

Legionnaires' disease

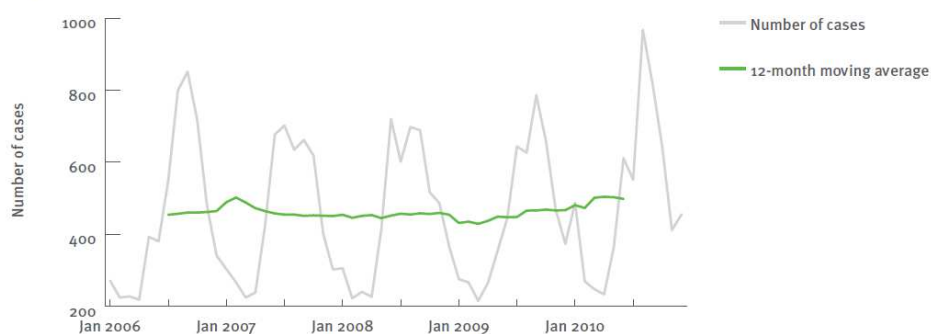
- Legionnaires' disease remains an uncommon, mainly sporadic infection with low confirmed case rates in EU/EEA countries (1.16 per 100 000 population), despite a 17% increase between 2009 and 2010.
- In 2011, two outbreaks were reported: one in Italy (17 cases) and one in Greece (15 cases).
- The majority of cases were reported by a small number of countries: France, Italy and Spain accounted for 62% of all cases. Under-ascertainment remains a particular issue in south-eastern Member States.
- Regular checks for *Legionella* combined with appropriate control measures in man-made water systems may prevent a significant number of Legionnaires' disease cases.

Legionnaires' disease is a multisystem disease involving pneumonia due to gram-negative bacteria (*Legionella* spp.) which are found in freshwater environments around the world¹. Humans are infected by inhalation of aerosols containing *Legionella*. The infection can be fatal and outbreaks from a common environmental source can occur. Cases of Legionnaires' disease are mainly reported in persons in older age groups, especially in males.

Epidemiological situation in 2010

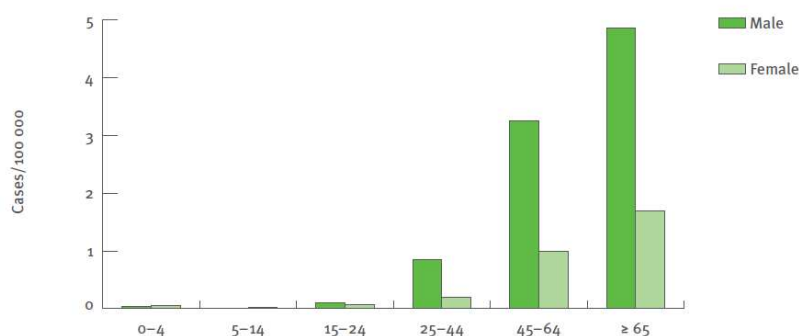
In 2010, 6299 confirmed and probable² cases were reported by 29 countries. France, Italy and Spain accounted for 62% of all cases (Table 2.3.12). The overall rate of confirmed cases was 1.16 per 100 000 population in 2010, significantly higher than in the previous year³. This increase was mainly driven by a relatively small number of countries reporting the majority of cases, notably France, Germany and the Netherlands. The

Figure 2.3.30. Trend and number of reported confirmed and probable Legionnaires' disease cases in EU/EEA countries, 2006–10



Source: Country reports from Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Norway, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, United Kingdom.

Figure 2.3.31. Rates of reported confirmed and probable cases of Legionnaires' disease, by age and gender, EU/EEA countries, 2010



Source: Country reports from Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Lithuania, Luxembourg, Malta, Norway, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, United Kingdom.

number of reported cases has been fairly stable over the past five years. Most cases in 2010 were community acquired (71%), 20% were travel associated, 8% were associated with healthcare facilities, and one per cent was associated with other settings. Of 4 339 cases with a known outcome, 438 were reported to have died, giving a case fatality ratio (CFR) of 10%.

