

## EUROPEAN GUIDELINES FOR CONTROL AND PREVENTION OF TRAVEL ASSOCIATED LEGIONNAIRES' DISEASE: THE ITALIAN EXPERIENCE

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In Italy, 35 clusters of travel associated Legionnaires' disease were identified from July 2002, when the European Guidelines for Control and Prevention of Travel Associated Legionnaires' Disease have been adopted by the EWGLINET network, to October 2003. Eight per cent (28.6%) would not have been identified without the network.

The clusters detected were small, ranging from 2 cases to a maximum of 6. All clusters involved 5 camping sites and 30 hotels/residences, and an overall of 87 patients. The diagnosis was confirmed in 92.0% of the cases and mainly performed by urinary antigen detection (84.7%). A clinical isolate was available only in one case.

Following environmental investigations, samples were collected for all the 35 clusters from the water system, and *Legionella pneumophila* was found in 23 occasions (65.7%). In 15 resorts out of 35, investigations were already in progress at the time of EWGLI cluster notification, since in Italy full environmental investigation is performed even after notification of a single case. Control measures were implemented in all accommodation sites at risk and one hotel only was closed.

In all the 35 clusters, reports were completed and sent on time, highlighting that it is possible to comply with the procedures requested by the European Guidelines.

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### Introduction

After France and Spain, Italy receives the largest number of foreign tourists per year. In 2002, in Italy, 639 cases of Legionnaires' Disease (LD) of which 119 were travel associated, were notified to the Istituto Superiore di Sanità. Furthermore, a further 90 cases diagnosed in foreign tourists who travelled to Italy were notified to the Institute by EWGLINET (The European Working Group for Legionella Infections, <http://www.ewgli.org>), bringing the total num-

ber of cases of travel associated LD to 209. This is an increase of approximately 60% on the previous year when 130 cases were notified. Most of the foreign tourists came from other European countries, such as the United Kingdom (23%), Netherlands (19%) and France (13%).

In July 2002, European guidelines for control and prevention of travel associated Legionnaires' disease were voluntarily adopted by most EWGLINET participant countries, even though at that time they were not yet officially approved by the European Commission.

This article reports on the Italian experience following the adoption of the European Guidelines.

### Methods

According to the guidelines, a cluster is defined as two or more cases who stayed at or visited the same accommodation site in the ten days before onset of illness and whose onset is within the same two year period. Identification of a cluster is sufficient to warrant immediate action by the coordinating centre in London and by the EWGLINET collaborator in the country where the cluster is located. The collaborator in the affected country immediately arranges for the accommodation site to be inspected by a local public health authority who carries out a risk assessment as well as an environmental investigation. A preliminary report (Form A) stating whether control measures are in progress and if the accommodation site may remain open or not is sent to the coordinating centre within two weeks of the cluster alert. A full report (Form B) is sent within six weeks of the cluster alert. If the coordinating centre does not receive the reports on time or if the control measures adopted are unsatisfactory, the name of the accommodation site is published on the EWGLI website (1).

In Italy, the procedure for reporting and responding to cluster is as follows: when EWGLINET alerts the Istituto Superiore di Sanità of a cluster, the EWGLINET collaborator immediately informs local and regional health authorities and the Ministry of Health by fax. The day after the notification the EWGLINET collaborator makes a phone call to the doctor in charge of the investigation, in order to ensure that cluster alert was received. One or two days before the deadline for Form A and B, a reminder is sent to the local health authority.

Data related to clusters were entered into a database and analysed by EPI Info 2000.

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## Results

From July 2002 to October 2003, 35 clusters of travel associated legionnaires' disease occurred in Italy.

Of the 35 resorts involved, five were campsites and 30 were hotels/residences.

The number of clinical cases per cluster was the following: 2 cases in 20 clusters, 3 cases in 7 clusters, 4 cases in 5 clusters, 5 cases in 2 clusters and 6 cases in 1 cluster. Overall, 87 patients were involved (8 patients visited 2 hotels, 1 visited 3 hotels) in a total of 97 visits.

The second case occurred less than 6 months after the notification of the first case in 69% of the clusters.

The age of the cases ranged from 27 to 78 years, with a mean of 58 years. The male to female ratio was 2.1/1. Italian citizens represented 40.2% of all cases and were involved in 19 clusters. In 9 clusters, only Italian citizens were involved. Dutch citizens were affected in 14.9% of cases, French citizens 9.2%, and German and English citizens both in 6.9% of cases. The remaining 21.9% of the cases were patients from other European countries.

The accommodation sites were located in 14 different Italian regions, as shown (FIGURE). The median length of stay in an accommodation was 7.8 days, with a range of one to 152 days.

The diagnosis was confirmed in 92% of the cases and investigations were mainly performed using urinary antigen detection (84.7%). A clinical isolate was available only in one case. The outcome of the disease was known in 74.4% of the cases. Of these, 59% recovered, 36% were still ill and 5% were dead by the time the cluster was alerted.

Environmental investigations were performed by the local health authorities and samples were collected from the water system at the locations of all 35 clusters. In Italy, a full environmental investigation is undertaken even after notification of a single case, and in 15 resorts out of 35, when the first case was an Italian citizen, at the time of EWGLI cluster notification, investigations were already in progress.

*Legionella pneumophila* was found on 23 occasions (65.7%). In 6 cases (26%), *Legionella pneumophila* was present in the water supply at a concentration ranging from  $10^2$  and  $10^3$  CFU/L, while in 12 (52%) cases the concentration was higher than  $10^4$  CFU/L. For the remaining cases (22%), the *Legionella* concentration was not known. In clusters with 2 or 3 cases the percentage of positive investigation results was 58% while in clusters with 4 or more cases this percentage was equal to 87%.

Control measures were implemented in all accommodation sites at risk and only one hotel was closed.

Form A and B were sent on time for all clusters, and so no names of accommodation sites were published on the public part of the EWGLI website.

## Discussion

The rapid exchange of information among European countries through the EWGLINET network allows the detection of clusters even when cases are from a different country of origin. For the cases associated with travel in Italy, 8 clusters (28.6%) would not have been identified without this network since each included one national from different countries. The clusters detected were small, ranging in size from 2 to a maximum of 6 cases.



FIGURE

Number of clusters reported by Italian regions from July 2002 to October 2003

Investigation immediately following a cluster alert found that 65.7% of the sites were positive for *Legionella*. This highlights the fact that risk assessment for control measures against *Legionella* bacteria proliferation should be carried out not only in response to a cluster but on a regular basis in order to prevent cases of disease.

This information is also important for assessing the impact of control measures at a site, as well as for providing evidence for any legal action arising from an infection. However, interpretation of the significance of environmental data results is limited when there are no matching clinical isolates from associated cases. The environmental investigations conducted show that investigation and reporting procedures take varying amounts of time, depending on the structure and organization of public health services in each region. Nevertheless, for all 35 clusters, reports were completed and sent in on time, demonstrating that it is possible to comply with the procedures requested by the European guidelines. Investigations and control measures were successful in preventing further cases in 31 out of 35 accommodation sites investigated. In the 4 accommodation sites where a new case was notified in a time period ranging from 2 to 8 months after implementation of control measures, a longer and stricter follow-up is foreseen.

## References

1. Carol Joseph. Launch of new European guidelines for control and prevention of travel associated legionnaires' disease *Eurosurveillance* 2002; 27 (<http://www.eurosurveillance.org/ew/2002/020704.asp>)