

## 5. Legionellosis

### Surveillance objectives

The objectives of legionellosis surveillance are to:

- Monitor the epidemiology of legionellosis in terms of time, person and place;
- Detect and investigate outbreaks to identify settings where others may have been exposed with appropriate interventions to minimise the risk of further transmission;
- Communicate the risks of legionellosis to those likely to have been exposed to implicated settings, and; the patterns and trends about legionellosis to the public, government and other key stakeholders;
- Inform the development of prevention strategies.

### Summary of notifications

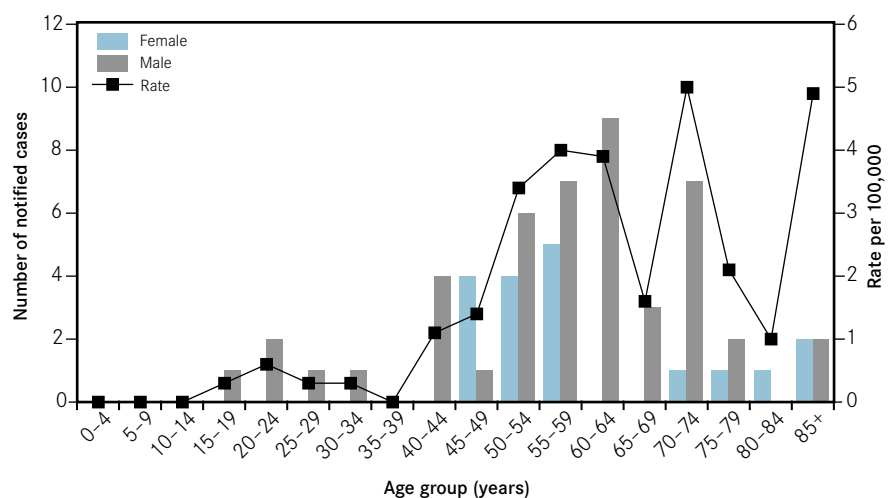
Notifications for 65 cases of confirmed and probable legionellosis were made to the department in 2005, a 36 per cent decrease from the 102 cases notified in 2004. Forty-six cases (71 per cent) were male; there were 18 female cases (28 per cent) and one person of indeterminate sex. The median age of notified cases was 57 years (range: 15–96 years). In general, age-specific notification rates increased with age for age groups over 40 years, but were lower for the 65–69, 75–79 and 80–84 years age groups (figure 19). More than 78 per cent of cases were aged 50 years or over.

The highest number of cases and notification rates were in the three metropolitan regions (figure 20). There were three or fewer cases in the other regions, including none in Loddon Mallee.

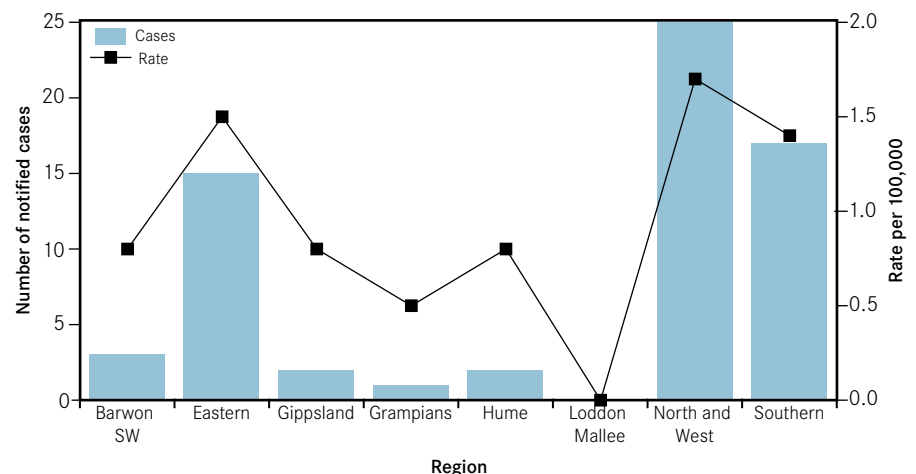
More than half of the notified legionellosis cases in 2005 (57 per cent) were *Legionella pneumophila* serogroup 1; a further six cases were *L. pneumophila* for which a serogroup could not be determined (table 16). Approximately one fifth of notified cases were due to *L. longbeachae*. Urinary antigen detection was the most

common diagnostic method, in 42 cases (65 per cent). This method was used in the diagnosis for 36 (97 per cent) of *L. pneumophila* serogroup 1 cases. Serology was the next most frequent diagnostic method for 25 cases (38 per cent), particularly for *L. longbeachae* of which there were ten cases (83 per cent).

