



LEGIONELLA PNEUMONIA 2006

No. 41, 2007

Notified cases

2006 saw a total of 123 notified cases of legionella pneumonia, 81 males and 42 females. The median age was 62 years, range 6-95 years. In 51 cases, a reminder was sent for a written notification. In 94 cases the diagnosis was verified; please refer to EPI-NEWS 43/03 for the verification criteria. Among the non-verified cases, 17 were demonstrated by PCR for *L. pneumophila* and in 12 cases only positive antibody titres were detected. A predisposing factor was stated for 48 patients. A total of 26 (21%) patients died, [Table 1](#).

Table 1. Notified cases of legionella pneumonia, 2006

Category	To- tal	Veri- fied	Disp. fact.	Deaths
Travel-assoc.	33	28	5	2
Nosocomial	6	5	6	4
Other, DK	84	61	37	20
Total	123	94	48	26

[Table 2](#) shows notified and verified cases presumably acquired in Denmark by county.

Table 2. No. and incidence per 10⁶ of notified and verified legionella pneumonia cases acquired in Denmark, 2006 (2005)

County	Incidence	
	2006	(2005) per 10 ⁶
Cph. Municip.	4	(4) 8.0
Frb. Municip.	0	(0) -
Copenhagen	8	(10) 12.9
Frederiksborg	6	(4) 15.8
Roskilde	3	(2) 12.4
West Zealand	5	(5) 16.3
Storstrom	1	(2) 3.8
Bornholm	1	(1) 23.1
Funen	4	(4) 8.4
South Jutland	3	(4) 11.9
Ribe	4	(2) 17.8
Vejle	5	(3) 13.9
Ringkobing	5	(3) 18.2
Aarhus	8	(6) 12.1
Viborg	4	(2) 17.0
North Jutland	8	(5) 16.2
Unknown	0	(1) -
Total	69¹⁾	(58)²⁾ 12.7

¹⁾ Incl. 3 travel-associated cases acquired in Denmark

²⁾ Incl. 2 travel-associated cases acquired in Denmark

Travel-associated /imported cases

A total of 33 cases were travel associated, [Table 3](#). Among these, 26 were notified to the European Working Group for Legionella Infections (EWGLI). The reason that not all cases were notified to the EWGLI was insufficient travel information,

Figure 1. Notified and verified cases of legionella in Denmark, 2000-2006

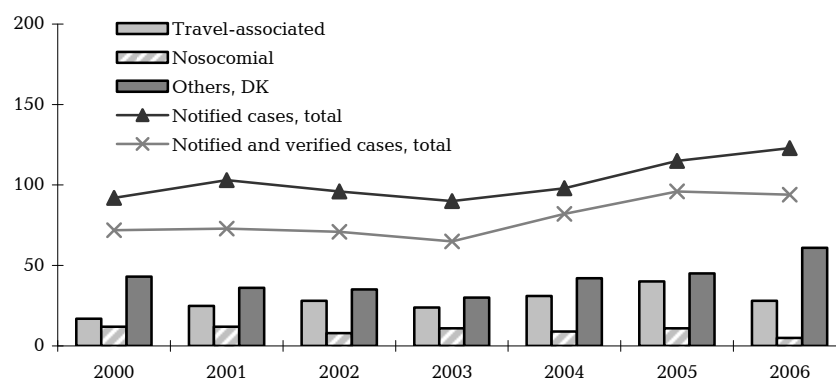


Table 3. Travel-associated cases of legionella pneumonia by country of infection, 2006

Country of infection	No. of cases
Italy	8
Germany	7
Denmark	3
France	3
Turkey	3
Spain	2
Greece	1
Bulgaria	1
Portugal	1
Outside of Europe	4
Total	33

stays at private addresses in connection with the journey, or uncertain diagnosis. The most frequently notified countries of infection were Italy and Germany. In comparison with previous years, the number of cases acquired in Turkey decreased. A corresponding decrease was also observed in some North European countries. Non-European countries of infection included Thailand, Sri Lanka and Egypt. Four outbreaks abroad involved Danish travellers. Furthermore, three Danish cases were presumably acquired during travels in Denmark.

A Swedish tourist was probably infected during a stay at a Danish aqua park, where a high colony count and a legionella type corresponding to the patient's infection was found in the showering water.

Nosocomial cases

Six cases of nosocomial legionella pneumonia were notified, and the diagnosis was verified in five of these. All six had predisposing factors and four cases were fatal.

Laboratory-diagnosed cases

The SSI has knowledge of 115 laboratory-diagnosed cases of legionella pneumonia in 2006, including 96

verified cases and 19 cases only detected by legionella PCR for *L. pneumophila*. In four of these cases, no notification was received. Legionella species were isolated by culture from 58 patients. The distribution of the isolates was: 35 *L. pneumophila* serogroup (sg) 1 (23 Pontiac and 12 non-Pontiac), 14 sg 3, two sg 6, two sg 10, one sg 5, one sg 15, one isolate was not received for serogroup determination, one *L. micdadei* and one *L. bozemanii*.

