

## LEGIONELLOSIS, SPA POOL - UK (ENGLAND)

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

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An outbreak of legionellosis (with clinical cases both of Pontiac Fever and full-fledged Legionnaire's disease) associated with use of a spa pool (otherwise known as Jacuzzi or whirlpool) at a local leisure club is being investigated in northeast England, UK. The outbreak was initially detected when 2 groups of 2 and 3 patients reported being ill with flu-like symptoms and a common link to the leisure club to the local authorities. These initial cases were reported to the health authorities (Health Protection Agency, <<http://www.hpa.org.uk>>) on 21 Aug 2006.

The subsequent investigation and local media coverage has led to continuing reports of flu-like illness (including fever, muscle pain, headaches and nausea) to local public health authorities from the leisure club, local authorities and from patients directly. Patients who had been admitted to hospital with pneumonia have also been identified.

Investigations have so far discovered 2 confirmed cases of Legionnaires' disease, 3 confirmed cases of Pontiac fever and a further 113 probable cases of Pontiac fever in patients who have symptoms and exposure matching that of the confirmed cases [for figure, see original URL - Mod.LL]. The 2 patients with confirmed Legionnaires' disease were hospitalized for 4 and 11 days; neither required intensive care. Patients' ages range between 18 and 85 years old. All confirmed cases have been in men. Among the probable cases, there is an 40:60 male:female ratio. There have been no fatalities associated with this outbreak.

The incubation period in the Pontiac Fever cases has been between 24 and 48 hours, with symptoms lasting 3 to 5 days. Generally, Legionnaire's disease has a longer incubation period although for non-pneumonic legionellosis, this is not thought to be the case. Cases of Legionnaires' disease involved an incubation period of approximately 4 days, although exact times are difficult to determine due to repeated exposures at the spa pool.

A positive urinary antigen test or positive initial serology for *Legionella* was required for confirmation of cases. Typing is available for 5 patients, all of which were *Legionella pneumophila* serogroup 1. Acute and convalescent serology is being undertaken for a small sample of the probable cases.

### Case definitions used

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Legionnaires' disease -- a clinical diagnosis of pneumonia with laboratory evidence of the presence of *L. pneumophila* urinary antigen, or seroconversion or positive culture

within 2-10 days of using the wet side facilities at the leisure club during a set time period.

Pontiac fever -- A flu-like illness without evidence of pneumonia within 4 days of using the wet side facilities at the leisure club during a set time period.

Probable Pontiac fever cases -- a combination of flu-like symptoms (fever, headache, muscle pain +/- nausea) plus exposure at the spa pool (which had tested positive for *Legionella pneumophila*) over a 12-day period in mid-Aug 2006.

Initial cases were positive for *Legionella* on urinary antigen detection and subsequent cases met the same symptom / exposure criteria as the confirmed cases.

#### Environmental investigations

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Investigations revealed that patients with reported cases had been in the spa pool (or very close to it) over a period of at least 12 days. Investigations into exact exposures are ongoing. There were no reports of illness in members who had used other facilities in the club.

Water samples from the spa pool, the return flow from the massage jets and a short section of segmented pipe connected to mains water used to fill the pool have all tested positive for *Legionella pneumophila* serogroup 1. Samples were also taken from the main swimming pool, shower in the changing rooms, and the poolside shower and the condensate from the steam room. None of these have tested positive.

#### Control measures

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The spa pool was voluntarily closed by the club when informed of the positive urinary antigen in one of the initial cases and the increasing numbers of club members reporting symptoms. Plans are in place for a cohort study to provide further epidemiological information on the outbreak.

Spa pools previously associated with legionellosis in Europe Spa pools have been associated in legionellosis outbreaks across Europe [2-6]. Health authorities across Europe have produced guidelines for the maintenance and design of spa/whirlpools in order to reduce the risk of these types of incidents [7,8].

This article was adapted from reference 1 by the authors and the Eurosurveillance editorial team

1. HPA: Mixed outbreak of legionnaires' disease and Pontiac fever associated with spa pool. *Commun Dis Rep CDR Wkly* [serial online] 2006 [cited 21/09/2006]; 16 (37): news. Available at (<<http://www.hpa.org.uk/cdr/archives/2006/cdr3706.pdf>>)

2. de Jong B, Allestam G, Knauth S: Legionella infections from a private whirlpool in Sweden. *Eurosurveillance Weekly* [1812-075X]. 2004 May 20;5(21) 040520. (<<http://www.eurosurveillance.org/ew/2004/040520.asp#4>>)
3. Gotz HM, Tegnell A, De Jong B, et al: A whirlpool associated outbreak of Pontiac fever at a hotel in Northern Sweden. *Epidemiol Infect.* 2001;126: 241-47.
4. Allerberger F, Schmid D, Wewalka G: Legionnaires' disease associated with whirlpools at an exhibition - Austria, March 2004. *Eurosurveillance Weekly* [1812-075X]. 2004 Apr 8;4(15) 040408. (<<http://www.eurosurveillance.org/ew/2004/040408.asp#2>>)
5. Den Boer JW, Yzerman EPF, Schellekens J, et al: A large outbreak of Legionnaires' disease at a flower show, the Netherlands, 1999. *Emerg Infect Dis* 2002; 8: 37-43. (<<http://www.cdc.gov/ncidod/eid/vol8no1/01-0176.htm>>)
6. Fallon RJ, Rowbotham TJ: Microbiological investigations into an outbreak of Pontiac fever due to *Legionella micdadei* associated with use of a whirlpool. *J Clin Pathol.* 1990;43: 479-83
7. Guidelines for reducing legionella risk associated with using spa baths from the UK Health and Safety Executive. *Eurosurveillance Weekly* [1812-075X]. 2003 Jul 3;7(27) 030703. (<<http://www.eurosurveillance.org/ew/2003/030703.asp#5>>)
8. Hasselbarth U. Prevention of Legionella multiplication in swimming and whirlpools [in German] *Schriftenreihe des Vereins für Wasser-, Boden- und Lufthygiene* 1993;91: 177-78

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[The upkeep checks of a spa bath (whirlpool) as outlined in a UK governmental paper (<<http://www.hse.gov.uk/pubns/spalegion.pdf#search=%22legionella%20spa%22>>) include:

"Every 2 hours:

After initial test, residual disinfectant levels and pH

3 Times daily:

Water treatment if not continual

Daily:

Before use, water clarity

Automatic dosing systems

Disinfectant levels in reservoirs

Filters

Strainers

Backwash sand filters

Automatic dosing systems

Weekly:

Drain, clean and disinfect entire system"

It is not stated in the posting if there were any deviations from standard protocols related to this facility. - Mod.LL]