**Figure 19: Notified cases and notification rates of legionellosis by age group and sex, Victoria, 2005**



**Figure 20: Notified cases and notification rates of legionellosis by region, Victoria, 2005**



Four deaths were attributable to legionellosis in 2005, corresponding to a case fatality rate of six per cent. One death was due to *L. pneumophila* serogroup 1 and three due to *Legionella* not otherwise specified.

**Table 16: Notified cases of legionellosis by species/serogroup, Victoria, 2005**

Species/serogroup	Cases (per cent)
<i>L. pneumophila</i> serogroup 1	37 (57)
<i>L. pneumophila</i> other	6 (9)
<i>L. longbeachae</i>	12 (18)
<i>L. micdadei</i>	1 (2)
<i>Legionella</i> not otherwise specified	9 (14)
<b>Total</b>	<b>65 (100)</b>

**Table 17: Notified cases of legionellosis by occupation, Victoria, 2005**

Occupation	Cases (per cent)
Retiree/pensioner	22 (34)
Not stated/unknown	14 (21)
Tradesperson/manufacturing	10 (15)
Office/sales/retail worker	6 (9)
Driver	3 (4)
Home duties	2 (3)
Hospitality worker	2 (3)
Security officer	2 (3)
Community worker	1 (2)
Farmer	1 (2)
Healthcare worker	1 (2)
Unemployed	1 (2)
<b>Total</b>	<b>65 (100)</b>

### Risk factors

Data on employment/occupational status were available for 51 cases (78 per cent), of which retirees or pensioners comprised nearly one half (table 17). The most common occupation group among employed cases was trades and manufacturing. Additional risk factor data were collected for 60 cases (92 per cent). Among these cases, 28 (47 per cent) reported having a chronic medical condition and 20 (33 per cent) reported being smokers. Eight of the twelve *L. longbeachae* cases reported gardening or use of potting mixes in the incubation period.

### Outbreak and other investigations

One outbreak and two clusters – all involving *L. pneumophila* serogroup 1 and occurring in metropolitan Melbourne – were investigated in 2005. The first occurred among two workplace employees in February, in which spray from a contaminated spot welding cooling system was thought to be the source of transmission; there was significant growth of *L. pneumophila* serogroup 1 from a spot welding bath sample.

Two clusters were investigated in August and November, and involved two and five cases respectively. Each cluster was identified following the identification of common exposures between cases and temporal proximity of illness onsets. However, neither investigation identified any environmental evidence for common sources of infection.

### Comment

The numbers of annually notified cases of legionellosis have steadily declined from a peak of 121 in 2001 to 65 in 2005. The decline in notified cases has occurred since the introduction of the Health (Legionella) Regulations 2001, although it is not possible to quantify the contribution of the legislation to this reduction. Consistent with previous years, surveillance data indicate age (particularly those aged 50 years or older) and smoking as the most significant risk factors associated with legionellosis.

Positive *Legionella* antibody results are common in healthy adult populations but are not necessarily indicative of acute infections; acute infection needs to be confirmed by parallel testing of convalescent serum three to six weeks after the onset of symptoms. Medical practitioners considering legionellosis in the differential diagnosis are also advised to undertake *Legionella* urinary antigen testing, which is rapid and sensitive. Collection of sputum samples for culture is important in epidemiological investigations, even if urinary antigen and serology testing results are positive, as molecular subtyping can be used to compare patient and environmental isolates and potentially identify epidemiological links.