Commentary

The number of verified legionella cases observed in the period 2000-2006 is within the expected random variation, [Figure 1](#). However, an increase was observed in the non-nosocomial cases acquired in Denmark in the period 2003-2006 (Others, DK), and the aggregate number of notified cases was higher in 2006 than in the preceding years. Compared with 2005, the increase is limited to the months of August, September and October. In this period of 2006, a total of 39 cases acquired in Denmark were notified as opposed to 18 cases in 2005. The 2006 increase was most prominent among cases detected by PCR and antibodies.

Even more substantial increases have been found in the same period in England and Holland. However, the increases cannot be ascribed to outbreaks and corresponding increases have not been observed in other European countries.

The possible increase in the Danish legionella pneumonia occurrence is being watched closely.

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Individually notifiable diseases

Number of notifications received in the Department of Epidemiology, SSI (2007 figures are preliminary)

Table 1	Week 40 2007	Cum. 2007 ¹⁾	Cum. 2006 ¹⁾
AIDS	1	43	32
Anthrax	0	0	0
Botulism	0	0	0
Cholera	0	0	0
Creutzfeldt-Jakob	0	6	16
Diphtheria	0	0	0
Food-borne diseases	17	499	428
of these, infected abroad	5	97	106
Gonorrhoea	1	283	338
Haemorrhagic fever	0	0	0
Hepatitis A	0	19	28
of these, infected abroad	0	9	16
Hepatitis B (acute)	0	22	15
Hepatitis B (chronic)	4	256	258
Hepatitis C (acute)	0	5	6
Hepatitis C (chronic)	14	481	391
HIV	13	236	178
Legionella pneumonia	2	85	95
of these, infected abroad	1	20	28
Leprosy	0	0	0
Leptospirosis	2	12	8
Measles	0	2	27
Meningococcal disease	0	55	65
of these, group B	0	30	34
of these, group C	0	18	13
of these, unspec. + other	0	7	18
Mumps	1	6	16
Neuroborreliosis	1	72	58
Ornithosis	0	7	9
Pertussis (children < 2 years)	2	59	37
Plague	0	0	0
Polio	0	0	0
Purulent meningitis			
Haemophilus influenzae	0	2	4
Listeria monocytogenes	0	8	7
Streptococcus pneumoniae	0	82	70
Other aethiology	0	11	8
Unknown aethiology	0	12	17
Under registration	1	6	-
Rabies	0	0	0
Rubella (congenital)	0	0	0
Rubella (during pregnancy)	0	0	0
Shigellosis	19	176	47
of these, infected abroad	2	34	41
Syphilis	3	79	53
Tetanus	0	2	2
Tuberculosis	2	312	284
Typhoid/paratyphoid fever	0	18	24
of these, infected abroad	0	17	23
Typhus exanthematicus	0	2	0
VTEC/HUS	3	122	108
of these, infected abroad	3	39	36

¹⁾ Cumulative number 2007 and in corresponding period 2006

Selected laboratory diagnosed infections

Number of specimens, isolates, and/or notifications received in SSI laboratories

Table 2	Week 40 2007	Cum. 2007 ²⁾	Cum. 2006 ²⁾
Bordetella pertussis (all ages)	8	157	161
Gonococci	4	275	329
of these, females	1	42	59
of these, males	3	233	270
Listeria monocytogenes	0	41	37
Mycoplasma pneumoniae			
Resp. specimens ³⁾	5	284	319
Serum specimens ⁴⁾	8	341	282
Streptococci ⁵⁾			
Group A streptococci	0	89	118
Group B streptococci	1	74	76
Group C streptococci	1	17	19
Group G streptococci	5	95	112
S. pneumoniae	13	789	755
Table 3	Week 38 2007	Cum. 2007 ²⁾	Cum. 2006 ²⁾
MRSA	13	449	-
Pathogenic int. bacteria ⁶⁾			
Campylobacter	69	3030	2346
S. Enteritidis	8	402	463
S. Typhimurium	3	255	295
Other zoon. salmonella	3	503	514
Yersinia enterocolitica	2	206	135
Verocytotoxin- producing E. coli	1	122	113
Enteropathogenic E. coli	4	144	205
Enterotoxigenic E. coli	12	225	188

²⁾ Cumulative number 2007 and in corresponding period 2006

³⁾ Resp. specimens with positive PCR

⁴⁾ Serum specimens with pos. complement fixation test

⁵⁾ Isolated in blood or spinal fluid

⁶⁾ See also www.germ.dk