

## LEGIONELLOSIS - ITALY (04): (VERONA) TRAVELERS, EUROSURVEILLANCE REPORT

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<<http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=19982>>

### Rapid communications

#### Cluster of travel-associated Legionnaires' disease in Lazise, Italy, July to August 2011

A total of 17 cases of travel-associated Legionnaires' disease have been reported since 18 August 2011 that were associated with a stay in several accommodation sites in Lazise, Italy. All cases -- 7 from the Netherlands, 6 from Germany, 2 from Italy, one from Austria and one from Denmark -- stayed at 5 different accommodation sites (2 campsites and 3 hotels) in Lazise between the beginning of July and end of August 2011. Dates of symptom onset ranged from 18 Jul 2011 to 25 Aug 2001 (Figure). The ages of the cases ranged from 42 to 78 years (mean: 57; standard deviation: 11.9) and the male to female ratio was 3.3 to 1.

### Background

Legionnaires' disease is a lung infection caused by *Legionella* bacteria. The bacteria live in water or wet soil and must be inhaled to cause infection. *Legionella* can cause a severe form of pneumonia (Legionnaires' disease), which in Europe can be fatal for about 5-15 percent of people with the disease, but it can also cause a mild influenza-like infection without pneumonia, called Pontiac fever [1].

Over the last 10 years, the number of cases of Legionnaires' disease in Italy has been steadily increasing, from 325 cases in 2001 to 1200 cases in 2009, with an incidence in 2009 of 2 per 100 000 population [2,3]. The number of cases of travel-associated Legionnaires' disease has also been increasing: every year, several clusters associated with accommodation sites, involving tourists from Italy and elsewhere in Europe, are reported [4,6]. Most of this increase has been attributed to improved diagnostic tools, in particular the urinary antigen detection test [7].

The European Legionnaires' Disease Surveillance Network (ELDSNet), coordinated by the European Centre for Disease Prevention and Control (ECDC) since April 2010, carries out surveillance of Legionnaires' disease, involving all European Union Member States, Iceland and Norway. It aims to identify relevant public health risks, enhance disease prevention and monitor epidemiological trends. In this context, surveillance of travel-associated disease is carried out on a day-to-day basis to inform urgent public health action, with the aim of preventing subsequent cases. Each travel-associated case of Legionnaires' disease diagnosed in a participating European country is reported by national ELDSNet collaborators to ELDSNet as quickly as possible. If other cases are found to have been associated with a particular accommodation site within a 2-year period, a cluster is identified. A rapid risk assessment of the accommodation site associated with the cluster is undertaken by the country in which the site is located: the results are reported to ECDC and shared with all countries in the network [8,9].

### Testing isolates and data collection

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Of the 17 reported cases reported in Lazise, 16 were confirmed by a urinary antigen test and one case remained probable because diagnosis was on the basis of a single high Legionella-specific antibody titre. Legionella pneumophila serogroup 1 was isolated from 2 patients: one had stayed at Campsite 1 and one at Campsite 2. There were no deaths.

Lazise is a small town located about 20 km (12.4 miles) north-west of Verona, by Lake Garda (the largest lake in the country). It has 7000 inhabitants and there are an estimated 60 000 visitors during the summer holiday period. Legionnaires' disease was not reported in Lazise inhabitants in July and August 2011. The disease has been reported in tourists staying in neighbouring villages in the Lake Garda area, as expected based on the previous years' notifications (unpublished data).

Patients were contacted by ELDSNet national collaborators in their country of residence. Information about potential exposure in the 10 days preceding the onset of symptoms (incubation period for Legionnaires' disease is 2-10 days) was obtained using a standardized questionnaire: national ELDSNet collaborators of the countries where cases were reported recorded the details in an ad hoc restricted-access web-based database set up by ELDSNet. Analysis of the data revealed common accommodation sites but no other common exposure.

#### Ongoing investigations

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Epidemiological and environmental investigations, which started immediately after notification of the cluster by ELDSNet on 19 August 2011, are ongoing. The Istituto Superiore di Sanita is supporting the local health authorities in Lazise.

Of the 17 reported cases, 12 had stayed in Campsite 1 (accommodating about 3500 people), 2 had stayed in Hotel 1 (with about 40 rooms), 2 in 2 different hotels (Hotels 2 and 3 with about 50 rooms each) and one in Campsite 2 (accommodating about 1800 people).

Of the 5 accommodations sites, 3 (Campsite 1, Campsite 2 and Hotel 1) were found to be within approximately 500 metres (1/3 mile) of each other. The water sources for the 5 accommodation sites are different: the 2 campsites are supplied by private wells while the 3 hotels are supplied by the same public service. Local rapid risk assessment was promptly carried out [10] and several water samples were collected for testing by the regional and the national reference laboratories according to procedures indicated for the control and prevention of legionellosis [11]. In the 1st round of sampling, 56 samples of cold and hot water were collected from water tanks, taps, shower heads, swimming pools, water sprinklers, decorative fountains and jacuzzis at the 5 accommodation sites. 2 samples from Campsite 1 were found positive for *L. pneumophila* serogroup 1, with a concentration of 900 and 4100 colony forming units per liter (CFU/L). These 2 samples had been collected from distal water outlets in one of the 7 washing and toilet facilities. In Hotel 2, 3 samples were found positive for *L. pneumophila* serogroup 1, at concentrations ranging from 2000 to 12 000 CFU/L. *L. pneumophila* serogroup 2-14 was isolated from other water points in all 5 accommodation sites.

