

Communicable Disease: Electronic Surveillance in the UK and EU

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Communicable Disease: Electronic Surveillance in the UK and EU

UK (England & Wales)

- Laboratory Reporting
- Direct reporting by the public

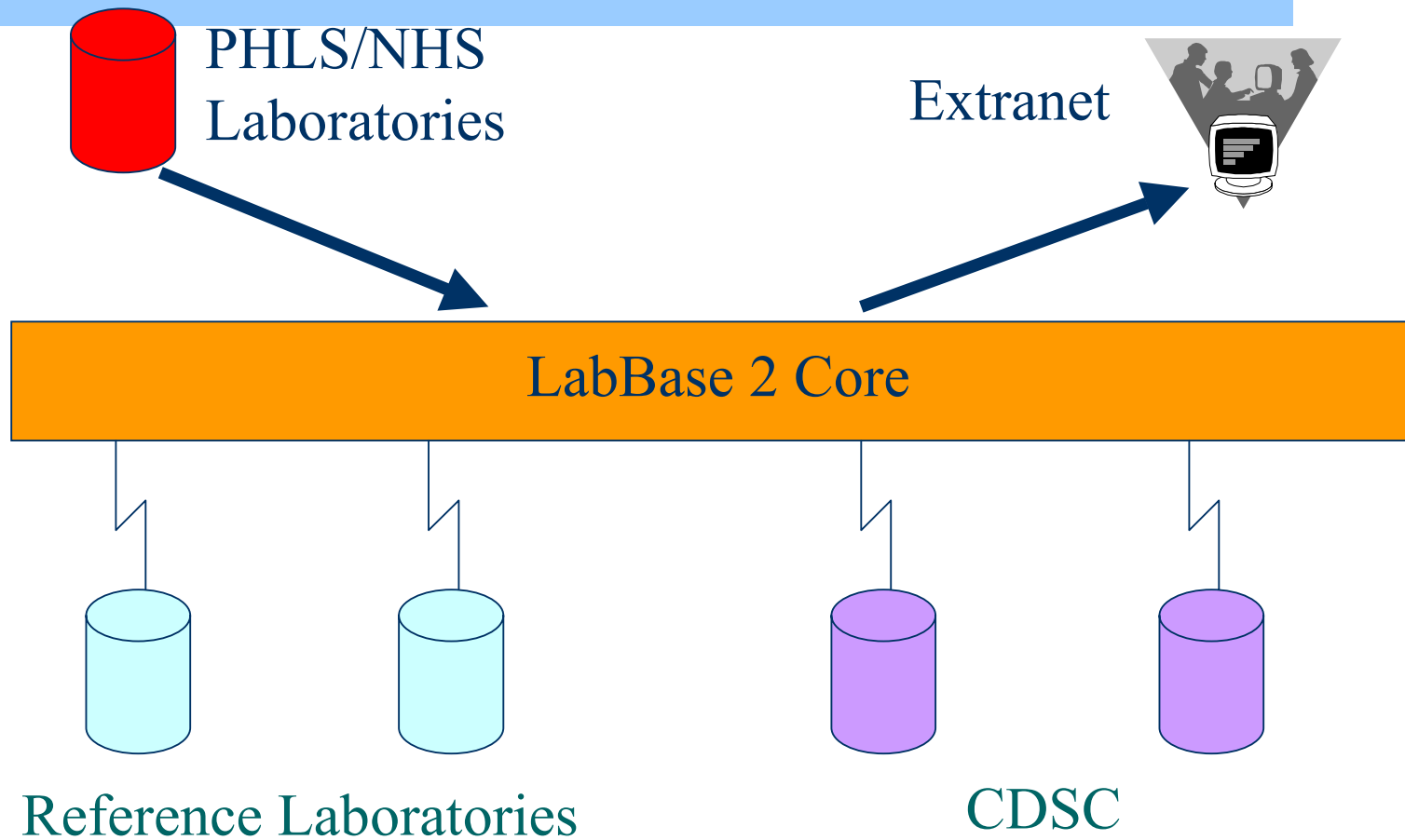
European Union

- Disease-specific surveillance networks
- Health alerting system

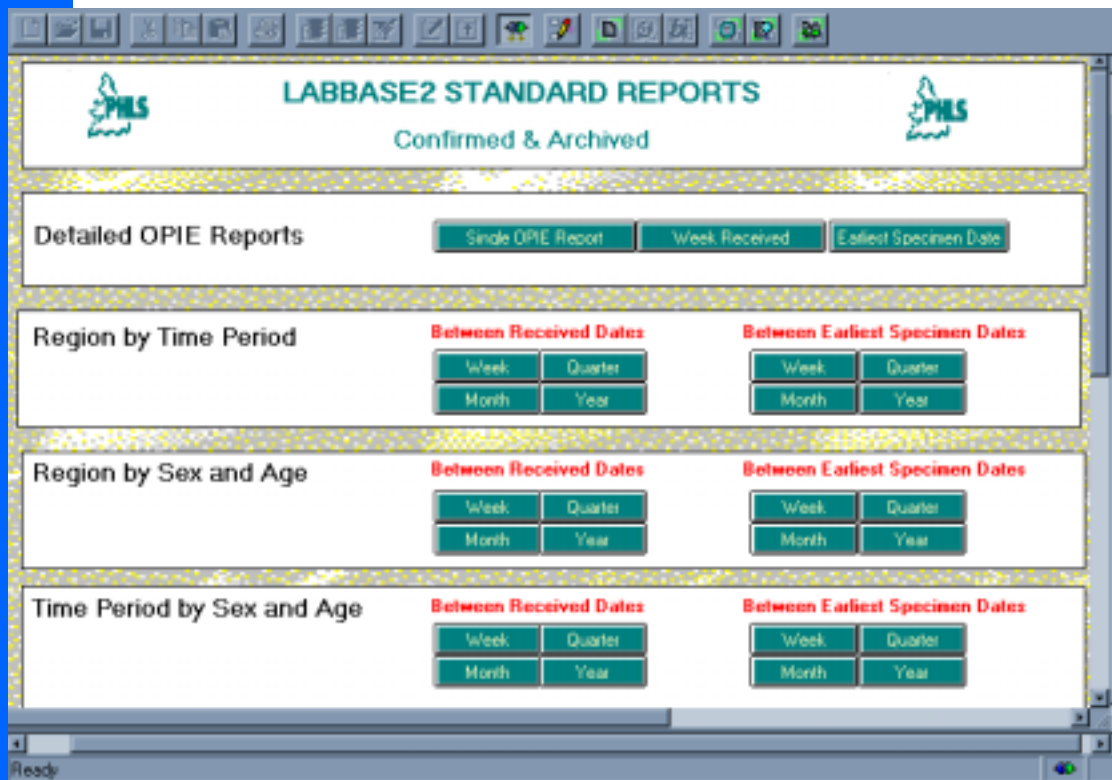
Laboratory Reporting in England & Wales

- 93% (204/220) diagnostic microbiology laboratories report to national Centre (weekly)
- 144 report electronically via data capture system (lablink/CoSurv)
- More than 300,000 reports per annum (all organisms)
- Automated matching of duplicate reports and merging of reference laboratory data
- Automated outbreak/exception reporting system
- Web enabled online database querying

