



MEETING REPORT

2nd European Legionnaires' Disease Surveillance Network (ELDSNet) annual meeting

Vienna, 24–25 May 2011

Executive summary

The 2nd European Legionnaires' Disease Surveillance Network (ELDSNet) meeting was held in Vienna, Austria on 24–25 May 2011. Sixty-seven participants from 29 countries attended the meeting. Presentations were given on cases reported in 2010 and an initial analysis was made of the disaggregated data for 2005–2010. In addition, there was a presentation on the laboratory capacity survey performed in late 2010. Furthermore, participants were updated on the latest development of the new EPIS ELDSNet, which will go live 1 June 2011. There was also a presentation on TESSy, providing the latest information and tips on how to work with the system. Austria and the Netherlands presented their activities for the surveillance of Legionnaires' disease and the detection of clusters. Operational procedures for ELDSNet, the laboratory capacity survey and the EQA results were discussed and updated during working group sessions. The meeting ended with presentations about the newly developed toolbox for outbreak investigations and the *Legionella* course on risk assessment, outbreak investigation and control that has been developed to strengthen control of Legionnaires' disease in Europe.

Scope and purpose

Background

Since 1 April 2010, ECDC has been coordinating the European Legionnaires' Disease Surveillance Network (ELDSNet). The tasks of the network include daily surveillance of travel-associated Legionnaires' disease (TALD), timely detection and immediate notification of clusters to the network, close monitoring of cluster site investigations and the taking of control measures. The network is also responsible for the annual collection, analysis and reporting of Legionnaires' cases notified by the 27 Member States, Norway and Iceland during the preceding year.

The epidemiological activities are complemented by outsourced centralised laboratory services. The Health Protection Agency's Atypical Pneumonia Unit in London has been contracted to provide an inventory of *Legionella* reference laboratory capacities in Member States, EQAs and targeted training, enhanced investigation of clusters and a quarterly science watch bulletin.

This report is from the second annual ELDSNet meeting under ECDC coordination.

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Objectives of the annual ELDSNet meeting:

- To present and discuss the epidemiology of Legionnaires' disease in Europe in 2010;
- To present and discuss the laboratory capacity survey conducted in Europe;
- To refresh knowledge on how to use TESSy;
- To discuss and recommend possible revisions/clarifications to the ELDSNet procedures;
- To discuss and recommend how to increase numbers of clinical and environmental isolates available for typing.

Planned outcomes of the annual ELDSNet meeting:

- Updated knowledge of the epidemiology of Legionnaires' disease in Europe, pertinent ongoing laboratory activities and the use of TESSy;
- Recommendations on changes to the ELDSNet procedures;
- Recommendations for a study on diagnostic tools;
- A meeting report summarising the discussions and conclusions reached.

Plenary session

Tuesday 24 May 2011

Welcome and opening

The annual meeting was opened by Prof. Dr. Franz Allerberger, Head of the Human Health Department at the Österreichische Agentur für Gesundheit und Ernährungssicherheit [Austrian Agency for Health and Food Safety] (AGES), who presented the work of his agency and emphasised the added value offered by European surveillance of Legionnaires' disease.

ELDSNet coordinator, Birgitta de Jong (ECDC), welcomed the participants, gave an overview of the programme, presented the ECDC ELDSNet team and support staff and addressed meeting-related administrative issues.

Analyses of reported TALD cases and the annual dataset collection 2010

Birgitta de Jong gave an overview of the TALD cases and clusters reported in 2010. A range of countries notified a total of 843 cases, with the largest number being reported by France. Clusters were found in all regions of the world. One of the findings from the 2010 data is that 41 (44%) of 92 clusters were only detected through the existence of the network.

Julien Beauté (ECDC) gave an overview of the ELDSNet annual surveillance data on all Legionnaires' disease cases for 2010. He noted that in 2010, ELDSNet recorded the highest notification rate since the creation of the network, with 13 cases per million inhabitants per year in the European Union, equivalent to an increase of 11 percent compared to 2009. France, Italy, Spain, Germany, the Netherlands and the United Kingdom reported the highest absolute numbers of cases. Due to the fact that the data call was ongoing in April, a more detailed analysis of the data was not possible and the data presented were preliminary.

