

## LEGIONELLOSIS, CRAFT FAIR - FRANCE (LORRAINE)

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A ProMED-mail post <<http://www.promedmail.org>>

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<<http://www.eurosurveillance.org/ew/2006/061012.asp#3>>

During September 2006, 12 cases of legionellosis in the small town of Lorquin, district of Moselle, north east France, were identified by the local health authority in charge of legionellosis surveillance. All patients had pneumonia; 11 tested positive for urinary antigen, indicating a *Legionella pneumophila* serogroup 1 infection; 2 also had positive cultures, and one was diagnosed by a positive culture (Lp1).

Dates of symptom onset ranged from 11 to 19 Sep 2006 [for figure, see original URL - Mod.LL]. The median age of the cases was 69 years (range 33-78 years), 66 per cent were men. None of the patients has died. No additional cases have been detected since the onset of the last case on 19 Sep 2006.

Local and national health authorities started an epidemiological investigation on 20 Sep 2006, interviewing patients using a standard questionnaire. Patients were asked about their activities, including work and leisure, in the 10 days before the onset of symptoms. The 11 patients who responded to the questionnaire reported visiting or working at a craft fair in Lorquin. The fair was held on 9-10 Sep 2006 in a sports center, which housed 37 stands and attracted about 10 000 visitors.

As 11 of the patients were known to have visited the fair, a list of aerosol-generating devices demonstrated during the fair was drawn up. One whirlpool spa filled with water from the municipal supply at the sports center was displayed. Water samples from the municipal water supply, the water source used to fill it, and from the showers at the sports centre were taken on 23 Sep 2006, and on 25 Sep 2006 from the whirlpool spa. No legionella was found in any of these samples. Disinfection treatment was done during the fair with an oxygen-based product, and after the fair by chlorination. This could have affected the detection of legionellae.

The source of the outbreak was not proven, but there is reason to believe the spa was responsible: 11 patients had visited or stayed at the fair, the spa was the only aerosol-producing device displayed and none of the cooling towers identified in the area tested positive when these were sampled in Aug and Sep 2006.

### Discussion

The inevitable delay between exposure and the recognition of an outbreak of legionnaires' disease always means that the conditions in the potential sources may have changed dramatically by the time they are investigated.

This is particularly true of whirlpool spas (synonyms: spa pools, hot tubs) that may have been repeatedly drained and disinfected or, if on display, moved to a new site. Water samples alone are often not sufficient. For example, in one outbreak, the pool water did not yield legionellae but large numbers of *Legionella pneumophila* were found in swab samples of biofilm from within the piping (1) and in an outbreak on a cruise liner, the outbreak strain was detected by swab samples of the air channels embedded in the pool shell even after the pool had been drained and disinfected (2).

1. McEvoy M, Batchelor N, Hamilton G, et al. A cluster of cases of legionnaires' disease associated with exposure to a spa pool on display. *Commun Dis Public Health* 2000; 3: 43-5.
2. Beyrer K, Lai S, Dreesman J, et al. Legionnaires' disease outbreak associated with a cruise liner, August 2003: epidemiological and microbiological findings. *Epidemiol Infect* 2006 (in press).

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[This posting illustrates the principles behind evaluating a cluster of cases of legionellosis and the pitfalls of confirming a definitive source.

Moselle is part of the current region of Lorraine and is surrounded by the French departments of Meurthe-et-Moselle and Bas-Rhin, as well as Germany (states of Saarland and Rhineland-Palatinate) and Luxembourg in the north. A map of France showing the Lorraine region in the north east part of the country can be found at: <<http://www.trip-europe.com/images/maps/lm112.gif>>

- Mod.LL]