Laboratory Reporting in England & Wales: Data Management



labBase2 - Accessing the Live Database - Standard Reports



Run predefined reports

Export data

Enter an organism

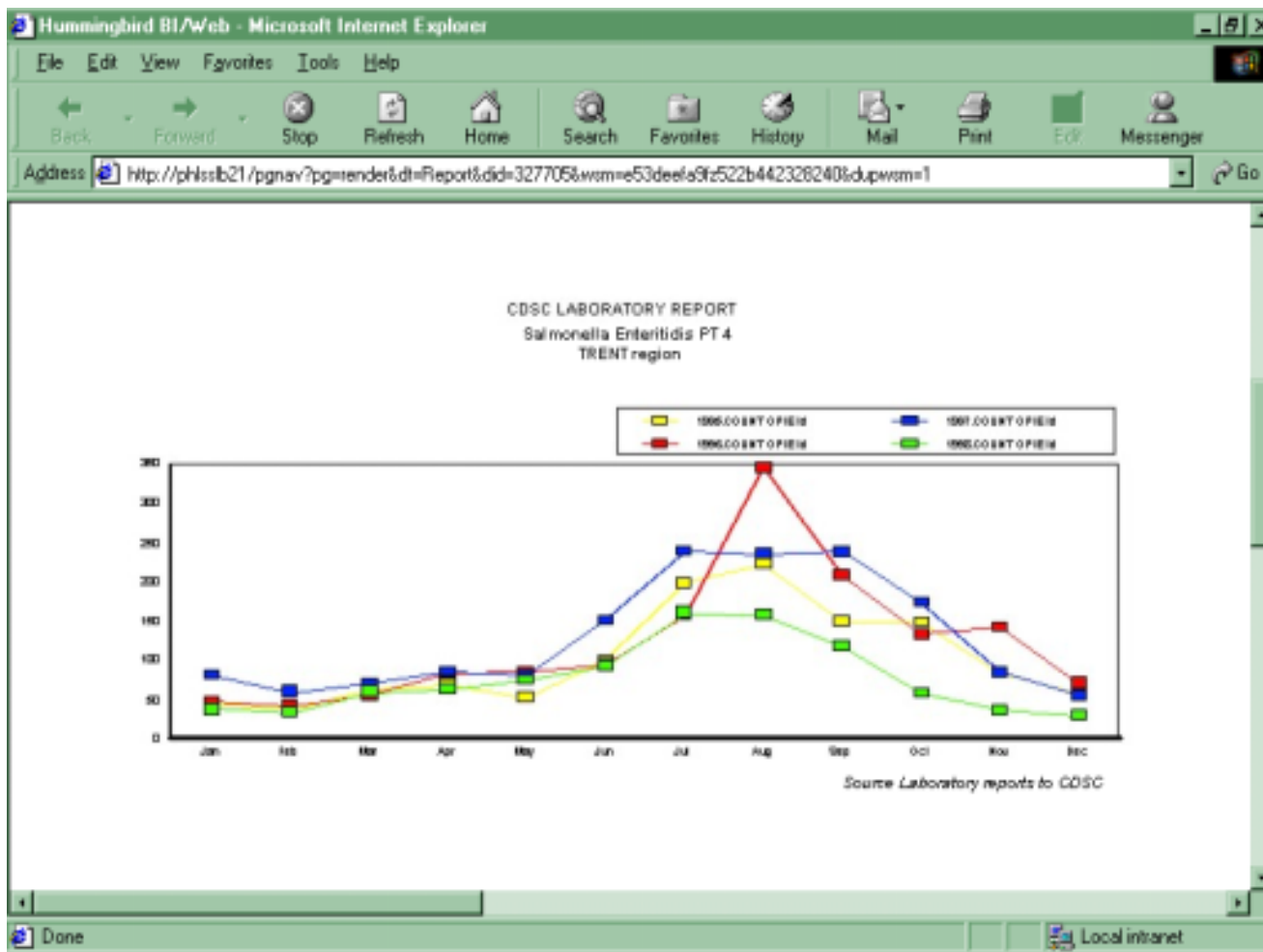
Start week number

Finishing week number

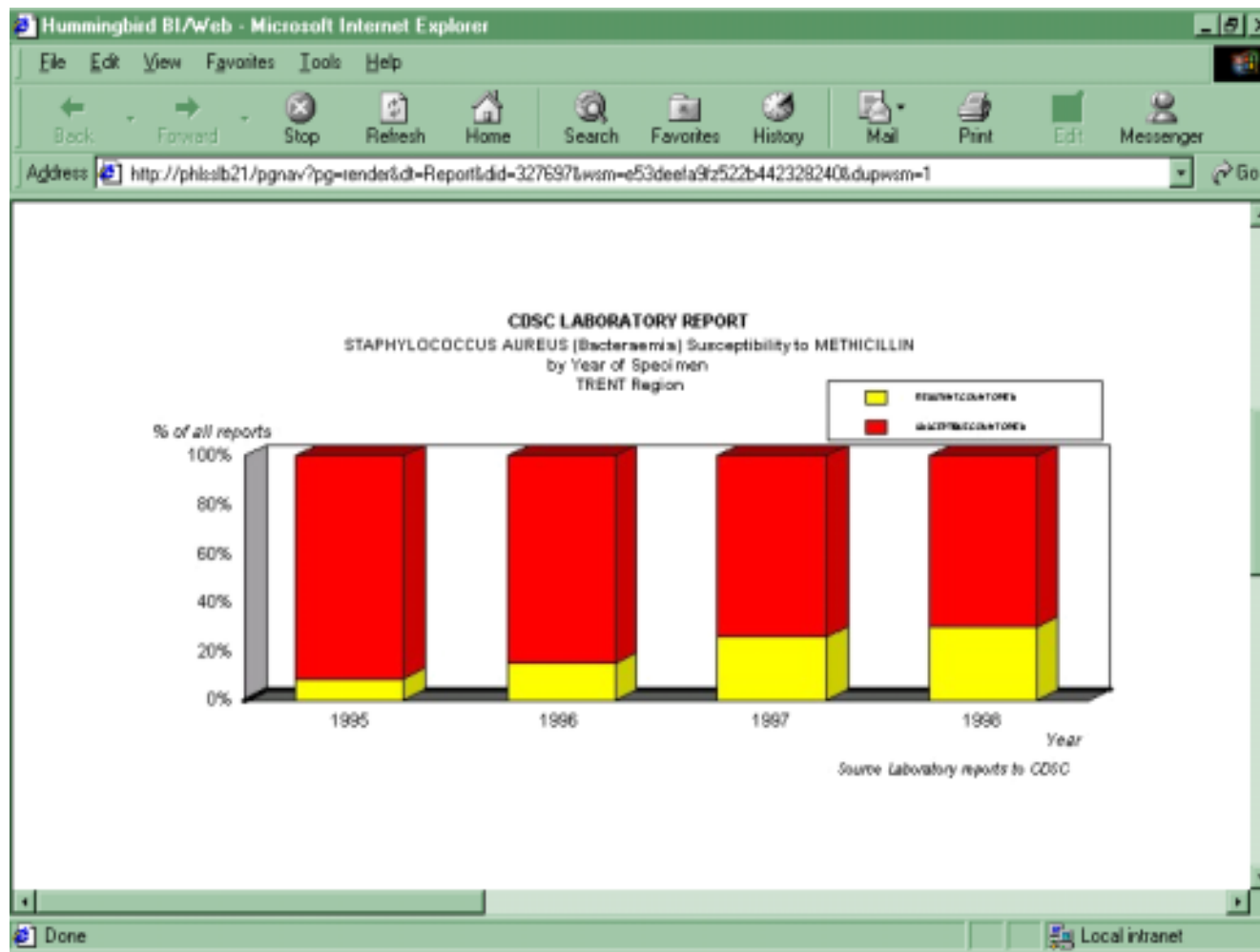
Enter parent specimen type

OK Cancel

labBase2 ñ Graphical Outputs



labBase2 ñ Graphical Outputs



Outbreak detection: the model

- A **regression** model applied to weekly data by week of **report** and adjusted for trend if significant
- **Poisson model** adjusted for excess variation (over dispersion).
- Model adjusted for seasonality by using data from comparable weeks (+/-2 weeks) in previous 5 years.
- Past outbreaks are downweighted by giving less weight to data points well above the expected values.
