible person to ensure that at least once each month a sample of the recirculating water of the cooling tower system is taken and is delivered to a laboratory for testing for HCC.

The costs to undertake this testing are included in the cost to undertake the recommended operational programs above.

Legionella sampling

The responsible person must ensure that at least once every three months a sample of the recirculating water of the cooling tower system is taken and delivered to a National Association of Testing Authorities accredited laboratory for testing and reporting for Legionella.

There is no requirement to notify the department of the detection of Legionella in a cooling tower system except in the case that Legionella is detected in three consecutive samples taken from the same cooling tower system. In this circumstance, the responsible person must notify the department immediately by phone and within three days in writing.

The costs to undertake this testing are included in the cost to undertake the recommended operational programs above.

Record-keeping requirements

The responsible person must ensure that testing records are kept up to date and are available upon the request of the department.

The costs to undertake this testing are assumed to be included in the cost to undertake the recommended operational programs above.

Cooling tower system public register

Registration is a requirement under the Act and is not included in considering options for the regulations. These are included below for reference only and are not included in the cost totals.

The Act sets out legal obligations on landowners to register cooling tower systems. A cooling tower system is considered to be in operation from when it is first commissioned until it has been decommissioned or removed and the department has been notified that it has been decommissioned or removed. The Act requires the cooling tower system to be registered at all times when it is in operation.
Obtaining registration involves obtaining and completing the relevant form and submitting it with the required fee and a copy of the risk management plan in respect of the cooling tower system or, in the case of a renewal, evidence that an audit and review has been conducted.

The department must keep a register containing the details of the location of each registered cooling tower system. This register must be available for inspection by any person wishing to inspect the register during the department’s normal business hours.

**Disinfection, testing for Legionella and follow-up samples**

The following are surveyed costs relating to once-off actions in cooling tower systems.

Based on industry information, cooling tower system operators make arrangements with service providers to undertake these actions as part of outsourced annual contracts for maintenance and cleaning services. However, there have been situations where the department has requested that actions be undertaken to proactively manage potential outbreaks. It is not known whether the operator would have undertaken these actions in the absence of direction by the department.

These actions may incur additional costs on the operator, depending on the contractual arrangements the operator has made with the third-party service provider. An estimate of the costs for a specific action are listed in Table 4.11 (informed by a survey of service providers).

**Table 4.11: Surveyed costs relating to service and maintenance for cooling tower systems**

<table>
<thead>
<tr>
<th>Costs</th>
<th>Disinfection</th>
<th>Chemical dosing in response to a high HCC</th>
<th>Follow-up sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average</td>
<td>$198</td>
<td>$175</td>
<td>$158</td>
</tr>
<tr>
<td>Minimum</td>
<td>$120</td>
<td>$100</td>
<td>$99</td>
</tr>
<tr>
<td>Maximum</td>
<td>$325</td>
<td>$275</td>
<td>$225</td>
</tr>
</tbody>
</table>

**Costs for government to enforce the regulations**

The cost to the department to administer the regulations relating to Legionella is shown in Table 4.12.

**Table 4.12: Staffing related to cooling tower systems regulations**

<table>
<thead>
<tr>
<th>Staffing profile</th>
<th>Salary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management</td>
<td>$23,617</td>
</tr>
<tr>
<td>Field work</td>
<td>$240,228</td>
</tr>
<tr>
<td>Administration/registration</td>
<td>$62,494</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>$326,339</strong></td>
</tr>
<tr>
<td>On-costs</td>
<td>$101,250</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$427,589</strong></td>
</tr>
</tbody>
</table>

This cost reflects a very small centralised team of environmental health officers supported by a share of a centralised licensing and registration team.

The total cost of administering the regulations is estimated at $571,093 over one year. There are 2,859 cooling tower systems registered, and the per-system administration costs are estimated at $200 per cooling tower system.

Regulatory administration and compliance by the department involves processing registration (both initial and renewal applications) and cancellations, providing information to operators, responding to complaints and conducting inspections and undertaking investigations.
In the absence of the cooling tower system registration requirements in the Act, it is expected that the department would continue, in a more limited capacity, to maintain oversight of risks relating to Legionella associated with cooling tower systems and water delivery systems.

**Fees revenue**

While not included in the costs associated with the regulations, there is a cost to industry to register cooling towers for a period of one, two or three years.

The current fees are as follows:

- one-year registration = $108.40 per cooling tower
- two-year registration = $202.30 per cooling tower
- three-year registration = $296.20 per cooling tower.

A majority of cooling tower operators (75 per cent) choose to register and renew for a period of one year; with 22 per cent choosing a two-year term. This preference for shorter terms is probably attributable to the tendency for property managers to prefer annual fees rather than longer, multi-year fees. The fee revenues received for the previous three years is shown in Table 4.13.

**Table 4.13: Fee revenue for cooling tower system registration, 2015–16 to 2017–18**

<table>
<thead>
<tr>
<th>Year</th>
<th>2015–16</th>
<th>2016–17</th>
<th>2017–18</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fee revenue for cooling tower system registration</td>
<td>$428,972.68</td>
<td>$446,139.30</td>
<td>$462,582.75</td>
<td>$445,898</td>
</tr>
</tbody>
</table>

Based on trends in cooling tower system registration, the department expects the number registrations to gradually decline over the next 10 years, with an associated decrease in fee revenue. However, given the ongoing presence of legionellosis cases and the potential for outbreaks in Victoria, the department expects to continue to maintain the same level of staffing profile in the regulatory administration and compliance relating to legionellosis.

It is proposed to set fees at the level needed for full cost recovery. This means that fees can be retained at existing levels. It is not proposed to discount the longer registration periods as is the case with the current regulations given the observed industry demand for shorter registration periods.

This will translate in the regulations to 7.5 fee units for registration of a tower for a one-year period; 15 fee units for registration of a tower for a two-year period and 22.5 fee units for registration of a tower for a three-year period (based on the value of a fee unit for the 2019–20 year of $14.8156).

## Technical appendix

<table>
<thead>
<tr>
<th>Item</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
<th>Year 6</th>
<th>Year 7</th>
<th>Year 8</th>
<th>Year 9</th>
<th>Year 10</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of cases of legionellosis in Victoria</td>
<td>78</td>
<td>78</td>
<td>78</td>
<td>78</td>
<td>78</td>
<td>78</td>
<td>78</td>
<td>78</td>
<td>78</td>
<td>78</td>
<td>780</td>
</tr>
<tr>
<td>Deaths from legionellosis (3.4% of cases – 10-year average)</td>
<td>2.7</td>
<td>2.7</td>
<td>2.7</td>
<td>2.7</td>
<td>2.7</td>
<td>2.7</td>
<td>2.7</td>
<td>2.7</td>
<td>2.7</td>
<td>2.7</td>
<td>27</td>
</tr>
<tr>
<td>Value of a Statistical Life figure</td>
<td>$4,500,000</td>
<td>$4,635,000</td>
<td>$4,774,050</td>
<td>$4,917,272</td>
<td>$5,064,790</td>
<td>$5,216,733</td>
<td>$5,373,235</td>
<td>$5,534,432</td>
<td>$5,700,465</td>
<td>$5,871,479</td>
<td>$136,809,936</td>
</tr>
<tr>
<td>Lost economic output due to deaths (deaths multiplied by Value of a Statistical Life)</td>
<td>$11,934,000</td>
<td>$12,292,020</td>
<td>$12,660,781</td>
<td>$13,040,604</td>
<td>$13,431,822</td>
<td>$13,834,777</td>
<td>$14,249,820</td>
<td>$14,677,315</td>
<td>$15,117,634</td>
<td>$15,571,163</td>
<td>$136,809,936</td>
</tr>
<tr>
<td>Legionellosis requiring hospitalisation (93.4 per cent of cases)</td>
<td>72.9</td>
<td>72.9</td>
<td>72.9</td>
<td>72.9</td>
<td>72.9</td>
<td>72.9</td>
<td>72.9</td>
<td>72.9</td>
<td>72.9</td>
<td>72.9</td>
<td>729</td>
</tr>
<tr>
<td>Burden of disease from hospitalisation cost</td>
<td>$14,664</td>
<td>$15,104</td>
<td>$15,557</td>
<td>$16,023</td>
<td>$16,504</td>
<td>$16,999</td>
<td>$17,509</td>
<td>$18,034</td>
<td>$18,575</td>
<td>$19,133</td>
<td>$19,133</td>
</tr>
<tr>
<td>Burden per year</td>
<td>$1,068,277</td>
<td>$1,100,325</td>
<td>$1,133,335</td>
<td>$1,167,335</td>
<td>$1,202,355</td>
<td>$1,238,426</td>
<td>$1,275,579</td>
<td>$1,313,846</td>
<td>$1,353,261</td>
<td>$1,393,859</td>
<td>$1,393,859</td>
</tr>
<tr>
<td>Legionellosis not requiring hospitalisation (6.6 per cent of cases)</td>
<td>5.1</td>
<td>5.1</td>
<td>5.1</td>
<td>5.1</td>
<td>5.1</td>
<td>5.1</td>
<td>5.1</td>
<td>5.1</td>
<td>5.1</td>
<td>5.1</td>
<td>51</td>
</tr>
<tr>
<td>Burden of disease from non-hospitalisation cost</td>
<td>$5,164</td>
<td>$5,319</td>
<td>$5,478</td>
<td>$5,642</td>
<td>$5,812</td>
<td>$5,986</td>
<td>$6,166</td>
<td>$6,351</td>
<td>$6,541</td>
<td>$6,737</td>
<td>$59,196</td>
</tr>
<tr>
<td>Total burden per year</td>
<td>$26,583</td>
<td>$27,380</td>
<td>$28,201</td>
<td>$29,047</td>
<td>$29,919</td>
<td>$30,816</td>
<td>$31,741</td>
<td>$32,693</td>
<td>$33,674</td>
<td>$34,684</td>
<td>$34,684</td>
</tr>
<tr>
<td><strong>Total burden of disease from legionellosis</strong></td>
<td>$13,028,859</td>
<td>$13,419,725</td>
<td>$13,822,317</td>
<td>$14,236,987</td>
<td>$14,664,096</td>
<td>$15,104,019</td>
<td>$15,557,140</td>
<td>$16,023,854</td>
<td>$16,504,569</td>
<td>$16,999,706</td>
<td>$12,551,337</td>
</tr>
<tr>
<td>Item</td>
<td>Year 1</td>
<td>Year 2</td>
<td>Year 3</td>
<td>Year 4</td>
<td>Year 5</td>
<td>Year 6</td>
<td>Year 7</td>
<td>Year 8</td>
<td>Year 9</td>
<td>Year 10</td>
<td>Total</td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>----------</td>
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<td>----------</td>
<td>----------</td>
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<td>----------</td>
<td>----------</td>
<td>----------</td>
<td>----------</td>
<td>----------</td>
</tr>
<tr>
<td>Net present value</td>
<td>$13,028,859</td>
<td>$12,903,582</td>
<td>$12,779,509</td>
<td>$12,656,629</td>
<td>$12,534,931</td>
<td>$12,414,403</td>
<td>$12,295,033</td>
<td>$12,176,812</td>
<td>$12,059,727</td>
<td>$11,943,768</td>
<td>$124,793,254</td>
</tr>
<tr>
<td>Percentage attributable to <em>Legionella pneumophila</em> (73.5% of cases – 10-year average)</td>
<td>$9,458,952</td>
<td>$9,368,001</td>
<td>$9,277,924</td>
<td>$9,188,713</td>
<td>$9,100,360</td>
<td>$8,926,194</td>
<td>$8,840,365</td>
<td>$8,755,362</td>
<td>$8,671,176</td>
<td>$8,671,176</td>
<td>$90,599,902</td>
</tr>
</tbody>
</table>
Table 4.15: Estimated cost to undertake the minimum requirements of the regulations relating to maintenance of cooling tower systems in Victoria

<table>
<thead>
<tr>
<th>Item</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
<th>Year 6</th>
<th>Year 7</th>
<th>Year 8</th>
<th>Year 9</th>
<th>Year 10</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost to undertake the minimum requirements of the regulations</td>
<td>$10,386,747</td>
<td>$10,698,349</td>
<td>$11,019,300</td>
<td>$11,349,879</td>
<td>$11,690,375</td>
<td>$12,041,087</td>
<td>$12,402,319</td>
<td>$12,774,389</td>
<td>$13,157,620</td>
<td>$13,552,349</td>
<td>$119,072,414</td>
</tr>
<tr>
<td>Net present value</td>
<td>$10,386,747</td>
<td>$10,286,874</td>
<td>$10,187,962</td>
<td>$10,090,001</td>
<td>$9,992,982</td>
<td>$9,896,895</td>
<td>$9,801,733</td>
<td>$9,707,486</td>
<td>$9,614,144</td>
<td>$9,521,701</td>
<td>$99,486,525</td>
</tr>
</tbody>
</table>

Table 4.16: Estimated disease burden using other jurisdictional comparison

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Victoria population</td>
<td>5,419,249</td>
<td>5,495,711</td>
<td>5,591,818</td>
<td>5,709,586</td>
<td>5,832,585</td>
<td>5,957,512</td>
<td>6,093,049</td>
<td>6,244,863</td>
<td>6,385,695</td>
<td>6,459,765</td>
<td>59,189,833</td>
</tr>
<tr>
<td>Victoria benchmark (per 100,000)</td>
<td>1.6</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Expected notified cases</td>
<td>87</td>
<td>88</td>
<td>89</td>
<td>91</td>
<td>93</td>
<td>95</td>
<td>97</td>
<td>100</td>
<td>102</td>
<td>103</td>
<td>947</td>
</tr>
<tr>
<td>New South Wales benchmark (per 100,000)</td>
<td>1.8</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Expected notified cases</td>
<td>98</td>
<td>99</td>
<td>101</td>
<td>103</td>
<td>105</td>
<td>107</td>
<td>110</td>
<td>112</td>
<td>115</td>
<td>116</td>
<td>1,065</td>
</tr>
<tr>
<td>Difference</td>
<td>11</td>
<td>11</td>
<td>11</td>
<td>11</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>13</td>
<td>13</td>
<td>118</td>
</tr>
</tbody>
</table>
Chapter 5: Legionella risks in certain premises (water delivery systems)

Problem analysis

Victoria regulates water delivery systems to protect our most vulnerable community members from legionellosis – a serious disease caused by a bacterium that can breed in warm, wet places such as pipes and showers.

Water delivery systems can provide a breeding ground for Legionella bacteria. If inhaled by a human, the bacteria can cause legionellosis (also known as legionnaires’ disease) – a serious and sometimes fatal form of pneumonia.

Victoria regulates water delivery systems supplying aged care facilities, health services, health service establishments, registered funded agencies, correctional services and commercial vehicle washes in Victoria to prevent and control outbreaks of legionellosis.

Hazard

Water delivery systems (pipes, showers and sundry plumbing that provide temperature-controlled water for use by people in buildings) can be a potential source for Legionella bacteria. While Legionella bacteria is commonly associated with cooling tower systems, it can also exist in any type of water system where the conditions (for example, temperature and water quality) are favourable to Legionella bacteria to grow. Legionella has been detected in water delivery systems associated with showers and ice dispensers in hospitals and aged care facilities in Victoria. Cases of legionellosis have also been linked to warm water in commercial car wash facilities.

Exposure

Water delivery systems are present in most homes and buildings in Victoria. It would be highly unlikely that a person living in Victoria would pass a single day without using a water delivery system. Requirements for manufacturing and installing water delivery systems are in place, with the objective of ensuring water is safe for humans to use. This includes requirements designed to prevent or limit the growth of Legionella bacteria. Exposure is an unavoidable consequence of inhabiting the built environment with operating water delivery systems.

Vulnerability

Most people exposed to Legionella bacteria do not get sick. However, of those who do become ill, 93 per cent end up in hospital.57 These are usually people who are at increased risk of illness, such as the elderly, smokers and people with weak immune systems or underlying chronic illnesses.

Exposure to Legionella bacteria in places with high concentrations of people with an increased risk of illness, such as hospitals and aged care facilities, have higher infection rates and a significantly higher case-fatality rate (up to 40 per cent) compared with the 3.3 per cent case-fatality rate for legionellosis in Victoria since 2009.58

57 Department of Health and Human Services (Victoria). Interactive infectious disease surveillance reports
58 Ibid.
Figure 5.1 provides a broad overview of the risks in water delivery systems and associated health risks.

**Figure 5.1: Water system and health risks in water delivery systems**

![Diagram](image)

*Source: enHealth 2015*

**History of regulation**

Water delivery systems were first regulated in Victoria in 1990 by the Health (Infectious Diseases) Regulations 1990, in recognition of the risk of legionellosis with water delivery systems as the source. These regulations required that the owner or the person who manages or controls any building that is served by a warm water system must maintain that system in a manner set out in the *Guidelines for the control of Legionnaires’ disease* published by Health Department Victoria in May 1989.

New regulations were made in 2001 as part of the comprehensive Legionella risk management reforms following the outbreak of legionellosis associated with the Melbourne Aquarium. While the focus of the reforms was on improving the management of cooling tower systems, a second component regulated all warm water systems except those in single dwellings. Those regulations required the use of either a prescribed form of disinfection or a method approved by the Secretary to the department. The regulations also required Legionella testing under some circumstances, record keeping and a mandatory response to advice from the Secretary that a site had been associated with a case of legionellosis.

While Legionella bacteria has been detected in Victorian water delivery systems in a wide variety of premises over the period since the original regulations were first made, there have been very few cases of legionellosis attributed to exposure to Legionella bacteria from water delivery systems in Victoria over the past 20 years.

---

In recognition of the low number of cases attributable to water delivery systems, in 2009 the regulations relating to Legionella and water delivery systems were altered to be less prescriptive and more targeted. Removing these prescriptive requirements saw the onus placed on the responsible person to manage the risk associated with the operation and use of the water delivery system. In place since 2009, the current regulations do not require a documented risk management plan and do not specify any maintenance, regular water sampling, disinfection or record-keeping requirements.

The current regulations also confine the application of the regulations to those premises understood to be at highest risk of a legionellosis outbreak due to the vulnerability of the patients or residents, except for commercial vehicle washes, which were specifically included after the 2008 outbreak of legionellosis at a Hoppers Crossing car wash facility.

The most well-known Australian outbreak related to a water delivery system occurred at the Wesley Hospital in Brisbane, Queensland in late May and early June 2013. Two patients were diagnosed with legionellosis, one of whom subsequently died as a result of the infection.

**Objective of the regulations**

The objective of the regulations is to reduce the risk of Legionella bacteria in water delivery systems in premises where vulnerable populations are concentrated or where Legionella is known to have occurred.

The regulations contribute to minimising the impact of legionellosis on the Victorian community by reducing illness at car washes and within vulnerable populations in health and aged care facilities and reducing service disruption at these premises.

**Requirements of the current regulations**

The regulations are made pursuant to ss. 232, 234(b) and 238(2) of the *Public Health and Wellbeing Act 2008*, which allow for certain requirements such as preventing, controlling and minimising public health risks to be prescribed.

The current regulations place the onus on a ‘responsible person’ to manage the risk of Legionella and set out the general risk management requirements to address the risk of Legionella being present in water delivery systems within aged care facilities, health services, health service establishments, registered funded agencies, correctional services and commercial vehicle washes (see Table 5.1).

The regulations set out the general risk management requirements to address the risk of Legionella being present in water delivery systems within certain types of premises.

The responsible person must:

- take reasonable steps to manage the risk of Legionella
- disinfect the system within 24 hours after receiving a report that Legionella has been detected in a water sample
- ensure that a water sample is promptly taken for testing and reporting if informed by the Secretary that a system is suspected or implicated in a case or outbreak of legionellosis
- disinfect the system in accordance with any reasonable direction of the Secretary.

The ‘responsible person’ is defined as the person who owns, manages or controls the water delivery system.
Table 5.1: Water delivery systems regulations

<table>
<thead>
<tr>
<th>Service</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aged care services</td>
<td>The Commonwealth Department of Health’s 2016 aged care services list identifies 1,326 aged care facilities located in Victoria. Aged care services are generally regulated by the Commonwealth under the <strong>Aged Care Act 1997</strong> and related instruments.</td>
</tr>
<tr>
<td>Health services, health service establishments and registered funded agencies</td>
<td>These organisations are structured and governed in accordance with the <strong>Victorian Health Services Act 1988</strong>, which is administered by the department. They include public hospitals, private hospitals, denominational hospitals, day procedure centres and state-funded residential care services. They are required to adhere to various standards developed by the department, such as cleaning standards.</td>
</tr>
<tr>
<td>Correctional services</td>
<td>According to Corrections Victoria, the state has 11 publicly operated prisons, three privately operated prisons and one transition centre. Under the <strong>Victorian Corrections Act 1986</strong>, the term ‘correctional services’ also encompasses a range of non-prison services, including facilities that administer community-based corrections orders.</td>
</tr>
<tr>
<td>Commercial vehicle washes</td>
<td>According to IbisWorld’s May 2017 report on car washing and detailing services in Australia, Victoria has around 825 car washes. Car wash usage is expected to increase due to the environmental benefits (compared with car washing at home) and busier lifestyles. There is a trend away from manual car wash services (where either the user or a staff member washes the car) to more automated solutions. However, the department understands that most car wash operators have moved away from warm water car washing due to the risk of legionellosis.</td>
</tr>
</tbody>
</table>

**Options**

- Option 1: Retain the current regulations without changes
- Option 2a: Amend the current regulations
  - Option 2b: Amend the current regulations and remove the mandatory disinfection requirement
- Option 3: Remove or reduce the current regulations

**Option 1: Retain the current regulations without changes**

By reviewing whether the current regulations have reduced the risk of Legionella from water delivery systems in places of highest exposure or infection, an assessment can be made regarding the viability of remaking the current regulations without changes.

**The number of cases of legionellosis in Victoria is rising**

Exposure to Legionella via water delivery systems generally involves a specific type of Legionella bacteria – **Legionella pneumophila**. By reviewing the incidence of **Legionella pneumophila** (Figure 5.2), a sense of the number of cases from cooling towers (see Chapter 4) and warm water delivery systems can be gained.

There has been a steady increase in the number of cases of legionellosis (including cases attributed to **Legionella pneumophila** bacteria; see Figure 5.3) in Victoria over the past 10 years; however, as outlined in Chapter 4 there are demographic trends that are likely to contribute to this gradual increase, and this increase is still lower than the rate per 100,000 experienced between 2002 and 2008. There is also an as-yet unexplained global increase in cases of legionellosis due to **Legionella pneumophila**.
The graphs above shows that, while other types of Legionella bacteria are also on the rise, the majority of cases remain *Legionella pneumophila* – of which the suspected sources are cooling towers, water delivery systems or other sources in the environment.

**Cases of Legionella arising from exposure to a water delivery system**

There is limited available information that identifies legionellosis infections based on the potential setting acquired, such as exposure via water delivery systems, either in Australia or abroad. This is partially attributable to the difficulty in assigning a specific source responsible for an infection. During the infection period a person is likely to have been exposed to multiple sources capable of producing aerosols containing Legionella.

While Legionella has been detected in Victorian water delivery systems in many different types of premises over the period since the current regulations were made, there have been few cases of
Legionellosis, possibly as low as two to three cases, attributed to exposure to water delivery systems as defined in the current regulations over the past 20 years in Victoria.

Given the absence of outbreaks (multiple cases linked in time and location) attributed to water delivery systems over the past 20 years and particularly over the life of the current regulations, it could be argued that the regulations have been successful; however, whether this is specifically due to the regulations is impossible to say. In any case, the department considers the scope to be appropriate due to experiences of other regulators globally.

Similar international jurisdictions have had numerous outbreaks in comparable water delivery system settings (with vulnerable populations) and have acted to regulate these settings rather than regulating settings frequented by lower risk populations such as showers in gymnasiums and residential homes.

Legionellosis infections attributed to water delivery systems overseas have seen infections occur gradually over a long period. For example, an aged care facility in the United States had 13 cases over four months, and this was considered an outbreak. Other outbreaks have occurred over multiple years. This slow infection rate is contrasted with the ‘explosive’ rate of infection observed from a cooling tower, such as the Melbourne Aquarium outbreak in 2000, which resulted in three deaths and more than 100 cases in a short period.

Possible explanation for the increase in reported cases of Legionella

While an examination of the notifications data could be seen to indicate an emerging issue with legionellosis in Victoria, the department believes several influencing factors have contributed to this increase that cannot be impacted by changes to the Public Health and Wellbeing Regulations. Legionellosis remains comparatively less prevalent in the nine years since 2009 (1.32 per 100,000 population) compared with the 2000–2009 period (1.98 per 100,000 population) and below the Australia-wide five-year average (1.6 per 100,000 population, 2013–2017). Contributing factors to the increase in reported cases in Victoria most likely include:

- improved reporting of cases by medical practitioners and laboratories resulting from improved awareness
- demographic and population behaviour changes including:
  - an ageing population contributing to a larger number of more vulnerable Victorians in the community
  - increased density of the urban population resulting in more people living in and around areas with cooling towers
  - increased travel between countries resulting in Legionella acquired overseas being notified in Victoria.

For further analysis of these factors please see the ‘Cooling tower systems’ chapter.

While the number of reported cases of legionellosis has increased beyond what would be expected relative to population growth, the likely contributing factors to this increase (population changes, changes to notification behaviour, overseas travel patterns and global increases from unknown sources) are beyond the scope of the Public Health and Wellbeing Regulations, which pertain to managing Legionella. The number of reported cases remains low overall, with fewer than two cases per 100,000 Victorians each year. This does not preclude the possibility that improved regulation could lead to a decrease in cases.

Advantages and disadvantages of this option

The advantages of this option are that it provides continuity. That is, no change for stakeholders to adapt to. The disadvantages of this option are that the regulations would still:
• apply to some classes of premises that the department considers represent low risk (options 2a and 2b would propose to limit the scope of the regulations slightly to address this problem)
• require the responsible person to disinfect the entire water delivery system following the detection of Legionella. This requirement has been problematic for large facilities with extremely large water delivery systems (the detection of Legionella in one outlet triggers the requirement to disinfect many hundreds of outlets). This issue is discussed further in options 2a and 2b.

Option 2a: Amend some aspects of the current regulations

Consultation with stakeholders, including public hospitals and health services with regulated water delivery systems and maintenance contractors, was undertaken in early 2018 to inform the review of these regulations. Written submissions were invited in response to circulating regulatory options with targeted stakeholders. Supplementary information was gleaned from face-to-face meetings conducted by departmental staff. A consistent theme of the consultation was the need to recognise the variation in size, type and operation of water delivery systems as well as the degree to which they pose a risk to public health.

The department subsequently analysed the consultation results and determined that certain clarifications and additions could improve the regulations to better meet regulatory objectives, specifically:
• more clearly defining the places where the regulations apply to better reflect the risk profile of Legionella
• adding a new offence to falsify a laboratory report or tamper with a sample taken from a water delivery system.

In this option, the proposed regulations reflect these findings.

Clearer definition of where regulations apply based on duration of stay

As Legionella risk relates to warm water distributed by water delivery systems used in large facilities and the exposure to aerosols created (for example, by shower heads), the risk exists where such exposure is most likely and those exposed may be more vulnerable to infection. Likelihood of exposure in a health service will relate to the patient’s duration of stay (use of shower facilities over the course of several days). Current regulations are applicable to water delivery systems used in day procedure centres (as health service establishments) where no appreciable risk of exposure exists (for example, length of stay is less than one day). In this option, this requirement would be removed to allow the regulations to focus on areas and facilities considered to be of high risk to vulnerable people.

More clearly defining the premises where the regulations apply will allow more targeted communications from the department and reduce unnecessary compliance efforts in premises where the Legionella risk is low. It will enable the department to allocate resources to the more tailored prevention activities outlined below.

Adding a new offence to falsify a laboratory report or tamper with a sample

Consultation suggested that there is a need to address the potential that water samples may not reflect the real state of the water due to tampering or swapping of the source water. A specific offence is proposed to be added to deal with this issue.

Option 2b: Amend some aspects of the current regulations and remove the mandatory disinfection requirement

This option contains the same measures above to option 2a with one key exception – removing the requirement to disinfect the entire water delivery system following the detection of Legionella in the system.
As described earlier, there has been an increasing problem observed where extremely large facilities with hundreds of water outlets have found it highly disruptive to comply with the current regulations requirement for system-wide disinfection following the detection of Legionella in any part of the system. Facility managers of large facilities have long argued that the specific circumstances of the Legionella detection and the design of each water delivery system needs to be considered in the decision on whether to perform a system-wide disinfection.

For example, a very large facility may have a hot water loop circulating at a temperature at which Legionella will not survive. The system may feed, for example, 200 TMVs, which then feed a total of, for example, 500 outlets. A sampling program may take, for example, 10 samples and Legionella may be detected in one of those samples. The current regulations would dictate that the entire system be disinfected following that detection. Facility managers have argued that this is a disproportionate response and that they are better placed to work with clinicians on developing a tailored response that considers the risks and benefits of responding in a different way. Given the extremely low numbers of cases in Victoria over the past 20 years, in this option it is proposed that the regulations be silent on the issue of disinfecting the system and to leave the issue with facility managers to resolve, taking into account the overall risk profile of the facility and the people who may be exposed to the water delivery system.