Strengthening of laboratory capacity

Tim Harrison from the Health Protection Agency, London, presented laboratory activities related to the ECDC tender and gave an overview of the laboratory capacity survey he had performed. The laboratory survey results were further discussed with the microbiologist-participants during the working group session.

Tim Harrison gave feedback on method-specific training. Every year three courses are organised, each with up to five days of training for two persons from the same laboratory.

Cluster detection in the Netherlands

Jeroen den Boer gave a presentation on the use of Geographical Information Systems (GIS) in the Netherlands. He indicated that GIS data provide a different way of calculating the incidence rate for Legionnaires' disease. By mapping cases it becomes clear that many communes have never had a single case while others are more affected. GIS data support the idea of looking at other transmission routes than water – for example, earth. He emphasised the importance of maps in improving understanding of the geographical spread of the disease.

EPIS ELDSNet

Emmanuel Robesyn, ECDC, gave an update about the development of EPIS ELDSNet and explained the different functions of the system. EPIS ELDSNet is planned to go live on 1 June 2011.

Parallel sessions

TESSy update

Silvia Sarbu, ECDC, leading one of the parallel sessions on TESSy, gave an overview of the challenges encountered by the system and some hints and tips on how to delete faulty data and how to review data. She reiterated the confidentiality aspects of data use and offered individual consultation on TESSy-related items during the coffee breaks.

Laboratory survey details, EQA results

Tim Harrison chaired the second parallel session on the laboratory survey and the EQA scheme results. He began by presenting the results from the laboratory capacity survey. The survey, which consisted of 97 questions, had been distributed to at least one laboratory in all 32 EU/EEA and candidate countries. Some of the key findings were:

- Urinary antigen testing is available in 24/28 countries;
- Most countries undertake clinical isolate culturing and isolation but specimen numbers are almost always low, resulting in few isolates;
- PCR is currently only used by 18 laboratories and there are many methods and platforms and no/very little standardisation;
- Serology is used by 17 countries and for some this is the primary diagnostic method. Methods used are very variable and checks are rarely made for known cross reactions (e.g. campylobacter).
- The standardisation of diagnostic methods across ELDSNet should continue and ELDSNet EQA schemes are a major source of 'positive samples' for many participants and should continue at current levels.
- Environmental services are more comprehensive than clinical services and the methods are more consistent. Molecular methods are currently used by only 7/27 labs.

Norman Fry, Health Protection Agency, UK, presented the results of Sequence-Based Typing (SBT) and PCR proficiency testing EQAs. Five *L. pneumophila* strains were included in the SBT EQA. A total of 18 laboratories participated and 15 submitted results. Overall, 7/15 (47%) scored 100% correct. *L. pneumophila* ELDSNet PCR EQA was sent out to 20 participating laboratories. The results returned showed that 12/20 labs (60%) had datasets that were 100% correct. The conclusions showed that some laboratories are consistently good (100%) and revealed a specificity problem in commercial kits and contamination problems in some laboratories.

Julie Russell, Health Protection Agency, UK, presented the EQA for *Legionella* isolation from water samples. Two distributions of three samples were dispatched during 2010. Fewer laboratories reported entirely correct or almost entirely correct results in 2010 than in 2009 and more laboratories reported grossly misleading results in 2010 than in 2009.

Wednesday 25 May 2011

Introduction to working groups

In order to obtain the participants' views on a number of important topics, the annual ELDSNet meeting 2011 included a session with two parallel working groups.

The general purpose of these working groups was to provide a forum for focussed exchange of experiences and ideas. Participants were asked to discuss specific questions and provide recommendations to support ECDC and the ELDSNet Coordination Group in fulfilling their mandate of coordinating and improving Legionnaires' disease surveillance in Europe.

Topics

Working group 1: Laboratory issues

Chair: Tim Harrison, Rapporteur: Emmanuel Robesyne

Working group 2: Operational procedures

Chair: Birgitta de Jong, Rapporteur: Julien Beauté.

Feedback from working groups

Working group 1: Laboratory methods

Background

Over the last 12 months of operation, three areas of laboratory activity have been identified as problematic for national reference laboratories (NRL). Further discussion of these issues by ELDSNet would be beneficial.

Objectives

- To discuss problems/issues with current urinary antigen tests used by NRL.
- To discuss approaches to increasing the availability and use of the Dresden MAb panel.
- To discuss possible modifications to the protocol for a DNA-based sequence typing scheme offering a solution to the 'neuA problem'.