- False positive rate (false alarms) stabilised using a power transformation when calculating the threshold so they are the same for rare and common infections.
- All automated

Automated Cluster Alert - Outputs

Statistical analysis of Organisms
for England and Wales

Sat October 9th 1999

Organisms with Exceedance score >1

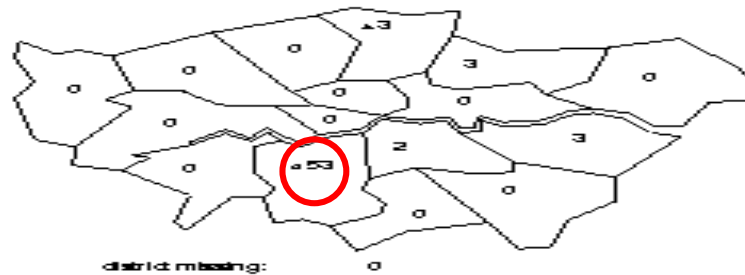
Organism	O	E	L	U	X
Salmonella typhimurium DT120	22	0.6	0.0	3.5	7.39
Mycobacterium sp	6	0.1	0.0	1.4	4.45
Salmonella enteritidis PT20	5	0.3	0.0	2.5	2.12
Salmonella agama	5	0.3	0.0	2.7	1.99
Plesiomonas shigelloides	4	0.2	0.0	2.4	1.77
Clostridium difficile	113	57.1	24.8	97.3	1.39
Salmonella hadar PT2	11	2.6	0.0	9.5	1.21
Escherichia coli O157	10	1.3	0.0	9.5	1.06

O-E / U-E

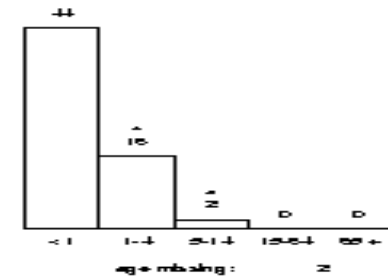
Outbreak detection: outputs

RESPIRATORY SYNCYTIAL VIRUS ...