**Advantages and disadvantages of option 2b**

The advantages of this option are that it responds to the increasing difficulty experienced by some sites to comply with the current requirement to disinfect the entire water delivery system following detection of Legionella at low levels in one outlet.

The disadvantages of this option are that the regulations would no longer require mandatory disinfection of the water delivery system following detection of Legionella. Stakeholders have proposed a position that full disinfection is not required given there is already a requirement for the responsible person to manage the risks of Legionella in the water delivery system, and that mandatory disinfection does not mitigate risks and comes with a high cost.

For operators of less complex or smaller water delivery systems it is expected that disinfection is likely to be the best approach for mitigating the risk of Legionella in the system, and that these operators would continue to undertake this action.

**Option 3: Remove or reduce the current regulations**

No regulation is a potential option and would be supported by information and awareness campaigns produced by the department. The regulations could be removed in favour of relying on reputational effects and post-infection legal action brought by those affected to control the risk of legionellosis from water delivery systems. However, these controls are relatively weak and their effect is significantly delayed.

A lack of regulation would not be sufficiently replaced by market forces and would reduce the prevention of Legionella bacteria in water delivery systems, impede the ability for the department to detect Legionella bacteria, and impede remedial action following a detection.

**Lack of prevention**

The absence of regulations means that any action taken to protect people from Legionella bacteria in water delivery systems could only occur following illness, rather than preventing illness, as is currently the case. Building operators would have existing liabilities under general consumer protections; however, this recourse would only be possible after an outbreak of legionellosis.

The lack of regulations may contribute to a perception that the risk of Legionella within water delivery systems is not serious. This would most likely lead to reduced preventative action taken by the person
responsible for the water delivery system to manage the risk of Legionella bacteria. Water delivery systems can be expensive to maintain, and adequate maintenance incurs a cost that the building operator may not prioritise with competing fiscal demands.

Reduced or removed preventative action would lead to more outbreaks of legionellosis.

**Impeded ability to detect Legionella bacteria**

Without regulation, the department would no longer have the specific power to require a water sample to be taken from the water delivery system if it is suspected or implicated as the source of a legionellosis infection.

The department would continue to investigate cases of legionellosis associated with stays in aged care facilities, hospitals, correctional services and car washes; however, this would rely on an authorised officer using their power to enter a public place or, with consent of the occupier, any other premises to investigate whether there is a risk to public health.

It may be necessary for the department’s authorised officers to obtain consent to enter a particular place to take water samples, and this may lead to refusal or delays because of the time required to obtain that consent.

The Chief Health Officer could consider authorising authorised officers to exercise any of the public health risk powers in the Act. This is a relatively cumbersome method and its use, if required, on a frequent basis would place a significant administrative burden on the department.

**Impeded or ineffective remedial action following detection**

In the absence of regulations, there would be no requirement for remedial action to prevent further infection if Legionella bacteria was detected in a sample taken from a water delivery system. The department would continue to provide best practice guidelines to owners/operators of water delivery systems to provide guidance about appropriate measures to control the risk of Legionella bacteria.

In the absence of regulations, thorough disinfection of the entire water delivery system may not be undertaken or may not be undertaken within the 24-hour period currently specified, which puts users of or those exposed to the system at greater risk of exposure to Legionella bacteria.

**Further reducing regulatory requirements based on historical evidence**

Regulatory requirements could be further reduced from the current requirements by reducing the types of premises required to comply with water delivery systems regulation. This could be done by reducing the scope of the regulations to apply only to premises with a history of outbreaks of legionellosis or detections of Legionella bacteria. This is not considered a viable option because past performance has not proven to be a reliable predictor of future performance in relation to Legionella outbreaks. There has been no substantial change to the risk profile of the disease, and an ageing population and increased population density means there are most likely larger numbers of people vulnerable to infection.

**Public expectation**

The final consideration is whether removing Legionella regulation would meet the expectations of the public that the government manages this public health risk. Outbreaks of Legionella have been associated with significant media attention and public demands for intervention and action by government. In responding to potential outbreaks, the department considers there is a heightened reaction (relative to the number of people identified as contracting legionellosis) to the real or potential health impacts of an outbreak of legionellosis. Academic literature theorises that this is because the risk cannot be assessed by the public and the hazard is invisible. It is likely that shifting the regulations to
focus solely on the most vulnerable populations or the highest risk cooling towers would not be enough to address the expectations of the public in the event of an outbreak.

Impact analysis

Burden of disease

The burden of disease is similar to the discussion in chapter 4 relating to Cooling tower systems. The same dollar value for a case of legionellosis would be expected to be applicable to a case of legionellosis – $14,663.66 for a case involving hospitalisation and $5,163.66 for a case not requiring hospitalisation.

Avoided economic burden of an outbreak of legionellosis from water delivery systems

While the number of cases attributed to water delivery systems in Victoria has been low, the economic costs of an outbreak would be high.

An Australian example of the impact is the response to legionellosis cases at the Wesley Hospital in Brisbane, Queensland in 2013. After detecting a number of cases, the hospital was closed, and no showers were allowed to be used. The hospital recalled 1,400 recently discharged patients, and more than 2,000 surgical procedures had to be rescheduled to other facilities. In the 2014–15 financial year, remediation costs (on top of the impacts listed above) were estimated to be $2.6 million and included immediate plumbing remediation, water remediation, filters, advertising and other media costs. These actions not only had an impact on the operation of the Wesley Hospital, but also affected the workload of south-east Queensland’s whole health system.

This example demonstrates that there can be sizeable economic costs in the event of an outbreak.

Cost for industry to implement the regulations

The regulations apply to water delivery systems in aged care facilities, health services, health service establishments, registered funded agencies, correctional services and commercial vehicle washes.

The number of water delivery systems to which the regulations apply is estimated to be at least 2,478.

Number and complexity of water delivery systems

Aged care facilities

There are 1,326 aged care facilities in Victoria. Based on the department’s inspections of this type of facility, these water delivery systems tend to be located in facilities where there is no on-site engineering expertise to manage the operation of the water delivery system. The size of the facilities varies but appears to be increasing.

Health services, health service establishments and registered funded agencies

As a lower estimate, there are 279 hospitals in Victoria (includes hospitals classified as a bush nursing hospital, day procedure centre, denominational hospital, multi-purpose service, private hospital, privately operated hospital, or public hospital).

The department does not have an accurate estimate of the number of ‘smaller’ water delivery systems that are within Victorian hospitals but notes that changes proposed in option 2 would improve the clarity of systems that are included in the regulations and reduce the number of facilities captured by the regulations. These water delivery systems can range from extremely large and complex for major hospitals, to small for a day procedure centre.
**Correctional service centres and prisons**

There are approximately 33 correctional service centres in Victoria, 11 publicly operated prisons, three privately operated prisons and one transition centre. The water delivery systems in these facilities vary from extremely large and complex to small in the case of smaller regional facilities.

**Car washes**

Victoria has around 825 car washes. The water delivery systems are understood to be of moderate risk due to the occasional practice of heating water used in the car wash process.

**Costs and benefits**

**Option 1: Retain the current regulations with no changes**

Table 5.2 lists the expected impacts on operators of water delivery systems if the current regulations are retained, relative to a base case of no regulations.

**Table 5.2: Retain the current regulations with no changes**

<table>
<thead>
<tr>
<th>Current regulation (option 1)</th>
<th>Benefit</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scope of regulation water delivery systems</td>
<td>Outlines the scope of the regulations based on the risk of these systems containing Legionella. This makes it easier for regulated parties to comply with regulations and reduces risks to the community through better compliance.</td>
<td>At least 2,478 water delivery systems covered by regulations.</td>
</tr>
<tr>
<td>Person responsible for the water delivery system</td>
<td>This regulation creates a liability for a responsible person to manage the risk of Legionella. This is likely to increase compliance with regulations and reduces risks to community.</td>
<td>Minor. This does not create any regulatory burden apart from those not complying with the regulations.</td>
</tr>
<tr>
<td>Reasonable steps to manage the risks of Legionella</td>
<td>Obligation for the person responsible to take ‘reasonable steps’ to manage the risks of Legionella in any water delivery system located in a specified premises.</td>
<td>Nil. These actions depend on the type and setting of the water delivery system, and consequently minimal actions are specified in the regulations. For some operators, these costs would be quantifiable due to outsourcing of maintenance to a third party; however, these operations are likely to address Legionella risk as a part of broader maintenance, disinfection and record-keeping requirements.</td>
</tr>
<tr>
<td>Legionella testing (routine testing)</td>
<td>Provides an obligation to test if directed by the department. Frequency of testing specified in guidelines not regulations. The operator makes an assessment of the testing required to manage the risk.</td>
<td>Nil. Frequency of testing specified in guidelines not regulations.</td>
</tr>
<tr>
<td>Current regulation (option 1)</td>
<td>Benefit</td>
<td>Cost</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>---------</td>
<td>------</td>
</tr>
<tr>
<td><strong>Testing requirements</strong></td>
<td>Provides an obligation where a water delivery system is suspected or implicated as the source of legionellosis. A water sample is promptly delivered to a laboratory for testing and reporting on for Legionella.</td>
<td>Unquantifiable. Unable to estimate expected frequency. In practice, there is often no cost for industry because the department undertakes these tests upon notification of a suspected or implicated source of legionellosis in a water delivery system.</td>
</tr>
<tr>
<td><strong>Reporting upon detection of Legionella</strong></td>
<td>Awareness of detection of Legionella by the department.</td>
<td>Negligible.</td>
</tr>
<tr>
<td><strong>Response upon detection of Legionella</strong></td>
<td>Provides an obligation to respond to the detection of Legionella.</td>
<td>Unquantifiable. No process prescribed by the regulations. These actions depend on the type and setting of the particular water delivery system, and consequently minimal actions are specified in the regulations.</td>
</tr>
<tr>
<td><strong>Disinfection of water delivery system</strong></td>
<td>Proactive response to the risk of Legionella.</td>
<td>Unable to estimate the number of detections and subsequent disinfections systems per year. Cost can range from $1,250 to 3,500 for a small system, up to more than $10,000 for a major water delivery system in a hospital.</td>
</tr>
</tbody>
</table>

**Option 2: Amend current regulations (both options 2a and 2b)**

Table 5.3 shows that the proposed amendments to improve regulation efficacy would be expected to have the following impacts on the requirements above:

- reduced scope
- new offences to ensure integrity of water sampling and reporting of test results.

**Table 5.3: Impacts of amending current regulations (options 2a and 2b), compared with option 1**

<table>
<thead>
<tr>
<th>Proposed amendments (option 2)</th>
<th>Benefit</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Scope of regulation water delivery systems</strong></td>
<td>More clearly defining the places where the regulations apply to better reflect the risk profile of Legionella. The department estimates that, based on a more refined definition, the number of facilities in scope would decrease by 20 per cent to at least 1,982 systems in scope.</td>
<td>Number of systems covered to fall from the current 2,478 systems.</td>
</tr>
<tr>
<td><strong>New offences to ensure integrity of water sampling and reporting of test results</strong></td>
<td>Ensure integrity of testing regime.</td>
<td>Unquantifiable. Unable to estimate expected frequency.</td>
</tr>
</tbody>
</table>
The main difference between options 2a and 2b is the removal of the requirement for mandatory disinfection. Option 2b would be expected to have a reduced impact (decreased cost) on water delivery system operators because disinfection would no longer be mandatory.

**Proposed approach**

Adopting option 3 (the base case – removing or reducing the regulations for water delivery systems) will potentially:

- negatively impact on the health of the Victorian population by increasing the likelihood of legionellosis in the community due to water delivery systems
- negatively impact the Victorian economy in the event of an outbreak in a facility with a vulnerable population due to the possible closure or reduction in facility operations to prevent further infections
- positively impact on the operations of water delivery system operators in the short term by providing greater flexibility to reduce servicing and maintenance standards.

Options 1 and 2 are expected to positively impact the health outcomes of the Victorian population, relative to having no regulations, by reducing the likelihood of legionellosis in the community due to poorly maintained water delivery systems and the associated impacts of an outbreak of legionellosis.

By reducing ambiguity of the definition of water delivery system, option 2 (both 2a and 2b) are expected to improve health outcomes more significantly than option 1.

Both options 1 and 2 would positively impact by reducing the economic impacts of an outbreak of legionellosis and assist in reducing the stigmatisation of exposure sites in the event of an outbreak.

Option 2 (both 2a and 2b) would be expected to improve health outcomes; however, there is a limited evidence base for the number of infections from water delivery systems in both options 1 and 2. Both options impact the operations of water delivery system operators, who may opt for less rigorous servicing and maintenance programs in the absence of regulations. Option 2 (both 2a and 2b) is expected to increase costs for water delivery system operators relative to option 1 by confirming the obligations relate to specific facilities with the associated burden. However, it will also reduce impacts on other low-risk premises that were inadvertently covered by the current definition. Option 2b would have less of an impact on operators than 2a through removing the mandatory requirement to disinfect.

These qualitative criteria have been scored in absolute terms below, with a score between –10 and +10.

Given the focus on the public benefits of the regulations and the Act, the health impacts have weighted equally important (0.2) alongside the potential economic impacts of an outbreak (0.3) (Table 5.4). The impacts on water delivery system operators is included as the key sector with regulatory burden (0.5). Multiplying the scores (–10 to +10) by the weightings gives a total possible score between –10 and +10 for each option.

**Table 5.4: Analysis of options regarding the regulation of water delivery systems**

<table>
<thead>
<tr>
<th>Option</th>
<th>Health impacts Score/weight</th>
<th>Potential economic impacts Score/weight</th>
<th>Impact on water delivery system operators Score/weight</th>
<th>Total (range: –10 to +10)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Retain the current regulations without changes</td>
<td>+4 / 0.4</td>
<td>+5.5 / 0.1</td>
<td>−2 / 0.5</td>
<td>1.15</td>
</tr>
</tbody>
</table>
### Option Impact Analysis

<table>
<thead>
<tr>
<th>Option</th>
<th>Health impacts Score/weight</th>
<th>Potential economic impacts Score/weight</th>
<th>Impact on water delivery system operators Score/weight</th>
<th>Total (range: –10 to +10)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2a. Amend some aspects of the current regulations</td>
<td>+5.5 / 0.4</td>
<td>+5.5 / 0.1</td>
<td>–1.5 / 0.5</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>(2.2 + 0.55 + -0.75)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2b. Amend some aspects of the current regulations and remove the mandatory disinfection requirement</td>
<td>+5 / 0.4</td>
<td>+5 / 0.1</td>
<td>–1 / 0.5</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>(2 + 0.5 + -0.5)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Base case – remove or reduce regulations</td>
<td>0 / 0.4</td>
<td>0 / 0.1</td>
<td>0 / 0.5</td>
<td>0</td>
</tr>
</tbody>
</table>

Based on the above impact analysis the preferred option is option 2a: Amend some aspects of the current regulations.

The department considers option 2a – to amend the current regulatory system, with improvements to increase the clarity of scope and requirements – is the best option to address the public health risk and in recognition of the precautionary principle to maintaining public health in the Act. This approach would also maintain a reasonable level of confidence in the management the risks in these facilities.

Removing the mandatory disinfection requirement would reduce the impact on water delivery system operators in certain circumstances and provide flexibility for operators to manage the risks based on their individual circumstances; however, this is expected to have a potential subsequent impact on health outcomes across Victoria. Disinfection of the water delivery system is still expected to be the most effective approach to reduce public health risks (and subsequent health and economic impacts) for most operators of water delivery systems.

The public health risks of Legionella are high in the event of an outbreak, as observed overseas; however, the number of observed cases from water delivery systems in Victoria is believed to be low compared with other sources (such as cooling tower systems).

Stakeholder consultation was undertaken on these changes. Industry was broadly supportive of the current regime with amendments similar to those proposed in option 2a.
Chapter 6: Pest control

Problem analysis

Victoria regulates pest control operators to manage the health risks posed by chemicals used to control pests. Our regulations need to change to harmonise with a new national framework, aiming to bring consistency across Australia.

There are several Victorian and Commonwealth Acts and Regulations that are relevant to the pest control industry. This legislation aims to ensure:

- people, the environment, agricultural produce and livestock are protected
- pesticides are applied according to label directions
- where required, pesticides are registered with the Australian Pesticides and Veterinary Medicines Authority.

Legislation controlling agricultural and veterinary chemicals is primarily provided through the *Agricultural and Veterinary Chemicals (Control of Use) Act 1992*. This Act requires that anyone who carries on a business or offers a service for fee or reward involving a prescribed class of agricultural chemical must have a commercial operator licence. There is an exception to this requirement for pest control operators licensed under the *Public Health and Wellbeing Act 2008*, reflecting the smaller size and scope of pest control operations relative to larger agricultural operations.

**Hazard**

Pest control operators use substantial quantities of pesticides from a variety of chemical classes to control pests. Many are highly toxic. Pesticides are controlled substances, and their distribution is managed throughout the supply chain.

**Exposure**

Pesticides can have serious health effects when used incorrectly. The short-term effects of contact with pesticides are well documented and can include vomiting, diarrhoea, mental confusion and effects on the heart rate, blood pressure and breathing. Short-term exposure to large amounts of pesticides can cause death.

Long-term exposure to pesticides in an occupational setting has been found to adversely affect the health of those exposed. People may be inadvertently exposed to pesticides through skin contact, inhalation and ingestion, leading to potential irritative effects. The systemic health effects of long-term pesticide exposure are of most concern. These effects include respiratory issues such as an increased incidence of asthma and cancer, as well as impaired neurological development and reduced male fertility from long-term exposure to pesticides.

**Vulnerability**

The most vulnerable population is the pest control operators who have small, long-term exposure to pesticides and chemicals as part of their occupation.

Pest control operators are hired to apply pesticides for controlling pests in residential and commercial premises. While pest control operators are at greatest risk, owing to being around pesticides all the time, homeowners and other people in the community are also at risk of exposure to large amounts in a short period of time.
Victoria has regulated the pest control industry, stipulating the qualifications that a pest control operator must have before applying pesticides in the business of pest control for several decades.

Objective of the regulations

The objective of the regulations to minimise the adverse health impacts associated with pesticides on the Victorian community, by establishing a framework for licensing pest control operators and the environment.

Requirements of the regulations

The current regulations relate to:

- s. 101 of the Public Health and Wellbeing Act – ‘Issue or renewal of pest control licences including:
  - prescribed licence fees and qualifications
  - prescribed courses of training and units of competency’

The current regulations prescribe the:

- qualifications required of those who authorise the use of one or more classes of pesticides and allows for people who held a licence and qualifications before the 2002 regulations were introduced to be eligible to apply for a current licence
- licence fees for different types of pest control licences (including fully qualified pest control operators, pest control operators undergoing training and pest control operators licensed and living in another state or territory)
- courses of training for supervised pest control licence holders
- records to be kept by a pest control operator in relation to the use of a pesticide, and the period for which the records must be kept.

Effectiveness of the current regulations

The department employs a variety of regulatory options, from public education and awareness campaigns and activities to support operator compliance, to enforcement actions such as warnings, fines and prosecution. Regulatory action is undertaken in a graduated and proportionate manner, commensurate to the actual or potential risk.

Education and awareness

The department operates an information service to educate the pest control industry and the public on the risks of pesticide use and the legislative requirements for using pesticides. Every year, this service receives approximately 1,600 enquiries via email and 1,000 phone calls via a dedicated phone number that require an action or response. Most enquiries (75 per cent of phone enquiries and 80 per cent of email enquiries) directly relate to the regulatory actions of the department's Pest Control team. The department continues to handle an average of four email and five phone enquiries per week from members of the public concerned about pesticide use.

Enquiries range from pest identification and control methods, to selecting a pest control operator and precautions to take when pesticides are used in the home. Complaints regarding pest control operators are also received. The department has produced three public information brochures and content for several articles on the Better Health Channel to support and emphasise this advice.
Monitoring and compliance

Inspections in response to enquiries and complaints is used as part of the department’s monitoring and compliance. For example, in 2017–18, of the approximately 2,711 enquiries received, there were 10 incidents investigated involving pesticides. The number of incidents investigated has increased over the past few years owing to a greater public awareness of the legislative requirements of pest control operators and an increase in the number of compliance inspections conducted by the department.

Should a compliance inspection or enquiry identify a potential breach of the Public Health and Wellbeing Act, authorised officers will act to gather evidence, including statements, and determine an appropriate enforcement action proportionate to the circumstances.

Number of regulated entities

As at the end of 2018, Victoria had 1,316 pest control operators licensed to apply pesticides for fee or reward in a commercial or domestic setting, with 153 of those currently undergoing training to become fully qualified.

The number of licensed operators over the past four years is shown in Table 6.1.

Table 6.1: Number of licensed pest control operators, by licence type and year, Victoria

<table>
<thead>
<tr>
<th>Licence</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technician</td>
<td>1,044</td>
<td>1,059</td>
<td>1,032</td>
<td>1,154</td>
</tr>
<tr>
<td>Trainee</td>
<td>102</td>
<td>78</td>
<td>134</td>
<td>153</td>
</tr>
<tr>
<td>Interstate</td>
<td>127</td>
<td>131</td>
<td>142</td>
<td>162</td>
</tr>
</tbody>
</table>

Exemptions

Under the current regulations, people who held a pest control licence on 26 October 2002 are exempt from the qualification requirement established under the current regulations (colloquially known as the ‘grandfather clause’). There are currently 221 pest control operators licensed under this exemption – approximately 17 per cent of all licences.

This exemption recognised that existing operators had experience in handling and applying pesticides. Over time, as operators have left the industry, the number of exempt licence holders has fallen.

In line with efforts to harmonise competency across jurisdictions in Australia, there is a case to remove this exemption and require operators licensed under the grandfather clause to demonstrate formally that they meet the current required competencies. The potential impacts and benefits of this will be described in the impact analysis section.

Potential impacts of pesticides in the absence of regulations

The department licenses pest control operators to apply pesticides in the business of pest control, based on the pest control operator being adequately trained in the safe handling and application of pesticides. This increases the likelihood that pesticides are applied according to specific label directions and in accordance with relevant safety precautions, minimising potential public health risks associated with pesticide use.

Removing or reducing regulations relating to the competencies required for licensed pest control operators would be expected to increase the risk that pest control operators would use pesticides incorrectly during their business operations. This may not immediately translate into poor outcomes for Victoria. This is because most of the current pest control operator workforce has been assessed for the required competencies (except for grandfathered licences). However, by removing training as a barrier to entry, it would be expected that new entrants into the pest control industry may not have the
competencies set by the regulations, and subsequently cultivate an environment in which there is an increased risk of incorrect use of chemicals and pesticides.

The department expects that ongoing continued incorrect use of pesticides would likely impact health outcomes in the Victorian population due to the health impacts associated with both short- and long-term exposure to pesticides. All Australian states and territories regulate chemical and pesticide use in recognition of the potential for serious adverse health effects when these substances are used incorrectly.

**Analysis of licence fees**

Table 6.2 provides comparative data on licensing fees that are charged across all states and territories. (Note that trainee licences are not issued in the ACT and Queensland.)

Fees for pest control technicians (the basic licence category) vary widely, from a low of $59 in the Northern Territory and New South Wales to a high of $297 in Queensland.

Victoria’s fee of $217 is the third highest however. Victoria does not levy a separate business licence fee (which is levied by some states and territories). These fees can be as much as $360 in Western Australia, which needs to be paid in addition to individual licence fees for all operators.

Victoria appears to be alone in having a separate interstate operator licence that provides a discounted fee for technicians licensed, and residing, in another state or territory but wishing to be able to operate in Victoria.

**Table 6.2: State and territory pest control licensing fees, per year, as at 1 July 2018**

<table>
<thead>
<tr>
<th>State</th>
<th>Licence</th>
<th>Authorisation</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACT</td>
<td>Technician</td>
<td>Commercial pest and weed control</td>
<td>$276.00</td>
</tr>
<tr>
<td>NSW</td>
<td>Technician</td>
<td>Pest management</td>
<td>$59.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fumigation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Trainee permit</td>
<td>Pest management</td>
<td>$59.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fumigation</td>
<td></td>
</tr>
<tr>
<td>NT</td>
<td>Technician</td>
<td>Pest control (may include fumigation)</td>
<td>$59.00</td>
</tr>
<tr>
<td></td>
<td>Provisional</td>
<td>Pest control (may include fumigation)</td>
<td>$59.00</td>
</tr>
<tr>
<td>Qld</td>
<td>Technician</td>
<td>Pest control including/excluding timber pest</td>
<td>$297.00</td>
</tr>
<tr>
<td>SA</td>
<td>Business</td>
<td>Registration for commercial pesticides or fumigation</td>
<td>$328.00</td>
</tr>
<tr>
<td></td>
<td>Technician</td>
<td>Controlled substances (includes pesticides/fumigants)</td>
<td>$80.50</td>
</tr>
<tr>
<td></td>
<td>Limited</td>
<td>Controlled substances (includes pesticides/fumigants)</td>
<td>$80.50</td>
</tr>
<tr>
<td>Tas.</td>
<td>Technician</td>
<td>Pest control (may include fumigation)</td>
<td>$155.00</td>
</tr>
<tr>
<td>Vic.</td>
<td>Technician</td>
<td>Arthropods, rodents, birds and fungi</td>
<td>$217.70</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pest animals</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fumigants</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Trainee</td>
<td>Arthropods, rodents, birds and fungi</td>
<td>$216.80</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pest animals</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fumigants</td>
<td></td>
</tr>
</tbody>
</table>
Pest control operators pay licence fees. Fee for the 2018–19 financial year are shown in Table 6.3.

**Table 6.3: Victorian licence fees for pest control operators as at 1 July 2018**

<table>
<thead>
<tr>
<th>Type</th>
<th>Cost</th>
<th>Length</th>
<th>Average cost per year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technician</td>
<td>$653.10</td>
<td>3 years</td>
<td>$217.70</td>
</tr>
<tr>
<td>Trainee</td>
<td>$216.80</td>
<td>1 year</td>
<td>$216.80</td>
</tr>
<tr>
<td>Interstate</td>
<td>$70.80</td>
<td>3 years</td>
<td>$23.60</td>
</tr>
</tbody>
</table>

The annual fee revenue from pest control operator licence fees is provided in Table 6.4. Given that all licences, other than the trainee licence, are issued for three years and because licences issued before 2002 have a common expiry date of 31 December, the annual revenue can fluctuate significantly. The industry can also be quite transient in nature, particularly among trainee licence holders.

**Table 6.4: Annual licence fee revenue from pest control licenses**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual fee revenue</td>
<td>$261,238</td>
<td>$181,874</td>
<td>$309,910</td>
<td>$321,956</td>
<td>$268,744</td>
</tr>
</tbody>
</table>

The department’s regulatory administration and enforcement activities involve processing licence applications (both initial and renewal applications) and cancellations, providing information to operators, responding to complaints, conducting inspections and undertaking investigations.

There are 2.3 full-time employee resources involved in these tasks, with approximate costs of $268,000 per annum inclusive of corporate overheads and non-salary items.
Cost recovery analysis

A comparison of departmental costs with the average fee revenue, as set out above, indicates that current licensing fees are set at cost recovery. This is inline with government policy on cost recovery. The average fee revenue of $268,744 closely matches the total administration costs of $268,000, noting that annual fee revenue can fluctuate based on licence renewals.

Costs incurred in providing other services including responding to enquiries and carrying out public educational initiatives are not included in the above comparison and would be expected to continue in the absence of the licensing system.

Proposed changes to the regulations

Amend the current regulations to be consistent with the national framework

The Victorian Government has committed to the national harmonisation of licensing and training requirements and chemical usage record-keeping requirements. As such, rather than examining a range of options, this chapter explores the impact of this commitment on Victoria’s regulations pertaining to pest control.

This includes an evaluation of the efficacy of the current regulations and a detailed analysis of the proposed changes to the current regulations to meet the government’s commitment to a consistent national framework.

Adopting the national framework for harmonised minimum training and licensing requirements

In 2008 the Productivity Commission produced a report on the regulation of chemicals and plastics. The report found that variable regulatory licensing requirements among occupational users of agricultural and veterinary chemicals between jurisdictions was an impediment to businesses operating across jurisdictional borders.

In 2013 the Australian ministers for agriculture endorsed a regulatory model for a national framework to harmonise regulations around agricultural and veterinary chemicals. The agreed national scheme will harmonise licensing and training requirements and chemical usage record-keeping requirements, as well as veterinary prescribing and compounding rights (not relevant to pest control licensing).

In July 2017 the Agricultural Ministers’ Forum endorsed harmonised minimum record-keeping requirements for users of agricultural chemicals, which includes pesticides. The endorsed model establishes a common level of information required to be recorded for agricultural chemical use and is proposed to be adopted into the Public Health and Wellbeing Regulations for national consistency.

In April 2018 the Agricultural Ministers’ Forum endorsed a proposal to harmonise minimum training and licensing requirements for fee-for-service users of agricultural and veterinary chemicals.