Distribution by age and gender

In 2010, people aged 65 years and older accounted for 2 652 (42%) of 6 283 cases with known age. The male-to-female ratio was 2.8:1. The rates increased with age, from <0.1 per 100 000 in those under 25 years of age to 2.9 in persons aged 65 years and above (4.6 per 100 000 in males and 1.6 in females) (Figure 2.3.31).

Seasonality

As in previous years, distribution of cases by month of onset showed a peak in August, with 60% of all cases

reported during the warm season (from June to October) (Figure 2.3.32).

Enhanced surveillance

In addition to the retrospective surveillance of Legionnaires' disease, the European Legionnaires' Disease Surveillance Network (ELDSNet) conducts daily surveillance of travel-associated cases. In 2010, 864 travel-associated cases were reported, which was very similar to the number of cases reported in previous years⁴. A total of 100 new travel-associated clustersⁱ were notified in 2010, 44 of which included cases from two or more countries and would therefore probably not have been detected without ELDSNet surveillance. *Legionella* was found in 61 environmental investigations following cluster cases. Of 100 accommodation

ⁱ A cluster is defined as two or more cases who stayed at the same public accommodation site in the two to 10 days before onset of illness and whose onsets were within the same two-year period.

Table 2.3.12. Number and rate of reported confirmed and probable cases of Legionnaires' disease in EU/EEA countries, 2006–10

Country	National coverage	Report type	Total cases	2010			2009		2008		2007		2006	
				Confirmed cases and notification rate per 100 000 population			Confirmed cases and notification rate per 100 000 population		Confirmed cases and notification rate per 100 000 population		Confirmed cases and notification rate per 100 000 population		Confirmed cases and notification rate per 100 000 population	
				Cases	Rate	Age standardised rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Austria	Y	C	80	76	0.91	0.87	83	0.99	97	1.17	101	1.22	64	0.78
Belgium	Y	C	89	89	0.82	0.79	64	0.60	0	0.00	77	0.73	131	1.25
Bulgaria	Y	C	1	1	0.01	0.01	2	0.03	1	0.01	0	0.00	1	0.01
Cyprus	Y	C	2	2	0.25	0.32	3	0.38	9	1.14	1	0.13	1	0.13
Czech Republic	Y	C	38	28	0.27	0.26	11	0.11	13	0.13	17	0.17	13	0.13
Denmark	Y	C	133	99	1.79	1.75	100	1.81	103	1.88	106	1.95	85	1.57
Estonia	Y	C	0	0	0.00	0.00	6	0.45	7	0.52	3	0.22	4	0.30
Finland	Y	C	24	10	0.19	0.17	8	0.15	5	0.09	13	0.25	7	0.13
France	Y	C	1540	1508	2.33	2.32	1181	1.84	1205	1.88	1337	2.10	1386	2.19
Germany	Y	C	688	550	0.67	0.59	378	0.46	406	0.49	392	0.48	363	0.44
Greece	Y	C	9	9	0.08	0.07	15	0.13	26	0.23	22	0.20	30	0.27
Hungary	Y	C	60	19	0.19	0.19	14	0.14	20	0.20	11	0.11	6	0.06
Ireland	Y	C	11	11	0.25	0.31	7	0.16	9	0.20	14	0.33	11	0.26
Italy	Y	C	1232	1182	1.96	1.74	1159	1.93	1144	1.92	906	1.53	903	1.54
Latvia	Y	C	6	6	0.27	0.26	3	0.13	5	0.22	2	0.09	1	0.04
Lithuania	Y	C	1	1	0.03	0.03	0	0.00	0	0.00	0	0.00	0	0.00
Luxembourg	Y	C	10	10	1.99	2.02	5	1.01	4	0.83	5	1.05	9	1.92
Malta	Y	C	6	6	1.45	1.33	5	1.21	2	0.49	14	3.43	2	0.49
Netherlands	Y	C	466	412	2.49	2.47	214	1.30	309	1.88	300	1.83	418	2.56
Poland	Y	C	36	6	0.02	0.02	4	0.01	6	0.02	0	0.00	0	0.00
Portugal	Y	C	128	125	1.18	1.13	93	0.88	91	0.86	78	0.74	89	0.84
Romania	Y	C	1	1	0.01	0.00	1	0.01	1	0.01	0	0.00	-	-
Slovakia	Y	C	4	4	0.07	0.07	1	0.02	5	0.09	2	0.04	2	0.04
Slovenia	Y	C	58	50	2.44	2.31	61	3.00	44	2.19	32	1.59	-	-
Spain	Y	C	1150	1142	2.48	2.43	1205	2.63	1220	2.69	1123	2.53	1328	3.04
Sweden	Y	C	100	87	0.93	0.88	114	1.23	153	1.67	127	1.39	77	0.85
United Kingdom	Y	C	376	367	0.59	0.59	372	0.60	394	0.64	486	0.80	581	0.96
EU total	-	-	6 249	5 801	1.16	1.20	5 109	1.02	5 279	1.06	5 169	1.04	5 512	1.17
Iceland	Y	C	2	2	0.63	0.87	6	1.88	2	0.63	4	1.30	1	0.33
Liechtenstein	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Norway	Y	C	48	43	0.89	0.91	32	0.67	35	0.74	33	0.71	26	0.56
Total	-	-	6 299	5 846	1.16	1.20	5 147	1.02	5 316	1.06	5 206	1.04	5 539	1.17