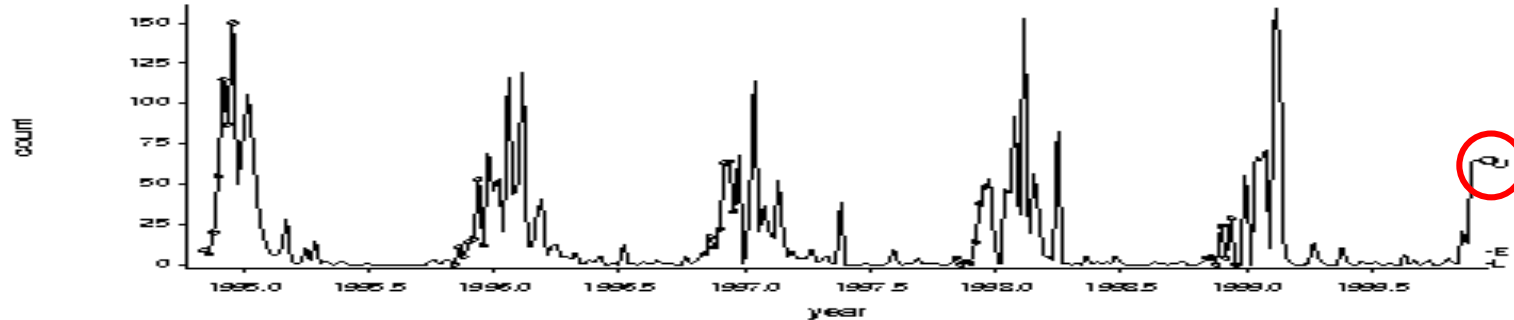
Distribution in Greater London



Age distribution



Weekly count



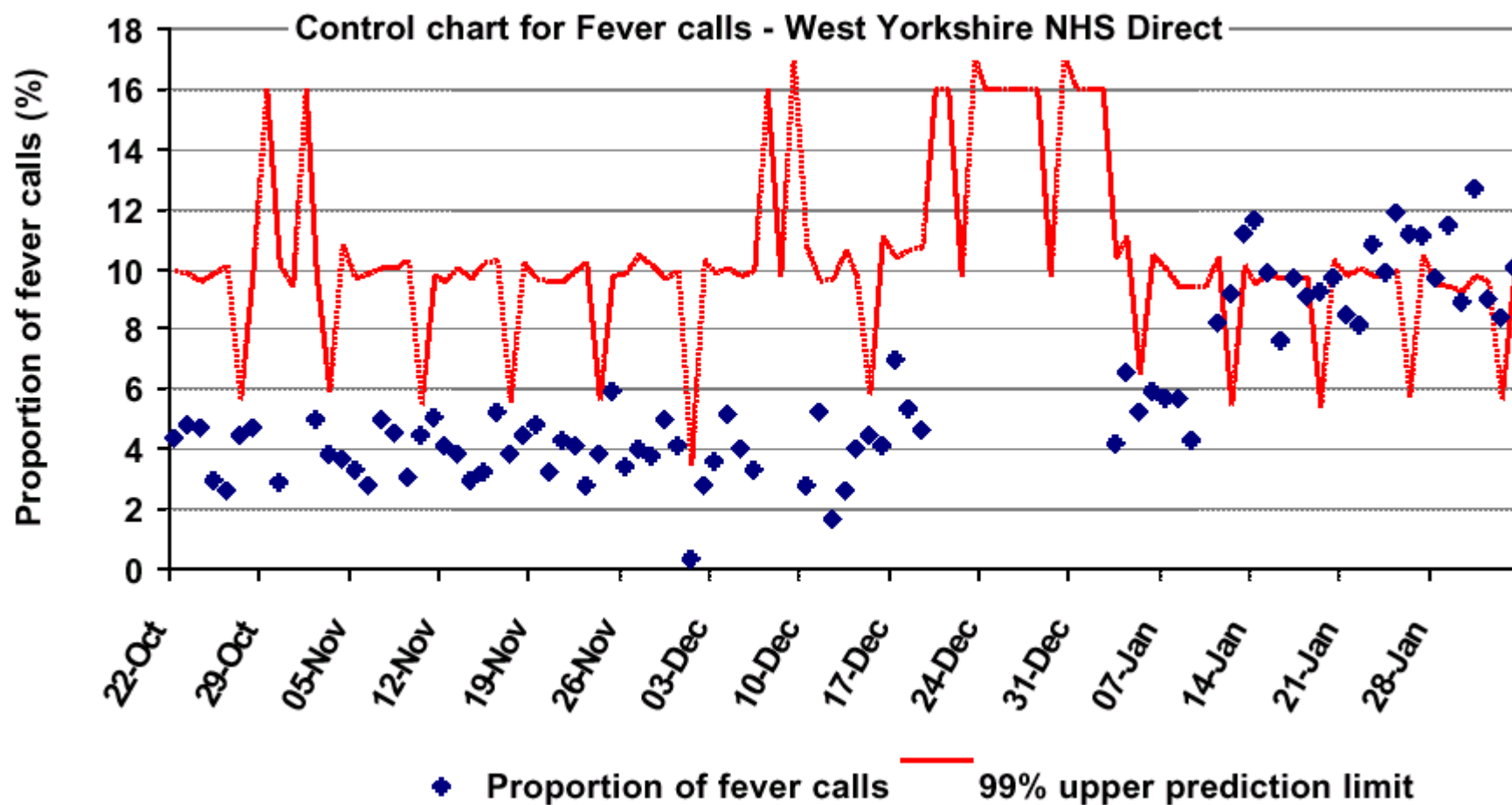
Observed:	64	Expected:	6.9	Exceedance:	1.03
Lower:	0.0	Upper:	62.1	Trend:	sig

