

5. Legionellosis

Summary of notifications

The department received notifications for 102 cases of confirmed and probable legionellosis in 2004, representing a 13 per cent increase on 2003. Of the 102 cases, 69 (68 per cent) were male and 33 (32 per cent) were female, with a male:female ratio of 2.1:1. The notification rate was 2.1 per 100,000 population. The median age of cases notified was 62 years (range: 20-89 years). Age-specific notification rates rose steadily with age from 0.3 per 100,000 people aged 20-24 years, to 9.9 per 100,000 people aged 75-79 years (figure 18).

There were 34 cases of *Legionella pneumophila* serogroup 1 (33 per cent of total notifications), the most commonly reported species and serogroup (table 13). There were 36 notified cases of *L. pneumophila* in which a serogroup could not be determined; a majority (92 per cent) of these were from serological

testing only which, unlike urinary antigen testing, is unable to distinguish between different *L. pneumophila* serogroups. The method of diagnosis for *Legionella* cases in 2004 is described in table 14.

Table 13: Notified cases of legionellosis, by species/serogroup, Victoria, 2004

Species/serogroup	Number	Per cent
<i>L. pneumophila</i> serogroup 1	34	33
<i>L. pneumophila</i> indeterminate serogroup	36	35
<i>L. longbeachae</i>	26	26
<i>L. micdadei</i>	4	4
<i>Legionella</i> not otherwise specified	2	2
Total	102	100

Seven deaths were attributable to *Legionella* infection, corresponding to a case fatality rate of seven per cent. Three deaths were due to *L. longbeachae*, and one death each attributable to infections of *L. pneumophila*, *L. pneumophila* serogroup 1, *L. micdadei* and not otherwise specified *Legionella*.

The highest notification rates were for the Hume, Eastern Metropolitan and North and West Metropolitan regions (2.7, 2.6 and 2.5 per 100,000). The lowest rate of 0.9 cases per 100,000 was recorded in the Grampians region (figure 19).

Risk factors

Information on employment/occupational status was available for 96 cases (94 per cent). Forty-four notified cases (43 per cent) were retirees and/or pensioners. The most common occupation nominated by employed cases was trades and manufacturing (table 15).

Figure 18: Notified cases of legionellosis, by age group, sex and rate per 100,000 population, Victoria, 2004

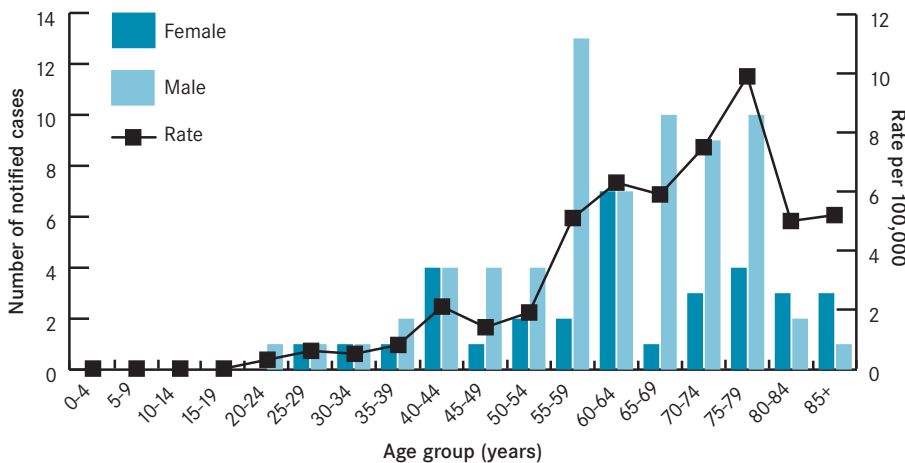


Table 14: Notified cases of legionellosis, by species/serogroup and method of diagnosis, Victoria, 2004