Expected benefits of the national framework

The main benefit of introducing national harmonisation is removing some of the regulatory burden placed on those that operate across jurisdictional borders.

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The national framework also creates additional licence authorisations (activities), and associated units of competency (training), for the control of timber pests and fumigation of pest animals. This is in recognition of the complexity involved and specialist knowledge required in pest management activities of this nature. The higher qualification requirements increase the skills and knowledge of the industry and consumer confidence in the service provided by licensed operators. The licensing system operates on the principle that ensuring minimum standards regarding the safe handling, storage and application of pesticides minimises the potential risk to health associated with their use.

**Implications for licensing requirements under the national framework**

The proposed national model includes the following minimum requirements:

- all fee-for-service providers (such as pest control operators and ground and aerial applicators) must be licensed
- licenses will be issued by the jurisdiction where the business is registered, or for an individual, based on their primary location/residence
- fees and charges will be set by each jurisdiction
- individual jurisdictions will be responsible for auditing and compliance
- any suspension or cancellation of a licence in a particular jurisdiction will automatically apply in other jurisdictions.

The proposed changes to Victoria’s pest control regulations to move towards national harmonisation include:

- creating an additional licence authorisation and associated units of competency for using pesticides to control timber pests
- modifying the pest animal licence authorisation such that an additional unit of competency is necessary for someone to be authorised to use fumigation tablets for controlling pest animals
- replacing the out-of-date units of competency for vertebrate (pest animal) control
- implementing transitional arrangements for new applicants and current pest control operator licence holders to acquire the specified units of competency
- making minor changes to the wording of the details to be kept under the record-keeping requirements.

In addition, it is proposed to set fees at approximately the same levels as in the current regulations.

**Licence authorisations and units of competency**

Pest control licences authorise an operator to use one or more classes of pesticides depending on the type of work the pest control operator is required to undertake. Licences are issued to individuals who have completed a qualification prescribed under the regulations that authorised the use of:

- pesticides (excluding fumigants) formulated for the control of arthropods, rodents, birds and fungi, which are used to control pests (other than pest animals): ‘General pest control’
- pesticides formulated for the control of pest animals to protect a building used for commercial purposes, a domestic premise or privately-owned land adjacent to domestic premises: ‘Pest animals’
- pesticides in the form of fumigants: ‘Fumigation’.

Table 6.5 outlines the harmonised licence authorisations and associated mandatory units of competency under the proposed regulations.

The change will move the requirements from ‘approved courses and qualifications’ to ‘units of competency’.
<table>
<thead>
<tr>
<th>Licence authorisations (current)</th>
<th>Approved courses and qualifications (current)</th>
<th>Licence authorisations (proposed)</th>
<th>Units of competency (proposed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pesticides (except fumigants) that have been formulated for the control of any pest, to control any pest except a pest animal [<em>general authorisation</em>]</td>
<td>Example: Completion of at least one of — Victoria Certificate in Pest Control (conducted by Commercial Pest Training Services and TAFE Colleges in Victoria). Statement of Attainment in Units 5, 6 and 18 of Certificate II in Asset Maintenance (Pest Management—Technical) issued by a registered education and training organisation. [a number of courses are specified]</td>
<td>Pesticides (except fumigants) that have been formulated for the control of any pest, to control any pest (including rodents or timber pests) [<em>general authorisation (excluding timber pests)</em>]</td>
<td>CPPPMT3005 – Manage pests without applying pesticides CPPPMT3006 – Manage pests by applying pesticides CPPPMT3018 – Maintain equipment and pesticide storage area in pest management vehicles</td>
</tr>
<tr>
<td>N/A</td>
<td>Pesticides (except fumigants) that have been formulated for the control of any pest, to control any pest (including rodents and timber pests) except a pest animal [<em>general authorisation (including timber pests)</em>]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pesticides— that have been formulated for the control of any pest animal; and to protect an area or place in a building used for commercial purposes or domestic premises or privately owned land adjacent to domestic premises.</td>
<td>Example: Completion of at least one of — Victoria Pest Animal Management Course (conducted by Victorian College of Agriculture and Horticulture and Victorian Colleges of TAFE).</td>
<td>Pesticides— that have been formulated for the control of any pest animal; and that are not in the form of fumigants; and to protect an area or place in a building used for commercial purposes or domestic premises or privately owned land</td>
<td>AHCCHM304 – Transport and store chemicals AHCCHM307 – Prepare and apply chemicals to control pest, weeds and diseases AHCPMG309 – Apply pest animal control techniques</td>
</tr>
<tr>
<td>License authorisations (current)</td>
<td>Approved courses and qualifications (current)</td>
<td>License authorisations (proposed)</td>
<td>Units of competency (proposed)</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>-----------------------------------------------</td>
<td>----------------------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td>['pest animal authorisation']</td>
<td>[a number of courses are specified]</td>
<td>adjacent to domestic premises.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>['pest animal authorisation (excluding fumigants)']</td>
<td></td>
</tr>
<tr>
<td>N/A</td>
<td></td>
<td>Pesticides — that have been formulated for the control of any pest animal; and that are in the form of fumigants; and to protect an area or place in a building used for commercial purposes or domestic premises or privately owned land adjacent to domestic premises.</td>
<td>AHCCHM304 – Transport and store chemicals AHCCHM307 – Prepare and apply chemicals to control pest, weeds and diseases AHCCHM310 – Conduct manual fumigation of vertebrate and invertebrate pests AHCPMG309 – Apply pest animal control techniques</td>
</tr>
<tr>
<td>Pesticides that are in the form of fumigants ['fumigant authorisation']</td>
<td>Example: Completion of at least one of — Victoria Methyl Bromide Fumigation Course (conducted by Victorian College of Agriculture and Horticulture and University of Melbourne). [a number of courses are specified]</td>
<td>Pesticides that are in the form of fumigants ['fumigant authorisation']</td>
<td>CPPPMT3011 – Manage organisms by applying fumigants to commodities and environments</td>
</tr>
</tbody>
</table>

The endorsed proposal to harmonise the training and licensing requirements for fee-for-service users of agricultural and veterinary chemicals in Australia also specifies creating an additional licence authorisation and associated units of competency required for using pesticides to control birds. However, because the proposal does not identify a specific course or training offered nationally, the department is not able to implement a bird control authorisation at this time.

The proposed new licence authorisations and associated mandatory units of competency under the new regulations are proposed to come into effect on the day the regulations commence. This would mean that from 15 December 2019 pest control licences would be issued based on the new licensing requirements specified above.

Existing licence holders who hold lower competency standards will have to provide proof that they have attained the relevant qualifications within a specified period from the commencement of the proposed regulations (see transitional arrangements) to retain the associated licence authorisations.
The Vocational Education and Training (VET) process allows for greater flexibility in the training and education system. It allows current competency and prior learning to be recognised, where registered training organisations (RTOs) assess prior learning and work experience for equivalence with current competencies. This ensures competency of licence holders through the process of recognition and, if required, reassessment.

The proposed regulations provide for the Secretary to, by notice published in the Government Gazette, approve units of competency to be equivalent units of competency for the purposes of the new licensing requirements. This caters for the minor changes in the course codes and descriptions of the units of competency that may occur over time.

**Implications for record-keeping requirements under the national framework**

Pest control operators are required to keep records for several purposes. Under occupational health and safety legislation employers have a responsibility to ensure workplace safety. This is often managed through job site analysis checklists and hazardous substance risk assessment records. Records must also be kept for insurance and operational purposes.

The Public Health and Wellbeing Act does not require a separate set of duplicate information to be kept, and it doesn’t specify the way the information is to be recorded. However, the department's Pest Control team provides a one-page template for record keeping that contains all the required information. The template is available online for pest control operators. Operators can modify it for their own use or insert repeating information such as their name, licence number and business details.

The endorsed harmonised minimum record-keeping requirements for users of agricultural chemicals establishes a common level of information that must be recorded for agricultural chemical use (see Table 6.6) and is proposed to be adopted into the regulations for national consistency. The proposed record-keeping requirements represent only minor amendments in the description of the details to be kept and are expected to only have a minor impact on pest control operators.

<table>
<thead>
<tr>
<th>Record-keeping requirements (current)</th>
<th>Record-keeping requirements (proposed)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>The trade name of the pesticide</td>
<td>Trade name of pesticide</td>
<td></td>
</tr>
<tr>
<td>The batch number of the pesticide</td>
<td>Batch number</td>
<td></td>
</tr>
<tr>
<td>Specific precautions to be observed, including the re-entry period</td>
<td>Specific precautions to be observed</td>
<td>Includes re-entry period</td>
</tr>
<tr>
<td>The date of the pesticide application</td>
<td>Date of application</td>
<td></td>
</tr>
<tr>
<td>The start and finish times of the pesticide application</td>
<td>Start and finish times of application</td>
<td></td>
</tr>
<tr>
<td>The location of the pesticide application (including street address, if applicable)</td>
<td>Location of the pesticide application</td>
<td>Includes street address (can differ from address of client)</td>
</tr>
<tr>
<td>A description of the areas treated</td>
<td>Specific location of application on the property</td>
<td>Areas within a property where the product was applied</td>
</tr>
<tr>
<td>The pests treated</td>
<td>Pests treated</td>
<td></td>
</tr>
</tbody>
</table>
### Record-keeping requirements (current) | Record-keeping requirements (proposed) | Description
--- | --- | ---
The method of application | Method of application | Spray, bait, etc.
A description of the amount of pesticide applied | **Quantity of pesticide applied** | 
| **Rate of pesticide application or sufficient information to allow the rate of pesticide application to be determined** | As expressed on the product label
If applied outdoors, the ambient temperature, wind direction and speed at the time of application | If applied outdoors, the ambient temperature, wind direction and speed at the time of application
The name and licence number of the person applying the pesticide and, if applicable, the name and licence number of the person supervising the application | Name and licence number of the person applying the pesticide
| **If applicable, name and licence number of the person supervising the application** | Where the pesticide is applied by a trainee licence holder
The trading name, address and phone number of the business employing, engaging or owned by the person applying the pesticide | Trading name, address and phone number of the business employing, engaging or owned by the person applying the pesticide
The name and address of the person for whom the work was carried out | Name and contact details (phone number and address) of the person for whom the work was carried out
The signature of the person completing the record | The signature of the person completing the record

Highlighted rows indicate the major proposed changes to pesticide application record-keeping requirements.

### Impact analysis

The government has committed to the national harmonisation of licensing and training requirements and chemical usage record-keeping requirements.

This impact analysis will review the expected impact for pest control operators in Victoria transitioning to the national requirements and uses similar methodology as was used in the Commonwealth’s *Decision Regulation Impact Statement on a national scheme for assessment, registration and control-of-use of agricultural and veterinary chemicals*. However, this report also assessed the impact of other uses of chemicals outside the scope of pest control operator licensing.
Assessment of the current qualifications and experience of the pest control industry and costs to transition

In implementing the national framework, consideration must be given to the experience and qualification profiles for pest control operators in Victoria. There are broadly three groups of pest control operator experience and qualifications:

1. trainees working under supervision and undertaking training (153 people)\(^6\)
2. technicians with current qualifications (934 people) – this category includes interstate operator licences
3. technicians with a qualification exemption, colloquially known as the ‘grandfather clause’ (currently 221 people but declining as a proportion of the total licences over time).

The licences issued based on the current qualifications (1 and 2 above) can be further broken down by licence authorisation type as follows:

<table>
<thead>
<tr>
<th>Authorisation</th>
<th>General pest control</th>
<th>Fumigation</th>
<th>Pest animal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of technician licences currently issued</td>
<td>1,041</td>
<td>106</td>
<td>20</td>
</tr>
<tr>
<td>Number of trainee licences currently issued</td>
<td>138</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,179</strong></td>
<td><strong>109</strong></td>
<td><strong>21</strong></td>
</tr>
</tbody>
</table>

*Note: The sum of these figures will not equal the total above because a pest control licence can be issued with multiple authorisations.*

As discussed above, the endorsed national model specifies harmonised licence authorisations and associated mandatory units of competency. In Victoria, adopting the national framework will require changes to the proposed regulations as follows:

- creation of an additional licence authorisation and associated units of competency required for the use of pesticides to control timber pests
- modification of the pest animal licence authorisation such that an additional unit of competency is necessary to be authorised to use fumigation tablets for the control of pest animals
- replacement of the out-of-date units of competency for vertebrate (pest animal) control.

The subsequent impact of the qualification requirement changes on each of the existing groups identified above are discussed below.

**General pest control**

Despite minor changes in course codes and descriptions, the proposed units of competency for general pest control remain unchanged from those currently prescribed. Equivalent iterations of these three units have been in place since before they were written into pest control licensing legislation in 2002. The proposed regulations provide for licences to be issued based on units of equivalency approved by the Secretary and published in the *Government Gazette*. Therefore, there will be no qualification impact for trainees or technicians who hold a licence with this authorisation.

\(^6\) The numbers of people in each group are current as of the end of December 2018.
General pest control with timber pests

The introduction of an additional licence authorisation, and associated units of competency, for the application of pesticides to control timber pests recognises the complexity involved and specialist knowledge required in pest management activities of this nature. Trainees and technicians who currently treat for timber pests under their general pest control authorisation will have to demonstrate to the department that they have obtained the additional units of competency specified in the proposed regulations to obtain a general authorisation (including timber pests).

The department estimates, based on ongoing interactions with industry, that approximately 80 per cent (four out of five) of the general pest control industry (approximately 943 people) are actively engaged in timber pest control. A small proportion of these licence holders may have already obtained the required units of competency for alternative reasons including insurance, professional development or as a result of interstate licensing requirements.

The department is aware of insurance firms that require minimum training as part of providing insurance policies specifically for the pest control industry. These require each operator to have units 8 and 10 in addition to 5, 6 and 18 to be covered under their company’s insurance policy and requires evidence of this in the form of a statement of attainment issued by the training provider.

RTO packaging of the units has often been designed to encourage students with an intention to undertake timber pest control to complete the additional units of competency in conjunction with the core licensing units. Pest control operators may also choose to take on additional units, including electives, to receive a qualification that is perceived to improve their business operations.

Operators primarily licensed in states or territories with an existing timber pest control licence (Western Australia, Queensland) will also already have obtained units CPPPMT3008 – Inspect for and report on timber pests and CPPPMT3010 – Control timber pests, the necessary units of competency.

It is therefore assumed that one-third of the pest control operators currently actively engaged in timber pest control have already undertaken the additional units of competency proposed under the new regulations for alternative purposes. The remaining operators will have to seek recognition of prior learning and experience through an RTO or undertake training in the specified units of competency to continue to apply pesticides for the control of timber pests following the introduction of the proposed regulations.

Fumigation

Despite minor changes in course codes and descriptions, the proposed units of competency for fumigation remain unchanged from those currently prescribed. Equivalent iterations of this unit have been in place since before they were written into pest control licensing legislation in 2002. The proposed regulations provide for licences to be issued based on units of equivalency approved by the Secretary and published in the Government Gazette. Therefore, there will be no qualification impact for trainees or technicians who hold a licence with this authorisation.

Pest animal control

The prescribed units of competency for pest animal control are obsolete. Despite major changes in course codes and descriptions, the proposed units of competency for pest animal control are equivalent to those currently prescribed. Other equivalent iterations of these units have also been in place since before they were written into pest control licensing legislation in 2002. The proposed regulations provide for licences to be issued based on units of equivalency approved by the Secretary and published in the Government Gazette. Therefore, there will be no qualification impact for trainees or technicians who hold a licence with this authorisation.
Pest animal control including fumigants

The introduction of an additional licence authorisation, and associated unit of competency, for the application of pesticides in the form of fumigants for the control of pest animals recognises the complexity involved and specialist knowledge required in pest management activities of this nature. Trainees and technicians who currently control pest animals using fumigant tablets such as aluminium phosphide will have to demonstrate to the department that they have obtained the additional unit of competency specified in the proposed regulations to obtain a pest animal authorisation (including fumigants).

Grandfather clause

Under the current regulations, operators who held a pest control licence on 26 October 2002 are exempt from the qualification requirements established under the current regulations. In line with efforts to harmonise competency across jurisdictions in Australia, it is proposed to remove this exemption and require operators previously licensed under the grandfather clause to demonstrate formally that they meet the current required competencies. A small proportion of these licence holders may have obtained the required units of competency for alternative reasons (insurance, professional development). However, it is assumed that the majority will have to seek recognition of prior learning and experience through an RTO or undertake training in the specified units of competency because they have either not undertaken a qualification or it has been more than 17 years since a qualification has been obtained.

Estimated costs and number of pest control operators to undergo additional training

In the report on the impact of national harmonisation of the units of competency for pest control licensing analysed the expected one-off qualification training costs as they relate to each jurisdiction, to the Certification III or Australian Qualifications Framework Level 3. In 2013 the one-off costs for training in Victoria were outlined, per individual seeking qualifications, as listed in Table 6.7.

Table 6.7: One-off qualification training costs in Victoria, 2013

<table>
<thead>
<tr>
<th>Type of cost</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time cost of attending course</td>
<td>$884</td>
</tr>
<tr>
<td>Time cost of travel</td>
<td>$221</td>
</tr>
<tr>
<td>Transport</td>
<td>$113</td>
</tr>
<tr>
<td>Tuition</td>
<td>$320</td>
</tr>
<tr>
<td><strong>Total cost per person</strong></td>
<td><strong>$1,537</strong></td>
</tr>
</tbody>
</table>

Source: Table A2.3, Decision Regulation Impact Statement on a national scheme for assessment, registration and control-of-use of agricultural and veterinary chemicals

Adjusting this 2013 cost for inflation provides a per-person cost of $1,677 in 2018.

Training in the required units of competency for all licence authorisations is readily available through several RTOs. Many offer alternative delivery options such as classroom-based training and via correspondence/online.

If all existing pest control operators had no pre-existing training, in 2018 there would be 1,469 operators who would need to seek qualification at the Australian Qualifications Framework Level 3. The total one-off cost for pest control operators in Victoria would be $2,463,513. However, because pest control operators have existing qualifications required by the current regulations, this total impact is expected to be less in practice.
As outlined above, there will be specific groups of current pest control operators that will need to undertake additional training or seek recognition of prior learning and experience from an RTO. The groups expected to be affected by adopting the national framework are:

- licence holders who are required to acquire qualifications relating to timber pests
- licence holders who are required to acquire qualifications relating to fumigation for pest animal control
- licence holders with a qualification exemption (‘grandfather clause’) who are required to obtain recognition of prior learning and experience.

The estimated costs for the pest control industry to undergo additional training are outlined in Table 6.8.

Table 6.8: Estimated costs for pest control industry to undergo additional training

<table>
<thead>
<tr>
<th>Type</th>
<th>Number in 2018</th>
<th>Estimate to undergo additional training</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber pests</td>
<td>1,179</td>
<td>778</td>
<td>$1,304,706</td>
</tr>
<tr>
<td>Fumigation for pest animal control</td>
<td>21</td>
<td>21</td>
<td>$35,217</td>
</tr>
<tr>
<td>Grandfather clause</td>
<td>221</td>
<td>221</td>
<td>$370,617</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>$1,710,540</strong></td>
</tr>
</tbody>
</table>

Totalling the estimates for each group expected to be affected by adopting the national framework gives an expected estimated one-off cost of $1,710,540.

There are no expected additional ongoing costs for new entrants, as contemporary qualifications are expected to provide required training to undertake pest control operator business.

**Transitional arrangements for pest control operators**

Despite the introduction of the new licensing requirements under the proposed new regulations, it is proposed that a transitional period will take effect on the day the regulations commence and operate until 31 December 2021. The transitional arrangements will be implemented to allow for pest control licences to be issued based on the licensing requirements under the current regulations and allow enough opportunity for operators to undergo the process of recognition of prior learning or undertake further training as necessary to meet the new requirements.

The regulations propose that from 1 January 2022, pest control licences will only be issued (or renewed) based on the new licence authorisations and associated mandatory units of competency under the proposed regulations.

**Proposed implementation and transitional arrangements**

It is proposed that a transitional period will be implemented to provide for three types of transitional arrangements for pest control operators as follows.

**New pest control licence applications**

The new regulations propose introducing new licence authorisations and associated mandatory units of competency. The transitional arrangements for new pest control licence applications will allow for operators who previously held a pest control licence or recently undertook training prior to the new regulations commencing to apply for a licence based on the approved courses and qualifications under the current regulations until 31 December 2021.

Licences issued under the transitional arrangements for new pest control licence applications will be valid for the full licence term (three years for technician and interstate operator licences and 12 months
for trainees) and may be subsequently renewed if the transitional period is still in effect. In practice, based on the licence durations this will apply to trainee licence holders only.

**Example 1: Previously held, now expired technician licence**

Joe held a pest control licence that has now expired. The pest control licence authorised Joe to use ‘Pesticides (except fumigants) that have been formulated for the control of any pest, to control any pest except a pest animal’ (also called a general pest control licence). Joe’s licence was issued in 2016 based on a statement of attainment in units 5, 6 and 18. Joe’s licence expired on 12 October 2019. The new regulations are proposed to come into effect on 15 December 2019.

Under the proposed transitional arrangements for new pest control licence applications, Joe applies for a new pest control licence based on the approved courses and qualifications listed under the current regulations during the transition period up to and including 31 December 2021.

He is granted a new licence on 3 March 2020. His licence will then be valid for the full three-year technician licence period, with a new expiry date of 3 March 2023.

Joe’s licence will now expire after the transitional period. Therefore, he will have to renew his licence based on the new licence authorisations and associated mandatory units of competency under the proposed regulations, having had three years in which to obtain any additional requirements.

Because Joe holds a statement of attainment in units 5, 6 and 18 he will be eligible to apply for a pest control licence authorised to use ‘Pesticides (except fumigants) that have been formulated for the control of any pest, to control any pest except a pest animal or timber pests’ [‘general authorisation (excluding timber pests)’]. Should Joe want to control timber pests, he will need to satisfy the department that he has obtained units CPPPMT3008 – Inspect for and report on timber pests and CPPPMT3010 – Control timber pests to upgrade his authorisation to ‘Pesticides (except fumigants) that have been formulated for the control of any pest, to control any pest (including rodents and timber pests) except a pest animal’ [‘general authorisation (including timber pests)’].

**Example 2: Trainee licence holder, upgrading to a technician**

Katie holds a trainee pest control licence and is authorised to use ‘Pesticides (except fumigants) that have been formulated for the control of any pest, to control any pest except a pest animal’ (general pest control licence). This licence was issued in early 2019 based on her enrolment in units 5, 6 and 18. The new regulations are proposed to come into effect on 15 December 2019. The expiry date of Katie’s licence is 21 February 2020.

Under the proposed transitional arrangements for new pest control licence applications, Katie applies for a new technician pest control licence based on the approved courses and qualifications listed under the current regulations during the transition period up to and including 31 December 2021. She is granted a new licence on 3 February 2020. Katie’s licence will then be valid for the full three-year technician licence period, with a new expiry date of 3 February 2023.

Katie’s licence will now expire after the transitional period. Therefore, she will have to renew her licence based on the new licence authorisations and associated mandatory units of competency under the proposed regulations, having had three years in which to obtain any additional requirements.

Because Katie holds a statement of attainment in units 5, 6 and 18, she will be eligible to apply for a pest control licence authorised to use ‘Pesticides (except fumigants) that have been formulated for the control of any pest, to control any pest except a pest animal or timber pests’ [‘general authorisation (excluding timber pests)’]. Should Katie want to control timber pests, she will need to satisfy the department that she has obtained units CPPPMT3008 – Inspect for and report on timber pests and CPPPMT3010 – Control timber pests to upgrade her authorisation to ‘Pesticides (except fumigants) that have been formulated for the control of any pest, to control any pest (including rodents and timber pests) except a pest animal’ [‘general authorisation (including timber pests)’].
**Example 3: New trainee licence**

Susan has decided to become a trainee pest control operator. Because she is new to the profession and has done no previous training, it is in Susan’s best interests to apply for a new licence under the new licence authorisations and associated mandatory units of competency proposed under the new regulations.

**Existing pest control licence holders**

Despite the proposed introduction of new licence authorisations and associated mandatory units of competency, the proposed transitional arrangements for existing pest control licence holders will allow for licences valid immediately prior to the commencement of the new regulations to:

- continue to be held until the existing expiry date
- be renewed based on the approved courses and qualifications under the current regulations until 31 December 2021.

Licences renewed under the transitional arrangements for existing pest control licence holders will be valid for the full licence term (three years for technician and interstate operator licences and 12 months for trainees) and may be renewed more than once if the transitional period is still in effect. In practice, based on the licence durations this will apply to trainee licence holders only.

**Example 4: Existing technician licence holder**

Jane holds a pest control licence and is authorised to use ‘Pesticides (except fumigants) that have been formulated for the control of any pest, to control any pest except a pest animal’ (general pest control licence). This licence was issued in 2018 based on a statement of attainment in units 5, 6 and 18. The new regulations are proposed to come into effect on 15 December 2019. The expiry date of Jane’s licence is 31 December 2021, the last day of the transitional period.

Under the proposed transitional arrangements for existing pest control licence holders Jane applies to renew her licence based on the approved courses and qualifications listed under the current regulations during the transition period up to and including 31 December 2021. Her licence will then be valid for the full three-year technician licence period, with a new expiry date of 31 December 2024.

Jane’s licence will now expire after the transitional period. Therefore, she will be required to renew her licence based on the new licence authorisations and associated mandatory units of competency under the proposed regulations, having had nearly five years in which to obtain any additional requirements.

Because Jane holds a statement of attainment in units 5, 6 and 18 she is eligible to apply for a pest control licence authorised to use ‘Pesticides (except fumigants) that have been formulated for the control of any pest, to control any pest except a pest animal or timber pests’ (‘general authorisation (excluding timber pests)’). Should Jane want to control timber pests she will need to satisfy the department that she has obtained units CPPPMT3008 – Inspect for and report on timber pests and CPPPMT3010 – Control timber pests to upgrade her authorisation to ‘Pesticides (except fumigants) that have been formulated for the control of any pest, to control any pest (including rodents and timber pests) except a pest animal’ (‘general authorisation (including timber pests)’).

**Example 5: Existing trainee licence holder**

James holds a trainee pest control licence and is authorised to use ‘Pesticides (except fumigants) that have been formulated for the control of any pest, to control any pest except a pest animal’ (general pest control licence). This licence was issued in early 2019 based on his enrolment in units 5, 6 and 18. The new regulations are proposed to come into effect on 15 December 2019. The expiry date of James’ licence is 21 February 2020.
Under the proposed transitional arrangements for existing pest control licence holders James applies to renew his trainee licence based on the approved courses and qualifications listed under the current regulations during the transition period up to and including 31 December 2021. His licence will then be valid for the 12-month trainee licence period, with a new expiry date of 21 February 2021.

James’ licence will expire before the transitional period ends. Therefore, he will be able to again renew his trainee licence under the transitional arrangements for existing pest control licence holders (unless he has already been granted a trainee licence three times (s. 101(4)) or apply for a new technician licence under the transitional arrangements for new pest control licence applications (see above).

James is granted a new trainee licence on 21 February 2021. His licence is again valid for the 12-month trainee licence period, with a new expiry date of 21 February 2022.

James’ new licence will expire after the transitional period. Therefore, he will have to renew his licence based on the new licence authorisations and associated mandatory units of competency under the proposed regulations, having had two years in which to obtain any additional requirements.

Because James was undertaking training in units 5, 6 and 18, when he finishes he will be eligible to apply for a pest control licence authorised to use ‘Pesticides (except fumigants) that have been formulated for the control of any pest, to control any pest (including rodents or timber pests)’ [‘general authorisation (excluding timber pests)’]. Should James want to control timber pests he will need to satisfy the department that he has obtained units CPPPMT3008 – Inspect for and report on timber pests and CPPPMT3010 – Control timber pests to upgrade his authorisation to ‘Pesticides (except fumigants) that have been formulated for the control of any pest, to control any pest (including rodents and timber pests) except a pest animal’ [‘general authorisation (including timber pests)’].

Operators previously licensed under the grandfather clause

Under the current regulations, operators who held a pest control licence on 26 October 2002 are exempt from the qualification requirements established under the current regulations. In line with efforts to harmonise competency across jurisdictions in Australia, it is proposed to remove this exemption and require operators previously licensed under the grandfather clause to demonstrate formally that they meet the current required competencies.

Despite the proposed introduction of new licence authorisations and associated mandatory units of competency, the transitional arrangements for operators previously licensed under the grandfather clause will allow for licences valid immediately before the new regulations commence to:

- continue to be held until the existing expiry date
- be renewed based on the grandfather clause under the current regulations until 31 December 2021.

Licences renewed under the transitional arrangements for operators previously licensed under the grandfather clause will be valid for the full licence term (three years for technicians and interstate operator licences).

Example 6: Existing technician licence holder (‘grandfather clause’)

John holds a pest control licence and is authorised to use ‘Pesticides (except fumigants) that have been formulated for the control of any pest, to control any pest except a pest animal’ (general pest control licence). This licence was issued based on the grandfather clause (John held a pest control licence on 26 October 2002). The new regulations are proposed to come into effect on 15 December 2019. The expiry date of John’s licence is 31 December 2021, the last day of the transitional period.