Direct Reporting by the Public

NHS Direct ñ Health Protection Alerts

- NHS Direct is a national nurse led telephone help line which aims to provide the public with rapid access to professional health advice and information about health, illness and the NHS.
 - ñ Coverage of England and Wales (Pop: 52 million)
 - ñ Available at a local level (23 NHS Direct sites)
 - ñ Daily age-specific data available every morning
 - ñ 115,000 calls per week for the first 10 weeks of 2002
- Analysis of calls for ten indicator 'complaints' that may be indicative of illness resulting from a biological/chemical release
 - ñ Fever, food poisoning, vomiting, cold/flu, double vision, cough, diarrhoea, difficulty breathing, rash, lumps

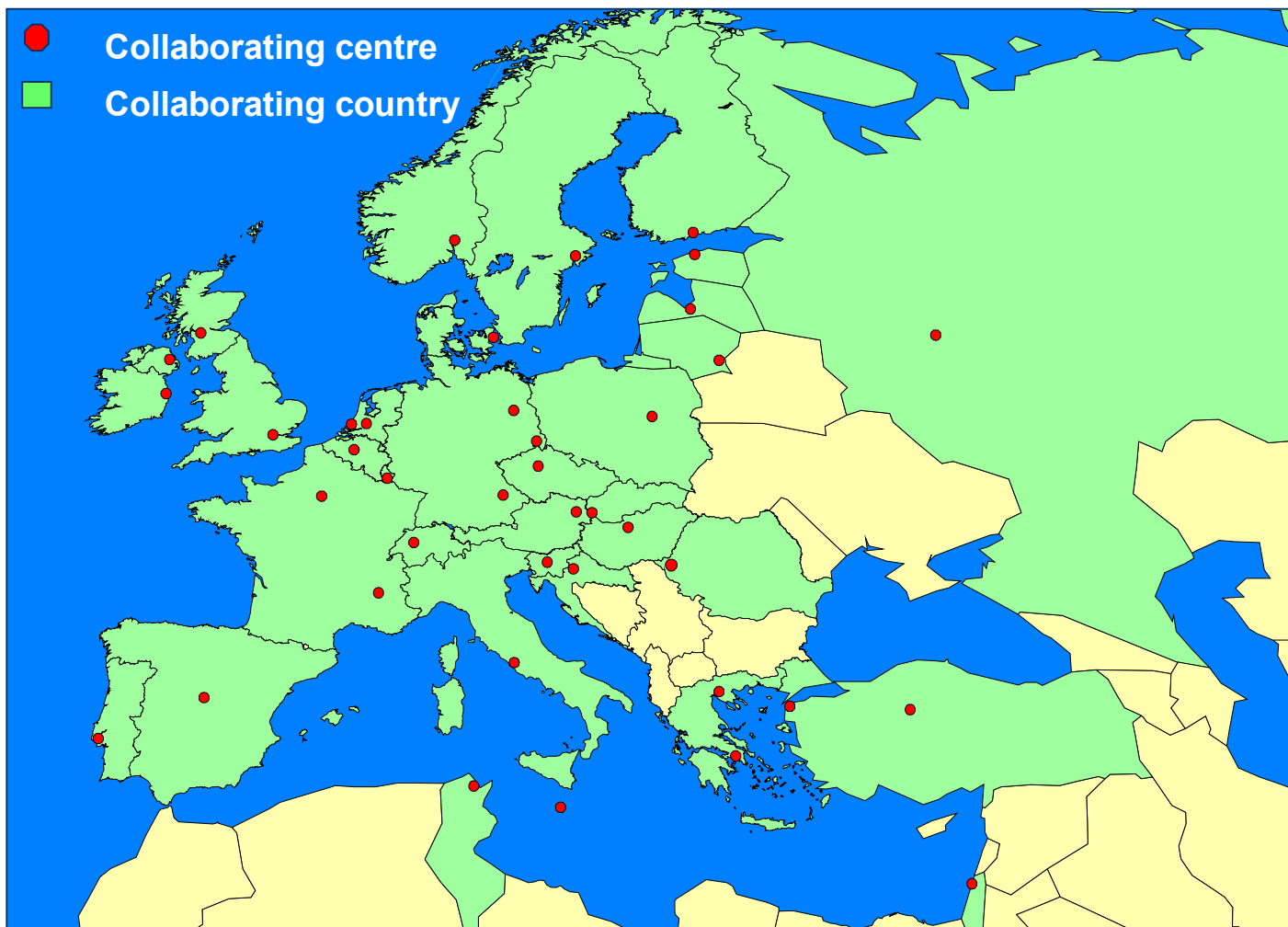
Direct Reporting by the Public ñ NHS Direct