Source: Country reports. Y: Yes; N: No; A: Aggregated data report; C: Case-based report; -: No report; U: Unspecified.

sites associated with clusters, five were published on the ECDC website because of unsatisfactory or uncertain control measures.

Updates from epidemic intelligence 2011

In 2011, ECDC monitored seven threats related to Legionnaires' disease, three of which were notified through the Early Warning and Response System (EWRS), including two outbreaks in EU/EEA countries.

An outbreak of Legionnaires' disease was associated with travel to the town of Lazise, Veneto, Italy, in July and August 2011^{5,6}. A total of 17 cases originating from five EU countries were reported.

A second outbreak reported through ELDSNet was associated with travel to Corfu, Greece, in September and October 2011. Of 15 cases reported, 14 were British residents. The source could not be ascertained and the typing of the strains revealed that this was not a point-source outbreak.

Discussion

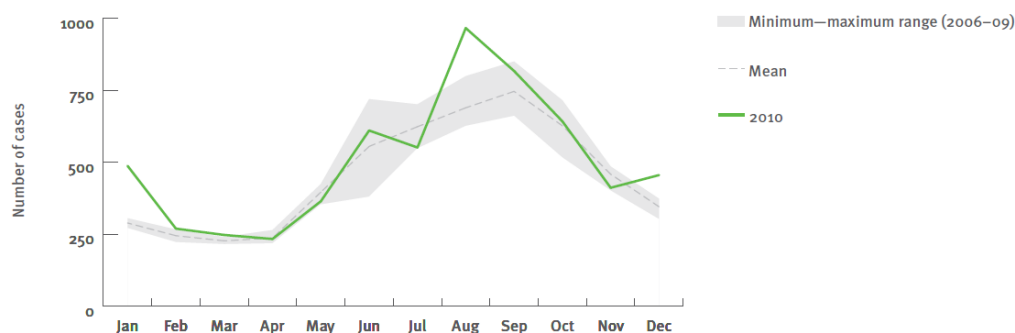
With a significant increase in 2010, the confirmed case rate for Legionnaires' disease in the EU/EEA in 2010 nearly returned to the peak level reached in 2006. The increase was mainly driven by a small number of countries which reported the majority of cases. Reported rates remain particularly low in a number of south-eastern European countries, such as Bulgaria, Greece and Romania, where climate conditions are conducive to the growth of *Legionella*. Rates of confirmed cases in those countries are expected to increase with the use of state-of-the-art diagnostic tests and improved reporting of cases. Additional factors such as global warming, the proliferation of man-made water systems and an aging population could also lead to an overall rise in the number of Legionnaires' disease cases. Regular checks for *Legionella* combined with appropriate control measures in man-made water systems may prevent a significant number of cases⁷.