Under the proposed transitional arrangements for operators previously licensed under the grandfather clause, John applies to renew his licence based on the grandfather clause under the current regulations
during the transition period up to and including 31 December 2021. His licence will then be valid for the full three-year technician licence period, with a new expiry date of 31 December 2024.

John’s licence will now expire after the transitional period. Therefore, he will have to renew his licence based on the proposed new licence authorisations and associated mandatory units of competency, having had nearly five years in which to obtain any additional requirements (obtain recognition of prior learning and experience or undertake training in the necessary units of competency).
Regulations for the management and control of infectious diseases, microorganisms and medical conditions
Chapter 7: Notifications of infectious diseases, micro-organisms and medical conditions

Problem analysis

Victoria regulates to require medical practitioners and pathology services to notify the Department of Health and Human Services if they suspect or detect certain diseases or conditions. This enables monitoring and response to prevent further illness. As diseases, testing methods and technologies change, how does regulation need to change?

The requirement to notify a central health authority when particular diseases or micro-organisms are detected is a common feature of public health surveillance systems around the world. Mandatory reporting of certain diseases was established with the first Victorian Public Health Act in 1854. The ‘listed’ or notifiable conditions in Victoria have changed over time with improvements in sanitation, as well as the introduction of new vaccines or other measures that have effectively controlled, or even eradicated, some diseases.

Notification of diseases and conditions prescribed in the regulations:

- provides a crucial early warning of a potential threat to public health
- enables the department to respond to prevent or control the spread of disease and prevent further illness
- allows emerging trends to be identified and appropriate policy responses and public health interventions to be implemented.

In the decade since the 2009 Public Health and Wellbeing Regulations came into effect, a range of developments and challenges have arisen in relation to the surveillance and management of notifiable conditions and micro-organisms. These include policy challenges posed by:

- changing disease patterns
- a significant increase in reporting of notifiable conditions and subsequent resourcing issues (for more information see the appendix: Increasing notification of prescribed notifiable conditions)
- new-generation treatments and associated health outcomes
- the rising threat of antimicrobial resistance
- technological advances in diagnostic methods
- changes to current practice that are not reflected in the regulations.

For a history of regulation requiring notification of diseases and conditions, see the appendix: History of regulation.

Objectives of the regulations

The objectives of the regulations are to enable the Department of Health and Human Services to:

- respond rapidly to serious or severe cases of disease to protect others
- detect environmental hazards and disease outbreaks in a timely manner and prevent further cases
• monitor disease epidemiology, including monitoring the burden of disease for priority conditions in certain ‘at-risk’ populations such as Aboriginal and Torres Strait Islander people
• inform public health interventions and policy such as immunisation, legislation or education programs.

These objectives contribute to reducing the spread of notifiable communicable diseases through timely notification of high-quality data that enables an appropriate and robust public health response.

Without these regulations, the department’s disease surveillance system would not function.

**Requirement of the regulations**

The regulations relate to:

• Division 3, Part 8 of the *Public Health and Wellbeing Act 2008*, which establishes the framework for Victoria’s notifiable conditions scheme
• s. 238 of the Public Health and Wellbeing Act, which allows certain matters in respect of the management and control of infectious disease, micro-organisms and medical conditions to be prescribed.

The regulations currently prescribe 62 conditions that must be notified by medical practitioners and 71 that must be notified by laboratories. The regulations provide legal authority for medical practitioners and laboratories to provide information to the Department of Health and Human Services that might otherwise be considered confidential. All, except anaphylaxis and elevated blood lead levels, are infectious diseases or complications of infectious diseases.

The specific conditions prescribed in the regulations are informed by Victorian health priorities, the National Notifiable Diseases List and the national *Biosecurity Act 2015.*

Twenty-four of the prescribed notifiable conditions are classified as ‘urgent’ and must be notified to the department by telephone immediately on initial diagnosis, whether presumptive (suspected) or confirmed. Diseases requiring immediate notification are those that pose the greatest threat to public health, allowing for immediate actions to be taken.

The remainder of the conditions, classified as ‘routine’, must be notified in writing within five days of initial diagnosis.

Schedules 4 and 6 of the current regulations list the prescribed notifiable conditions and the requirements for notification (how and when to notify and what information needs to be included in the notification).

Notification regulations apply to medical practitioners (of which the majority are general practitioners – approximately 8,500 in Victoria) and pathology laboratories (of which there are around 170). The impact of the current regulations is outlined in the appendix: *Impact of the current regulations on industry.*

The conditions have been prescribed both because of their potential to affect public health in Victoria and because the Victorian Government is bound to uphold the regulation of disease notification by federal and international laws and agreements.

**Options**

The options explored are:

• Option 1: Retain the current regulations without changes
• Option 2: Amend some aspects of the current regulations
• Option 3: Remove or reduce the current regulations.
Option 1: Retain the current regulations without changes

Retain the requirements for notifying micro-organisms in food

The notification of micro-organisms in food often results in a recall of contaminated food products as an essential measure to protect public health. To make decisions about risks and responses in the quickest possible timeframe, the department needs all the information regarding the case, the contaminant and the risks as soon as is practicable.

The current regulations do not require written notice of a notifiable micro-organism within the desired timeframe (micro-organisms in food)

The Public Health and Wellbeing Regulations currently require that a notification of a prescribed micro-organism detected in food supplies is made to the department immediately by telephone, followed by a written notice within five days. This time period reflects the time taken by the postal system to deliver written notice.

The written notification can provide important information for determining the appropriate public health response. To make decisions about risks and responses in the quickest possible timeframe, the department needs all the information regarding the risks as soon as is practicable. In practice, most laboratories provide the written notification immediately after or coinciding with the telephone notification. The majority of these notifications are provided electronically.

Retaining the regulation that requires written notification within five days does not reflect the need and current practice of most laboratories of providing immediate written notification to enable the quickest response from the department.

The current regulations do not require the written notice of a notifiable micro-organism (micro-organisms in food) to include all the details required to determine a response

The Public Health and Wellbeing Regulations currently require that the written notice of a notifiable micro-organism detected in food or water must specify the:

- micro-organism isolated or detected
- date of isolation or detection
- source – food or water
- type – batch identification (if appropriate)
- name and contact number of notifying laboratory.

In practice, these requirements do not ensure enough information is always provided with the notification to ensure that the department can assess the scale of the risk and respond rapidly. Nor do the requirements reflect current practice by the notifying laboratories, which is to provide additional required details such as:

- details of the food sample, including type of food, product and brand name (if known)
- name and contact details (including phone number) of the person or company that submitted the sample.

Continuing with the current system would mean notifying laboratories would continue to provide the additional information needed by the department for public health risk assessment and response, either voluntarily through the written notification process or via follow-up contact initiated by departmental officers. This is not transparent or efficient, it may lead to delays in time-sensitive cases and does not reflect current practice.

The current regulations do not ensure enough information is always provided with the notification to ensure the department can respond rapidly – for example, in undertaking a full risk assessment. Nor do the requirements reflect current practice by the notifying laboratories. Further, the current regulations do
not compel primary laboratories to forward clinical specimens or isolates at the request of the Secretary to the department to obtain the crucial isolate typing information needed to definitively attribute the source of the pathogen and therefore determine the most appropriate public health response.

**Maintain the current compliance tools for notifiable conditions**

Compliance tools within the current regulatory framework for notifiable conditions and micro-organisms allow for a departmental response at the highest and lowest levels of intervention:

- **Guidance and support**: the department’s primary response is education, used to encourage compliance.
- **Prosecution**: potential to use the existing failure-to-notify penalties that may be applied to medical practitioners (s. 127) and pathology services (s. 128) in relation to notifiable conditions, and for laboratory services in relation to food (s. 130). This reflects the importance of notifications to controlling infectious diseases, and the Act specifies maximum penalties of 60 penalty units (equivalent to $9,671.40 in 2018–19).

Education programs have been used to improve medical practitioner compliance with the notification requirements, with limited success.

An analysis of 2017–18 notification data revealed that 47.9 per cent of laboratory notifications had a corresponding notification from a medical practitioner. This contrasts with high compliance with notification requirements by pathology services, potentially attributable to pathology services’ consistent use of highly automated systems for providing notifications.

Maintaining the current regulations without change carries the risk that many will continue to fail to notify.

Experience demonstrates that the current regulatory option (prosecution) does not serve as a sufficient deterrent. While many contextual issues underpin noncompliance with legislative penalties for administrative processes (such as notification requirements), general perceptions that prosecutions ‘never happen’ often nullify deterrent effects. In the absence of an intermediate-level intervention, such as official warnings or infringement notices, these perceptions may not change.

**Maintain the current list of prescribed notifiable conditions and microorganisms without change**

The conditions that must be notified to the department by medical practitioners and laboratories have been prescribed both because of their potential to affect public health in Victoria and because the Victorian Government is bound to uphold the regulation of disease notification by federal and international laws and agreements.

The specific conditions prescribed in the regulations are informed by Victorian health priorities, the National Notifiable Diseases List and the national **Biosecurity Act 2015**. As diseases, testing methods and technologies change, the prescribed notifiable conditions need to change. Maintaining the current list of prescribed notifiable conditions and microorganisms without change presents challenges in addressing antimicrobial resistant organisms, clarity regarding the nomenclature for Shiga toxin and verotoxin-producing *Escherichia coli* and does not reflect significant advances in the diagnostic testing for Hepatitis B and C.

**The current regulations do not prescribe specific antimicrobial-resistant (AMR) organisms or test results to be notified by pathology services**

AMR is the process whereby micro-organisms become resistant to antimicrobial medicines such as antibiotics. AMR is increasing dramatically worldwide due to our reliance on and, in many cases, misuse of antibiotics.
Studies have confirmed that an increasing number of infections in healthcare facilities and the community are caused by resistant pathogens. Figures from 2014 suggest that about 700,000 people die each year, worldwide, from antimicrobial-resistant varieties of common bacterial infections – though this is probably an underestimate due to poor reporting and surveillance.

The current Victorian notification scheme does not include notifications for AMR. While pathology services may test for AMR and susceptibility to provide doctors with clinical information about patient treatment options, under the current regulatory requirements these results do not need to be reported to the department for broader public health responses.

Retaining the list of prescribed conditions without change will not provide the information needed to determine an appropriate public health response.

The key shortfall of this current regulations is that they are designed for surveillance and not response, and while the department is able to access the data, this is not reported in a timeframe or manner that allows for an immediate and rapid response to an instance of critical AMR.

The current regulations do not prescribe Shiga toxin-producing *Escherichia coli* as a notifiable micro-organism in food or drinking water

Shiga toxin and verotoxin-producing *Escherichia coli* (STEC/VTEC) are not prescribed as notifiable micro-organism. STEC/VTEC are generally accepted as alternative names for the same strain of *Escherichia coli* and are often used interchangeably.

Retaining the list of prescribed conditions without change will perpetuate the lack of transparency and reliance on assumed knowledge around this condition.

Without specifying both names the reporting requirements are not transparent, and this assumes a common understanding across all involved in the notifications scheme about the interchangeable nature of the terminology.

The current regulations do not require reporting of results of any nucleic acid tests performed at the time of a hepatitis B virus (HBV) and hepatitis C virus (HCV) diagnosis and subsequent notification.

The increasing use of nucleic acid testing (NAT) test results for HBV and HCV allows for the measurement of the activity of the virus in a patient and can indicate the stage of an infection, in particular whether the diagnosis is an acute infection. However, there is no requirements to notify the department when a NAT test is done in combination with a primary diagnostic test, such as serology for HBV or HCV.

**Maintain the current specifications for case information required to be notified to the department**

The Public Health and Wellbeing Regulations specify what details must be supplied as part of a condition notification to the department, including information specific to the individual, not just the condition. Retaining the current requirements without change would negate the opportunity to improve information that could better inform public health action.

The current regulations do not include ‘Aboriginal or Torres Strait Islander status’ as a notification detail that must be provided by pathology services

The 18 priority conditions identified by the Communicable Diseases Network Australia for Indigenous status are currently notified in Victoria by both medical practitioners and laboratories. The current regulations require that written notifications from medical practitioners include the Aboriginal or Torres Strait Islander status of the case.
However, medical practitioner noncompliance with the notification requirements is widespread. An analysis of 2013 notification data identified that only 51 per cent of laboratory notifications had an accompanying medical practitioner notification. The completeness of medical practitioner notifications is also an area of concern for the department. These challenges contributed to the Australian Institute of Health and Welfare’s recommendations that Aboriginal and Torres Strait Islander status be included on pathology forms.

The department is currently investigating opportunities to link existing health datasets, and this may provide some intelligence on the prevalence of priority conditions among Aboriginal and Torres Strait Islander people. This approach also has significant limitations because it will produce only a partial picture due to incomplete datasets.

**The current regulations do not require reporting of individual health identifier number and/or Medicare number as a component of the notification process**

This information is currently obtained on an as-needs basis by the department making follow-up contact with the relevant medical practitioner or laboratory.

Without the regulated – and therefore consistent – collection of this data, the possibility of inappropriate direction of resources to ‘new’ disease events or a misrepresentation of disease burden in the community exists. Gathering additional information that impacts on the public health response, such as immunisation status, would remain a manual process that relies on personal interviews undertaken by departmental staff.

**Option 2: Amend some aspects of the current regulations**

Proposed changes, based on consultation findings, aim to improve the accuracy or timeliness of data that notifications provide or to clarify ambiguities in the regulations, enabling an improved public health response. Some changes involve formalising and standardising current practices.

Table 7.1 lists the proposed regulatory amendments and classifies them according to their regulatory objective.

**Table 7.1: Proposed regulatory amendments classified by regulatory objective**

### Respond rapidly to serious or severe cases of disease to protect others

<table>
<thead>
<tr>
<th>Proposed amendment</th>
<th>The purpose of the proposed amendment is...</th>
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<tbody>
<tr>
<td>1. Change the timing of the written notice for a notifiable micro-organism from five days to one day (micro-organisms in food)</td>
<td>... to support a rapid response to food-and waterborne illness, reflecting the current informal practice of notification within one day and the common use of electronic means of written notification, such as web notification, rather than post for written notification.</td>
</tr>
</tbody>
</table>

### Detect disease outbreaks in a timely manner and prevent further cases

<table>
<thead>
<tr>
<th>Proposed amendment</th>
<th>The purpose of the proposed amendment is...</th>
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<tbody>
<tr>
<td>2. Expand the information required in the written notice of a notifiable micro-organism to provide additional details about the food sample and the submitter (micro-organisms in food)</td>
<td>... to reflect current practice and formalise the requirement for the contextual information needed to determine the scale of the public health risk and what action is required to prevent further cases.</td>
</tr>
</tbody>
</table>
Monitor disease epidemiology

<table>
<thead>
<tr>
<th>Proposed amendment</th>
<th>The purpose of the proposed amendment is...</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. Introduce infringements for failure to notify</td>
<td>... to enable the department to address noncompliance by medical practitioners and pathology labs in a proportionate, adaptable and expedient way, resulting in improved notification practices and more complete data on disease epidemiology.</td>
</tr>
<tr>
<td>4. Prescribe specific antimicrobial-resistant organisms or test results to be notified by pathology services</td>
<td>... to provide data that will contribute significantly to a Victorian, national and global response to the significant threat that antimicrobial resistance poses to public health.</td>
</tr>
<tr>
<td>5. Prescribe Shiga toxin-producing <em>Escherichia coli</em> as a notifiable microorganism in food or drinking water</td>
<td>... to remove ambiguity in the regulations regarding which conditions need to be notified, potentially caused by the interchangeable use of two terms for the same condition.</td>
</tr>
<tr>
<td>6. Require reporting of results of any nucleic acid tests performed at the time of a hepatitis B virus (HBV) and hepatitis C virus (HCV) diagnosis and subsequent notification.</td>
<td>... to allow the department to collect information to inform better management of the disease as well as interventions designed to support HBV and HCV strategies.</td>
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</table>

Inform public health interventions and policy

<table>
<thead>
<tr>
<th>Proposed amendment</th>
<th>The purpose of the proposed amendment is...</th>
</tr>
</thead>
<tbody>
<tr>
<td>7. Include ‘Aboriginal or Torres Strait Islander status’ as a notification detail that must be provided by pathology services</td>
<td>... to reflect the national recognised need for accurate identification of Aboriginal and Torres Strait Islander people to understand trends and disparities in health status and inform the design of health interventions and policy.</td>
</tr>
<tr>
<td>8. Require reporting of individual health identifier number and/or Medicare number as a component of the notification process.</td>
<td>... to ensure the right health information is associated with the right individual, assisting with surveillance and control activities.</td>
</tr>
</tbody>
</table>

1. Change the timing of the written notice for a notifiable micro-organism from five days to one day (micro-organisms in food)

Proposed change to the regulations

The Public Health and Wellbeing Regulations currently require that a notification of a prescribed micro-organism detected in food or drinking water supplies is made to the department immediately by telephone, followed by a written notice within five days.

It is proposed that the regulations be amended to reflect current practice and require that a written notice is provided within one day of obtaining test results.

The requirement for immediate telephone notification will remain.

Rationale

The notification of micro-organisms often results in a recall of contaminated food products as an essential measure to protect public health. To make decisions about risks and responses in the quickest possible timeframe, the department needs all the information regarding the risks as soon as is practicable.

Notifying laboratories should have all the details needed for the written notice at the point at which they notify the department by telephone, and so forwarding through written confirmation in a very short
timeframe is practicable and reasonable, particularly since most laboratories now have databases set up to automatically notify the department by fax.

Formalising current practice in regulation transparently articulates the department’s expectations and needs for all regulated entities and is not expected to significantly increase the burden on laboratories.

The Public Health and Wellbeing Regulations currently require that a notification of a prescribed micro-organism detected in food or drinking water supplies is made to the department immediately by telephone, followed by a written notice within five days.

The five-day timeframe was based on the time required for a written notice to be received through the postal system.

Current practice involves written notices being routinely provided by email, and so it is reasonable to expect the timeframe could be substantially reduced. Reducing the timeframe to one day would ensure there is a swift response to assessing and managing any potential public health risks posed by the food or drinking water in question, including the rapid recall of contaminated food or water from the market if required.

There is an informal expectation that this 24-hour timeframe is currently met – this position has been previously communicated to notifying laboratories in writing. Laboratories typically comply with the reduced timeframe and have not demonstrated or articulated any obstacles to meeting the requirement.

The requirement for immediate telephone notification should remain, as this ensures that early attention is drawn to detections of notifiable micro-organisms in food and water, and that immediate actions can be taken for high public health risk cases.

2. Expand the information required in the written notice of a notifiable micro-organism to provide additional details about the food sample and the submitter (micro-organisms in food)

Proposed change to the regulations

It is proposed that the regulations be updated to reflect the current practice that enables the department to respond to potential risks with minimum delay. This would require that a written notice includes:

- details of the food sample, including type of food, product and brand name (if known)
- name and contact details (including phone number) of the person or company that submitted the sample.

Including these additional details in the written notice would not represent a significant, if any, additional burden on notifying laboratories. This information would be close at hand, and the requirement reflects the information that is already typically provided by notifying laboratories either directly or through follow-up by the department.

Rationale

The Public Health and Wellbeing Regulations currently require that the written notice of a notifiable micro-organism detected in food or water must specify the:

- micro-organism isolated or detected
- date of isolation or detection
- source – food or water
- type – batch identification (if appropriate)
- name and contact number of notifying laboratory.

In practice, these requirements do not ensure enough information is always provided with the notification to ensure that the department can assess the scale of the risk and respond rapidly. Nor do the
requirements reflect current practice by the notifying laboratories, which is to provide the additional required details.

**Food sample details**

Limiting the source to ‘food or water’ does not enable the department to determine if there is a significant public health risk. For example, the detection of *Salmonella* in raw chicken is common and does not pose a particular public health risk, given that chicken is typically well-cooked before consumption. However, detection of *Salmonella* in a ready-to-eat chicken product would warrant further investigation and present a potential risk to health.

Current practice by laboratories is to describe, in detail, the type of food associated with the notification — for example, a description such as ‘egg and lettuce sandwich’ followed by the brand of the product if known. This provides the department with the contextual information required to assess the risk posed by the notifiable micro-organism.

**Details of the food sample submitter**

A laboratory notification is not currently required to provide the contact details of the person or company that submitted the sample to the laboratory (for example, the manufacturer of the product). Current practice by laboratories is that written notices are routinely provided with submitter details to allow the supplier of the food or water to be identified. This practice helps the department to obtain further information about the sample from the submitter for the purpose of investigations and risk assessment.

3. **Introduce infringements for failure to notify**

**Proposed change to the regulations**

It is proposed to introduce a failure to notify infringement notice within the regulations for pathology services and medical practitioners who fail to notify under r. 71. This measure is intended as a more moderate mechanism to address poor notification compliance by medical practitioners. The penalties that apply to infringement notices are lower than those that would apply if the same offence were prosecuted. This provides the incentive for the person against whom the notice was served to expiate the offence by paying the infringement, which finalises the offence without the matter going to court or a conviction being recorded. This makes an infringement notice an appropriate tool to deal with the kind of noncompliance that may not lend itself well to prosecution, owing to the time, cost and resources involved, or because it is not serious enough to warrant prosecution.

It is proposed that the infringements should be set at 4 penalty units, equivalent to $661 in 2019–20. An infringements scheme would be applicable to both medical practitioners and pathology services. However, based on current compliance, it is envisaged that infringements among pathology services would be extremely unusual.

**Rationale**

An analysis of 2017–18 notification data revealed that 47.9 per cent of laboratory notifications had a corresponding notification from a medical practitioner. The department reviewed the list of conditions medical practitioners were required to notify and the reduced the number of conditions required to be reported. 62

This contrasts with high compliance with notification requirements by pathology services, potentially attributable to pathology services’ consistent use of highly automated systems for providing notifications.

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62 Further details of this reduction in regulatory burden is outlined in option 3: Remove or reduce the current regulations.
Compliance tools within the current regulatory framework for notifiable conditions and micro-organisms only allow for a departmental response at the highest and lowest levels of intervention:

- **Guidance and support**: the department’s primary response is education, used to encourage compliance.
- **Prosecution**: potential to use the existing failure-to-notify penalties that may be applied to medical practitioners (s. 127) and pathology services (s. 128) in relation to notifiable conditions, and for laboratory services in relation to food (s. 130). This reflects the importance of notifications to controlling infectious diseases, and the Act specifies maximum penalties of 60 penalty units (equivalent to $9,671.40 in 2018–19).

At present, the regulatory framework does not provide for an intermediate response and the department is unable to respond to noncompliance in a graduated and proportionate way. For example, in a case where a medical practitioner repeatedly fails to notify, providing further guidance and support is an insufficient response; however, prosecution may also be a disproportionate response depending on the circumstances.

The need to modernise enforcement options under the Act by introducing an intermediate-level response to address noncompliance by a medical practitioner in a more proportionate, adaptable and expedient way has become increasingly evident.

Section 209 of the Act provides for infringements for prescribed offences within the regulations, enabling this approach.

### 4. Prescribe specific antimicrobial-resistant organisms or test results to be notified by pathology services

**Proposed change to the regulations**

It is proposed that the Public Health and Wellbeing Regulations are amended to:

- prescribe additional notifiable conditions for immediate notification: *Candida auris* and Carbapenemase-producing *Enterobacterales* (CPE) infection
- prescribe additional notifiable conditions for notification within five days: Carbapenemase-producing *Pseudomonas*, Carbapenemase-producing *Acinetobacter*, VanA-type Vancomycin-resistant *Enterococcus* (VRE)
- prescribe that the results of any antimicrobial resistance (AMR) testing, where undertaken, including minimum inhibitory concentration (MIC) values, are notified to the department for existing notifiable conditions.

Introducing this reporting at a Victorian level would mean that some laboratories (primarily the Microbiological Diagnostic Unit) would be required to report into two systems. Ultimately laboratory reporting to the department will be streamlined, and of very low burden, through completing the electronic laboratory reporting project (currently being implemented).

Many clinical laboratories currently voluntarily report AMR test results to the department (where relevant) with notifications for prescribed conditions. This proposal would safeguard that practice in regulation but also expand the number of conditions that need to be notified.

**Rationale**

AMR is the process whereby micro-organisms become resistant to antimicrobial medicines such as antibiotics. AMR is increasing dramatically worldwide due to our reliance on and, in many cases, misuse of antibiotics.

Studies have confirmed that an increasing number of infections in healthcare facilities and the community are caused by resistant pathogens. Figures from 2014 suggest that about 700,000 people die each year,
worldwide, from antimicrobial-resistant varieties of common bacterial infections – though this is probably an underestimate due to poor reporting and surveillance.

Improving surveillance of AMR in infectious diseases has been recognised as a global priority. Collecting data on AMR through the Victorian notifiable conditions framework would contribute significantly to a Victorian, national and global response to the threat of AMR.

The Australian Government departments of Health and Agriculture jointly released the first national AMR strategy, *Responding to the threat of antimicrobial resistance*, in June 2015. Among measures to improve awareness and response to AMR, improve antimicrobial stewardship and promote research and investment in the development of new intervention, the strategy seeks to improve surveillance of AMR and use.

The current Victorian notification scheme does not include notifications for AMR. While pathology services may test for AMR and susceptibility to provide doctors with clinical information about patient treatment options, under the current regulatory requirements these results do not need to be reported to the department for broader public health responses.

Some conditions are of particular concern in Victoria; however, it should be noted that more pathogens may emerge as public health issues over time:

- CPE
- Carbapenemase-producing *Pseudomonas*
- Carbapenemase-producing *Acinetobacter*
- VRE infection
- *Candida auris*.

Identifying and controlling cases of CPE is a priority for Victoria. Its relatively emergent state means it may be possible to control this threat with timely and coordinated responses. The Victorian CPE guidelines were developed with this in mind. Including CPE as a notifiable condition would formalise reporting expectations and strengthen these arrangements.

VRE has relatively high prevalence in Victorian healthcare settings, and as such there is limited value in responding to individual cases.

5. **Prescribe Shiga toxin-producing *Escherichia coli* as a notifiable microorganism in food or drinking water**

**Proposed change to the regulations**

It is proposed that the regulations list Shiga toxin and verotoxin-producing *Escherichia coli* (STEC/VTEC) as notifiable micro-organism. STEC and VTEC are generally accepted as alternative names for the same strain of *Escherichia coli* and are often used interchangeably.

**Rationale**

Listing both names would ensure transparency in the reporting requirements and remove the possibility of misinterpretation. Given it is likely that laboratories are already reporting STEC under the requirement to report VTEC, this reporting requirement is not expected to increase the burden on laboratories.
6. Require reporting of results of nucleic acid testing when hepatitis B virus and hepatitis C virus is notified

Proposed change to the regulations

Section 238 of the Public Health and Wellbeing Act establishes broad powers to make regulations about collecting information in relation to notifiable conditions that could be used to make a regulation requiring that NAT test results for HBV and HCV be notified in certain circumstances.

It is proposed that the regulations are amended to require pathology services to report positive results of any tests (including NAT) performed at the time of a HBV and HCV diagnosis and subsequent notification to the department.

Rationale

NAT measures the activity of the virus in a patient and can indicate the stage of an infection, in particular whether he diagnosis is an acute infection. However, there is no requirements to notify the department when a NAT test is done in combination with a primary diagnostic test, such as serology for HBV or HCV. Mandatory reporting of any NAT test results performed upon HBV and HCV diagnosis would allow the department to collect information to inform better management of the disease as well as interventions designed to support HBV and HCV strategies.

7. Include ‘Aboriginal or Torres Strait Islander status’ as a notification detail that must be provided by pathology services

Proposed change to the regulations

Notification details (the case information that must be provided with a notification) are currently prescribed in the regulations. It is proposed that Aboriginal or Torres Strait Islander status be added to this list for pathology services. This may require pathology services to modify their pathology request forms to collect that information from medical practitioners. Pathology services would only be expected to provide this additional information when it was provided to them by the medical practitioner.

Medical practitioners are currently required to report this information to the department with disease notifications. They would therefore typically be expected to have the information to hand when completing pathology request forms.

Rationale

The Department of Health and Human Services’ priorities include implementing strategies across the entire department’s business to improve the health of Aboriginal and Torres Strait Islander people. An important aspect is the aim to improve data and evidence.

Accurate identification of Aboriginal and Torres Strait Islander people is vital for understanding trends and disparities in health status and important for planning and improving health services to meet the needs of these groups.

The National Notifiable Disease Surveillance System (NNDSS) collects and publishes data from state and territory health departments (Australian Government 2015), but Aboriginal and Torres Strait Islander status is often not reported for a large proportion of notifications.

At present, when a pathology provider notifies a state registry, they usually cannot provide the Aboriginal and Torres Strait Islander status of the patient because this information is not requested as standard practice. An important source of data for monitoring health status is therefore not available.

Following extensive consultation, the Australian Institute of Health and Welfare developed a business case recommending a focus on improving Aboriginal and Torres Strait Islander identification in national
health registries. This business case noted that including Aboriginal status on pathology request forms is important in improving key health datasets. Including Aboriginal status identification on pathology forms is also a key priority for the National Advisory Group on Aboriginal and Torres Strait Islander Health Information and Data.