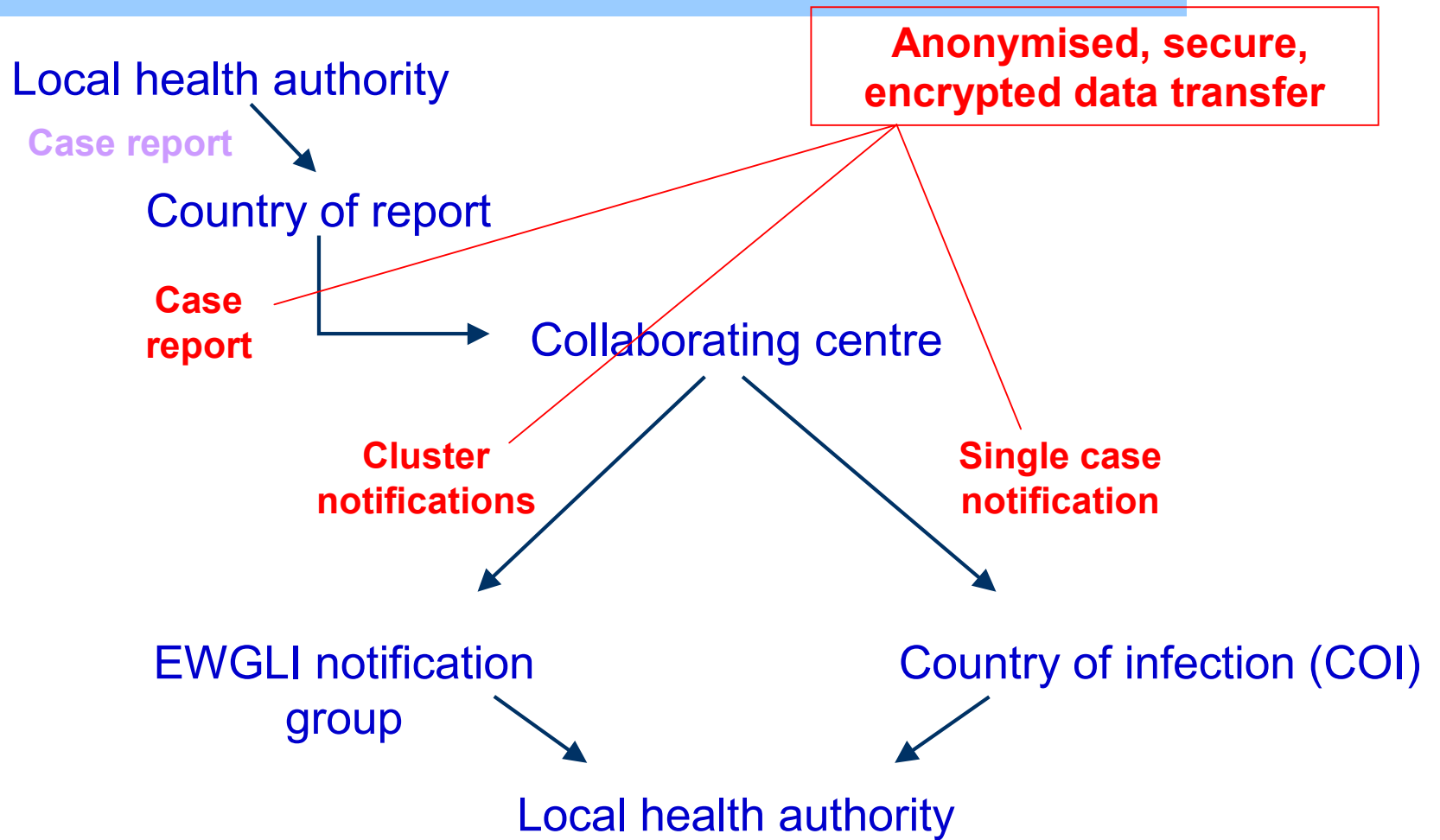
EU Surveillance Systems

- Legionella infections (EWGLI)
- Health alerting system (HSSCD)

European Surveillance Scheme for Travel Associated Legionnaire's Disease



European Surveillance Scheme for Travel Associated Legionnaire's Disease - Flow of case information



Opera 5 - [EWGLI Database Main Menu]

File Edit View Navigation Bookmarks E-mail Messaging News Window Help

New Print Find Hotlist Back Reload Forward Home

14:57

FREE CREDIT REPORT ONLINE!
CLICK HERE TO GET YOURS TODAY!

http://.../ewgli/asp/mainmenu.asp

<Search with Google here>

100%

European Surveillance Scheme for Travel Associated Legionnaires' Disease: Database access

Data last updated: 09 November 2001, 1702 hrs GMT



- Enter case and travel details
- Enter investigation results
- Search for cases
- Search for travel history
- Search for investigation results
- Search for accommodation sites
- Tables of summary data
- e-mail EWGLI
- Collaborators' e-mail addresses

Conferences, recent data

EWGLI 1999 results have now been published online by Eurosurveillance. Paper version to follow.

- [Eurosurveillance: Travel associated legionnaires' disease in Europe in 1999](#)

Powerpoint presentations from Bilthoven 2001 for viewing and download

EU Health Alerting System - HSSCD



The screenshot shows a Microsoft Internet Explorer browser window displaying the website for the European Commission's Interchange of Data between Administrations (IDA) - EUPHIN Health Surveillance System for Communicable Diseases (HSSCD). The browser's address bar shows the URL <https://hsscd.euphin.org/>. The website features a navigation menu with links for Home, Special Applications, Telematic Services, Administration & Support, and Help. The main content area includes the following text:

European Commission
Interchange of Data between Administrations (IDA) - EUPHIN

Welcome to the Health Surveillance System for Communicable Diseases (HSSCD)

The HSSCD allows sharing and exchange of information within the health care user community specialized in the surveillance of communicable diseases such as AIDS, Hepatitis, Cholera etc. The HSSCD provides two types of services:

