

**A bird's eye view on**

**The European Centre for Disease  
Prevention and Control**

***ECDC***



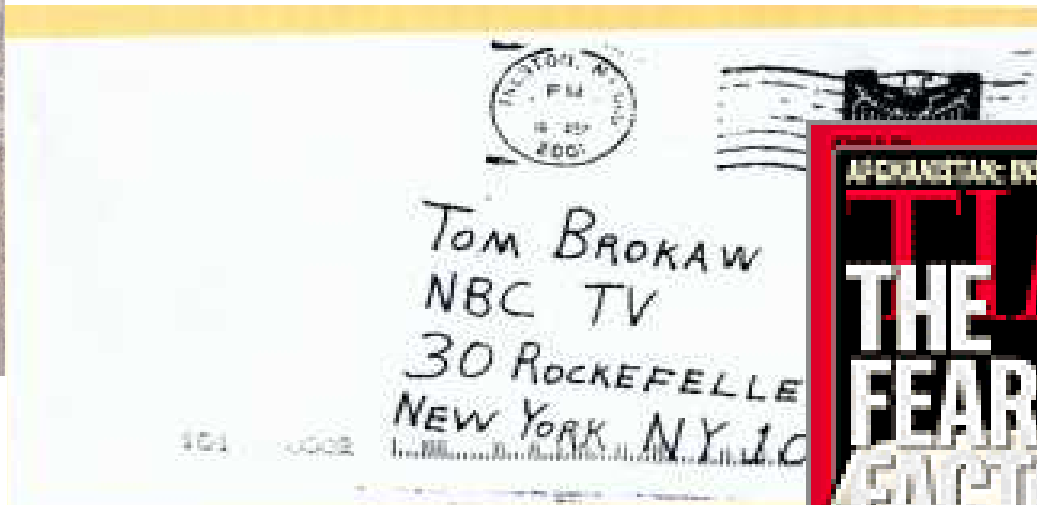
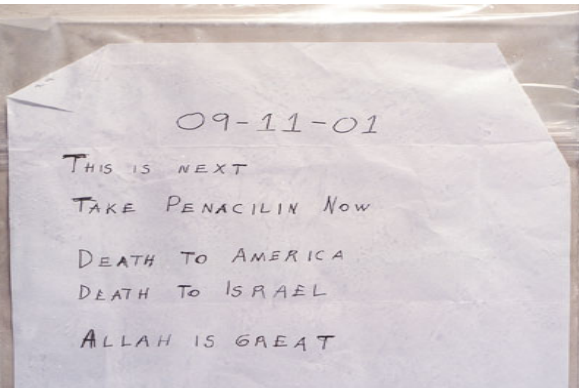
# Control of infectious diseases : what European citizens expect

- Protection against disease pandemics (influenza) and antibiotic-resistant « super-bugs » (MRSA)
- Rapid detection and control of outbreaks
- Optimal & affordable prevention and healthcare services
- Biomedical innovation to improve prevention and healthcare

# Control of Communicable Diseases in the European Community

- **1998: European Community Network for the Epidemiological Surveillance and Control of Communicable Diseases** (Decision 2119/98/EC : Coordination between EC & Network of National Public Health Institutes)
- **2000: Disease specific surveillance networks** (Decision 2000/96/EC: definition of diseases or health issues included in DSNs)
- **2000: Early warning and response system for the prevention and control of communicable diseases** (Decision 2000/57/EC: mutual information and coordination of national action for outbreaks spreading beyond MS borders or requiring Community action for containment)

# 2001/ The Anthrax Scare



Letter to Tom Brokaw



## Cover Story



Letter to Senator Daschle

# 2003/ SARS changed daily lives





## **Health and Consumer Protection Directorate-General**

### **Public health**

We have around 100 staff, mostly based in Luxembourg, who work on public health issues. Some of these officials manage or develop laws. The EU has a small but important body of public health legislation covering matters such as the safety and quality of blood, blood derivatives, human tissues and human cells used in medical treatments.