New South Wales and Tasmania already require pathology services to report on Aboriginal and Torres Strait Islander status with disease notifications.

Section 238 of the Public Health and Wellbeing Act establishes broad powers to make regulations regarding the collection of information in relation to notifiable conditions. This could be used to meet the objective of a more comprehensive and reliable data regarding health conditions impacting on Aboriginal and Torres Strait Islander communities.

8. Require reporting of individual health identifier number and/or Medicare number as a component of the notification process

Proposed change to the regulations

Notification details (the case information that must be provided with a notification) are currently prescribed in the regulations. It is proposed that the list of details required be amended to include an individual health identifier number and/or Medicare number. This will ensure the right health information is associated with the right individual, assisting with surveillance and control activities.

Rationale

The benefits of including an individual health identifier number and/or Medicare number are as follows:

- It better enables the department to contact the patient (case), their medical practitioner and, when relevant, other individuals as part of a public health investigation – for example, to limit the spread of infection to other members of the community.
- It ensures that each person's notifiable condition is only captured once in the surveillance system and not each time a notification is made, avoiding the possibility of inappropriate direction of resources to 'new' disease events or a misrepresentation of disease burden in the community.
- It enables additional information about the person being notified to be gathered from other databases or surveillance systems – for example, whether the case attended hospital, has been vaccinated or identifies as being Aboriginal and Torres Strait Islander. This information informs an appropriate public health response.

The use of a person's individual health identifier or Medicare number is supported by the Victorian health priorities framework, which sets out a plan to deliver a sustainable and productive health system. It is consistent with federal law regarding sharing this information and aligns with the national framework for communicable disease control, which identified that integrating data captured from other datasets should form part of a modernised public health surveillance system.

Option 3: Remove or reduce the current regulations

In a major effort to reduce the regulatory burden of these regulations on medical practitioners, the current regulations were remade on 1 September 2018. This followed a review of the necessity for medical practitioner notifications for certain conditions that found that regulatory burden for medical practitioners could be reduced without adversely impacting on public health. Following consultation with medical practitioners, pathology services, infectious disease experts and other key stakeholders, the Public Health and Wellbeing Regulations 2009, which set out the requirements for both medical practitioners and pathology services to notify the department of specific conditions, was changed to:

- reduce the number of conditions that must be notified by medical practitioners (10 conditions were removed)
• simplify the groupings of notifiable conditions (from four classes requiring different timing and method of notification, to two groups – ‘urgent’ and ‘routine’)
• reduce the requirement to notify in writing (medical practitioners are no longer required to follow up telephone notifications with a written notification).

For full detail see the communiqué provided to medical practitioners in the appendix: Changes to notifiable conditions from 1 September 2018.

Given that a reduction in regulation has recently been implemented and the assessment of its effectiveness is ongoing, further reductions have not been considered at this time. Some of the changes to regulations explored in option 1 will result in reduced prescriptive requirements. Where this is the case, it is noted under option 1.

Impact analysis

Benefits and costs of option 1

Effective public health responses to infectious diseases require an efficient and effective system for health professionals to notify relevant authorities as cases occur. This system is designed to monitor and control the occurrence of infectious diseases and other specified conditions and helps to prevent further illness. The aim is to protect the health and safety of the community and improve public health outcomes in Victoria.

The current regulations are intended to reduce the burden of disease in Victoria. It is difficult to quantify with any accuracy the amount of disease prevented and the fiscal impact of less disease. Adding to the complexity, the impact of each disease varies.

The existing system imposes notification requirements on both medical practitioners and pathology laboratories. The notification methods that meet the requirements are outlined below:

<table>
<thead>
<tr>
<th>How to notify conditions in Victoria</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>How to notify</strong></td>
</tr>
<tr>
<td>Note: <strong>Urgent conditions must be notified immediately (24/7)</strong> by telephone to 1300 651 160. <strong>Written notification does not replace the obligation to telephone urgent conditions.</strong></td>
</tr>
<tr>
<td>Notify all other conditions using one of the following methods:</td>
</tr>
<tr>
<td>• <strong>online</strong> via <strong>the department’s website</strong> &lt;health.vic.gov.au/notify&gt;</td>
</tr>
<tr>
<td>• <strong>post</strong> to Department of Health and Human Services, Reply Paid 65937, Melbourne VIC 8060</td>
</tr>
<tr>
<td>• <strong>fax</strong> to 1300 651 170.</td>
</tr>
</tbody>
</table>

**Standard notification forms** are available for all conditions and contain the minimum mandatory information required. Using the standard form, you can notify securely online (this is the department’s preference). Alternatively, you can download a form from the link above and return the form by post or fax.

The department’s preference is for notifications to be submitted using the secure online forms where possible. This system is considered secure and provides safeguards that all relevant information is provided.

**Enhanced notification forms** are available for some conditions from the link above. Enhanced notification forms collect the same mandatory information as the standard form, as well as additional epidemiological data about the case and/or potential public health risks.

The time of staff to notify, as well as technology and systems to enable efficient and effective notification are costs imposed on industry. The majority of notifications are submitted online through forms with fields to complete. On average the department estimates that a notification submitted through the online form would take between three and five minutes to complete; however, the actual time will depend on the type of condition and the level of detail provided by the medical practitioner (with more detail on the case providing greater context). Based on consultations with laboratories, the majority of this industry's condition notifications are submitted via automatic (or partially automatic process) as part of the testing of samples. There has been a trend of rising numbers of notifications, which is described further in the technical appendix.

The department bears costs and responsibility following from the regulated notification requirement, including the administrative costs of recording and collating the notification and excludes the costs of substantive follow-up activity, which is undertaken to address public health concerns and is not a direct requirement of regulation notification requirements.

**Benefits for option 2**

The proposed changes are expected to reduce the burden of disease in Victoria. It is difficult to quantify with any accuracy the amount of disease prevented and the fiscal impact of less disease. Adding to the complexity, the impact of each disease varies.

Notification regulations apply to medical practitioners (of which the majority are general practitioners – 8,500 in Victoria) and pathology laboratories (of which there are around 170). The department received more than 115,000 case notifications in 2017 (due to the significant 2017 influenza season) and approximately 74,000 in 2018. Estimating financial benefits from avoided disease is problematic in the context of incremental changes proposed in option 2. The proposed changes address risks to public health by improving the public health surveillance system of Victoria to:

- respond rapidly to serious or severe cases of disease to protect others
- detect disease outbreaks in a timely manner and prevent further cases
- monitor disease epidemiology
- inform public health interventions and policy.

**Costs for option 2**

The costs associated with the proposed changes are expected to be incurred through minor adjustments to existing systems or small additional costs, such as courier costs to forward samples. These potential costs, when considered relative to the wider operations and complexities of pathology laboratory operations, are anticipated to be small.

The benefits and costs are described qualitatively in Table 7.2.

**Table 7.2: Cost/benefit analysis of option 2 – changes to improve regulation efficacy**

<table>
<thead>
<tr>
<th>Proposed amendment</th>
<th>Benefit</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Change the timing of the written notice for a notifiable micro-organism from five days to one day (micro-organisms in food).</td>
<td>Supports a rapid response to food and waterborne illness, reflecting the current informal practice of notification within 24 hours and the common use of electronic means of written notification, such as web notification, rather than post for written notification.</td>
<td>Negligible processing cost for laboratories. All laboratories already email rather than post notifications.</td>
</tr>
</tbody>
</table>
## Detect disease outbreaks in a timely manner and prevent further cases

<table>
<thead>
<tr>
<th>Proposed amendment</th>
<th>Benefit</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Expand the information required in the written notice of a notifiable micro-organism to provide additional details about the food sample and the submitter (micro-organisms in food)</td>
<td>Reflects current practice and formalises the requirement for the contextual information needed to determine the scale of the public health risk and what action is required to prevent further cases.</td>
<td>Negligible. This information would be close to hand and the requirement reflects the information that is already typically provided.</td>
</tr>
</tbody>
</table>

## Monitor disease epidemiology

<table>
<thead>
<tr>
<th>Proposed amendment</th>
<th>Benefit</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. Introduce infringements for failure to notify</td>
<td>Addresses noncompliance by medical practitioners in a more proportionate, adaptable and practical way, resulting in improved notification practices and a more complete disease epidemiology data.</td>
<td>As a new infringement, it is unclear how many infringements would be issued. Initially, the department would absorb costs to administer the infringements as part of costs to manage the notifications surveillance system.</td>
</tr>
<tr>
<td>4. Prescribe specific antimicrobial-resistant organisms or test results to be notified by pathology services</td>
<td>Provides data that will contribute significantly to a Victorian, national and global response to the significant threat AMR poses to public health.</td>
<td>Cost to laboratories to implement change to reporting mechanism to the department. Initial consultation with impacted stakeholders indicated that costs could be absorbed as part of broader IT maintenance and upgrades.</td>
</tr>
<tr>
<td>5. Prescribe Shiga toxin-producing <em>Escherichia coli</em> as a notifiable micro-organism in food or drinking water</td>
<td>Removes ambiguity in the regulations regarding which conditions need to be notified, potentially caused by the interchangeable use of two terms for the same condition.</td>
<td>Nil.</td>
</tr>
<tr>
<td>6. Require reporting of results of any nucleic acid tests performed at the time of a hepatitis B virus (HBV) and hepatitis C virus (HCV) diagnosis and subsequent notification</td>
<td>Allows the department to collect information to inform better management of the disease as well as interventions designed to support HBV and HCV strategies.</td>
<td>Cost to laboratories to implement a change to the reporting mechanism. Initial consultation with impacted stakeholders indicated that costs could be absorbed as part of broader IT maintenance and upgrades.</td>
</tr>
</tbody>
</table>

## Inform public health interventions and policy

<table>
<thead>
<tr>
<th>Proposed amendment</th>
<th>Benefit</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>7. Include ‘Aboriginal or Torres Strait Islander status’ as a notification detail that must be provided by pathology services</td>
<td>Reflects the nationally recognised need for accurate identification of Aboriginal and Torres Strait Islander people to understand trends and disparities in health status and</td>
<td>Cost to pathology services to modify their pathology request forms to collect Aboriginal status from medical practitioners. Initial consultation with impacted stakeholders</td>
</tr>
</tbody>
</table>
## Proposed amendment

<table>
<thead>
<tr>
<th>Proposed amendment</th>
<th>Benefit</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>8. Require reporting of individual health identifier number and/or Medicare number as a component of the notification process.</td>
<td>Ensures the right health information is associated with the right individual, assisting with surveillance and control activities.</td>
<td>Cost to laboratories to implement change to the reporting mechanism. Initial consultation with impacted stakeholders indicated that costs could be absorbed as part of broader IT maintenance and upgrades.</td>
</tr>
</tbody>
</table>

## Proposed approach

### Option 2: Amend some aspects of the current regulations

It is proposed that all elements of the current regulatory framework regarding notifiable conditions are adopted in any replacement regulatory scheme. The public health benefits of a notifications scheme such as this have been demonstrated previously, and the department considers that they continue to apply. The notifications scheme maintains consistency with other Australian jurisdictions and enables agreed reporting and response at the national level.

The notifiable conditions and notification requirements prescribed in the current regulations were reviewed in 2018, with amendments to the scheme coming into effect on 1 September 2018. The objective of the 2018 review was to reduce regulatory burden, modernise the scheme and ensure the lists of notifiable conditions reflected contemporary public health risks and priorities. Extensive stakeholder consultation was undertaken on these recent changes, and for that reason it is not proposed to revisit the issues considered and resolved by that recent review in this sunset review.

However, this sunset review provides an opportunity to identify emerging issues and mechanisms to further improve the recently updated regulatory scheme. Several additional options for regulatory improvement have been canvassed in the previous sections.

It is proposed that the current requirements for notifiable micro-organisms are broadly adopted in any replacement regulations, with minor amendments to modernise the scheme, as detailed in option 2.
**Technical appendix**

**History of regulation**

The reporting of certain diseases has been required in Victoria since the first Victorian Public Health Act commenced in 1854.

In the decade since the 2009 regulations were drafted, a range of developments and challenges have arisen in relation to the surveillance and management of notifiable conditions and micro-organisms. These include policy challenges posed by changing disease patterns, new-generation treatments and associated health outcomes, the rising threat of AMR and technological advances in diagnostic methods.

The list of notifiable conditions prescribed in the regulations was reviewed and updated in 2018, with the primary objective of taking a more risk-based approach to notifications and reducing the regulatory burden on medical practitioners. The revised list of notifiable conditions and a reduction on the number of diseases requiring notification by both doctors and laboratories (known as ‘dual notification’) came into effect on 1 September 2018.

Under the revised public health surveillance system, influenza and nine other conditions no longer require medical practitioners to notify cases to the department. More information about the changes is available from the department’s website <https://www2.health.vic.gov.au/about/publications/policiesandguidelines/notifiable-conditions-changes-sep-2018>.

**Impact of the current regulations on industry**

The requirement to notify the department of certain conditions and micro-organisms has an associated burden on medical practitioners and laboratories to provide the related information. Table 7.3 outlines the department’s minimum expectations for industry to fulfil this requirement. Where the method of notification is not prescribed, industry has the flexibility to notify in a method that aligns with their business operating practices. For example, some laboratories have automated several processes and information related to notifications.

**Table 7.3: Minimum notification expectations on industry**

<table>
<thead>
<tr>
<th>Who</th>
<th>Type</th>
<th>Description of impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical practitioner – general</td>
<td>Urgent</td>
<td>Require immediate notification to the department by telephone on 1300 651 160 (24 hours) upon initial diagnosis or clinical suspicion. The process of initial notification takes 5 – 10 minutes.</td>
</tr>
<tr>
<td></td>
<td>Routine</td>
<td>Require written notification within five days of diagnosis by fax, post or on the department’s website [<a href="https://www2.health.vic.gov.au/public-health/infectious-diseases/notify-condition-now%3E">https://www2.health.vic.gov.au/public-health/infectious-diseases/notify-condition-now&gt;</a>]. The form takes three to five minutes to complete.</td>
</tr>
<tr>
<td>Laboratory</td>
<td>Urgent</td>
<td>The prescribed period is immediate notification by telephone whether presumptive or confirmed, followed by written notification within five days of obtaining the result of the test indicating that the person has or may have any notifiable condition.</td>
</tr>
<tr>
<td></td>
<td>Routine</td>
<td>Complete online form (most information pre-filled)</td>
</tr>
</tbody>
</table>
Increasing notification of prescribed notifiable conditions

The number of cases (patients with a diagnosed notifiable condition) notified to the department is increasing year on year. This is in part due to factors such as population growth, the addition of new notifiable diseases to the regulatory scheme and the increasing sensitivity of testing methods. It is also influenced by disease patterns. For example, in 2015 and 2016 there were 75,000–80,000 notified cases of infectious disease, but in 2017 this jumped to more than 115,000 cases due to the significant 2017 influenza season (Figure 7.1).

Figure 7.1: Notified cases of infectious diseases by year of notification, 1991–2018, Victoria

A single case of a notifiable condition will typically have several notification events associated with it, including a notification from a medical practitioner plus one or more notifications from laboratories (information is progressively provided to the department if/as additional tests results become available).

The department’s use of notification data varies depending on the specific condition but may involve one or more of the following:

- immediate public health actions to limit the potential spread of a disease – for example, isolating a measles case while infectious or providing antibiotics to close contacts of a case of invasive meningococcal disease
- investigation – for example, interviewing cases affected by an outbreak of foodborne disease to identify and eliminate the cause
- contact tracing to prevent further person-to-person spread of infectious disease – for example, partner notification for certain sexually transmitted infections
- epidemiology and surveillance activities – for example, activities at a population level to identify disease trends and risk factors that can inform population-level prevention policies and programs such as community education, vaccination and research.

Chlamydia notifications, Victoria

Figure 7.2 shows the notified cases of chlamydia in Victoria from 1991 to 2018.
Figure 7.2: Notified cases of chlamydia by year of notification, Victoria, 1991–2018

Notification rates of laboratory-confirmed influenza, Victoria and Australia

Figure 7.3 shows the notification rate per 100,000 population of laboratory-confirmed influenza for Victoria and Australia between 2001 and 2018.

Figure 7.3: Notification rate per 100,000 population of laboratory-confirmed influenza by year of notification, Victoria and Australia, 2001–2018
The Age: ‘Victoria’s horror flu statistics revealed as stronger vaccine on way’

Victoria's horror flu statistics revealed as stronger vaccine on way
By Aisha Dow
25 January 2018 — 5:31pm
A strengthened flu vaccine could be introduced this year after cases soared by nearly 300 per cent during last year’s horror flu season in Victoria.
There were just over 48,000 laboratory-confirmed cases of influenza last year in Victoria, compared to 12,785 the year before.


Changes to notifiable conditions from 1 September 2018
Visit the department’s website for information about changes to notifiable conditions <https://www2.health.vic.gov.au/about/publications/policiesandguidelines/notifiable-conditions-changes-sep-2018> from 1 September 2018.
Chapter 8: Immunisation and exclusions – schools and childcare

Problem analysis

Victoria regulates to prevent the spread of infectious disease by requiring some children to temporarily stop attending childcare, kindergarten or primary school if their attendance will put them or others at risk of contracting or spreading an infectious disease.

Childcare centres, kindergartens and primary schools provide a high-risk environment for transmitting communicable diseases. This is because of the higher rate of physical contact between children, their underdeveloped personal hygiene habits, and their greater susceptibility to many infections due to still-developing immune systems.

Regulating to prevent or minimise the spread of disease in these settings benefits the children themselves (through avoiding the potentially significant consequences of infection) and the broader community (by preventing the spread of disease to the wider population).

Regulating periods of mandatory exclusion for both infected children and those vulnerable to infection, provides a risk-based framework that allows schools and childcare centres (hereafter referred to as children’s service centres or CSCs) to protect attending children from contracting or spreading some infectious diseases.

Research confirms that children achieve the most academic benefit if they maximise attendance in school. For this reason, short periods of targeted exclusion to prevent the spread of illness can prevent longer or more widespread absences from school as a result of illness, minimising the potential negative impact on a child’s education as well as their health.

Objectives of the regulations

The objectives of the regulations are to:

- create behaviours and environments that aim to prevent the spread of infectious diseases among children in the high-risk settings of childcare centres, kindergartens (hereafter referred to as children’s service centres) and primary schools
- ensure the necessary information is available to inform an appropriate public health intervention in these settings.

These regulations contribute to achieving the highest attainable standard of public health and preventing disease and illness.

Requirement of the regulations

These regulations relate to s. 3 and 238(1)(a) of the *Public Health and Wellbeing Act 2008* – Management and control of infectious disease, micro-organism and medical conditions.

Temporary exclusion of children who could infect others

Schedule 7 of the Public Health and Wellbeing Regulations 2009 lists 32 conditions with prescribed periods of exclusion for people infected with the illness and for ‘contacts’. (A contact can be defined as
any person potentially exposed to an infectious disease. The definition/criteria for listing someone as a 'contact' will vary depending on the infectious disease.)

Those in charge of a primary school or children’s service centre must not allow a child/children to attend the school/service in accordance with Schedule 7.

Schedule 7 includes diseases or conditions that are either highly infectious or carry potentially severe consequences, or both. The period of exclusion is based on medical consensus regarding the amount of time needed for the risk of transmission to pass.

**Exclusion of children who are at risk of infection**

Under the Public Health and Wellbeing Regulations (r. 85(2)) the Secretary to the Department of Health and Human Services has the power to direct the person in charge of a primary school or children’s service centre to ensure that children who are not vaccinated against a specified disease do not attend, until such time as the Secretary directs that attendance can resume.

**Collection of immunisation status certificates**

Under the Public Health and Wellbeing Regulations (r. 85(2)) primary schools and children’s service centres must:

- collect and record the immunisation status of children at enrolment
- keep immunisation records up to date
- provide authorised officers from the department or local council access to the immunisation records if required.

The purpose of these requirements is to ensure that unimmunised children can be quickly identified and excluded, if necessary, during an outbreak of vaccine-preventable disease.

**Options**

- Option 1: Retain the current regulations without changes
- Option 2: Amend some aspects of the current regulations
- Option 3: Reduce the current regulations and use non-regulatory alternatives.

**Option 1: Retain current regulations without changes**

**Efficacy of the current regulations**

The Public Health and Wellbeing Act legislates immunisation and exclusion requirements, while the regulations provide the detailed framework under which the requirements are implemented. The current regulations have been effective in supporting the legislative goals of increased immunisation, particularly in children, and a reduction in the spread of vaccine-preventable disease.

**Preventing the spread of infectious diseases in children in primary schools and children’s service centres**

Victoria has very high childhood immunisation rates that have generally increased over the time the current regulations have been in force, as indicated by the trend line in Figure 8.1.
A review of notifications (Table 8.1) of vaccine-preventable diseases in school-aged children over the past 10 years indicates a reduction in cases across 10 of the 12 diseases vaccinated against in Australia and no cases of diphtheria, tetanus and polio across the same time period.

Table 8.1: Notified cases of vaccine-preventable diseases in primary school-aged children (5–12 years), Victoria, 2010–2018

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<tr>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Haemophilus influenzae type b infection</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Hepatitis B</td>
<td>11</td>
<td>9</td>
<td>12</td>
<td>14</td>
<td>15</td>
<td>11</td>
<td>10</td>
<td>12</td>
<td>5</td>
</tr>
<tr>
<td>Measles</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>4</td>
<td>11</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Meningococcal infection</td>
<td>5</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Mumps</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Pertussis</td>
<td>1,279</td>
<td>1,619</td>
<td>579</td>
<td>532</td>
<td>903</td>
<td>866</td>
<td>475</td>
<td>355</td>
<td>343</td>
</tr>
<tr>
<td>Pneumococcal infection (IPD)</td>
<td>17</td>
<td>20</td>
<td>7</td>
<td>18</td>
<td>15</td>
<td>15</td>
<td>15</td>
<td>19</td>
<td>13</td>
</tr>
<tr>
<td>Rubella</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Varicella zoster infection (chickenpox)</td>
<td>263</td>
<td>316</td>
<td>338</td>
<td>424</td>
<td>396</td>
<td>416</td>
<td>614</td>
<td>607</td>
<td>845</td>
</tr>
<tr>
<td>Diphtheria</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Poliomyelitis</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Tetanus</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

63 An examination of data for children aged under five years is problematic because they do not all attend children’s services centres and receive vaccinations from birth.

64 Children in Australia have usually received vaccinations to prevent these conditions, provided free under the Australian National Immunisation Schedule, by the time they start primary school around five years of age.
Some diseases that are ‘excludable’ (they require children to be excluded from attending until the risk of infection has passed) are not vaccine-preventable (for example, conjunctivitis). Data is not collected on the occurrence of these diseases and is therefore not available for analysis.

The trend line in Figure 8.2 shows that, for the vaccine-preventable diseases with low case numbers (under 20), there is a consistent downward trend in notified cases in school-aged children.

For larger volume cases of pertussis (whooping cough) and varicella (chickenpox) the past 10 years have seen a significant reduction in pertussis but an upward trend for chickenpox notifications. The increase in chickenpox notifications is being experienced Australia-wide.65

**Figure 8.2: Notified cases of vaccine-preventable diseases in primary school-aged children (5–12 years) excluding varicella and pertussis, Victoria, 2010–2018**

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**Figure 8.3 shows notified cases of vaccine-preventable diseases in primary school-aged children for varicella and pertussis only.**

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This data supports the view that regulatory and legislative efforts to reduce the spread of disease in this cohort have been effective.

**Ensuring the necessary information is available to inform appropriate public health interventions in primary schools and children’s service centres**

The current regulations require primary schools and children’s services to retain immunisation history statements and to allow access to these statements to authorised officers in the event of an outbreak of a vaccine-preventable disease. Department of Education and Training data indicates that 85.2 per cent of 2019 Foundation students who enrolled in public primary schools in Victoria provided an immunisation history statement. Compliance with this regulatory requirement has improved over the period the current regulations have been in effect; up from 73.3 per cent in 2009.

Although the regulations have been generally effective in supporting the legislative goals of the Act, a range of minor improvements and clarifications to the regulations have been identified.

**Option 2: Amend some aspects of the current regulations**

Consultation with key stakeholders brought to light some opportunities for improving the current regulations. Proposed changes are based on consultation findings and aim to prevent the spread of infectious disease by improving the public health response to outbreaks in these settings. The proposed changes are listed in Tables 8.2 and 8.3.

Table 8.2: Objective: prevent the spread of infectious diseases in children in the high-risk settings of children’s service centres and primary schools

<table>
<thead>
<tr>
<th>Proposed change</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <strong>Update diseases and exclusion periods in the regulations</strong></td>
<td>To align with current evidence regarding infection control, reflect current nomenclature or clarify requirements.</td>
</tr>
</tbody>
</table>
| 2. **Introduce infringement penalty those in charge of a primary school or children’s services centre who fail to exclude a child infected with, or exposed to, a specified** | To:  
  - encourage compliance and provide an alternative means of addressing noncompliance where prosecution may not be feasible. |
**Proposed change** | **Rationale**
---|---
infectious disease in accordance with Schedule 7 | • strengthen measures to prevent the further transmission of disease and protect vulnerable children in high risk settings
  Noting this would only be considered where there is a deliberate intention to not comply or as a last resort. Education and assistance will be the primary means of achieving compliance. The department expects that the use of infringement notices would be a highly unusual occurrence.

### Table 8.3: Objective: ensure the necessary information is available to inform an appropriate public health intervention in these settings

<table>
<thead>
<tr>
<th>Proposed change</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. Remove the duty of a person in charge of a primary school or children’s services centre to notify the Secretary about an ill child</td>
<td>To reduce regulatory burden for the person in charge of a primary school, education and care service premises or children’s services centre; avoid processing of multiple notifications regarding the same case; and reduce the likelihood of misinformation and unnecessary exclusion spreading for the department.</td>
</tr>
</tbody>
</table>

1. **Update diseases and exclusion periods in the regulations**

#### Proposed change to regulations

It is proposed that Schedule 7, *Minimum period of exclusion from primary schools and children’s services centres for infectious diseases cases and contacts* be altered in line with emerging evidence relating to their risk or changes to standard nomenclature, as shown in Table 8.4.

### Table 8.4: Proposed changes to Schedule 7

<table>
<thead>
<tr>
<th>Proposed change to Schedule 7</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add cytomegalovirus (CMV) infection, glandular fever (Epstein-Barr virus infection) and molluscum contagiosum to the list of excludable diseases with the advice that exclusion is not necessary</td>
<td>These conditions frequently occur and are a source of concern among schools; however, exclusion is not required. Adding these conditions to the list would reassure schools by providing authoritative guidance on what action is required.</td>
</tr>
<tr>
<td>Reduce the exclusion period for mumps from nine to five days.</td>
<td>These proposed changes reflect the latest published evidence-based guideline from the National Health and Medical Research Council on managing transmission of infection in children’s service centres and primary schools.</td>
</tr>
<tr>
<td>Amend the exclusion period for Haemophilus influenzae type B from four days to 48 hours after starting treatment.</td>
<td></td>
</tr>
<tr>
<td>Update ‘HIV/AIDS’ to ‘HIV’.</td>
<td>This amendment reflects current accepted nomenclature.</td>
</tr>
</tbody>
</table>
| Consolidate the multiple causes of diarrhoea – currently listed separately as amoebiasis, campylobacter, diarrhoea, salmonella, shigella, worms – into one regulated condition referred to | Some causes of diarrhoea are not listed (for example, rotavirus) but still require exclusion from primary school or children’s services centres to prevent the spread of infection.
2. Introduce infringement penalty for failure to exclude a child with, or exposed to, a specified infectious disease in accordance with Schedule 7 (person in charge of a primary school or children’s services centres)

In accordance with Schedule 7, those in charge of a primary school or children’s services centre must not allow the child to attend the facility. Schedule 7 prescribes minimum periods and circumstances of exclusion for a child infected with a specified infectious disease or in contact with a person who has a specified infectious disease.

It is intended to introduce an infringement penalty for this offence set at 4 penalty units, equivalent to $661 in 2019–20, an alternative and practical means to achieve compliance where a prosecution may not be a feasible response.

Education will be the primary means of achieving compliance and the department will continue to provide support to facilitate awareness and compliance. It is intended that the department would only consider an infringement penalty where the person in charge has a deliberate intention to not comply.

Based on current compliance levels, the department expects that the use of infringement penalties would be a highly unusual. However, if circumstances do warrant action, an infringement penalty provides alternative measure to help protect vulnerable children from diseases or conditions that are either highly infectious or carry potentially severe consequences. It is considered in the context of the existing requirement for a parent or guardian to inform the person in charge of a primary school or children’s care service if the child is suffering from a specified infectious disease, or the child has been in contact with a person who is infected with a specified infectious disease.

3. Amend the regulations to remove the duty of a person in charge of a primary school or children’s services centre to notify the Secretary about an ill child

Proposed change to regulations

Under the Public Health and Wellbeing Regulations 2009, a person in charge of a primary school or children’s services centre must inform the Secretary to the department if they suspect that an enrolled child is suffering from either:

- pertussis
- poliomyelitis
• measles
• mumps
• rubella, or
• meningococcal C.