Problems/issues with current urinary antigen (UAg) tests

Four issues were discussed:

- Results from the ELDSNet *L. pneumophila* urinary antigen EQA scheme indicate that commercial UAg kits differ in their sensitivity. Data was presented to illustrate this, and after discussions the group concluded ELDSNet should recommend that the Biotest assay is not used, or it is only used in conjunction with a second assay.
- Results from the laboratory capacity survey show that only a few laboratories confirm positive UAg results by boiling, the group was asked to consider whether this should be adopted as ELDSNet best practice and it was decided that it should be. This procedure will be included in the best practice guidance currently being drafted.
- The group was asked to consider whether or not to incorporate MAb3/1 in the assays to give added value to the diagnostic and confirmatory work of NRLs. It was agreed that this would be a useful addition to current procedures but that some validation work needed to be done before it could be formally adopted as an ELDSNet method.
- The group was asked to consider whether to undertake a multicentre evaluation of some of the newer UAg kits on the market. A decision was made to submit a proposal to the ELDSNet Coordination Group.

Increasing availability/use of the Dresden MAb panel

Results from the laboratory capacity survey showed that many ELDSNet NRLs do not currently use the Dresden MAbs to characterise their *L. pneumophila* isolates. This appears to be due partly to lack of access to the reagents but also due to lack of training in the appropriate typing methods. The group was asked to consider:

- how the MAb panel could be made more widely available. It was agreed that the priority should be to obtain a sufficient volume of high-titre MAb to supply all ELDSNet laboratories and thus secure the future of this valuable typing method. Tim Harrison agreed to discuss this issue further with the aim of a) identifying a commercial partner(s) to work with and b) drafting a proposal for the ELDSNet Coordination Group to secure funding from ECDC for the work.

- whether ELDSNet should move to adopt the Dresden MABs as the standard *L. pneumophila* serogrouping method instead of using hyperimmune rabbit antisera. Although the idea of defining serogroup by MAB reactivity was generally supported, it was not felt to be a sensible approach to take until the supply of the MABs to all ELDSNet laboratories could be assured.
- possible formats of MAB subtyping assays and possible use of MAb3/1 in other assays (e.g. as an adjunct to commercial UAg EIA – as noted above). This was agreed to be a good move - subject to the successful completion of the MAb3/1 work).

The 'neuA problem' (or solution)

As discussed at previous meetings, the *neuA* gene cannot be amplified from some *L. pneumophila* strains using the current ELDSNet protocols. This means a sequence type cannot be allocated. Additional work has been undertaken this year by the Dresden and London NRLs to try to resolve this problem.

The group agreed that the new *neuA* allele could be incorporated into the standard ELDSNet SBT protocol. The London coordinating laboratory undertook to make the necessary changes to the protocol and to adapt the SBT quality tool to include the new *neuA* allele.

Working group 2: Operational procedures

Background

The operational procedures were inherited from EWGLINET and have now been in use at ECDC for one year. During this time, some issues have been identified that should be clarified in the procedures, and therefore it suggest the changes listed below.

Questions

- Do you agree with the proposed changes?
- If not, so, where and why do you disagree, and in what way should the proposals be modified?
- Would you like to propose any additional changes to the operational procedures?
- Would you like to propose any other changes to improve ELDSNet?

Proposed changes in ELDSNet operating procedures

1. Reported accommodation sites

In the current operating procedures:

The number of people with TALD, who stayed in privately rented apartments or villas, frequently obtained through the internet, has increased steadily in recent years. They should continue to be reported to the network although it may be difficult to follow them up without permission for access to the property given to the investigating authority. Likewise, persons, such as truck drivers, who travel extensively in the period before onset of infection, but sleep in their vehicles, should be reported to the network, particularly, if information is available on the location of truck stops, where truck drivers stayed overnight and used the showers.

Suggested change:

The number of people with TALD, who stayed in privately rented apartments or villas obtained through the Internet has increased steadily in recent years. Such cases should continue to be reported to the network although it may be difficult to follow up them unless the investigating authority is given permission to access the property.

