

Clusters of travel associated Legionnaires disease in France, 2001-2005



INSTITUT DE
VEILLE SANITAIRE

Christine Campese
12, rue du Val d'Ogne - 94415 St-Maurice Cedex - France
Tél. : +33 (0)1 41 79 68 75 Fax : +33 (0)1 41 79 69 95
c.campese@invs.sante.fr

C Campese¹, D Bitar¹, S Jarraud², M Lacoste¹, D Che¹

¹Institut de veille sanitaire (InVS), Saint-Maurice ; ²National Reference Centre for Legionella (NRC), Lyon

Background

The European Surveillance Scheme for Travel Associated Legionnaires' disease (LD) was established with EWGLINET (European Working Group for Legionella Infections Network) in 1987 to identify cases of LD in returning travellers and detect clusters and outbreaks of LD.

Upon identification of a cluster site, immediate investigation and control measures have to be initiated. In July 2002, a new European guideline was introduced to standardize national response to cluster alerts.

Since 2001, France has applied this new EWGLINET procedure and has notified all the internal travel associated cases of LD.

This presentation aims to present a summary of the Ewgli clusters notified in France.

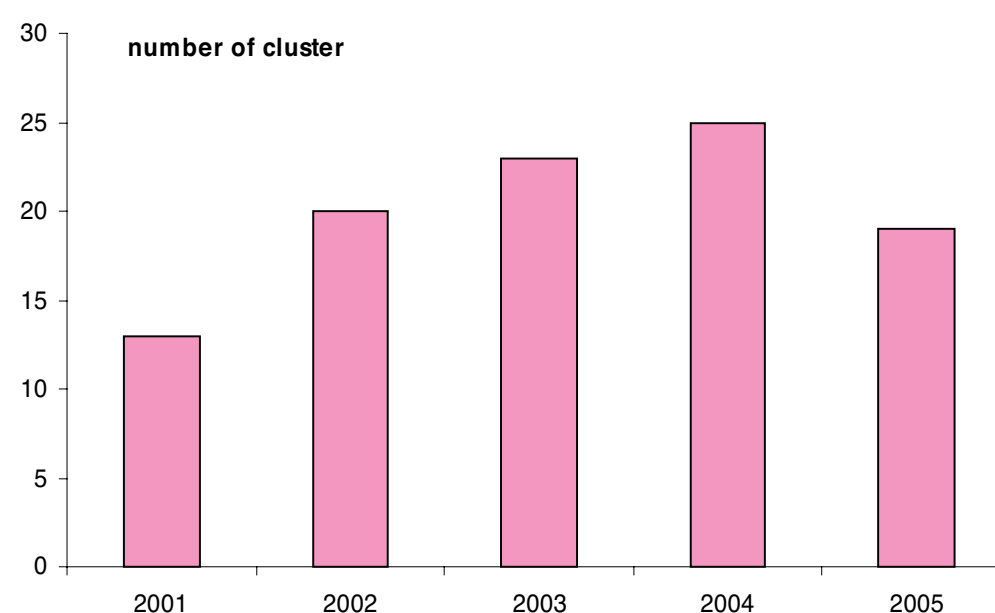
Methods

- A cluster of travel-associated legionnaires' disease is defined as two or more cases who stayed at or visited an accommodation site between two and 10 days before onset of illness and whose onset is within the same two year period.
- A cluster requires a risk assessment, sampling and control measures.
 - Two reports have to be sent to the coordinating centre, one in the first two weeks and one within six weeks of the date of the cluster's notification.
 - These reports have to confirm that measures to minimize the risk have been taken at the site.
 - If these reports are not received, after the six week period, Ewgli publishes the name of the site on the public Ewgli-website. This notice is removed once the relevant forms have been received.
- In France (Fr), local health authorities conduct the environmental investigation and send the reports to the National Institut for Public Health Surveillance (InVS) which informs the Ewgli coordinating centre.
- Water samples are collected and analysed by the local environmental laboratories. Isolation of *Legionella* is based on standard methods.
- NRC compares clinical and environmental strains by pulsed-field gel electrophoresis of genomic restriction fragments.
- Ewgli cluster notifications in France from January 2001 to December 2005 are included.