It is proposed to remove r. 84(2), therefore removing the duty of a person in charge to notify the Secretary if they suspect an enrolled child is suffering from one of the listed conditions.

Rationale

The listed conditions are already notified to the department by medical practitioners and laboratories. The department undertakes routine follow-up activities after receiving a notification of a case of one of these diseases. Follow-up activities include contacting medical practitioners and guardians and identifying if the case attends a primary school or children’s services centre and ensuring that appropriate isolation is undertaken, and that contacts are being managed. If the department determines the primary school or children’s service centre needs to be contacted, the relevant principal is identified (either through discussion with the child’s guardian(s) or liaison with the Department of Education and Training), and the department advises the principal of the required action (if any) to protect public health.

Requiring the person in charge of a primary school, education and care service premises or children's services centre to provide additional notification is no longer considered necessary. Feedback from consultation indicated that the provision has limited utility and tends to result in multiple notifications (as these conditions are already notifiable by doctors and laboratories). A school may still inform the department if concerned for the health of a student but is no longer required to.

Removing this regulatory requirement would reduce workload for the person in charge of a primary school or children's services centre and avoid multiple notifications regarding the same case.

Option 3: Reduce the current regulations and use non-regulatory alternatives

Reducing mortality from many infectious diseases has been described as the most significant public health achievement of the past century. Developing socially responsible legislation has played a crucial role in limiting the transmission of these diseases. Despite the huge gains made in this area, infectious diseases remain a significant cause of death worldwide, threatening public health and contributing significantly to the escalating costs of health care.

Increased spread of infectious diseases in children in the high-risk settings of children’s service centres and primary schools

The possibility of reducing a list of conditions mandating exclusion from childcare services and primary school was considered as a component of this review; however, given the wealth of medical research, as well as the presence of mandatory exclusion periods in all other similar jurisdictions, this was not considered appropriate.

The base-case scenario where the regulations are eliminated and not replaced would mean there is no restriction of attendance at a primary school or childcare centre due to infectious disease. Many significant communicable diseases occur in this age group, such as pertussis, varicella zoster (chickenpox) and viral gastroenteritis. An increase in occurrences of these diseases in this group, and across the community more broadly, is a likely outcome of ceasing to regulate.

While the likelihood of exposure to vaccine-preventable diseases is significantly reduced by Victoria’s very high immunisation coverage for babies and children, there are several factors that counteract the efficacy of vaccination in preventing the spread of disease in the high-risk settings of primary schools and early childhood education and care services:
• Population density creates an environment where more people are more frequently in confined conditions together, facilitating the spread of disease.

• More families with young children are travelling to overseas destinations with different disease profiles. In 2018, 11.1 million Australians returned from short-term overseas trips.66 All measles cases in Victoria are in returned travellers or spread from returned travellers. Children too young to be vaccinated are a key high-risk group.

• Emerging diseases and evolving pathogens continue to present challenges when seeking to prevent infection; in particular, the rise of antimicrobial resistance is considered a significant threat to public health that will render a common go-to treatment for children – a course of antibiotics – to become ineffective.

In the settings conducive to the spread of disease, such as primary schools and children’s services, the threat of infectious disease is high, and the need for appropriate regulation to reduce this threat remains.

**Lack of necessary information available to inform an appropriate public health intervention in these settings**

The department uses the information made available by these regulations to respond to incidences of disease and to prevent illness and disease from spreading. While, in some cases, the information can be obtained without regulation, the delay would impact on how effective any follow-up action could be in preventing disease.

For example, should an outbreak of measles occur in a primary school it may take several days or weeks to ascertain the immunisation status of students, putting unvaccinated and immunocompromised students at risk of contracting the disease.

Even with regulation, the availability of information required to determine a public health response in these settings is not always available.

Removing the regulation requiring such data would impede health authorities aiming to protect public health, who would not have access to the necessary information to inform an appropriate intervention in these settings. Reducing regulation is anticipated to have the same outcome, but to a lesser degree.

**Impact analysis**

**Costs and benefits**

The benefits and costs are described qualitatively in Tables 8.5 and 8.6. Any minor financial costs incurred by the changes are likely to be offset by efficiencies gained through clarification and reduction in regulatory burden.

**Table 8.5: Objective: prevent the spread of infectious diseases in children in the high-risk settings of children’s service centres and primary schools – cost-benefit analysis of option 2**

<table>
<thead>
<tr>
<th>Proposed amendment</th>
<th>Benefit</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Update diseases and exclusion periods</td>
<td>Regulatory requirements would be clearer, aligned with current evidence regarding infection control and reflect current nomenclature.</td>
<td>No costs are associated with this change.</td>
</tr>
</tbody>
</table>

---

66 Australian Bureau of Statistics
<http://www.abs.gov.au/AUSSTATS/abs@.nsf/Previousproducts/3401.0Feature%20Article1Dec%202018>
<table>
<thead>
<tr>
<th>Proposed amendment</th>
<th>Benefit</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduce infringement penalty for those in charge of a primary school or children’s services centre who fail to exclude a child infected with, or exposed to, a specified infectious disease in accordance with Schedule 7.</td>
<td>Supports action to prevent further transmission of infectious disease in a high-risk environment and provides an alternative and practical means to address noncompliance in certain circumstances.</td>
<td>An infringement penalty would only be considered where there is a deliberate intention to not comply or as a last resort. There is expected to be very minimal impact on primary schools and children’s services centre, noting that education and assistance is the primary means of achieving compliance.</td>
</tr>
</tbody>
</table>

Table 8.6: Objective: ensure the necessary information is available to inform an appropriate public health intervention in these settings – cost-benefit analysis of option 2

<table>
<thead>
<tr>
<th>Proposed amendment</th>
<th>Benefit</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remove the duty of a person in charge of a primary school or children’s services centre to notify the Secretary about an ill child</td>
<td>The person in charge of a primary school, education and care service premises or children’s services centre will have a reduced regulatory burden; the department will reallocate resources currently used to processing multiple notifications regarding the same case and counteracting misinformation and unnecessary exclusions.</td>
<td>The department would incur a small cost in informing stakeholders of this regulatory change. No financial cost would be incurred by stakeholders. Minor savings may be incurred through avoiding unnecessary work.</td>
</tr>
</tbody>
</table>

Consequences of retaining the current regulations without changes

Non-regulatory alternatives and potential consequences of maintaining the current regulations without changes are detailed in Tables 8.7 and 8.8 for each proposed regulatory change.

Table 8.7: Objective: prevent the spread of infectious diseases in children in the high-risk settings of children’s service centres and primary schools

<table>
<thead>
<tr>
<th>Proposed change</th>
<th>Non-regulatory alternative</th>
<th>Description of consequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Update diseases and exclusion periods to align with current evidence regarding infection control, reflect current nomenclature or clarify requirements.</td>
<td>No viable alternative could achieve this objective as effectively as amending the regulations.</td>
<td>Without regulation the diseases and exclusion periods will remain as they are, continuing disparity with national guidelines and ongoing confusion and queries regarding exclusions.</td>
</tr>
</tbody>
</table>

Table 8.8: Objective: ensure the necessary information is available to inform an appropriate public health intervention in these settings

<table>
<thead>
<tr>
<th>Proposed change</th>
<th>Non-regulatory alternative</th>
<th>Description of consequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remove the duty of a person in charge of a primary school or children’s services centre to notify the Secretary about an ill child to reduce regulatory</td>
<td>Undertake stakeholder engagement and communications with Victorian primary school principals with the aim of</td>
<td>Principals will be required to continue to report illness to the department; the department will continue to process multiple notifications, and unnecessary</td>
</tr>
<tr>
<td>Proposed change</td>
<td>Non-regulatory alternative</td>
<td>Description of consequence</td>
</tr>
<tr>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>----------------------------</td>
<td>-------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>burden for the person in charge of a primary school, education and care service premises or children’s services centre; avoid processing of multiple notifications regarding the same case; and reduce the likelihood of misinformation and unnecessary exclusion spreading for the department.</td>
<td>clarifying the requirements of the regulations.</td>
<td>exclusions are likely to continue to occur.</td>
</tr>
</tbody>
</table>

**Proposed approach**

**Option 2: Amending some aspects of the current regulations**

The proposed changes described in option 2 are expected to assist the department to meet the objectives of the regulations pertaining to immunisation and exclusions in high-risk settings of children’s service centres and schools in Victoria. The objectives are to:

- prevent the spread of infectious diseases in children in the high-risk settings of children’s service centres and primary schools
- ensure the necessary information is available to inform an appropriate public health intervention in these settings.
Other regulations
Chapter 9: Closed court orders for prescribed diseases

Problem analysis

The regulations enable closed court orders (that is, suppression of a person’s identity) for those who might be stigmatised if it becomes public that they have a particular disease.

Certain diseases are associated with stigma and discrimination, which can then result in poor physical and mental health outcomes for those affected. Stigma may cause affected people to purposefully avoid situations where their diagnosis may be revealed. Such situations may include legal proceedings that relate to their diagnosis, such as medical negligence claims where the alleged negligence resulted in infection. As a result, stigma may create a barrier to people accessing the justice system due to fears that their diagnosis will be revealed.

Closed court orders are made by Victorian courts or tribunals to protect the privacy of individuals living with either human immunodeficiency virus (HIV) or other prescribed (infectious) diseases from adverse social and economic consequences that may result from disclosing their diagnosis. HIV is provided for under the Public Health and Wellbeing Act 2008, and the only disease prescribed by the regulations is hepatitis C.

One of several policy priorities under the Victorian hepatitis C strategy 2016–2020 is to address stigmatisation and discrimination associated with hepatitis C in the community. The strategy recognises the right to privacy and that stigma may prevent people with hepatitis C from making legitimate complaints about care or treatment received, or about discrimination experienced at places such as work. Closed court orders can reduce the barrier for people living with hepatitis C to access complaint systems and allow these people to address concerns about their healthcare treatment or other rights such as discrimination or claims for damages due to negligence.

Closed court orders for hepatitis C were used during a negligence case against a medical practitioner where approximately 50 women were infected with hepatitis C. In this case, the judge made orders under both the Public Health and Wellbeing Act and the Supreme Court Act 1986 (the previous form of the provisions now included in the Open Courts Act 2013).

Objective of the regulations

The objective of the regulations is to protect people with hepatitis C, or other prescribed diseases, from having their identity and diagnosis publicly disclosed and enable them to pursue legal action pertaining to their diagnosis without fear of stigmatisation or discrimination that can be associated with hepatitis C (or other prescribed diseases).

Requirements of the regulations

The Public Health and Wellbeing Act allows for a court or tribunal to order that the identify of a person with a prescribed disease is kept private, and fines apply to those who contravene this order.

The regulations prescribe the diseases the Act applies to. For the purposes of s. 133 of the Act, hepatitis C is a prescribed disease.
Options

- Option 1: Retain the current regulations without changes
- Option 2: Amend some aspects of the current regulations
- Option 3: Remove or reduce the requirements of the current regulations

**Option 1: Retain the current regulations without changes**

**Maintain hepatitis C as a prescribed disease**

To evaluate the options to remove, maintain or expand the diseases included in the regulations, it is necessary to consider both of the essential conditions for an order in the Act:

- social and economic consequences – there must be adverse social or economic consequences for an individual because of disclosure
- prejudice to the administration of justice – the consequences from disclosure may deter an individual from either initiating (or defending) a legal proceeding.

While there are other examples of stigmatised infectious diseases that could satisfy the conditions above, their inclusion must be balanced with the move towards open justice (where justice is both done and seen to be done). Principles of open justice are enshrined in the Open Courts Act and promote transparency of the judicial process; they limit the settings in which suppression or closure orders can be requested. The Act stipulates that closure or suppression orders can be made:

- to prevent a real and substantial risk of prejudice to the proper administration of justice
- to protect the safety of any person
- in the case of the Victorian Civil and Administrative Tribunal (VCAT), for any reason in the interests of justice
- in other specific circumstances including those related to sexual offences, family violence or criminal proceedings involving children.

Infectious disease is another of these specific circumstances.

**Frequency of use**

Compared with the number of closure or suppression orders made under other legislative provisions, closed court orders under the Act are rare. Given that information about the proceedings is not public, it is difficult to review which condition the closed court order relates to, with the exception of the high-profile case mentioned previously.

However, there have been two reviews of suppression orders that provide context for the use of close court orders under the Act. Before the Open Courts Act was enacted, a study of suppression orders made by Victorian courts over a five-year period (2008–2012) found that of the 1,501 suppression orders considered in the study, only 12 were made under the Act (one per cent of all suppression orders). It is likely that most of these orders were for HIV because hepatitis C was not prescribed until 2011.

In the 2016 review of the Open Courts Act, the majority of court orders made under other legislation between 2014 and 2016 were made under the *Serious Sex Offenders (Detention and Supervision) Act 2009* or the *Crimes (Mental Impairment and Unfitness to be Tried) Act 1997*. Only one order was made under the Public Health and Wellbeing Act in relation to an infectious disease diagnosis.

In summary, orders under the Act for closed courts are not often made. Based on data above for the 2008–2012 and 2014–16 periods, only 13 closed court orders where issued under the Act. Compared
with other types of closure or suppression orders, this is infrequent; however, relative frequency does not reduce the importance of these provisions for people engaged in the legal action involved.

**Additional protections not available from general provisions**

A range of protections are available to people living with hepatitis C who wish to make a formal complaint within a community or a healthcare setting. For example, confidentiality applies to any health condition and is commonly used in healthcare complaint systems.

For example, if a person makes a complaint against a registered health practitioner and the matter proceeds to VCAT for determination, the person’s health information remains confidential. VCAT decisions or appeals use pseudonyms and other anonymising methods to protect the confidentiality of notifying parties or patients involved.

However, where a person brings a legal proceeding such as a negligence claim to a court, the individuals are named as plaintiffs and are identifiable. Closed court orders can be used if justified in the circumstances.

Relative to seeking an order under the general processes of the Open Courts Act, an order under the Public Health and Wellbeing Act is based on specific grounds (social or economic consequences of disclosure) that are linked to hepatitis C stigma. ‘Social and economic consequences’ has been given a wide meaning in the context of the Public Health and Wellbeing Act and can include stigma associated with infection as well as stress, anxiety and potential for unlawful discrimination associated with possible disclosure.

This option continues the existing regulation and maintains hepatitis C as a prescribed disease for these closed court orders. In general, the existing regulations have been effective because they have been used, although infrequently, and provide additional protections to people living with hepatitis C for closed court orders.

There is now effective treatment available for hepatitis C, but this does not necessarily affect the arguments for or against maintaining hepatitis C as a prescribed disease. The reason to include hepatitis C as a prescribed disease – stigmatisation – may eventually be alleviated by the availability of treatment in the future. While stigmatisation persists, the rationale for including hepatitis C remains.

**Option 2: Amend some aspects of the current regulations**

**Add more prescribed diseases**

Disease-related stigma extends to a range of other infectious diseases – for example, hepatitis B, tuberculosis and sexually transmitted infections. Efforts to reduce stigma are often priorities in strategies for these infectious diseases as well.

Infectious disease-related stigma has been noted in relation to severe acute respiratory syndrome (SARS) and H1N1 influenza; however, these are not chronic infections and so are unlikely to have long-term social or economic consequences.

An infectious disease that could be included in the remade regulations is tuberculosis. In global terms, there is increasing recognition of tuberculosis-related stigmatisation and how it contributes to the current epidemic throughout the world. In low-incidence countries such as Australia, tuberculosis incidence is higher in population groups that are already marginalised due to homelessness, imprisonment, substance misuse or recent migration from countries with a high incidence of tuberculosis.

There is limited guidance on how courts or tribunals view tuberculosis in relation to closed court orders. An Open Courts Act order was made in 2014 for a plaintiff with tuberculosis, but this was based on multiple grounds (not specific to the stigmatisation of tuberculosis). As such, it is unclear whether it is necessary to include tuberculosis as a prescribed disease.
Option 3: Remove or reduce the current regulations

Remove hepatitis C as a prescribed disease

Removing hepatitis C orders would mean that only closed court orders under the Act relating to HIV can be considered because HIV is specified in the Act, whereas hepatitis C is prescribed by the regulations.

While these closed court orders are infrequently made compared with other closed court orders, frequency of use is not necessarily proportionate to the level of stigmatisation in the community. The fact that the orders are granted at all indicates that the adverse social or economic consequences of disclosure were sufficient for the court or tribunal to overcome the general presumption of for open justice.

Not remaking hepatitis C as a prescribed disease is inconsistent with the Victorian hepatitis C strategy 2016–2020. Removing this specific protection afforded to people living with hepatitis C is contrary to the efforts under the hepatitis C strategy to promote the use of complaint systems. People living with hepatitis C would still be able to apply for an order under the Open Courts Act, but the conditions for making these orders are different and may not place the same priority on the social and economic consequences of disclosure (compared with orders under the Act).

Impact analysis

This type of closed court order is a small subset of the suppression orders used by courts and tribunals in Victoria. This makes specific costs and benefits difficult to quantify.

Maintaining hepatitis C is expected to positively affect people living with the hepatitis C due to preventing the possible social or economic consequences arising from disclosure.

Removing hepatitis C from the regulations will potentially:

- **negatively** impact on the administration of justice by deterring these people from proceeding with claims (by negatively impacting on these people through possible social and economic impacts)
- **positively** impact to the principles of open justice by increasing the threshold to make a suppression court order (greater transparency of judicial proceedings).

In options 1, maintaining hepatitis C would be expected to create a positive effect on people living with prescribed diseases by reducing stigmatisation and associated social and economic impacts.

In option 2, expanding the regulations to include other stigmatised infectious diseases (such as hepatitis B) would be expected to create a positive effect on people living with prescribed diseases. However, the department does not have enough data to justify expanding the scope of the regulations at this stage to include other diseases.

Removing hepatitis C as a prescribed disease would be expected to create a negative effect on people living with hepatitis C and is inconsistent with the Victorian hepatitis C strategy.
Proposed approach

Option 1: Retain the current regulations without changes

The preferred option is to maintain the current regulations and not expand the prescribed diseases that may access the use of court suppression orders under the Public Health and Wellbeing Act. Maintaining the existing arrangements is simpler and provides certainty for stakeholders.
Chapter 10: Escort agencies providing information to sex workers and clients

Problem analysis

Victoria regulates to minimise sexually transmitted infections (STIs) among sex workers. The prevalence of STIs is currently lower among sex workers than the general population.

Victoria regulates the sex industry as part of its public health strategy to minimise the transmission of blood-borne viruses and STIs. This includes screening sex workers and providing information to clients and sex workers to help them make informed decisions.

Legislation controlling sex work in Victoria is primarily provided through the Sex Work Act 1994 and associated regulations. The Public Health and Wellbeing Act 2008 and associated regulations supplement this legislation to:

- help control infectious diseases, micro-organisms and medical conditions
- ensure sex workers and clients are given information and education about preventing STIs.

To this end, education and information about passing on STIs within escort agency services is a key element of the broad approach to reduce STIs.

The risk to public health can be broken down into the specific hazard, who is exposed and the vulnerability of the population.

Hazard

The public health and wellbeing risks relate to the incidence, prevalence and burden of blood-borne viruses and STIs. Blood-borne viruses and STIs can pass between people via sexual contact and may have no immediate symptoms but can cause serious illness or death.

Sex workers in Australia have sustained low rates of STI transmission and high rates of condom use. In Victoria, sex workers have an extremely low STI prevalence – lower than the broader population – and an extremely high rate of condom use with their commercial clients.

Exposure

Sex workers, as providers of sexual services, are exposed to sexual contact that may pass on blood-borne viruses and STIs. The public perception is that sex workers are at increased risk of STIs due to multiple sexual partners. Under the Sex Work Act, sex workers must take all reasonable steps to minimise the risk of acquiring or transmitting STIs while providing or receiving sexual services.

Vulnerability

There may be increased risks for vulnerable groups such as:

- street-based sex workers
- at-risk young people
- people experiencing homeless
- those recently released from prison.

However, these vulnerable groups don’t cover the entire population of sex workers.
As both the specific hazards and the vulnerable population cannot be controlled for, the public health intervention focuses on the possible exposure.

The department provides medically accurate STI information to brothel and escort agencies to pass on to sex workers and clients to help minimise the transmission of blood-borne viruses and STIs. Further to this, STI information is readily available from many sources – the internet, sexual health centres and general practice clinics. Sex workers also play an important role in educating their clients on safe sex practices.

**Objective of the regulations**

The objective of the regulations is to ensure agency-based sex workers and their clients can easily access written information in a variety of languages to help minimise the transmission of STIs. The regulations work as part of a broad suite of laws and education campaigns such as the *Sex Work Act 1994*.

**Requirements of the regulations**

The regulations relate to s. 162(4) of the Act – ‘Information to sex workers and clients’, which states:

An escort agency proprietor must, in accordance with the regulations, provide easily accessible written information about the transmission of sexually transmitted infections in a variety of relevant languages for the benefit of sex workers and clients.

The regulations require an escort agency proprietor to provide relevant information about STIs if requested to do so by a sex worker or client.

**Options**

- Option 1: Retain the current regulations without changes
- Option 2: Amend some aspects of the current regulations
- Option 3: Remove or reduce the requirements of the current regulations

**Option 1: Retain the current regulations without changes**

**Maintain the requirement to provide information only on request**

The current regulations contain specific requirements for escort agencies to provide information about transmitting STIs, in a variety of languages, to clients and sex workers on request. This different requirement is because sex workers and clients using escort agencies do not meet at a brothel premises.

Maintaining the requirement would ensure escort agencies continue to forward relevant information regarding STI transmission if requested to do so.

The information being provided on request means that it is a low-impact approach, when a sex worker or client self-identifies that they are at risk of STI transmission. Compared with providing the information in a public manner such as a sign, this ensures that when a client or sex worker is actively seeking information on STIs, the information is provided and is accurate.

The information may be more effectively engaged with when provided on request by the escort agency because the business may be considered trustworthy – the client is already relying on discretion from the business and a sex worker has an ongoing working relationship with the business.
Option 2: Amend some aspects of the current regulations

Actively provide information to all sex workers and clients

Increasing the requirements for the escort agency to actively provide information regarding STI transmission could be introduced in line with similar requirements for brothels in the Act. In a brothel, this is typically a clearly visible sign in the brothel premises; however, the approach would have to be different for escort agencies because they do not operate from a fixed premise.

Accessible information forms part of broad education campaign supporting STI control in sex workers and operates alongside other measures such as regular STI screening, early detection and a supportive environment. Without the information provided as part of this regulation, it would be expected that information about STIs could be obtained by sex workers and clients from other sources such as a general practitioner, the department’s website or non-government organisations.

Other non-government organisations that provide education to sex workers include:

- Resourcing Health and Education (RhED), a specialist service for registered and unregistered sex workers that provides a range of material including STI information directly to sex workers, brothels and escort agencies on outreach visits
- the Melbourne Sexual Health Centre, one of the main clinics sex workers attend for STI screening certificates.

An active approach to providing information could require escort agencies to directly provide more information to sex workers and clients. This may be in the form of a physical brochure, email, text message or another appropriate form. The escort agency does not need to create this information because the department already develops and distributes relevant information in a variety of languages (as do some non-government organisations).

Implementing this approach would have different impacts on sex workers and clients. Providing information to sex workers is relatively low-impact and could be included alongside other administration paperwork (such as when starting employment). However, it may do little to improve information availability for sex workers. For example, if a sex worker also works in a brothel, this is a duplication of information. This same information is also available and displayed at STI screening centres.

Providing STI information directly to clients is likely to affect the operations of escort agencies. Information could be either provided by the escort agency to the client or given to the sex worker to provide it to the client. To be provided by the escort agencies, the business would have to collect personal details of clients to then disseminate the information. The department is not aware whether escort agencies current hold this information for worker safety purposes. However, because discretion is part of the escort agency service business model, this requirement may unintendedly increase the cost (or the perceived cost) for clients to book through an escort agency.

A sex worker could carry brochures to the client booking. Sex workers already bring a standard kit of items, including condoms and lubricant, to bookings; including brochures in this kit would be a relatively straightforward process. However, as bookings are charged by time, discussing the information during the booking with the client would either increase the time of the booking (and the cost) or reduce the amount of time spent on service provision. However, providing the information to all clients does not guarantee that clients would actively engage with the information.
Option 3: Remove or reduce the requirements of the current regulations

Reduce the available information for sex workers and clients

Reducing or removing the requirements would remove the obligation for escort agency operators to provide information on STIs to sex workers and clients on request.

In theory this would reduce the amount of information available. However, in practice it is not expected that this would have a meaningful impact on STI awareness among sex workers because there are a variety of other freely available information sources. There are also direct incentives, both legal and reputational, for sex workers to avoid being infected with an STI. The same incentives are present for clients of sex workers but to a lesser degree.

However, this approach would be in direct contrast to the approach for other regulated sex worker businesses that are required to provide STI information in the Act. Brothels and related businesses are required to provide information within the place of business, with the reduced requirement for escort agencies in recognition that there is no fixed place of business yet continue to be obligated to provide STI information if required.

Impact analysis

To evaluate these options to maintain or expand the information that escort agencies provide to sex workers and clients, there are three criteria that will be considered:

- the impact and effectiveness of available STI information for clients and sex workers
- the effect on escort agency operations
- the contribution to controlling STI rates in the sex worker population.

The criteria above must balance the availability of information and the contribution to controlling STI rates in the sex worker population alongside the regulatory impacts for escort agencies to effectively implement the regulations.

If regulatory impacts are too high, this may have the unintended effect of increasing costs to such a level that either sex workers or clients choose to withdraw from the registered sector and move to the unregistered sector.

Consultations with escort agencies operating in Victoria has confirmed that the current regulations have been incorporated into their business operations. Escort agencies advised that sex workers are provided with appropriate resources (including condoms and lubricant) to adhere to broader STI control requirements.

Escort agencies raised concerns about implementing any additional requirements to provide more information to clients, due to privacy and discretion forming a key component of their business models. Clients seek confidentiality and discretion when using escort agency services. Escort agencies also noted that it may be difficult to get clients to receive and meaningfully engage with additional information about STIs.

It is not expected that option 2 (actively provide information to all sex workers and clients) would see a noticeable decrease in the STI rates in sex workers, given the other available sources of information to sex workers and the already low STI rates in sex workers compared with the broader population.

There may be benefits for actively providing STI information to clients. However, given other required practices of sex workers (such as the mandatory use of condoms), this greater awareness by clients is unlikely to contribute to better controlling STI rates in the sex worker population. Maintaining this
regulation would help educate clients whose understanding of STIs is low and reaffirm existing measures that have successfully contributed to a reduction in STIs.

Option 2 will have higher regulatory impacts compared with option 1, including new processes for escort agencies to more actively manage confidential information that may not be otherwise collected. This change of process and the impact on privacy, whether perceived or real, would be expected to increase the costs of escort agency operations.

Option 1 (maintain the requirement to provide information only on request) has reduced benefits because information is provided only on request and is provided to a smaller number of people. However, these people have self-identified themselves to be at risk. Although accessible through other channels, this information may be more effective coming from employers than an organisation without a pre-existing relationship. This is a benefit for sex workers.

In option 1, the escort agency takes a reactive approach, only responding on request, because there is no information captured by the department or by escort agencies about the number of times information on STIs has been requested by either sex workers or clients and then provided by an escort agency.

The effectiveness of regulation relies on sex workers and clients being aware of their right to request STI information. The requirement to provide information on request operates in the context of a number of available sources of information and the broader approach to STI rates in sex workers. This regulation can be considered effective as part of the range of measures contributing to the low STI prevalence and high rate of condom use among sex workers.

The main difference between option 1 and 2 is in the increased provision of information to clients in option 2 and the associated regulatory impact of escort agencies implementing systems that collect private information while maintaining privacy.

The preferred option is to maintain the requirement for escort agencies to provide information only on request. Compared with a requirement to actively provide STI information, this approach has a limited burden on industry while providing support to the efforts to control STIs in sex workers. It is unlikely that increasing the burden on escort agencies would meaningfully improve STI rates for sex workers, which are already lower than the broader population.

Proposed approach

Option 1: Retain the current regulations without changes, maintaining the requirement for escort agencies to provide information only on request.
Chapter 11: Consultative councils

Problem analysis

Consultative councils bring together experts who work to make our hospitals safer for patients. The regulations provide the powers needed to enable the councils to function and perform effectively.

Risk to public health

Australian research suggests that around one in 10 patients suffers a complication of care during their hospital stay, with half of those complications being avoidable. While most complications only have a minor impact on patients, a significant number end in permanent disability or death.\(^6\)

Consultative councils in Victoria are one of a range of mechanisms designed to detect and address issues related to quality and consistency of care in hospitals, with the goal of preventing avoidable harm to patients while in the care of a health service.

They do this by bringing together substantial expertise in relation to specialised areas of health care that can be subject to higher rates of avoidable patient harm (currently in Victoria there are consultative councils for obstetrics/paediatrics, surgery and anaesthetics). Consultative councils are a forum for experts in these specialised areas to undertake high-level analysis and discussion of issues based on the best and most timely data available from hospitals and health services.

