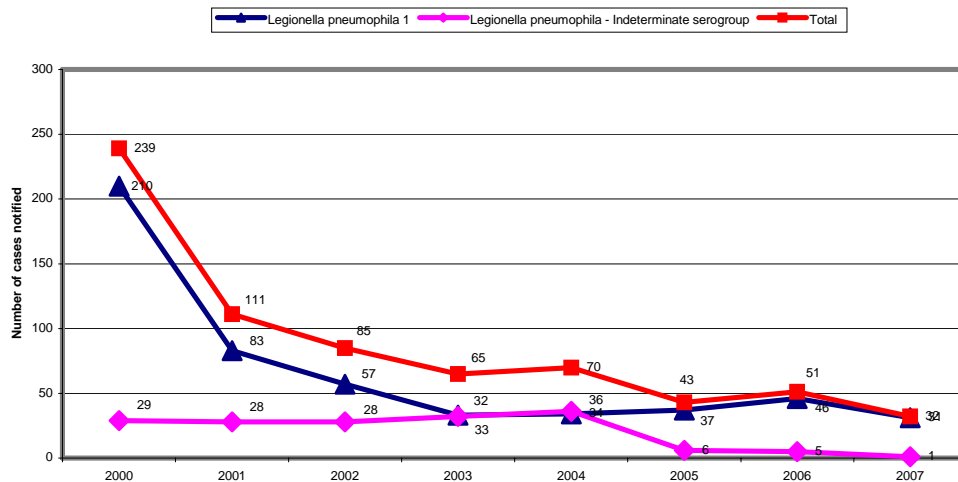


Legionella pneumophila cases

Cases of legionellosis attributed to *Legionella pneumophila*, Victoria, 2000 to 2007



| | | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |
|--|--|------|------|------|------|------|------|------|------|
| Cases of legionellosis attributed to <i>Legionella pneumophila</i> | <i>L pneumophila</i> 1 | 210 | 83 | 57 | 33 | 34 | 37 | 46 | 31 |
| | <i>L pneumophila</i> – indeterminate serogroup | 29 | 28 | 28 | 32 | 36 | 6 | 5 | 1 |
| | <i>L pneumophila</i> - total | 239 | 111 | 85 | 65 | 70 | 43 | 51 | 32 |

Note: Number of cases of legionellosis attributed to *L pneumophila* and notified to DHS under the Health (Infectious Diseases) Regulations 2001. The figures include both confirmed and probable diagnoses. Separate figures are shown for *L pneumophila* serogroup 1, *L pneumophila* indeterminate serogroups, and total *L pneumophila* notifications. The figures for 2000 include 125 cases of legionellosis associated with the Melbourne Aquarium outbreak. The above figures do not include other species of *Legionella*, such as *L longbeachae*, which have not been associated with outbreaks of legionellosis in Australia.

Source: Notifications of Infectious Diseases, DHS, Victorian Summary Report prepared for general release.

Legionellosis is a potentially fatal respiratory disease caused by bacteria belonging to the genus *Legionella*. It particularly affects the elderly, those with chronic ailments and the immunocompromised.

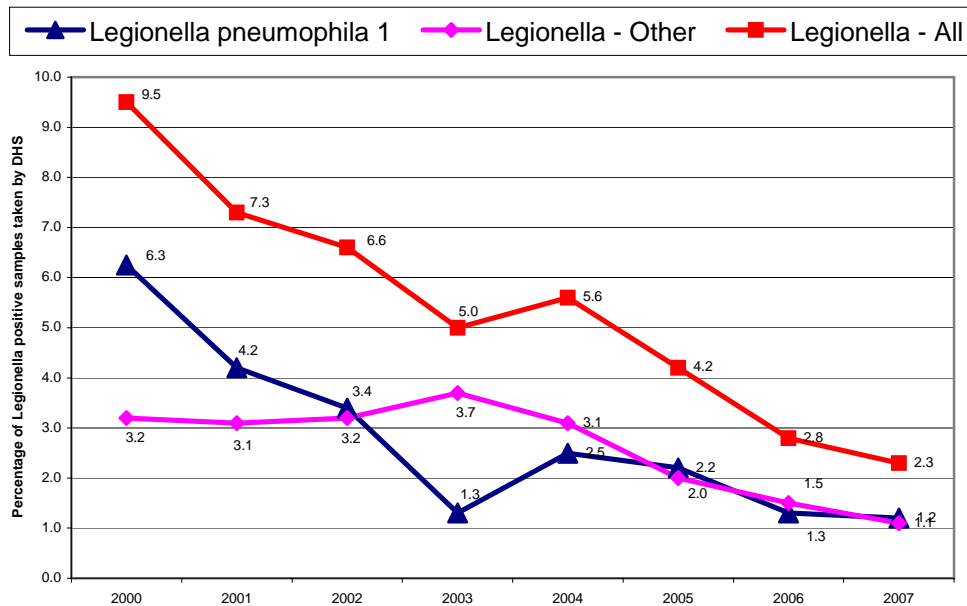
Cases of legionellosis attributed to *L pneumophila* are health outcome indicators which are one of the measures used to gauge the success of the Government's Legionella Reform Strategy. The strategy has been progressively implemented since 1 March 2001.