In 2010, the number of notified travel-associated Legionnaires' disease cases was comparable to the number of cases reported in previous years. Near real-time surveillance at the European level has proved its usefulness, with 44% of clusters unlikely to have been detected without ELDSNet. The detection and follow-up of two major outbreaks in 2011 also benefited from this network.

References

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Figure 2.3.32. Seasonal distribution of reported confirmed and probable cases of Legionnaires' disease, in EU/EEA countries, 2006–10



Source: Country reports from Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Malta, Netherlands, Norway, Poland, Slovakia, Spain, Sweden, United Kingdom.

Surveillance systems overview

Country	Data source	Compulsory (Cp)/ voluntary (V)/other (O)	Comprehensive (Co)/ sentinel (Se)/other (O)	Active (A)/passive (P)	Case based (C)/ aggregated (A)	Data reported by				National coverage
						Laboratories	Physicians	Hospitals	Others	
Austria	AT-Epidemiegesetz	Cp	Co	P	C	Y	Y	Y	Y	Y
Belgium	BE-FLA_FRA_LABNET_REFLAB	Cp	O	A	C	Y	Y	Y	-	Y
Bulgaria	BG-NATIONAL_SURVEILLANCE	Cp	Co	P	A	Y	Y	Y	Y	Y
Cyprus	CY-NOTIFIED_DISEASES	Cp	Co	P	C	N	Y	N	N	Y
Czech Republic	CZ-EPIDAT	Cp	Co	A	C	N	Y	Y	N	Y
Denmark	DK-MIS	Cp	Co	P	C	N	Y	N	N	Y
Estonia	EE-LEGIONELLOSIS	Cp	Co	P	C	Y	Y	Y	Y	Y
Finland	FI-NIDR	Cp	Co	P	C	Y	Y	N	N	Y
France	FR-MANDATORY_INFECTIOUS_DISEASES	Cp	Co	P	C	Y	Y	Y	Y	Y
Germany	DE-SURVNET@RKI-7.1	Cp	Co	P	C	Y	N	N	Y	Y
Greece	GR-NOTIFIABLE_DISEASES	Cp	Co	P	C	Y	Y	Y	N	Y
Hungary	HU-EFRIR	Cp	Co	P	C	Y	Y	Y	N	Y
Iceland	IS-SUBJECT_TO_REGISTRATION	Cp	Co	P	C	Y	Y	Y	N	Y
Ireland	IE-CIDR	Cp	Co	P	C	Y	Y	Y	N	Y
Italy	IT-LEGIONELLOSIS	Cp	Co	P	C	N	Y	Y	N	Y
Latvia	LV-BSN	Cp	Co	P	C	Y	Y	Y	N	Y
Lithuania	LT-COMMUNICABLE_DISEASES	Cp	Co	P	C	Y	Y	N	N	Y
Luxembourg	LU-SYSTEM ₁	Cp	Co	P	C	Y	Y	N	N	Y
Malta	MT-DISEASE_SURVEILLANCE	Cp	Co	P	C	Y	Y	Y	Y	Y
Netherlands	NL-OSIRIS	Cp	Co	P	C	Y	Y	N	Y	Y
Norway	NO-MSIS_A	Cp	Co	P	C	Y	Y	Y	N	Y
Poland	PL-NATIONAL_SURVEILLANCE	Cp	Co	P	C	Y	Y	Y	N	Y
Portugal	PT-LEGIONELLOSIS	Cp	Co	P	C	Y	Y	N	N	Y
Romania	RO-RNSSy	Cp	Co	P	C	N	N	Y	N	Y
Slovakia	SK-EPIS	Cp	Co	A	C	Y	Y	Y	N	Y
Slovenia	SI-SURVIVAL	Cp	Co	P	C	Y	Y	Y	N	Y
Spain	ES-STATUTORY_DISEASES	Cp	Co	P	C	N	Y	Y	N	Y
Sweden	SE-SMINET	Cp	Co	P	C	Y	N	N	N	Y
United Kingdom	UK-LEGIONELLOSIS	O	Co	A	C	Y	N	Y	Y	Y