No cooling towers were found in Lazise and its outskirts. To date, no installations have been identified as a potential source of Legionella.

#### Typing of Legionella isolates

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The 2 *L. pneumophila* serogroup 1 clinical isolates were characterised by sequence-based typing [12]: both were sequence type (ST) 23, as were the 2 *L. pneumophila* serogroup 1 isolates from the environmental samples. Further molecular investigations are ongoing.

#### Control measures

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A rapid risk assessment conducted promptly in all 5 accommodation sites allowed us to implement control measures. Disinfection of the water systems in all 5 accommodation sites involved was carried out as a control measure and all devices generating aerosols (e.g. spa pools, lawn sprinklers and decorative fountains) were immediately deactivated. Hospitals and general practitioners (GPs) in the area were alerted in order to enhance clinical surveillance of the disease. People staying at Campsite 1 (which reported the greatest number of cases) and for whom e-mail addresses were available were informed by e-mail of the ongoing cluster of the disease and were encouraged to contact their GPs if they developed symptoms. Managers of all the accommodation sites, spas and other recreational sites in the municipality were also informed through a note issued by the mayor of Lazise and were made aware of the importance of adopting adequate measures to prevent legionellosis.

Environmental sampling, repeated after disinfection of the water systems, was negative for *Legionella* and no further cases have been notified after the risk management measures were adopted.

#### Conclusion

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As a common source of infection in Lazise has not yet been identified, there may be an ongoing risk of exposure to *Legionella* for persons visiting or residing in the town. For this reason, we encourage timely notification of further cases potentially associated with stay in Lazise.

[References can be accessed at

<<http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=19982>>.]

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Communicated by:

HealthMap Alerts via

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[The above Eurosurveillance report gives the latest findings on the outbreak of Legionnaires' disease among tourists staying at 5 different sites in the northern Italian town of Lazise. There is now a total of 17 cases; 16 were confirmed by a urinary antigen test for *Legionella pneumophila* serogroup 1 and one case remained probable because diagnosis was on the basis of a single high *Legionella*-specific antibody titer. *L. pneumophila* serogroup 1 was isolated from 2 patients and from water samples at 2 locations. All were sequence type 23. No common source of infection has yet been identified. The water systems were disinfected in all 5 accommodation sites.

For a discussion of travel-associated legionellosis see ProMED-mail post Legionellosis - USA (03): (NV) hotel 20110716.2159.

Veneto region can be located is at <[http://en.wikipedia.org/wiki/File:Veneto\\_in\\_Italy.svg](http://en.wikipedia.org/wiki/File:Veneto_in_Italy.svg)>; a map on which the Province of Verona can be located is at <[http://upload.wikimedia.org/wikipedia/commons/3/36/Map\\_Province\\_of\\_Verona.svg](http://upload.wikimedia.org/wikipedia/commons/3/36/Map_Province_of_Verona.svg)>, and a map on which the town of Lazise can be located in the province of Verona is at

<[https://commons.wikimedia.org/wiki/File:Map\\_of\\_comune\\_of\\_Lazise\\_\(province\\_of\\_Verona,\\_region\\_Veneto,\\_Italy\).svg](https://commons.wikimedia.org/wiki/File:Map_of_comune_of_Lazise_(province_of_Verona,_region_Veneto,_Italy).svg)>.

A HealthMap/ProMED-mail interactive map showing the location of Veneto can be accessed at <<http://healthmap.org/r/00V7>>. - Mod.ML]

[see also:

Legionellosis - Italy (03): (VR) travelers, background 20110915.2821 Legionellosis - Italy (02): (VR) travelers 20110915.2817 Legionellosis - Italy: (VR) travelers 20110914.2802 Legionellosis - USA (03): (NV) hotel 20110716.2159 Legionellosis, hotel - UK (03): (Scotland) 20110408.1100 Legionellosis, hotel - UK (02): (Scotland) background 20110328.0974 Legionellosis, hotel - UK: (Scotland) 20110327.0965 Legionellosis - USA (02): (CA) conference, susp 20110304.0713 Legionellosis - USA: (CA) conference, susp 20110214.0494 Legionellosis, hotel - Mexico: (QR) alert 20110121.0253 Legionellosis - Australia (02): ex Indonesia (Bali) alert 20110119.0226 Legionellosis - Australia: (WA, VI) ex Indonesia (Bali) 20110115.0173 2010

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Legionellosis - Australia: (WA) ex Indonesia (Bali) alert 20100826.3021 2009

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Legionellosis, fatal, hotel - United Arab Emirates: (Dubai) 20090205.0509 2007

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Legionellosis, hotel - Scandinavia ex Thailand (Phuket): alert 20070113.0178 2006

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Legionellosis, tourists - Malaysia 20061027.3064 Legionellosis, craft fair - France (Lorraine) 20061012.2924 Legionellosis, spa pool - UK (England) 20060929.2787 Legionellosis - Italy (Venice): alert 20060912.2588 2005

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Legionellosis, hotel - Sweden (Dalarna): susp. 20050204.0383 2004

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Legionellosis, fatal 2003 - UK ex India 20040628.1724 Legionellosis - Italy (Basilicata) (02): background 20040408.0957 Legionellosis - Italy (Basilicata) 20040408.0950 2002

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Legionellosis, pilgrims - Italy (Puglia) 20020705.4674 1999

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Legionellosis - UK ex Thailand 19990422.0673 Legionellosis, imported - Thailand 19990320.0442] .....sb/ml/ejp/ml