Until recently, each phase of the strategy's implementation has seen a marked reduction in the number of cases of legionellosis attributed to *L pneumophila* in Victoria. Notified cases attributed to *L pneumophila* have fallen from a high of 239 in 2000, to 111 in 2001, 85 in 2002, 65 in 2003 and a slight increase to 70 in 2004, 43 in 2005, 51 in 2006 and 32 in 2007. While the trend has been generally downward since the new legislation was introduced, some fluctuations are expected in the trend.

For more information: Notifications of Infectious Diseases, DHS, Victorian Summary Report www.health.vic.gov.au/ideas/downloads/daily_reports/rptVictorianSummary.pdf and Victorian Government Health Information, Environmental Health, Legionella www.health.vic.gov.au/environment/legionella/index.htm

Percentages of cooling tower water samples taken by DHS that tested positive for Legionella

Percentages of cooling tower water samples taken by DHS that tested positive for Legionella, 2000 to 2007



| | | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |
|--|--|------|------|------|------|------|------|------|------|
| Percentages of cooling tower water samples that tested positive for Legionella | <i>L pneumophila</i> 1 | 6.3 | 4.2 | 3.4 | 1.3 | 2.5 | 2.2 | 1.3 | 1.2 |
| | <i>Legionella</i> – other types and serogroups | 3.2 | 3.1 | 3.2 | 3.7 | 3.1 | 2.0 | 1.5 | 1.1 |
| | <i>Legionella</i> – all positive results | 9.5 | 7.3 | 6.6 | 5.0 | 5.6 | 4.2 | 2.8 | 2.3 |

Note: Percentages of cooling tower water samples taken by DHS that, on testing according to Australia Standard AS3896, were shown to be positive for *Legionella*. The threshold limit of detection by this method is 10 *Legionella*/mL. Separate figures are shown for *pneumophila* serogroup 1, *Legionella* other types and serogroups, and *Legionella* all positive results. During the above period, the number of samples taken by DHS p.a. varied within the range of 430 (year 2000) to 1243 (2006). During the same period, the average number of cooling towers sampled p.a. varied within the range of 5% (2000) to 19% (2004) of towers.

Source: Data pre 1 April 2001 - Microbiological Diagnostic Unit, Department of Microbiology and Immunology, University of Melbourne. Data since 1 April 2001 - Victorian Government Health Information website, Environmental Health, Legionella www.health.vic.gov.au/environment/legionella/index.htm

The percentages of cooling tower water samples taken by DHS that tested positive for *Legionella*, are exposure-based indicators which are measures used to gauge the success of the Government's Legionella Reform Strategy. The strategy has been progressively implemented since 1 March 2001.

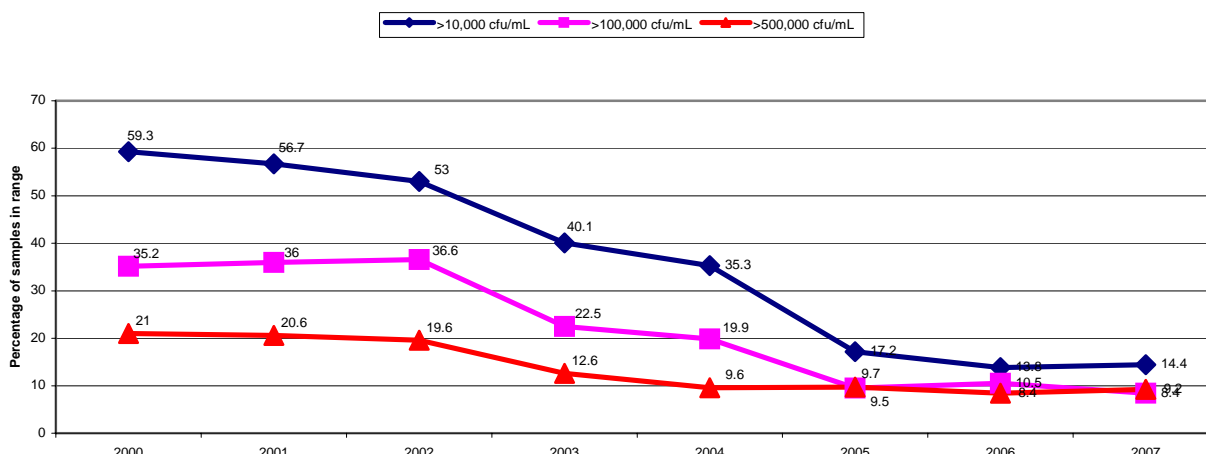
Under the strategy, DHS undertakes targeted sampling of the recirculating water of cooling tower systems throughout Victoria. The sampling may occur as part of a routine visit by DHS staff to a site with a cooling tower system; as part of an investigation into a case of legionellosis; or when investigating a complaint concerning the operation of a cooling tower system.