Results

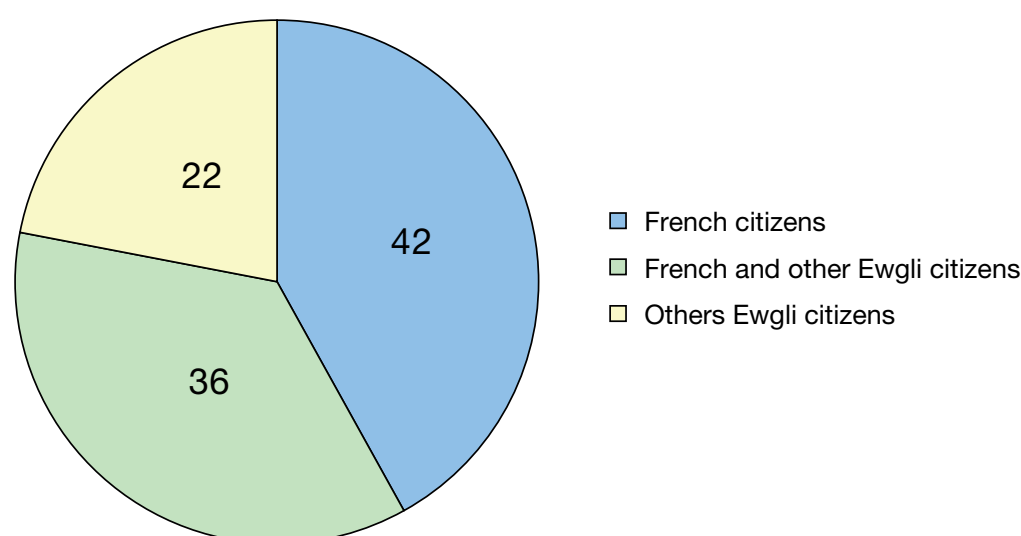
- From January 1st 2001 to December 31st 2005 857 French sites were notified
- **83 sites** (9,7%) were notified as cluster sites
- 83 sites = 100 cluster notifications
- Among the 83 sites
 - 63 sites : single notification
 - 6 sites : 1 additional notification before the 6 week delay
 - 8 sites : 1 additional notification in the 2 year period
 - 3 sites : 2 additional notifications in the 2 year period
 - 1 site : 1 additional notification after the 2 year period
 - 2 sites : complex additional notifications
- Median delay between the date of onset of the first clustered notification and the date of Ewgli notification 20 days [5 - 206 days]

Distribution of number of travel associated clusters of LD notified in France by year, 2001-2005 (n=100)