...out of 21,000 Commission staff

The main thrust of EU public health policy, though, is to help EU countries pool their expertise on health, to identify and share best practice and to help coordinate the EU wide response to health threats such as infectious disease outbreaks. Fostering cooperation between EU countries' healthcare systems is also becoming an increasingly important area of activity.

# Control of Communicable Diseases in the European Community: Milestones

- **2003-08: Community Action Programme in Public Health**
  - Early warning of outbreaks and development of rapid response capability
  - Strengthening epidemiological surveillance
  - International quality assurance and standardisation for clinical and public health laboratories
  - International training to develop expertise
- **2004: European Centre for Disease Control and Prevention** (Regulation 851/2004 adopted by Parliament and Council)

(Inter)national (co)operation in  
biodefence and communicable  
disease surveillance & control:

*Where does the EU stand  
in 2005 ?*



<http://iride.cineca.org>

I.R.I.D.E.

of Resources for **Inventory of Infectious Diseases in Europe**

a Project funded by Directorate General SANCO of the European Commission

Computerized database of resources  
for the control of infectious  
diseases, updated on-line by  
participating countries.

An opportunity for sharing technology  
and facilities by knowing specific  
locations, contact points and procedures  
in each Member State and other near countries

Project and results



Participating Countries



Search the database

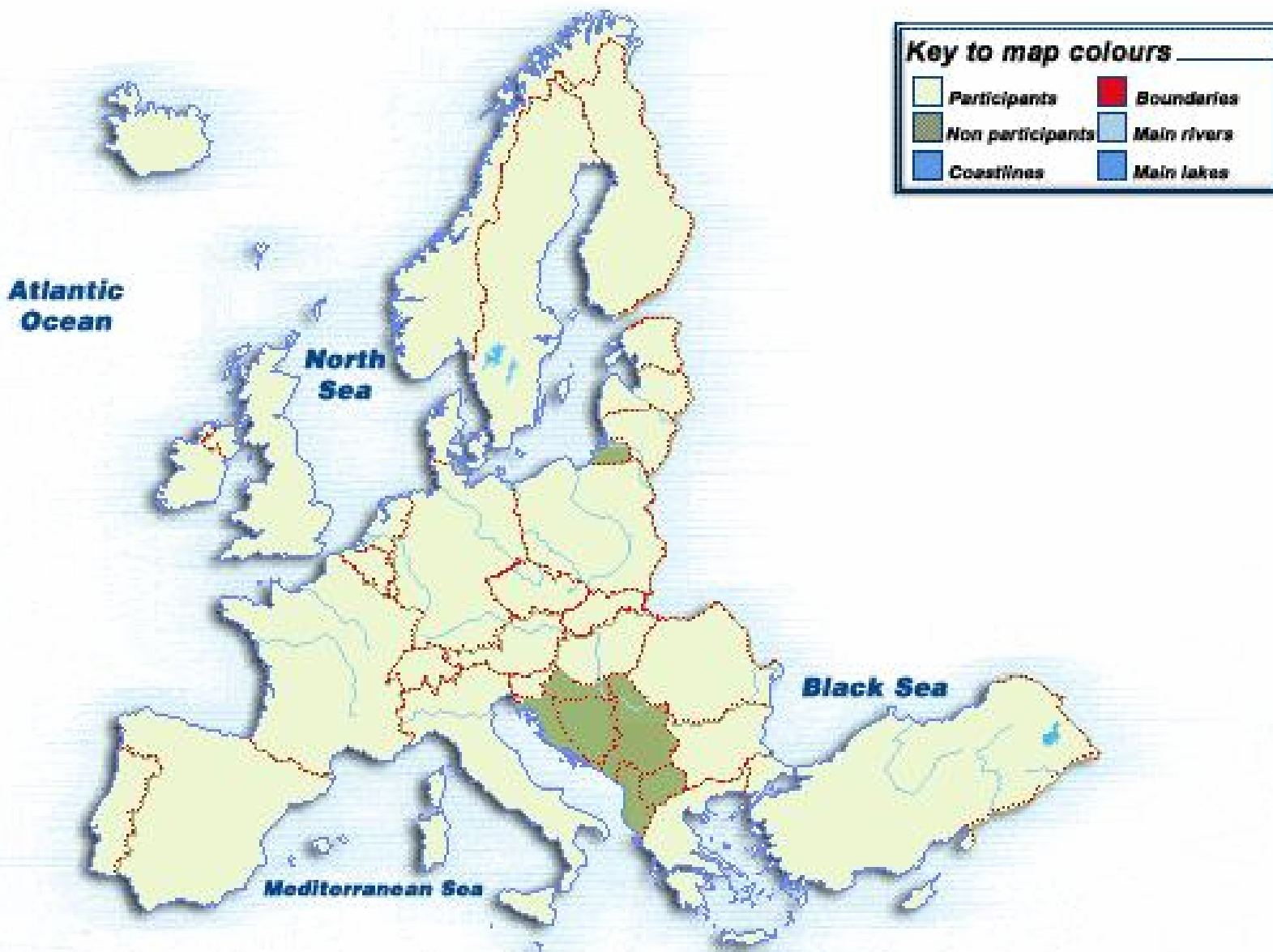


Data entry



# Map of I.R.I.D.E. Countries

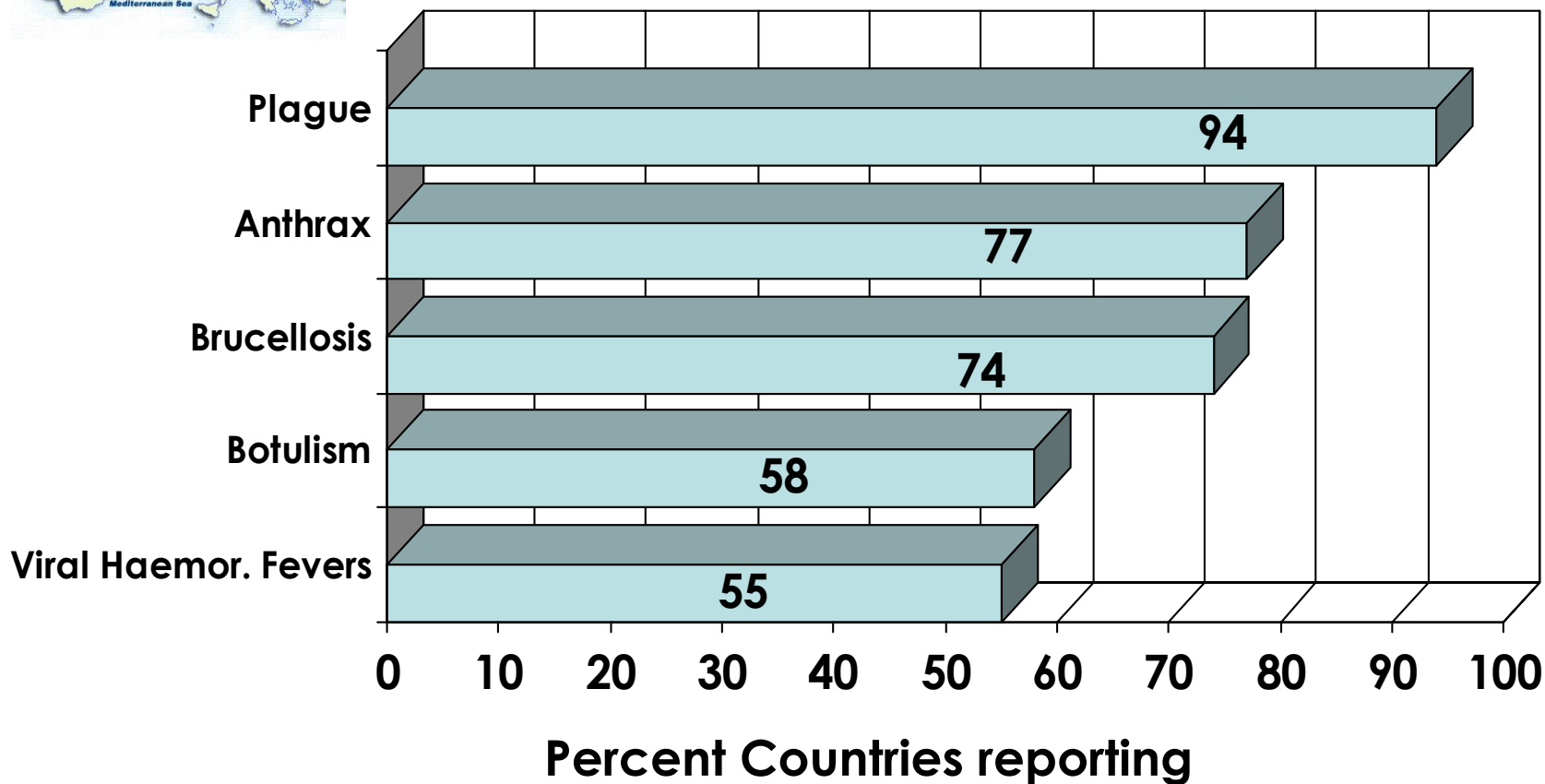
27 European Countries,





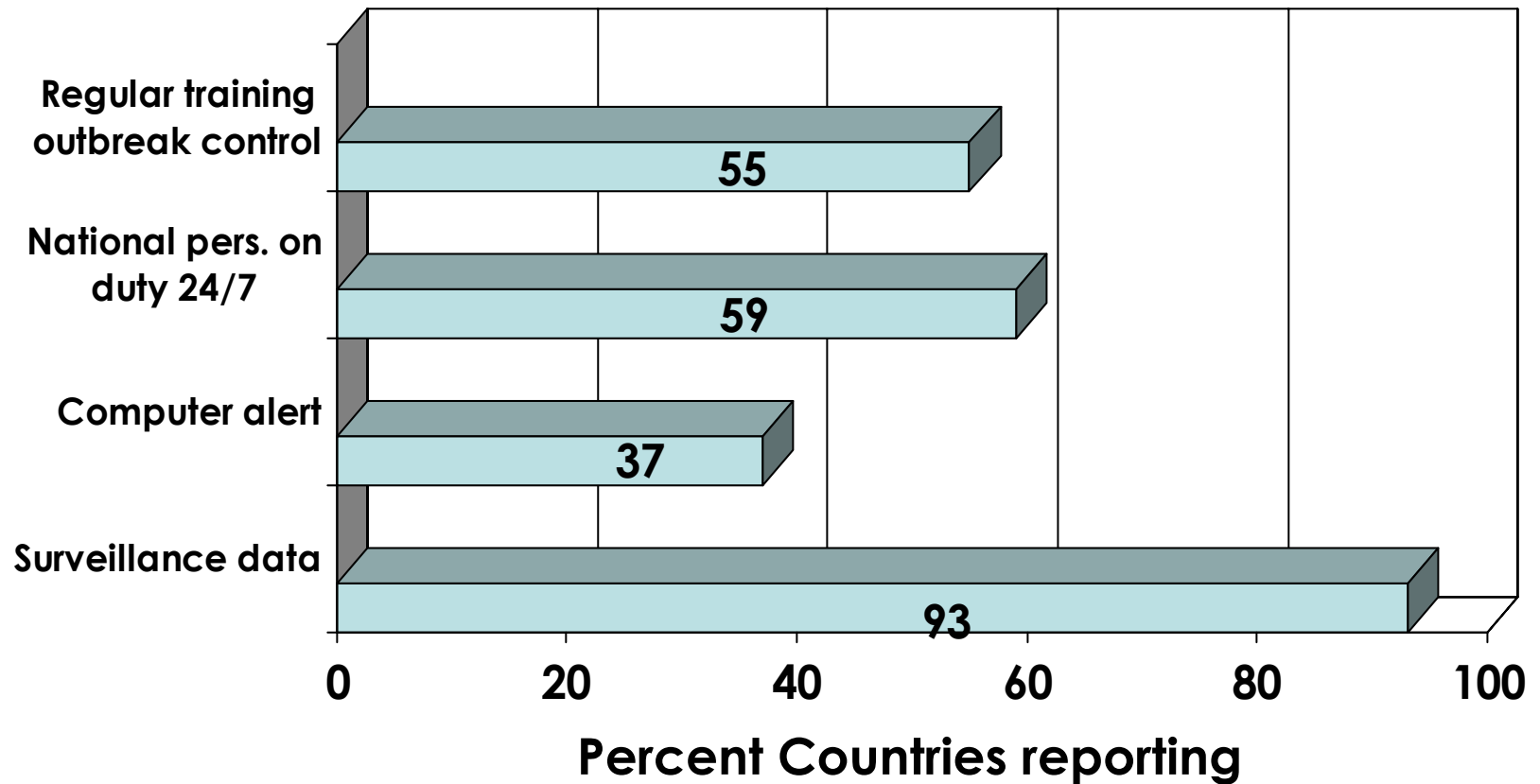
# Notifiable Diseases

IRIDE Database, 27 European Countries,  
2005





# Outbreak Alert & Response, IRIDE Database, 27 European Countries, 2005

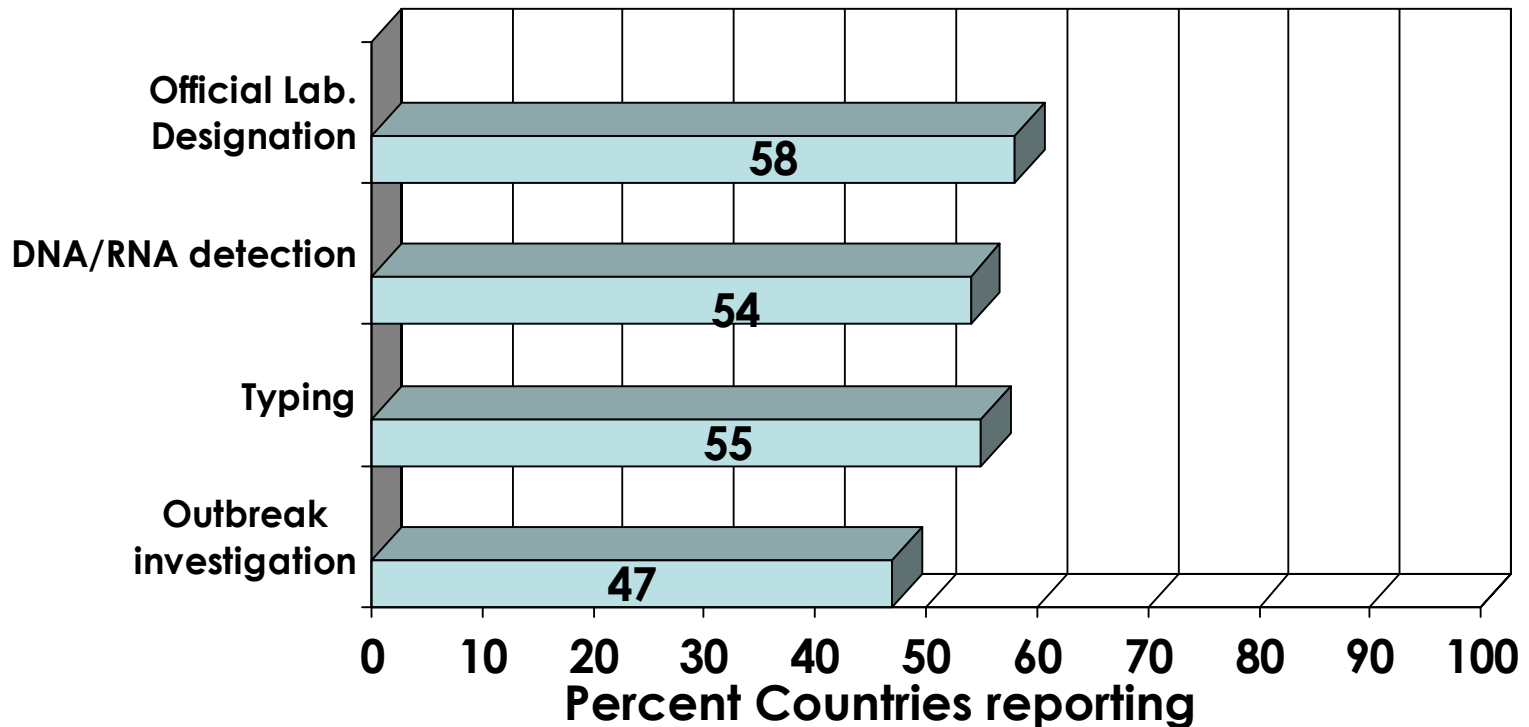




# Reference Laboratories

IRIDE Database, 27 European Countries,  
2005

**N= 304 national reference laboratories; 485 staff members  
Available for 257 pathogens; 60 % of all notifiable diseases**



# Europe : unity arising from diversity...







# ECDC Prehistory



- 1997: Proposal for Euro-CDC/ ECID with large research programme Tibayrenc *Nature* 1997;389:433