Until recently, each phase of the strategy's implementation has seen a marked reduction in the number of DHS cooling tower water samples that, on testing, were shown to be positive for *Legionella*. The percentages of *Legionella* positive samples were 9.5 in 2000, 7.3 in 2001, 6.6 in 2002, 5.0 in 2003, a slight increase to 5.6 in 2004, 4.2 in 2005, 2.8 in 2006 and 2.3 in 2007. While the trend has been generally downward since the new legislation was introduced, some fluctuations are expected in the trend.

For more information: Victorian Government Health Information website, Environmental Health, Legionella www.health.vic.gov.au/environment/legionella/index.htm.

Percentages of cooling tower water samples taken by DHS in higher ranges for Heterotrophic Colony Count

Percentages of cooling tower water samples taken by DHS in different ranges for Heterotrophic Colony Count



| | | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |
|--|-----------------|------|------|------|------|------|------|------|------|
| Percentages of cooling tower water samples in different ranges for HCC | >10,000 cfu/mL | 59.3 | 56.7 | 53.0 | 40.1 | 35.3 | 17.2 | 13.8 | 14.4 |
| | >100,000 cfu/mL | 35.2 | 36.0 | 36.6 | 22.5 | 19.9 | 9.5 | 10.5 | 8.4 |
| | >500,000 cfu/mL | 21.0 | 20.6 | 19.6 | 12.6 | 9.6 | 9.7 | 8.4 | 9.2 |

Note: Percentages of cooling tower water samples taken by DHS that, on testing according to Australian Standard *AS4276.3.1* were found to have Heterotrophic Colony Counts (HCC):

1. exceeding 10,000 colony forming units per millilitre (cfu/mL), ie. more than 10% of the current maximum level specified in the *Health (Legionella) Regulations 2001*.
2. exceeding 100,000 cfu/mL, ie. in excess of the current maximum level of 100,000 cfu/mL specified in the current *Health (Legionella) Regulations 2001*.
3. exceeding 500,000 cfu/mL, ie. in excess of the previous maximum level of 500,000 cfu/mL specified under the since replaced *Health (Infectious Diseases) Regulations 1990*.

During the above period, the number of samples taken by DHS p.a. varied within the range of 430 (year 2000) to 1243 (2006). During the same period, the average number of cooling towers sampled p.a. varied within the range of 5% (2000) to 19% (2004) of towers.

Source: Data pre 1 April 2001 - Microbiological Diagnostic Unit, Department of Microbiology and Immunology, University of Melbourne. Data since 1 April 2001 - Victorian Government Health Information website, Environmental Health, Legionella www.health.vic.gov.au/environment/legionella/index.htm

The percentages of cooling tower water samples taken by DHS that failed to exceed or to meet prescribed standards for HCC are exposure-based indicators which are measures used to gauge the success of the Government's Legionella Reform Strategy. The strategy has been progressively implemented since 1 March 2001.

Under the strategy, DHS undertakes targeted sampling to ascertain the HCC of the water of cooling tower systems throughout Victoria. HCC is a useful indicator both of the efficacy of biocidal treatment of cooling tower water, and the general cleanliness of cooling tower systems.

Until recently, each phase of the strategy's implementation has seen marked positive improvements in the percentages of DHS cooling tower water samples that, on testing, were shown to surpass or fail to comply with prescribed standards for HCC. While the trend since the new legislation was introduced has been consistently positive, some fluctuations can be expected in the figures in the future.

For more information: Victorian Government Health Information website, Environmental Health, Legionella www.health.vic.gov.au/environment/legionella/index.htm