Consultative councils in Victoria advise the Minister for Health on how to reduce mortality and morbidity (death and disability) in these specialised areas. This is achieved through:

- collecting, analysing and reporting on data about mortality and morbidity
- identifying avoidable or contributing factors
- generating recommendations that inform priority areas for research, quality and safety improvements, and policy developments.

The councils are supported by Safer Care Victoria, an administrative office of the Department of Health and Human Services, to undertake their functions. Safer Care Victoria:

- coordinates council activities
- manages sensitive and confidential mortality and morbidity information
- prepares correspondence and complex reports
- liaises with stakeholders, including public and private health services and the Coroners Court of Victoria.

History of regulation

As at July 2019 the schedule of consultative councils listed in the Public Health and Wellbeing Regulations included:

- Victorian Consultative Council on Anaesthetic Mortality and Morbidity (VCCAMM)
- Victorian Perioperative Consultative Council (VPCC)

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• Victorian Quality Assurance Committee (VQAC)
• Victorian Surgical Consultative Council (VSCC).

The VCCAMM was established in 1976 and works closely with anaesthetists and hospitals across Victoria to improve the reporting of anaesthesia-related adverse events and to reduce clinical risk.

The core function of the VSCC, established in October 2001, is to identify avoidable causes of mortality and morbidity relating to surgery.

The VQAC is listed on the schedule but was never operationalised.

The efficacy of the current regulations was indirectly assessed in 2017 as a result of the Targeting zero review. The purpose of the review was to assess the efficacy of the department’s current systems for governance and quality and safety assurance in hospitals and provide advice about how these systems might be improved. The report found that the ‘expert committees [including consultative councils] are fragmented and many are not resourced to detect problems in a timely manner or to follow up to stop them happening again’.

Targeting zero recommended – and the minister accepted and enacted – a range of recommendations to improve the efficacy of the councils, for example, to address information flows and share information to drive quality improvement.

A key recommendation of the review that has a direct impact on the Public Health and Wellbeing Regulations was the combining and empowering of two of the consultative councils listed in Schedule 1 of the regulations into a single council with amended functions and abilities:

That:

4.8.6. the work of the Ministerial Advisory Committee on Surgery and the Surgical Consultative Council be absorbed into a new surgery network, consideration also be given to absorbing the Victorian Consultative Council for Anaesthetic Morbidity and Mortality into the surgery network. The work of the Healthcare Associated Infection Committee be absorbed by a newly formed infection and infectious disease network.

Subsequent to the recommendations, a review to evaluate the functionality and performance of the VSCC and the VCCAMM was undertaken to determine whether their functions could be strengthened, or whether a new combined perioperative council may be more efficient. Interim findings of the review recommended that both the VSCC and the VCCAMM should be disbanded and replaced with a new Victorian Perioperative Consultative Council (VPCC).

From 1 July 2019 the Public Health and Wellbeing Regulations was amended to include the VPCC.

The new council will combine the roles and functions of the VSCC and the VCCAMM; however, both old and new councils will need to co-exist for a short time within the regulations to enable information to be freely shared during the transition.

Objectives

The Public Health and Wellbeing Act 2008 and supporting regulations related to consultative councils are part of a broad range of laws and initiatives that aim to ensure quality and consistency of care in Victorian hospitals.

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The objective of the regulations is to detect and address quality and consistency issues in hospitals, with a view to preventing or responding to avoidable harm to patients, by facilitating the effective operation of a governance body(ies) that can undertake this.

**Requirements of the regulations**

The regulations:

- prescribe consultative councils to be ‘prescribed consultative councils’ for the purposes of ss. 33–48B of the Public Health and Wellbeing Act
- set out basic procedural arrangements and sitting fees
- set out provisions designed to preserve patient confidentiality and privacy in relation to the flow of information to and from the councils to be used for research purposes.

**Proposed changes to the regulations**

As a result of the recent changes to both the Act and the regulations in relation to consultative councils, combined with the recent extensive consultation and exploration of options with stakeholders undertaken by Safer Care Victoria for the above changes, this chapter does not explore a range of options.

**Remove defunct consultative councils from the schedule**

As stated above, both old and new councils need to co-exist for a short time within the regulations to enable free sharing of information during the transition. Between 1 July 2019 and the remaking of the sunsetting regulations in November 2019, the schedule of consultative councils will include:

- Victorian Consultative Council on Anaesthetic Mortality and Morbidity (VCCAMM)
- Victorian Quality Assurance Committee (VQAC)
- Victorian Surgical Consultative Council (VSCC)
- Victorian Perioperative Consultative Council (VPCC).

The period July to November 2019 will accommodate the free sharing of information between the new and old councils. The recommendation is to further amend the regulations in November 2019 to remove the VSCC and VCCAMM as a component of the remaking of the Public Health and Wellbeing Regulations.

Further, it is recommended that the Victorian Quality Assurance Committee be removed from Schedule 1 to reflect the reality that the committee has never been operationalised, and that all changes made to the regulations to establish and enable operation of the VPCC be carried over.

Following the remaking of the regulations in November 2019 it is proposed that the list of consultative councils contained in the regulations be as follows:

- Victorian Perioperative Consultative Council (VPCC).

**Impact analysis**

Establishing prescribed consultative councils constitutes a strategic approach to managing a number of identified priority areas in terms of improving public health standards. The costs to government of the consultative councils is expected to total approximately $11.1 million over 10 years in present value terms. The benefits associated with consultative councils, though hard to quantify in dollar terms, are
their contribution to the range of mechanisms essential to efforts for consistent, high-quality care by
Victorian health services.

Expected costs of operating consultative councils

The budgeted costs to the department in respect of the consultative councils established to advise the
Minister for Health totalled approximately $1.02 million in 2017–18. This total comprised $0.53 million in
budgeted costs for the operations of the Consultative Council Unit69 within the department, together with
$0.49 million in ‘external costs’. These external costs constitute payments made to bodies outside the
department in relation to a range of activities connected with the work of the consultative councils.

Future budgets in this area can clearly not be predicted accurately. However, on a ‘steady state’ basis,
the current annual cost of $1.17 million70 is equal to a total cost in present value terms of $11.1 million
over 10 years.

These costs are the only quantifiable costs associated with operating the consultative councils. However,
it must be recognised that the members of the consultative councils essentially donate their time to this
work and that this constitutes perhaps the largest single resource input to the work of the councils. While
sitting fees are payable to members of consultative councils at the rate of 40 fee units per sitting day
(currently $578),71 this amount falls substantially short of the standard rates of remuneration for many
members of the councils. In this context, it is important to recognise that the time devoted to consultative
council activities substantially exceeds the time involved in proceedings of the councils per se, and is
therefore remunerated at the above rates. That is, a significant proportion of the time devoted to
consultative council activities by their members goes completely un-remunerated.

Expected costs of removing defunct councils from the schedule

The functions of the VCCAMM and the VSCC will be merged into the new VPCC. As such, the costs will
remain the same. The costs are expected to increase if the VPCC increases the scope of its reviews in
future.

Proposed approach

As previously stated, a range of options is not appropriate in the context of consultative councils due to
the very recent consultation with stakeholders, the government’s commitment to implementing the
recommendations of the Targeting zero review and the implementation of regulatory changes on 1 July
2019.

The preferred option therefore is to proceed with removing the defunct councils from the regulations and
to carry over those regulations that inform the operation of the ongoing councils without changes.

69 The Consultative Council Unit provides secretariat services to the various consultative councils.
70 Please note forecasts to 30 June 2019 are estimates. Final figures for the 2018–19 financial year would be available after the
financial year has ended.
71 The value of a fee unit for the 2018–19 financial year is $14.45.
Chapter 12: Prescribed senior officers (Chief Health Officer delegations) and tissue donation

The changes proposed to the following regulations are not expected to impose a significant economic or social burden on the public. The following sections discuss the intention of these regulations, and proposed changes, describing why a detailed impact assessment has not been prepared in this regulatory impact statement.

1. Chief Health Officer delegations

The Public Health and Wellbeing Act 2008 requires the department to appoint a registered medical practitioner as the Chief Health Officer (CHO) for Victoria. The Act grants the CHO a number of legal powers; use of these powers requires high-level medical expertise and judgement.

The Act stipulates that delegation of CHO powers requires that the delegate must be: (1) a registered medical practitioner; and (2) a senior public servant who is either an executive (as defined by the Public Administration Act 2004) or a ‘prescribed senior officer’. As a prescribed matter, the definition of this second type of senior public servant can be specified in regulations made under the Act.

The regulations define who can be a delegate as a prescribed senior officer. The delegation of legal powers was reviewed, and it was determined that the current regulatory definition – a senior medical adviser employed by the department – remains appropriate. This delegation is an internal administrative process of the department and will not have an economic or social impact on the Victorian community.

2. Tissue donation

The tissue donation regulation specifies a statutory defence when specific standards for quarantine of semen donations for the purposes of screening donors for certain infectious diseases, such as HIV, are met. This is infrequently used but may have an economic and social impact in certain circumstances such as a negligence claim.

The six-month period prescribed by the regulations forms part of the defence to liability (contained in the Act) for infectious disease transmission arising from semen donations. These defences to liability are available only when certain standards (such as a six-month quarantine for screening purposes) are met. These standards represent best practice and are a conservative approach to preventing infectious disease transmission through semen donations. The six-month time period itself reflects old technology and practices, where longer testing windows were necessary. The national review will consider new regulatory approaches to quarantining semen donations using shorter timeframes when newer diagnostic technology is used (such as that used in the European Union).

The department intends to remake the regulations as they currently stand but intends to defer a review of this regulation. This is due to an upcoming national review of human tissue legislation.72 In Victoria, the Human Tissue Act 1982 will be the major legislative framework considered by the national review, where

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72 Council of Australian Governments, Health Council Communiqué, October 2018
the statutory defences in the Act (and the regulations) will be considered in more detail. To provide continuity, there will be no change until the review is concluded.
Infringements, implementation, evaluation and consultation
Chapter 13: Infringement offences

Background

The Public Health and Wellbeing Regulations 2009 (the current regulations) impose a maximum court penalty of 20 penalty units for most breaches of the regulations (offences).\(^{73}\)

Certain prescribed accommodation and cooling tower offences in the regulations are enforceable by an infringement notice, commonly known as an on-the-spot fine or infringement offence. Table 1 in Schedule 8 of the current regulations sets out the specific infringement offences and their penalties. These infringement offences carry a penalty of four penalty units or $661 in 2019–20, which is 20 per cent of the maximum court penalty and in line with the Attorney-General’s Guidelines to the Infringement Act 2006.\(^{74}\)

There are also several infringement offences in the Public Health and Wellbeing Act 2008 such as failure to register a cooling tower system or a premises for a prescribed business (such as a tattooing business). Table 2 in Schedule 8 of the current regulations sets out the specific infringement offences in this Act and their penalties.

The Attorney-General’s Guidelines to the Infringement Act 2006 sets a policy framework to assist agencies seeking to make offences infringeable.

Proposed expansion of infringement offences

Regulators (council and departmental authorised officers) commonly use the following measures to assist businesses and entities to comply with the regulations:

- education and guidance materials
- proactive compliance (such as inspections and education visits)
- assisted compliance activities (such as letters and notices).

The above approach forms most of the compliance-related activity, recognising that most regulated entities (such as businesses) want to comply with the regulations.

Prosecution and the full force of the law is reserved for high levels of risk, repeated noncompliance and where a business or entity is deliberatively noncompliant. This intervention is generally used as a last resort or when other actions are ineffective.

There is, however, a gap between existing measures to achieve compliance and prosecution, such as where there are continual minor breaches and/or moderate levels of risk.

Situations may arise where lower level approaches such as education and notices have not been effective. Additionally, prosecution in these instances and for moderate levels of risk is often not a proportionate or feasible response noting that it is also time consuming and costly.

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\(^{73}\) Section 232(2) of the Public Health and Wellbeing Act allows a maximum penalty of 20 penalty units for any breach of the regulations.

\(^{74}\) A penalty unit is indexed annually. For 2019–20, one penalty unit is $165.22.
In these situations, an infringement notice offers an alternative method for encouraging compliance and addressing noncompliance.

To enable graduated and proportionate sanctions and a practical means of encouraging compliance and addressing noncompliance, it is proposed that infringement offences are expanded. The offences in the table below meet the grounds for infringement offences under the Attorney-General’s Guidelines to the Infringement Act 2006 and can therefore be enforced by way of an infringement notice. These offences are generally straightforward in nature and an authorised officer can readily determine whether an offence has occurred. For example, an authorised officer can easily determine whether a direction has been complied with or whether water quality in an aquatic facility meets prescribed standards through simple on-site testing.

Broadly, infringement offences are considered in proportion to the ongoing risk, taking into account the compliance posture (willingness to comply) of the regulated entity and the level of risk to the Victorian community.

As emphasised above, education, routine monitoring and assisted compliance will be the primary means of achieving compliance and this will not change. Additionally, most regulated entities such as businesses would already be aware of, and comply with, their existing obligations and given an opportunity to comply. However, for certain situations, infringement notices are a practical means of influencing and achieving compliance, which can promptly reduce public health risk.

For new requirements, regulators will first focus on making sure regulated entities are first aware of, and understand, their requirements.

An expanded approach aligns with the availability of infringement notices for offences under other Victorian public health legislation such as the Tobacco Act 1987 and the Food Act 1984.

Tables 13.1–13.7 set out proposed infringement offences deemed suitable and their penalties. The penalty levels:

- primarily align with existing prescribed accommodation and cooling tower infringement offences
- reflect a significantly lesser proportion of the maximum penalty
- reflect public health risk.

## Proposed infringement offences in the regulations

### Table 13.1: Vector-borne infectious disease control

<table>
<thead>
<tr>
<th>Proposed regulation area</th>
<th>Brief summary of offence</th>
<th>Proposed penalty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mosquito control</td>
<td>Failure to comply with a council authorised officer direction in relation to mosquito breeding ground.</td>
<td>4 PU</td>
</tr>
<tr>
<td>Mosquito control</td>
<td>Failure to comply with authorised officer direction in relation to mosquito breeding ground.</td>
<td>4 PU</td>
</tr>
<tr>
<td>Control of disease vectors other than mosquitoes</td>
<td>Failure to comply with council authorised officer direction in relation to disease vector.</td>
<td>4 PU</td>
</tr>
<tr>
<td>Control of disease vectors other than mosquitoes</td>
<td>Failure to comply with any authorised officer direction in relation to disease vector.</td>
<td>4 PU</td>
</tr>
</tbody>
</table>
Table 13.2: Registered premises (hairdressing, beauty therapy, colonic irrigation, tattooing, ear piercing and other skin penetrations processes)

<table>
<thead>
<tr>
<th>Proposed regulation area</th>
<th>Brief summary of offence</th>
<th>Proposed penalty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Condition of premises</td>
<td>Failure to ensure registered premises is kept in a clean, sanitary and hygienic condition.</td>
<td>4 PU</td>
</tr>
<tr>
<td>Condition of skin-penetrating equipment before use</td>
<td>Failure to ensure articles intended to be used for skin penetration are sterile.</td>
<td>4 PU</td>
</tr>
<tr>
<td>Conditions of skin-penetrating equipment after use</td>
<td>Failure to ensure articles used for skin penetration are disposed of or sterilised.</td>
<td>4 PU</td>
</tr>
<tr>
<td>Condition of other articles used at registered premises</td>
<td>Failure to ensure other article used are clean before use.</td>
<td>4 PU</td>
</tr>
<tr>
<td>Personal hygiene</td>
<td>Failure to ensure personal hygiene standards are upheld.</td>
<td>4 PU</td>
</tr>
<tr>
<td>Hand washing</td>
<td>Failure to ensure access to hand washing facilities.</td>
<td>4 PU</td>
</tr>
<tr>
<td>Information provision</td>
<td>Failure to provide information in an approved form to clients about the risks associated with tattooing, body piercing and other skin penetration.</td>
<td>4 PU</td>
</tr>
<tr>
<td>Information to be kept</td>
<td>Failure to keep client information about tattooing, body piercing or other skin penetration procedures.</td>
<td>4 PU</td>
</tr>
<tr>
<td>Advertising and registered premises</td>
<td>Misleading advertising in relation to registration.</td>
<td>4 PU</td>
</tr>
<tr>
<td>Display notice</td>
<td>Failure to display notice about scope of registration.</td>
<td>2 PU</td>
</tr>
</tbody>
</table>

Table 13.3: Class 1 aquatic facilities

<table>
<thead>
<tr>
<th>Proposed regulation area</th>
<th>Brief summary of offence</th>
<th>Proposed penalty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical testing</td>
<td>Failure to ensure required testing is conducted.</td>
<td>4 PU</td>
</tr>
<tr>
<td>Micro testing</td>
<td>Failure to ensure microbiological standard of aquatic facility water is maintained.</td>
<td>4 PU</td>
</tr>
<tr>
<td>Response procedures</td>
<td>Failure to ensure further testing of aquatic facility is undertaken.</td>
<td>4 PU</td>
</tr>
<tr>
<td></td>
<td>Failure to notify council of test results</td>
<td>4 PU</td>
</tr>
<tr>
<td></td>
<td>Failure to undertake further testing of aquatic facility</td>
<td>4 PU</td>
</tr>
<tr>
<td></td>
<td>Failure to close aquatic facility</td>
<td>4 PU</td>
</tr>
<tr>
<td></td>
<td>Failure to notify council of closure</td>
<td>4 PU</td>
</tr>
<tr>
<td>Condition of aquatic facilities</td>
<td>Failure to ensure aquatic facility is kept in a clean, sanitary and hygienic condition.</td>
<td>4 PU</td>
</tr>
<tr>
<td>Clarity of water</td>
<td>Failure to ensure aquatic facility water maintained in a clear condition.</td>
<td>4 PU</td>
</tr>
</tbody>
</table>

76 Class 1 aquatic facilities will become prescribed businesses for the purposes of s. 68 of the Public Health and Wellbeing Act. This means they will need to be registered with their local council. In this regard, an infringement offence is created for failure to register the business under the Act. An infringement penalty of four penalty units (in the case of a natural person) or 10 penalty units (in the case of a body corporate) applies.
<table>
<thead>
<tr>
<th>Proposed regulation area</th>
<th>Brief summary of offence</th>
<th>Proposed penalty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature</td>
<td>Failure to keep the water temperature below set temperature.</td>
<td>4 PU</td>
</tr>
<tr>
<td>Filtering</td>
<td>Failure to ensure filtration of aquatic facility water.</td>
<td>4 PU</td>
</tr>
<tr>
<td>Treatment of aquatic facility water in accordance with prescribed standards</td>
<td>Failure to treat aquatic facility or spa pool with a chlorine-based disinfectant or bromine-based disinfectant.</td>
<td>4 PU</td>
</tr>
<tr>
<td></td>
<td>Failure to treat aquatic facility (chlorine-based disinfectant) in accordance with parameters.</td>
<td>4 PU</td>
</tr>
<tr>
<td></td>
<td>Failure to treat aquatic facility spa pool (chlorine-based disinfectant) in accordance with parameters.</td>
<td>4 PU</td>
</tr>
<tr>
<td></td>
<td>Failure to treat aquatic facility (bromine-based disinfectant) in accordance with parameters.</td>
<td>4 PU</td>
</tr>
<tr>
<td></td>
<td>Failure to treat aquatic facility spa pool (bromine-based disinfectant) in accordance with parameters.</td>
<td>4 PU</td>
</tr>
<tr>
<td>Cyanuric acid level</td>
<td>Failure to ensure cyanuric acid level is below the set level.</td>
<td>4 PU</td>
</tr>
<tr>
<td>Total alkalinity</td>
<td>Failure to ensure alkalinity level is maintained above set level.</td>
<td>4 PU</td>
</tr>
<tr>
<td>Combined chlorine</td>
<td>Failure to ensure combined chlorine level is maintained within set parameters.</td>
<td>4 PU</td>
</tr>
<tr>
<td>Response to suspected infection</td>
<td>Failure to ensure water testing is undertaken.</td>
<td>4 PU</td>
</tr>
<tr>
<td>Requirement to keep records</td>
<td>Failure to keep adequate records are kept.</td>
<td>4 PU</td>
</tr>
</tbody>
</table>

**Table 13.4: Cooling tower systems**

<table>
<thead>
<tr>
<th>Proposed regulation area</th>
<th>Brief summary of offence</th>
<th>Proposed penalty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment of cooling tower system</td>
<td>Failure to ensure continuous treatment of recirculating water in cooling tower system</td>
<td>4 PU</td>
</tr>
<tr>
<td>Disinfection, cleaning and re-disinfection (at specific periods)</td>
<td>Failure to ensure disinfection, cleaning and re-disinfection of cooling tower system.</td>
<td>4 PU</td>
</tr>
<tr>
<td>Routine service and testing obligations</td>
<td>Failure to ensure monthly servicing of cooling tower system (existing infringement).</td>
<td>4 PU</td>
</tr>
<tr>
<td></td>
<td>Failure to ensure monthly sampling of recirculating water to determine heterotrophic colony count</td>
<td>4 PU</td>
</tr>
<tr>
<td></td>
<td>Failure to ensure quarterly sampling of recirculating water to test for Legionella (existing infringement).</td>
<td>4 PU</td>
</tr>
<tr>
<td>Response procedure to high heterotrophic colony count (non-manually treated)</td>
<td>Failure to ensure further testing of recirculating water is undertaken.</td>
<td>4 PU</td>
</tr>
<tr>
<td></td>
<td>Failure to ensure recirculating water is disinfected</td>
<td>4 PU</td>
</tr>
<tr>
<td></td>
<td>Failure to ensure further testing of recirculating water is undertaken.</td>
<td>4 PU</td>
</tr>
<tr>
<td></td>
<td>Failure to ensure disinfection and testing procedures are repeated or that cooling tower is shut down.</td>
<td>4 PU</td>
</tr>
<tr>
<td>Alternate procedure to high heterotrophic colony count (manually treated)</td>
<td>Failure to ensure further testing of recirculating water is undertaken.</td>
<td>4 PU</td>
</tr>
<tr>
<td></td>
<td>Failure to ensure recirculating water is disinfected</td>
<td>4 PU</td>
</tr>
<tr>
<td></td>
<td>Failure to ensure further testing of recirculating water is undertaken.</td>
<td>4 PU</td>
</tr>
</tbody>
</table>
### Table 13.5: Legionella risks in certain premises

<table>
<thead>
<tr>
<th>Proposed regulation area</th>
<th>Brief summary of offence</th>
<th>Proposed penalty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water delivery system suspected as source 93</td>
<td>Failure to ensure required response to notification is implemented.</td>
<td>4 PU</td>
</tr>
</tbody>
</table>

### Table 13.6: Management and control of infectious diseases, micro-organisms and medical conditions

<table>
<thead>
<tr>
<th>Proposed regulation area</th>
<th>Brief summary of offence</th>
<th>Proposed penalty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Notification of notifiable conditions – medical practitioners</td>
<td>Section 127(2) of the Public Health and Wellbeing Act creates an offence for registered medical practitioners failing to report a notifiable condition</td>
<td>4 PU</td>
</tr>
<tr>
<td>Notification of notifiable conditions – pathology services</td>
<td>Section 128(2) of the Public Health and Wellbeing Act creates an offence for a pathology service to fail to report a notifiable condition.</td>
<td>4 PU</td>
</tr>
<tr>
<td>Powers of authorised officers</td>
<td>Failure to comply with written direction.</td>
<td>4 PU</td>
</tr>
<tr>
<td>Proposed regulation area</td>
<td>Brief summary of offence</td>
<td>Proposed penalty</td>
</tr>
<tr>
<td>----------------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------</td>
<td>------------------</td>
</tr>
<tr>
<td>Exclusion of a child from primary school, education, care service or children services centre</td>
<td>Failure to exclude child infected with or exposed to infectious disease in accordance with Schedule 7.</td>
<td>4 PU</td>
</tr>
</tbody>
</table>
Chapter 14: Implementation

Overview

Implementation of the Public Health and Wellbeing Regulations 2019 will encompass a multifaceted approach to support awareness and compliance. It is an integral element to realising public health objectives.

The department acknowledges the key roles councils, regulated entities and industry representatives will play to successfully implement the changes. Successful implementation will enhance the health and wellbeing of the community and reduce public health risks.

Objectives of implementation

Implementation seeks to:

- ensure affected entities (such as businesses) and regulators are aware of, and understand, the changes to the regulations; this will help realise the public health benefits
- support affected entities to prepare for, and comply with, the changes through a range of means and channels
- facilitate high levels of voluntary compliance and minimise unintentional noncompliance
- partner with organisations representing affected businesses to communicate the changes to their members or affiliates
- enable regulators (local council and departmental authorised officers) to effectively undertake compliance monitoring and education and enforcement activities.

Target audiences for implementation

Table 14.1 shows the scope of target audiences the implementation encompasses.

Table 14.1: Target audiences for implementation

<table>
<thead>
<tr>
<th>Target audience</th>
<th>Brief summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regulators, notably local councils</td>
<td>Councils administer parts of the regulations related to vector-borne infectious disease control, registration of certain business premises and aquatic facilities. There is a need to inform and support councils to enable them to effectively undertake compliance monitoring and education and enforcement activities. The department's authorised officers administer parts of the regulations related to cooling tower systems, Legionella risks in certain premises and pest control</td>
</tr>
<tr>
<td>Regulated entities and industry representatives</td>
<td>There is a need to create awareness and understanding among regulated entities and industry representative to facilitate compliance. This includes, but is not limited to, the following areas:</td>
</tr>
</tbody>
</table>
Target audience | Brief summary  
|----------------|-------------------------------------------------|
|                | • registered premises for personal services (such as those that provide beauty therapy, cosmetics, colonic irrigation, hairdressing, skin penetration and tattooing)  
|                | • aquatic facilities  
|                | • cooling tower operators  
|                | • certain premises with Legionella risks  
|                | • medical practitioners  
|                | • laboratories  
|                | • schools, childcare centres and kindergartens.  

To a lesser extent, the Victorian community should also be aware of the regulations and the overarching objective to strengthen health and wellbeing, and their obligations to comply in certain circumstances.

**Key components of implementation**

The overarching key components to guide implementation are:

- governance and oversight arrangements where appropriate
- communication channels and tools to create awareness of the changes
- support and guidance to facilitate understanding and compliance – this includes support and guidance to:
  - regulated entities such as businesses, schools, childcare centres, pathology laboratories and medical practitioners
  - regulators such as council authorised officers and departmental authorised officers
- compliance monitoring (education and enforcement activities).

Across the regulatory areas, the key components of implementation are described in Table 14.2. The scope and nature of each component depends on the changes and the regulated entities affected. For example, there are very few proposed changes to the regulations relating to Legionella risks in certain premises and a more streamlined implementation approach would be expected. However, there are more substantial changes to aquatic facilities, which would require a more comprehensive implementation approach.

Additionally, implementation is also considered in the context that:

- most of the current requirements will not change and the same regulatory approach will apply
- changes primarily strengthen and clarify the current requirements and can be easily incorporated into the operation of the regulated entity.

**Table 14.2: Key components of implementation**

<table>
<thead>
<tr>
<th>Key component</th>
<th>Method</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Key component</td>
<td>Method</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>-----------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Communication</td>
<td>Communication channels and tools</td>
<td>The department has many regular communication channels with its target audiences – though news bulletins and newsletters, email communication systems, presentations, written correspondence and information lines. The department will use these channels and tools to inform stakeholders of the changes to the regulations to support awareness, understanding and compliance. For example, there is a 1300 information line and dedicated email address for the pest control program. The department's webpages are well used by industry and local government. Websites will be used to inform stakeholders of dates of implementation, transition arrangements and for frequently asked questions, as appropriate. The websites will also provide access to fact sheets and guidance materials.</td>
</tr>
<tr>
<td>Engaging with peak bodies, government agencies and industry representatives</td>
<td></td>
<td>Peak bodies and industry associations are key stakeholders, and many have provided input into the proposed regulations. Engaging with these organisations and providing communication materials will increase opportunities for regulated entities to be informed about the changes. For example, the department will liaise with the Department of Education and Training to ensure consistent and coordinated messaging to schools and child care centres.</td>
</tr>
<tr>
<td>Support and guidance</td>
<td>Workshops, training sessions and roadshows</td>
<td>Where appropriate, additional engagement activities such as workshops and training sessions will be held. This will primarily be undertaken when there are more significant changes to the regulations and where there are new definitions or categories of regulation introduced. The format and style of the engagement activity will be determined to meet the needs of the target audience. The department will aim to combine and coordinate training sessions where possible to minimise burden. For example, the department will present: • to students undertaking pest control training at Melbourne Polytechnic TAFE • at Environmental Health Professionals Australia forum (in August).</td>
</tr>
<tr>
<td>Guidance materials and fact sheets (for regulated entities and councils)</td>
<td></td>
<td>Department program areas will develop or update guidance materials, such as easy-to-understand fact sheets, to support regulated entities and councils. The type and nature of the guidance materials will reflect the target audience and the extent of the change. The guidance materials aim to: • assist regulated entities (such as businesses, aquatic facility operators, pest control licensees and persons responsible for cooling tower systems) to understand and comply with the changes • support regulators (such as councils) to undertake operational matters and compliance-related activities • support consistent messaging and interpretation.</td>
</tr>
</tbody>
</table>
### Key component | Method | Description
--- | --- | ---
 |  | The guidance materials will target key target audiences including:
- regulated entities
- industry representatives
- regulators, particularly local government authorised officers.
For example, for regulations relating to registered premises (hairdressing, beauty therapy, colonic irrigation, skin penetration and tattooing) the department will need to develop and disseminate:
- Secretarial approved information for proprietors to provide to clients about risks and safeguards relating to the process
- a Scheduled notice about the scope of registration.
Additionally, for aquatics facilities, the department will develop to ‘toolbox’ materials for both councils (as the regulator) and aquatic facility to ensure consistent messaging and interpretation of the regulations occurs.
  | Training tools | Departmental program areas may consider other tools such as online training and podcasts, which may be useful when considering travel and training time.
Professionl development and educational activities occur regularly across the different regulated areas. These activities will provide additional learning and development opportunities.
  | Compliance monitoring | Education and enforcement activities | Through compliance monitoring activities such as routine inspections, regulators (both departmental and council authorised officers) will aim to raise awareness of the regulations to assist regulated entities to comply, making sure they understand their obligations and requirements. Enforcement is generally reserved as a last resort and assessed on a case-by-case basis.
For example, departmental authorised officers can explain the changes to the person responsible for a cooling tower system during a routine inspection.
See further information in the section ‘Compliance monitoring and education and enforcement activities’.