However, if they stayed in accommodation owned by relatives or friends which is otherwise not rented out commercially there is no need to report. Similarly, persons such as truck drivers who travel extensively in the period before onset of infection, but sleep in their vehicles, should only be reported to the network if information is available on the location of truck stops where the truck drivers stayed overnight and used the showers **or other aerosol generating apparatus.**

The working group decided to approve these changes.

2. Rapidly evolving clusters

In the current operating procedures:

If a cluster is identified consisting of three cases with dates of onset within a period of three months, this will be regarded as a rapidly evolving cluster and in addition lead to a specific notification report to tour operators.

Suggested change:

If a cluster is identified consisting of three cases with dates of onset within a period of three months **during the last six months**, this will be regarded as a rapidly evolving cluster which will cause an additional, specific notification report to be sent to tour operators.

The working group decided to approve this change.

3. Closed hotels

When an accommodation site is closed for the season, there is no possibility of obtaining samples from the site. We have requested that any risk assessment should be performed before the reopening of the accommodation site and Forms A and B should be submitted.

If a newly infected case is reported, it was proposed that **publication procedures start immediately** instead of waiting for Forms A and B, since the new case shows that the accommodation site is open and poses a risk of Legionnaires' disease.

The working group disagreed and it was decided that the issue would have to be discussed at both national and local level ahead of a publication on the ECDC web portal.

Legionella situation in Austria

Daniela Schmid, AGES, Austria, gave a description of the Legionnaires' surveillance system in Austria. She described the evolution of the notification rate over time, highlighting important events, settings and sources of infection. Seasonal and long-term trends were also presented.

Historical data 2005–2010

Phillip Zucs, ECDC, described the surveillance data for all cases of Legionnaires' disease in Europe 2005–2010. A total of 32 213 cases were reported from 20 countries, 92.8% were confirmed cases according to the case definition. The highest incidences were reported from Spain, Denmark and France. Fatal outcome was associated with age ≥ 60 years, infection with *L. bozemannii* or *L. longbeachae*, healthcare-associated infection and disease onset during the colder season. The proportion of clustered cases varies more over time than most other parameters under surveillance.

Coordination group activities

Günther Wewalka, AGES, Austria, chair of the ELDSNet Coordination Group, gave a description of the group's activities to date: the first meeting in Copenhagen in September 2010, a teleconference meeting in January 2011 and the third meeting on 24 May 2011 and reported on recent discussions.

Training course on risk assessment, outbreak investigation and control of Legionnaires' disease

Emmanuel Robesyn, ECDC, described the objectives, design and materials for training sessions. The course will cover risk assessment, outbreak investigation and control. The aim of the course is to improve knowledge and skills on Legionnaires' cases and outbreaks. The course will last for 3.5 days and is designed for multidisciplinary participants (e.g. epidemiologists, environmental health officers and/or microbiologists) who are senior experts, mid-career, particularly those dealing with Legionnaires'. A total of 15 participants per course will be selected.

Toolbox for outbreak investigations

Emmanuel Robesyn, ECDC, gave an update on the development of the toolbox for outbreak investigation and response. The toolbox has three objectives: to facilitate common data collection and comparable analysis, to support mobilised experts and to provide a library of useful resources. The toolbox will include a scoping paper on a geographic information system (GIS).

Closure

Christian Lück from Germany announced that the next ELDSNet meeting would take place in Dresden in early September 2012 and would be followed by the EWGLI meeting.

Birgitta de Jong closed the meeting by thanking Günther Wewalka, Daniela Schmid and their co-workers for organising the ELDSNet meeting 2011 and for their hospitality and all participants for attending and contributing.

Annex 1. Meeting agenda

Second European Legionnaires' Surveillance Network (ELDSNet) annual meeting
Vienna, 24–25 May 2011