- Telematic services**
As a registered user of the HSSCD, you have access to the several [general-purpose telematic services](#).
- Special applications**
HSSCD provides a selection of [special applications](#) to submit information for use by the HSSCD user community and query information available on the network.

Access to some of these services is provided only to registered users of the HSSCD. Registered users belong to European establishments participating in the HSSCD. Please contact the HSSCD Administrator at your establishment to obtain a user account.

If you are a registered user and want to update your personal data, change your password or load the certificate of the EUPHIN Certificate Authority in your browser, please consult [the admin and support page](#).

EU Health Alerting System ñ Message Structure

- Unique ID:
- Reporting person (Name/Institution)
- Contact person (Name/Institution)
- Level (Early warning/information)
- Origin of information (Clinical report/laboratory report/press/other)
- Status (Confirmed/not confirmed)
- Event reported
- Country of illness
- Presumed country of infection
- Date of onset (yyyy/mm/dd)
- Free text
- Distribution (Member States Authorities & Structures/ Special Networks)

EU Health Alerting System ñ Message Content

- Level: Information
- Origin of information: Laboratory report
- Status: Confirmed
- Event reported: Coccidioidomycosis
- Country of illness: United Kingdom
- Presumed country of infection: United States; travel related
- Date of onset (yyyy/mm/dd): 2001/10/25
- Free text: The patient attended the World Championship of Model Aeroplane Flying in Lost Hill Valley, Bakersfield, California from 5-14 October 2001

Message issued: 7 December 2001

Electronic Communicable Disease Surveillance

- Established for laboratory-based surveillance in UK and in EU
- Recent development of capture of self-reported illness data
- Rapid collation and analysis of data ➔ early detection of outbreaks and incidents
- Problems remain in establishing automated data capture at source
 - ñ Lack of data coding standards
 - ñ Lack of IT system standards

Acknowledgements

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