### Timing of implementation
In the lead up to the regulations commencing, the department will consider the timing of key implementation components. This approach aims to assist regulated entities and regulators to prepare for the changes.

### Transitional arrangements
Transitional arrangements will be in place for the areas of category 1 aquatic facilities and pest control. For category 1 aquatic facilities, it is proposed that registration requirements will commence on 14 December 2020. This extended commencement period reflects the time needed for both councils and category 1 aquatic facilities to transition to the new registration requirements.

For pest control, transitional arrangements are in place for:
• new pest control licence applications, which allow for operators who previously held a pest control licence or recently undertook training prior to the new regulations commencing to apply for a licence based on the approved courses and qualifications under the current regulations until 31 December 2021

• existing pest control licences, which allow for licences valid immediately prior to the commencement of the new regulations to continue until the existing expiry date or be renewed based on the approved courses and qualifications under the current regulations until 31 December 2021

• operators previously licensed under the grandfather clause, which will allow for licences immediately valid before the proposed regulations commence to continue to be held until the existing expiry date or be renewed based on the grandfather clause under the current regulations until 31 December 2021.

Developing specific implementation plans

Each departmental regulatory program area will develop specific implementation plans, which are based on target audiences, the settled regulations and the degree of change.

Following the public consultation period, the department will consider all submissions and comments made by stakeholders on the proposed regulations. Once the review of submissions has occurred, any necessary changes to the proposed regulations will be made. Once the final regulations have been prepared, the implementation plans will be adjusted and finalised, and rollout will begin.

If there are more significant changes to a specific regulatory area, more targeted communication and engagement will be delivered to stakeholders.

An example of specific implementation approaches is reflected in Tables 14.3–14.6. The department is currently developing specific implantation plans across all areas. The information below is indicative and is subject to change and revision.

Table 14.3: Example of a specific implementation approach for aquatic facilities

<table>
<thead>
<tr>
<th>Component</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Governance and oversight</td>
<td>Convene a working group to implement and communicate the changes. Specific stakeholder groups could include:</td>
</tr>
<tr>
<td></td>
<td>• industry</td>
</tr>
<tr>
<td></td>
<td>• regulators, particularly local government</td>
</tr>
<tr>
<td></td>
<td>• advocacy and peak body organisations.</td>
</tr>
<tr>
<td>Communication channels and tools</td>
<td>Written advice to key industry representatives and councils to inform them of the changes.</td>
</tr>
<tr>
<td></td>
<td>Update the department’s websites to inform regulated entities, councils and the public about the changes.</td>
</tr>
<tr>
<td>Guidance materials and fact sheets (for regulated entities and council)</td>
<td>Review and develop ‘toolbox’ materials for the regulator and aquatic facilities to ensure understanding, consistent messaging and interpretation of the regulations occurs. This will include:</td>
</tr>
<tr>
<td></td>
<td>• regulator (council authorised officer) guidance and templates encompassing the new regulations, registration, inspections, assessing compliance and enforcement, water quality guidelines/water treatment requirements and training</td>
</tr>
<tr>
<td></td>
<td>• aquatic facility guidance and templates encompassing the new regulations, registration, key changes and compliance, water quality</td>
</tr>
</tbody>
</table>
### Table 14.4: Example of a specific implementation approach for management and control of infectious diseases, micro-organisms and medical conditions

<table>
<thead>
<tr>
<th>Component</th>
<th>Actions</th>
</tr>
</thead>
</table>
| Communication channels and tools | Inform laboratories and clinicians of the changes through:  
- Chief Health officer alerts/advisories  
- website updates  
- infectious diseases email address for email queries.  
Disseminate information to medical colleges, clinical associations and health networks to facilitate circulation to a wider audience.  
Update information on health.vic.gov.au/notify, which provides details on which infections must be notified, when this must occur and how to notify. |
| Workshops, forums and roadshows | Through the Laboratory Liaison Committee (an established group consisting of Victorian laboratories and departmental representatives), disseminate and discuss the changes and implementation. |
| Compliance monitoring | Monitor urgent notifications to ensure notifiers are reporting within the required time frame from suspected/presumptive diagnosis. Where a notifier has failed to notify within the required timeframe, the Chief Health Officer will issue a ‘failure to comply’ notice. The department will make every effort to work with the notifier to resolve noncompliance. As a last resort, the department may consider enforcement action such as an infringement notice for continual noncompliance. |

### Table 14.5: Example of a specific implementation approach for immunisation and exclusions

<table>
<thead>
<tr>
<th>Component</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Governance and oversight</td>
<td>The Victorian Local Government Immunisation Network meets twice each year and provides a forum for collaboration and information exchange for local government immunisation providers and the Immunisation Section at the department.</td>
</tr>
</tbody>
</table>
| Communication channels and tools | A dedicated email address and 1300 number are in place.  
A regular (bi-monthly) Immunisation newsletter is produced that is received by more than 5,000 mailboxes. Additional newsletter opportunities will also be used when appropriate to primary and community health services. |
Table 14.6: Example of a specific implementation approach for pest control

<table>
<thead>
<tr>
<th>Component</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication channels and tools</td>
<td>A dedicated email address and 1300 number are in place. Industry specific newsletters Attend peak industry body meetings</td>
</tr>
<tr>
<td>Guidance materials and fact sheets (for regulated entities)</td>
<td>Develop technical notes interpreting legislative requirements Develop licensing guidelines Develop risk assessment plans Support the creation of adaptable templates</td>
</tr>
<tr>
<td>Workshops, forums and roadshows</td>
<td>Presentation on demand Present to students undertaking pest control training at Melbourne Polytechnic TAFE</td>
</tr>
<tr>
<td>Compliance monitoring</td>
<td>The department’s authorised officers undertake: • investigations and work with key stakeholder to inform compliance monitoring activity • targeted inspections to where there is an indication of noncompliance, such as a result of a complaint or in the case of a previous unsatisfactory outcome. Authorised officers also monitor various advertising channels and follows up suspected unlicensed entities • compliance and enforcement action in a graduated and proportionate manner, commensurate to risk.</td>
</tr>
</tbody>
</table>
Compliance monitoring and education and enforcement activities

Council and departmental authorised officers undertake compliance monitoring and associated education and enforcement activities. The approach to regulatory compliance monitoring and education and enforcement activities will remain broadly consistent with current practice, with a focus on key changes.

Table 14.7 outlines the proposed regulatory provisions administered by councils and the Secretary to the department and the scope of the proposed change.

Table 14.7: Proposed regulatory provisions administered by councils and the Secretary to the department

<table>
<thead>
<tr>
<th>Councils</th>
<th>Secretary to the department</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Vector-borne infectious disease control</td>
<td>• Cooling tower systems</td>
</tr>
<tr>
<td>• Registered premises – infection control</td>
<td>• Legionella risks in certain premises (water delivery systems)</td>
</tr>
<tr>
<td>• Aquatic facilities</td>
<td>• Pest control</td>
</tr>
</tbody>
</table>

The Secretary to the department primarily administers the management and control of infectious diseases, micro-organism and medical conditions.

Approaches to achieve compliance

Education, routine monitoring and assisted compliance

This approach is primarily used to achieve compliance, recognising that most regulated entities want to comply with the regulations. It forms most of the compliance-related activity and is the foundation to enable compliance and achieve regulatory outcomes.

Regulators (both departmental and council authorised officers) aim to raise awareness of the regulations to assist regulated entities to comply, making sure they understand their obligations and requirements. To this end, the department recognises that collaboratively working with regulators such as councils and industry representatives enhances awareness and compliance and informs continuous improvement.

Regulators commonly use the following tools and methods to assist businesses and entities comply with the regulations, such as:

- guidance materials, advice services, website information and education campaigns
- inspections and site visits as part of routine compliance monitoring and responding to reports of noncompliance
- assisted compliance activities (such as letters and notices to discuss compliance concerns).

Where applicable, routine inspections and site visits present key opportunities for regulators to personally educate, and reiterate the changes to, regulated entities. For example, during a routine inspection of a cooling tower, a departmental authorised officer could provide information materials to the person responsible and explain the changes. Likewise, a council authorised officer could provide education and advice to proprietors of a tattooist during a routine inspection.
New registered premises – category 1 aquatic facilities

The proposed regulations broaden the scope of aquatic facilities and prescribe a category 1 aquatic facility as a prescribed business for the purposes of s. 68 of the Public Health and Wellbeing Act 2008. This means that certain aquatic facilities will need to be registered with their local council.

To facilitate registration, it is likely that a council will need to identify class 1 aquatic facilities within their municipality and introduce a registration process that is commensurate with other registered premises under the Public Health and Wellbeing Act. Many councils would be already aware of class 1 aquatic facilities within the municipality and undertake compliance monitoring.

The department appreciates that there needs to be a suitable transition time for these changes to take effect. As such, this part of the regulations will commence on 14 December 2020.

Enforcement

Chapter 13 proposes expanding infringement offences (on-the-spot fines) to many existing and new offences. This approach provides graduated and proportionate sanctions and an practical means of encouraging compliance and addressing noncompliance. It aligns with existing infringement offences under prescribed accommodation and cooling towers.

Where a penalty is attached to an offence, prosecution and the full force of the law is an option reserved for high levels of public health risk, repeated noncompliance or where a business or entity is deliberatively noncompliant. This intervention is generally used as a last resort or when other actions are ineffective. Ultimately, the regulator determines the need for prosecution on a case-by-case basis, having regard to several factors.

Monitoring implementation

Departmental regulators

The department’s programs area will undertake close monitoring of the regulatory provisions administered by the Secretary to the department. This includes routine monitoring (such as inspections and timeframes of notifiable conditions), engagement with regulated entities, outbreaks of disease and reported implementation barriers.

Monitoring implementation will be based on the department’s Better Regulatory Practice framework and departmental program area regulator plans, which set the framework for the department’s approach to regulation. This includes defining regulatory outcomes, developing regulatory interventions based on risk, identifying available regulator tools and compliance posture, setting and reviewing performance indicators and stakeholder engagement as a means of obtaining feedback.

Councils

Departmental program areas have close working relationships with council authorised officers. There are mechanisms in place to share information and provide compliance-related advice and assistance.

Accountabilities and ongoing support

There will be ongoing support for regulated entities through several means including departmental program area information phonelines, website information and direct contact with council and departmental authorised officers. Guidance materials for regulated entities will be made available on the department’s websites.
Chapter 15: Evaluation

Overview

Evaluation has a key role to measure the effectiveness of the regulations and to assess the intended improvements. Evaluation also seeks to inform continuous regulatory improvement on an ongoing basis.

Objectives

The objectives of evaluation are to ensure mechanisms are in place that will enable regulators to assess the efficiency and effectiveness of the remade Public Health and Wellbeing Regulations, and to identify whether additional improvements can be made over time. Evaluation aligns with the Victorian Government’s commitment to continuous improvement and better regulation.

Linking the regulations to objectives and outcomes

The proposed regulations aim to strengthen, clarify and build on existing requirements. Collectively, the proposed regulations and related activities are expected to support changes or reaffirm requirements that will promote and achieve public health objectives. For example, the combination of the new regulations, guidance materials and routine inspections are expected to result in certain improved behaviours and actions that reduce the transmission of infectious diseases in high risk environments.

Evaluation in this respect seeks to link the regulations (and changes) to behaviours and actions that reduce the transmission of infectious diseases. For example, complying with water quality requirements in cooling tower systems will prevent and reduce the likelihood of outbreaks of legionellosis in these environments. The number of outbreaks associated with these environments can indicate whether the regulations are meeting their objectives. Additionally, how outbreaks and high bacterial levels are controlled can indicate whether response procedures are achieving their intended outcomes.

The department acknowledges that improved data collection will assist in the evaluation process and there is a need to identify data gaps and sources.

Key stages and components of evaluation plans

Across the regulatory areas, Table 15.1 describes the key stages and components of an evaluation plan for a regulatory area. An evaluation plan will consider what information is being collected, by whom and how it will be reviewed.
Data sources
Wherever possible, the department intends to use and analyse data that is already collated and reported, and to minimise the burden of additional data capture and reporting systems. Departmental staff will generally undertake analysis using established data sources, tools and platforms including:

- compliance monitoring data from regulators (both departmental and councils) such as number of inspections, audits and compliance rates
- outbreak notifications from regulators
- Public Health Event Surveillance System, which provides comprehensive datasets on communicable (infectious) diseases in Victoria
- Commonwealth National Notifiable Diseases Surveillance systems
- Australian Bureau of Statistics resident population data
- Australian Institute of Health and Welfare.

Performance indicators
In summary, departmental regulators use performance indicators to:

- understand the relationship between their activities and outcome they seek to influence and achieve
- support communication with stakeholder about effectiveness
- support continuous improvement over time.

Table 15.1: Key stages and components of evaluations plans

<table>
<thead>
<tr>
<th>Stage</th>
<th>Component</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline data</td>
<td>Establish a range of data (qualitative and quantitative) on current outcomes to provide a baseline for future comparisons.</td>
</tr>
<tr>
<td>Implementation</td>
<td>This data will be collected during implementation to monitor and assess the immediate impact of the regulations. This may include:</td>
</tr>
<tr>
<td></td>
<td>• qualitative data about awareness and understanding of key changes</td>
</tr>
<tr>
<td></td>
<td>• ease of implementation and identified barriers</td>
</tr>
<tr>
<td></td>
<td>• compliance levels.</td>
</tr>
<tr>
<td>Ongoing monitoring</td>
<td>This data collection will enable comparison across periods of time, providing feedback about whether the objectives of the regulations are being achieved.</td>
</tr>
<tr>
<td></td>
<td>Departmental regulatory areas will determine the data indicators and performance measures to assess the effectiveness of the regulations. Generally, this could include indicators such as compliance levels, outbreaks of disease and time/action to respond to disease outbreaks.</td>
</tr>
<tr>
<td></td>
<td>Qualitative data will also form part of ongoing monitoring to provide 'on-the-ground' information about the regulations. This could be from surveys of regulators and feedback during stakeholder consultation. Additionally, qualitative data may be useful where quantitative data does not exist or cannot be obtained.</td>
</tr>
<tr>
<td></td>
<td>Additionally, the department’s Better regulatory practice framework and program area regulator plans also set a framework for measuring performance and obtaining stakeholder feedback.</td>
</tr>
<tr>
<td>Comprehensive review</td>
<td>A mid-term review (proposed at five years) will focus on the areas where significant changes are proposed (such as aquatic facilities, pest control and notifiable conditions). The review will seek to determine, whether:</td>
</tr>
<tr>
<td></td>
<td>• the regulations are achieving their objectives, such as compliance levels, changes in behaviours and actions, reduction in outbreaks of diseases and the effectiveness to control and limit the outbreak of infectious diseases</td>
</tr>
</tbody>
</table>
Stage | Component
--- | ---
• the regulations can be improved
• the impact on the Victorian public, businesses and regulators
• there are barriers or unintended consequences.

**Specific evaluation plans**
Each of the regulatory areas will identify the methods to evaluate the effectiveness of the regulations, the impact on the regulated entity and regulator, and develop mechanisms that will provide improved data and intelligence collection in future (such as where adequate data does not exist).

Evaluations will be proportionate. The scope of evaluation plans is dependent on the changes, regulated entities impacted and scale of regulatory activity. For the areas that are proposing the more substantial changes to the regulations, such as aquatic facilities, management and control of infectious diseases, micro-organisms and medical conditions and cooling tower systems, the department acknowledges that more robust evaluation for these areas will be required. There will be a need to identify data gaps and sources and consider avenues for obtaining data, noting that these aspects may need to be developed in consultation with stakeholders.

Table 15.2 provides an indicative summary of a specific evaluation approach for aquatic facilities. This approach is subject to change and is contingent on the settled regulations and development in consultation with stakeholders. Evaluation approaches for other substantial changes to regulations as detailed above will be developed in consultation with stakeholders.

**Aquatic facilities**

**Objective**
The overarching objective of the aquatic facility regulations is to reduce the burden of disease associated with aquatic facilities. Additionally, evaluation also allows consideration on the impact on aquatic facilities. The data collected will help evaluate the effectiveness the regulations and inform continuous improvement.

**Table 15.2: Indicative summary of a specific evaluation approach for aquatic facilities**

<table>
<thead>
<tr>
<th>Objective/outcome</th>
<th>Stage</th>
<th>Performance indicators</th>
<th>Data source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquatic facilities successfully manage public health risks associated with their facilities</td>
<td>Baseline data, Implementation, Ongoing</td>
<td>Water quality risk management plans are current, Improved compliance with water quality requirements, Reduced outbreaks of infectious diseases</td>
<td>Council inspection data, noting avenues and the extent of data to be obtained is being considered and further consultation may be required. Public Health Event Surveillance System, Stakeholder feedback (consultation) about awareness and understanding of the regulations</td>
</tr>
<tr>
<td>Effective compliance and enforcement tools</td>
<td>Ongoing</td>
<td>Reduced number of repeated outbreaks and noncompliance associated with a specific aquatic facility.</td>
<td>Council inspection data, reports of microbiological testing noncompliance results, outbreaks, noting avenues and the extent of data to be obtained is being</td>
</tr>
<tr>
<td>Objective/outcome</td>
<td>Stage</td>
<td>Performance indicators</td>
<td>Data source</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------------</td>
<td>-------------------</td>
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<td>----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>High level of satisfaction with compliance and enforcement tools.</td>
<td></td>
<td></td>
<td>considered and further consultation may be required. Council response protocols in relation to outbreaks Public Health Event Surveillance System Council feedback (consultation) on suitability of compliance and enforcement tools</td>
</tr>
<tr>
<td>Effective response to illness and outbreaks of infectious disease</td>
<td>Baseline data Implementation Ongoing</td>
<td>Effectiveness of response procedure for an aquatic facility suspected or implicated as a source of infections or outbreak of pathogenic microorganism. Reduced number of repeated outbreaks and noncompliance associated with a specific aquatic facility.</td>
<td>Council inspection data and feedback Council response protocols in relation to outbreaks Public Health Event Surveillance System</td>
</tr>
<tr>
<td>Impact on aquatic facilities such as costs, time, flow-on effects and any unintended consequences.</td>
<td>Ongoing</td>
<td>Costs associated with meeting new requirements, such as registration and any flow on effects to users.</td>
<td>Feedback and consultation with industry</td>
</tr>
</tbody>
</table>

A mid-term review will analyse all stages, performance indicators and data sources to determine the effectiveness of the regulations. The management and control of infectious disease outbreaks will provide important information about the effectiveness of key changes and whether further improvements can be made to mitigate public health harms, and/or reduce burdens on facilities.
Chapter 16: Consultation

Overview

The proposed Public Health and Wellbeing Regulations are planned to commence on 10 December 2019, before the current regulations expire.

The review aims to strengthen and modernise the regulations against the intention of the Public Health and Wellbeing Act 2008.

Consultation process

For the review of the Public Health and Wellbeing Regulations, the department has undertaken targeted engagement with key stakeholders. Some aspects of the consultation began in 2017, with most consultation taking place in 2018 and, in some cases, up to mid-2019.

The breadth of regulatory areas included within the Public Health and Wellbeing Regulations is expansive, covering areas that are connected only by their potential to impact on public health. Consequently, stakeholders are diverse in their interests, engagement and practices.

Consultation to date has been deliberately targeted to the businesses or individuals required to adhere to the regulations and the different agencies and organisations involved in their ongoing implementation.

The Department of Health and Human Services has now published draft regulations and a regulatory impact statement for a period of broader public consultation.

The department welcomes feedback from all interested parties, which includes the general public, industry representatives, business owners and regulators, on any matter they consider would improve the draft regulations or regulatory impact statement.

The draft regulations have not been ‘settled’, and improvements or changes may be made as a result of feedback received during the public consultation.

The targeted consultation that has already occurred across the different regulatory areas is detailed in Tables 16.1–16.4.

Summary of preliminary consultation activities

Outcomes, findings and suggested approaches gleaned during the preliminary consultation process have been synthesised into the draft regulations and reflected in this regulatory impact statement.

Table 16.1: Regulations administered by local councils

<table>
<thead>
<tr>
<th>Regulatory area</th>
<th>Consultation summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vector-borne infectious disease control</td>
<td>Informal consultation with local authorities, and their authorised officers, was undertaken during 2018 and 2019 to consider the effectiveness and efficiency of the 2009 regulations. Additional consultation was held with the Department of Land, Water and Planning and Parks Victoria. Early feedback has also been sought and received from a Traditional Owner organisation partner agency.</td>
</tr>
<tr>
<td>Aquatic facilities</td>
<td>Consultation with aquatic facilities stakeholders has been extensive, beginning in 2017.</td>
</tr>
</tbody>
</table>
Consultation has been designed to ensure the views, concerns and ideas of aquatics industry stakeholders have been heard. Government and other agencies that have been consulted for their views include local government authorities, the Department of Environment, Land, Water and Planning, Emergency Management Victoria and WorkSafe. Industry associations including Aquatics and Recreation Victoria, Lifesaving Victoria and YMCA Victoria have assisted by sending consultation information to their members and providing updates on the consultation process in their newsletters. The Department of Health and Human Services also arranged a workshop for aquatics industry stakeholders. This provided an opportunity to discuss current issues, seek feedback on problems and canvass potential solutions. Private and non-profit operators of aquatic facilities (councils, swim schools, hotels and private and non-profit facilities) and pool treatment specialists were also invited to engage in the aquatic facilities regulations review. Regional meetings have also been arranged to ensure that both metropolitan and regional views have been understood.

Registered premises – infection control
With local government being the regulator of registered premises, early consultation was undertaken with council environmental health officers during 2018 to review the effectiveness and efficiency of the current regulations. Additional engagement, particularly on higher risk cosmetic procedures, has been undertaken with medical and nursing associations and key representatives. The Australian Health Practitioner Regulation Authority (AHPRA) has also been consulted. Industry consultation and other business operators have contributed to developing the draft regulations.

<table>
<thead>
<tr>
<th>Regulatory area</th>
<th>Consultation summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooling tower systems</td>
<td>In 2018 the department produced a discussion paper on cooling tower system regulation as part of the sunset review of the Public Health and Wellbeing Regulations 2009. In August 2018 the paper was distributed to more than 50 stakeholders, with an opportunity to give feedback on specific issues and to make any general comments. The stakeholders represented the following industries:</td>
</tr>
<tr>
<td></td>
<td>• cooling tower manufacturers</td>
</tr>
<tr>
<td></td>
<td>• water treatment providers</td>
</tr>
<tr>
<td></td>
<td>• laboratories</td>
</tr>
<tr>
<td></td>
<td>• consultants</td>
</tr>
<tr>
<td></td>
<td>• Legionella risk management plan auditors</td>
</tr>
<tr>
<td></td>
<td>• other relevant agencies and associations.</td>
</tr>
<tr>
<td></td>
<td>Face-to-face meetings were conducted later in 2018, with several key stakeholders representing water treatment providers, industry representatives and Legionella risk management consultants.</td>
</tr>
<tr>
<td></td>
<td>A summary of the responses was used to develop the draft regulations and information within this regulatory impact statement.</td>
</tr>
<tr>
<td>Legionella risks in certain premises (water delivery systems)</td>
<td>In August 2018 a discussion paper on water delivery system regulation was distributed to more than 50 stakeholders with a request to give feedback on specific issues and to make any general comments. The stakeholders represented the following industries:</td>
</tr>
<tr>
<td></td>
<td>• water treatment providers</td>
</tr>
</tbody>
</table>
Consultation summary

- correctional services
- commercial vehicle washes
- laboratories
- consultants
- hospitals and health services
- aged care
- other relevant agencies and associations.

Face-to-face meetings were conducted later in 2018, with several key stakeholders representing hospitals, aged care organisations and Legionella risk management consultants.

The responses were used to develop the draft regulations and information within this regulatory impact statement.

**Pest control**

The proposed national framework to harmonise regulation of agricultural and veterinary chemicals has been widely consulted on.

In 2013 the *Decision regulation impact statement on a national scheme for assessment, registration and control-of-use of agricultural and veterinary chemicals* was published by the Commonwealth to evaluate the proposed national scheme in comparison with feasible alternative schemes.

The Minimum Training and Licensing Working Group was one of three groups established under the Agvet Chemical Task Group (ACTG) (now the Harmonised Agvet Chemicals Control of Use Task Group) to progress elements of the national framework. A representative from each of the state and territory licensing authorities formed membership of this group.

The ACTG consulted on proposals that form part of the regulatory model for a national framework to harmonise the control of use of agricultural and veterinary chemicals. In December 2017 the department’s Pest Control team wrote to stakeholders advising them of the proposal to set minimum training and licensing requirements for occupational (fee for service) users of agricultural and veterinary chemicals and the process for lodging a submission.

The department also attended regular meetings of the Australian Environmental Pest Managers Association, where proposed changes and implications for the industry were discussed.

### Table 16.3: Regulations for managing and controlling infectious diseases, micro-organisms and medical conditions

<table>
<thead>
<tr>
<th>Regulatory area</th>
<th>Consultation summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Notifications of infectious diseases, micro-organisms and medical conditions</td>
<td>In September 2018 the Laboratory Liaison Committee was engaged to develop policy proposals contained within the relevant chapter, with a workshop and other feedback mechanisms undertaken to capture the considerations of the members. The committee brings together all the relevant pathology services in Victoria to enable regular communication between the Department of Health and Human Services and pathology services. The Victorian Infectious Disease Reference Laboratory and the Microbiological Diagnostic Unit Public Health Laboratory also provided feedback and comments to policy proposals during 2018. Food regulators, food laboratories and industries, were invited to participate and provide feedback on the policy proposals, and several written submissions were received.</td>
</tr>
</tbody>
</table>
Meetings with medical and nursing associations and representatives enabled those organisations to consider the impact of the policy proposals on the public and their members. AHPRA was also consulted in 2019.

The department used its current collaborative arrangements to engage with the Department of Education and Training. The Health Protection Branch has also liaised with maternal and child health representatives to discuss these policy proposals. Additionally, medical and nursing associations, colleges and federations were engaged in 2019 to enable these organisations to consider the impact of the policy proposals on their members and the public.

<table>
<thead>
<tr>
<th>Regulatory area</th>
<th>Consultation summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Escort agencies providing information to sex workers</td>
<td>In 2018 the department contacted escort agencies in Victoria to invite their views on the current regulations. Changes in the industry, mainly due to technology, have reduced the number of escort agencies in Victoria to three. One of these agencies provided feedback to the regulation review. Advocacy groups were also contacted for their views during the review process. Other key stakeholders consulted during the review process include the Department of Justice and Community Safety.</td>
</tr>
<tr>
<td>and clients</td>
<td></td>
</tr>
<tr>
<td>Consultative councils</td>
<td>All consultative councils were asked to provide feedback on the current Public Health and Wellbeing Regulations 2009 in their respective council meetings. A consultation paper was then shared with the chairs of the councils and leadership in Safer Care Victoria for their feedback.</td>
</tr>
</tbody>
</table>

Consultation on the regulatory impact statement and draft regulations

The consultation period for this regulatory impact statement and the draft regulations is 60 days, with comments required by 5.00 pm, Monday 30 September 2019. Specific questions for each of the regulatory areas are included on the Engage website <https://engage.vic.gov.au>.

Additional feedback and alternative feedback mechanisms can also be accessed via the website. Respondents who register with the Engage website can receive updates on the progress of the review of the Public Health and Wellbeing Regulations.
Public Health and Wellbeing Regulations 2019