Tuesday 24 May	
14.00 – 14.30	Coffee and registration
	Plenary session (Chair: Günther Wewalka)
14.30 – 14.45	Welcome and opening – <i>Birgitta de Jong</i>
14.45 – 15.15	Analyses of reported TALD cases and the annual dataset collection 2010 – <i>Birgitta de Jong /Julien Beauté</i>
15.15 – 15.35	Strengthening laboratory capacity – <i>Tim Harrison</i>
15.35 – 15.55	Cluster detection in the Netherlands – <i>Jeroen den Boer</i>
15.55 – 16.15	Coffee
16.15 – 16.30	EPIS ELDSNet – <i>Emmanuel Robesyn</i>
	Parallel sessions
16.30 – 17.30	TESSy Update – <i>Silvia Sarbu</i>
	Lab survey results, EQA results – <i>Tim Harrison</i>
19.30	Dinner at Hotel Regina (network members)
Wednesday 25 May	
09.00 – 09.15	Introduction to working groups
09.05 – 09.10	WG 1 Laboratory – <i>Tim Harrison</i>
09.10 – 09.15	WG 2 Operational procedures – <i>Birgitta de Jong</i>
	Parallel sessions: Working groups
09.15 – 10.30	WG 1
	WG 2
10.30 – 11:00	Coffee break (Individual TESSy coaching if required)
	Plenary Session (Chair: Søren Uldum)
11.00 – 11.45	Feedback from working groups
11.45 – 12.00	Legionella situation in Austria – <i>Daniela Schmid</i>
12.00 – 12.20	Historical data 2005–2010 – <i>Phillip Zucs</i>
12.20 – 12.35	Coordination group activities – <i>Günther Wewalka</i>
12.35 – 12.50	Course on Legionnaires' disease: Risk assessment, outbreak investigation and control – <i>Emmanuel Robesyn</i>
12.55 – 13.10	Update: Toolbox for outbreak investigations – <i>Emmanuel Robesyn</i>
13.10 – 13.20	Next network meeting, wrap-up and closure – <i>Birgitta de Jong</i>
13.20 – 14.20	Lunch

Annex 2. List of participants

Country	Surname	First name
Austria	Schmid	Daniela
Austria	Wewalka	Günther
Belgium	Wybo	Ingrid
Belgium	Braye	Toon
Bulgaria	Marinova	Lili
Bulgaria	Tomova	Iskra
Cyprus	Hadjiloukas	Avgi
Cyprus	Gregoriou	Ioanna
Czech Republic	Drasar	Vladimir
Czech Republic	Martinkova	Irena
Denmark	Kjelsø	Charlotte
Denmark	Uldum	Søren Anker
Estonia	Dontsenko	Irina
Estonia	Viktorova	Jelena
Finland	Kustnetsov	Jaana
Finland	Mentula	Silja
France	Campese	Christine
France	Jarraud	Sophie
Greece	Spala	Georgia
Greece	Velonakis	Emanuel
Hungary	Paluska Ferencz	Ildiko
Hungary	Kaszàs	Katalin
Ireland	Hickey	Lorraine
Italy	Ricci	Maria Luisa
Italy	Rota	Maria Cristina
Latvia	Bormane	Antra
Lithuania	Janulaitiene	Migle
Lithuania	Liausediene	Rasa
Luxembourg	Scheiden	Gerard
Luxembourg	Demuth	Irène
Malta	Maistre Melillo	Jackie
Malta	Buttigieg	Carmen
Netherlands	den Boer	Jeroen
Netherlands	Brandsema	Petra
Norway	Caugant	Dominique
Norway	Aaberge	Ingeborg
Poland	Stypulkowska-Misiurewicz	Hanna
Portugal	Marques	Teresa
Portugal	Orta Gomes	Carlos
Romania	Chicin	Gratiana
Romania	Badescu	Daniela
Slovenia	Kese	Darja
Slovenia	Sočan	Maja
Slovak Republic	Spalekova	Margita
Slovak Republic	Namesna	Jana
Spain	Cano-Portero	Rosa
Spain	Pelaz-Antolin	Carmen
Sweden	Löfdahl	Margareta
Sweden	Allestam	Görel
United Kingdom	Henton	Diane
United Kingdom	Harrison	Tim

Self-funded participants

Czech Republic	HALUZOVA	Kamila
Greece	FLOUNTZI	Anastasia
Italy	FRANZIN	Laura
Russia	TARTAKOVSKIY	Igor
Switzerland	GAIA	Valeria
United Kingdom	TEMEZHNIKOVA	Nadezhda
United Kingdom	FRY	Norman
United Kingdom	MENTASTI	Massimo
United Kingdom	RUSSELS	Julie
United Kingdom	JOSEPH	Carol

ECDC

ECDC	DE JONG	Birgitta
ECDC	ROBESYN	Emmanuel
ECDC	ZUCS	Phillip
ECDC	SARBU	Silvia
ECDC	ERLMAN	Elina
ECDC	NYAKUNDI	Petronella