Method of diagnosis	<i>L. pneumophila</i> serogroup 1	<i>L. pneumophila</i> indeterminate serogroup	<i>L. longbeachae</i>	<i>L. micdadei</i>	<i>Legionella</i> not otherwise specified	Total
Urinary antigen	21	1	0	0	1	22
Serology	0	33	23	3	1	61
Serology & urinary antigen	5	1	0	0	0	6
Serology & PCR	0	0	1	0	0	1
Culture & PCR	0	0	1	0	0	1
Urinary antigen & culture	3	0	0	0	0	3
Urinary antigen and PCR	3	0	0	0	0	3
Serology & culture & PCR	0	0	0	1	0	1
Serology & urinary antigen & culture	1	0	0	0	0	1
Serology & urinary antigen & PCR	1	1	1	0	0	3
Total	34	36	26	4	2	102

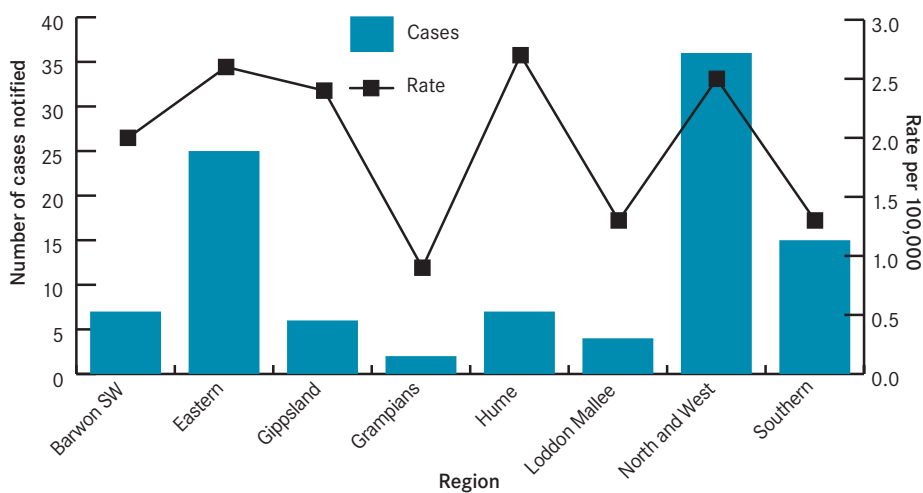
Figure 19: Notified cases of legionellosis, by region and rate per 100,000 population, Victoria 2004

Table 15: Notified cases of legionellosis, by employment/occupation status, Victoria, 2004

Occupation/ employment status	Number	Per cent
Retiree/pensioner	44	43
Office/sales worker	8	8
Tradesperson/ manufacturing	14	14
Home duties	12	12
Driver	6	6
Unemployed	2	2
Not stated/unknown	9	9
Healthcare worker	3	3
Nurseryperson	1	1
Vegetable grower	1	1
Student	1	1
Farmer	1	1
Total	102	100

Outbreak and other investigations

There were three outbreaks in 2004. All were *L. pneumophila* serogroup 1; two occurred in the Melbourne metropolitan area and the other in the Hume region. The first outbreak occurred in March and involved three cases; all males aged between 56 and 65. All cases had an association with a street in a light industrial area of Melbourne's south-eastern suburbs where they had all conducted work duties. Molecular typing was conducted on *L. pneumophila* serogroup 1 isolates obtained from one case and three cooling towers in the common exposure vicinity. The molecular profiles of isolates from two cooling towers were related – but not an exact match – to that of a case and were unable to be excluded as the source of the outbreak.

A second outbreak in the metropolitan area occurred in April among two male co-workers aged 55 and 58 although no source was identified.

The third outbreak occurred in a regional town during June and July and involved four cases (two males and two females) aged between 64 and 78 years, and a 20-year-old male. A cooling tower of a commercial premises that was within the common exposure area identified by cases was found to be positive for *L. pneumophila* serogroup 1. Molecular subtyping of isolates from the cooling tower and one of the cases was an exact match.

Comment

This year saw the first increase in legionellosis cases since a peak in 2000. Low positive *Legionella* titres are frequently found in patients who do not have acute infections, possibly reflecting past exposure or cross-reactivity with other organisms. Medical practitioners considering legionellosis in the differential diagnosis are advised to consider confirmation with a *Legionella* urinary antigen test and to arrange collection of a second (convalescent) serum sample three to six weeks after the onset of symptoms. This second sample should ideally be sent to the same laboratory as the first sample so that both samples can be tested in parallel.