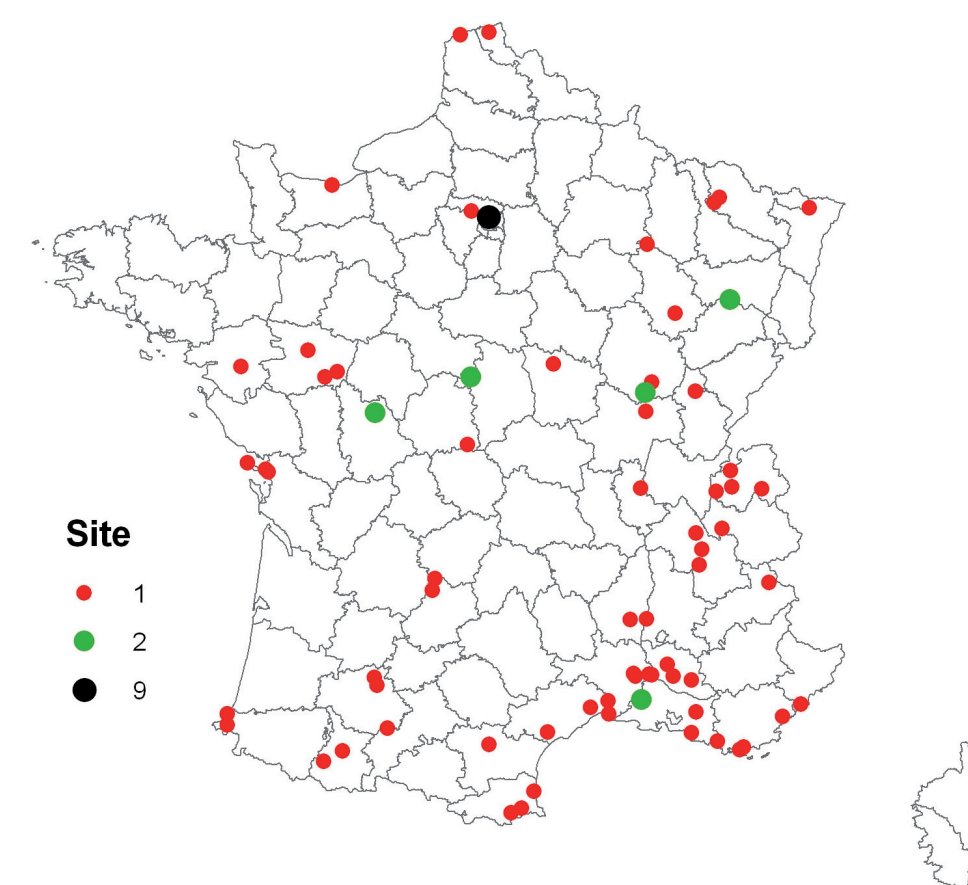
- 62 hotels and 21 campsites
- 197 cases stayed in the 83 sites
- Between 2 and 6 cases per site
 - 61 sites : 2 cases
 - 15 sites : 3 cases
 - 6 sites : 4 cases
 - 1 site : 6 cases
- Median length of case's stay = 2 days [1 - 62 days]

Origin of cases involved in travel associated clusters of LD in France, 2001-2005



- French citizens were involved in 78% of the clusters

Geographic distribution of the travel associated cluster sites of LD in France 2001-2005



- Among 197 cases, clinical isolates were available for 24 cases (12%) visiting 23 sites
- 8 sites were published on the Ewgli public website
 - 7 hotels and 1 campsite
 - number of days on the website: from 4 to 348 days

Environmental investigations

- All the sites were investigated by the local health authorities
- Water samples were collected in 78 sites (94%)
 - 25 sites negative
 - 53 (68%) positive for *Legionella*
 - . 16 sites sample results < 10³ CFU/l
 - . 37 sites sample results > 10³ CFU/l 37/78 = (47%)
- Control measures were implemented or reinforced in all the accommodation sites
- 9 (11%) sites were closed for improvements
- 14 sites were closed for the winter season and checked before re-opening

Microbiological investigations

- 23 sites with clinical isolates available
- 16/23 (70%) environmental samples were positive
- 12/16 sites environmental isolates were available
- Among those 12 sites clinical and environmental isolates were compared by Pulsed Field Gel Electrophoresis or Sequence Based Typing (SBT)
- 10/12 identical genomic profiles identified (1 by SBT UK/Fr)
- For 3 of the 10 sites sample result < 10³ CFU/l
- In one site, 2 clinical isolates were identical by SBT (Spain/Fr) but no environmental isolates were available

Discussion

- Less than 10% of sites were notified as a cluster
- 76% of the sites were single cluster notifications
- Median length of case stay is only 2 days: other possible sources of contamination may be involved
- High number of French citizens
 - notification of all internal cases
 - high sensitivity of the French surveillance system
- 74% of the sites with only 2 cases suggesting that the control and preventive measures implemented were efficient
- Geographic distribution of the sites correspond to the tourist regions
- Hotels and campsites are known to be at high risk for LD
 - high proportion of positive environmental samples
 - 83% of strains comparisons were identical
- Importance of the availability of clinical isolates for typing
- SBT is a promising tool for investigation of European clusters

Conclusion

- Reinforcement of preventive measures in hotels and campsites is necessary.
- Collaboration between all European countries is essential to minimize the risk of travel associated LD.
- Notification of national cases travelling within their own country contributes to a better understanding of travel associated cases in Europe.