- 1998: Virtual “CDC” = Network of networks  
Giesecke J, Weinberg J *The Lancet* 1998;352:1238
- 1999: ECCMID Debate between supporters & opponents Stephenson *JAMA* 1999;281:1477
- 2002: European Parliament Workshop : need for a ECDC *ESCMID News* 2002; 3:18
- 2003: Commission ECDC proposal; ESCMID support  
Position paper *ESCMID News* 2003;3:18

# Why a new Centre

- New threats emerge and old diseases reemerge – SARS, Flu, AMR, bioterror
- 10 new Member States
- Pre-ECDC
  - Uncoordinated surveillance networks
  - EWRS
  - Weak coordination of response capacity



# EUROPEAN CENTRE FOR DISEASE PREVENTION AND CONTROL

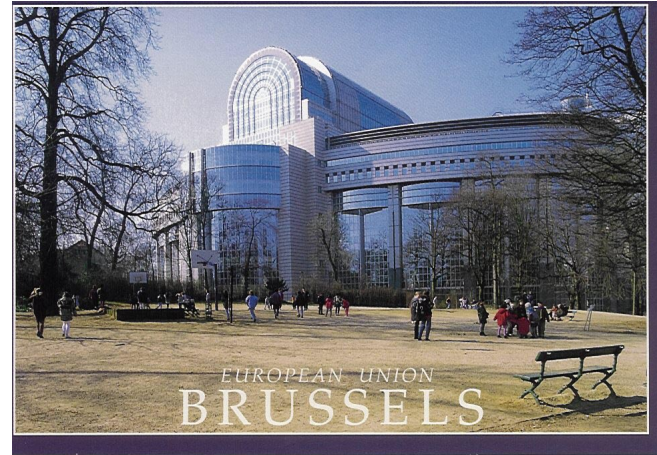


## *Position Paper 2003: Key elements for success*

- Increase ECDC budget for sufficient capacity to achieve its mission
- EU capacity building at local & national levels : training in microbiology, infectious diseases and epidemiology
- Complementation of national reference laboratory networks by EU microbiology laboratory
- Integration of epidemiology and laboratory research (microbial genomics, molecular epidemiology)

# ECDC history

- July 2003: Commission's proposal to establish Centre
- December 2003: Council decision that Sweden will host the Centre
- April 2004: Regulation 851 establishing the Centre
- September 2004: 1st meeting of Management Board
- December 2004: Director Zsuzsanna Jakab nominated
- March 2005: Director takes office
- May 2005: Centre operational
- [www.ecdc.eu.int](http://www.ecdc.eu.int)



# ECDC Mandate

Founding Regulation 851/2004/EC

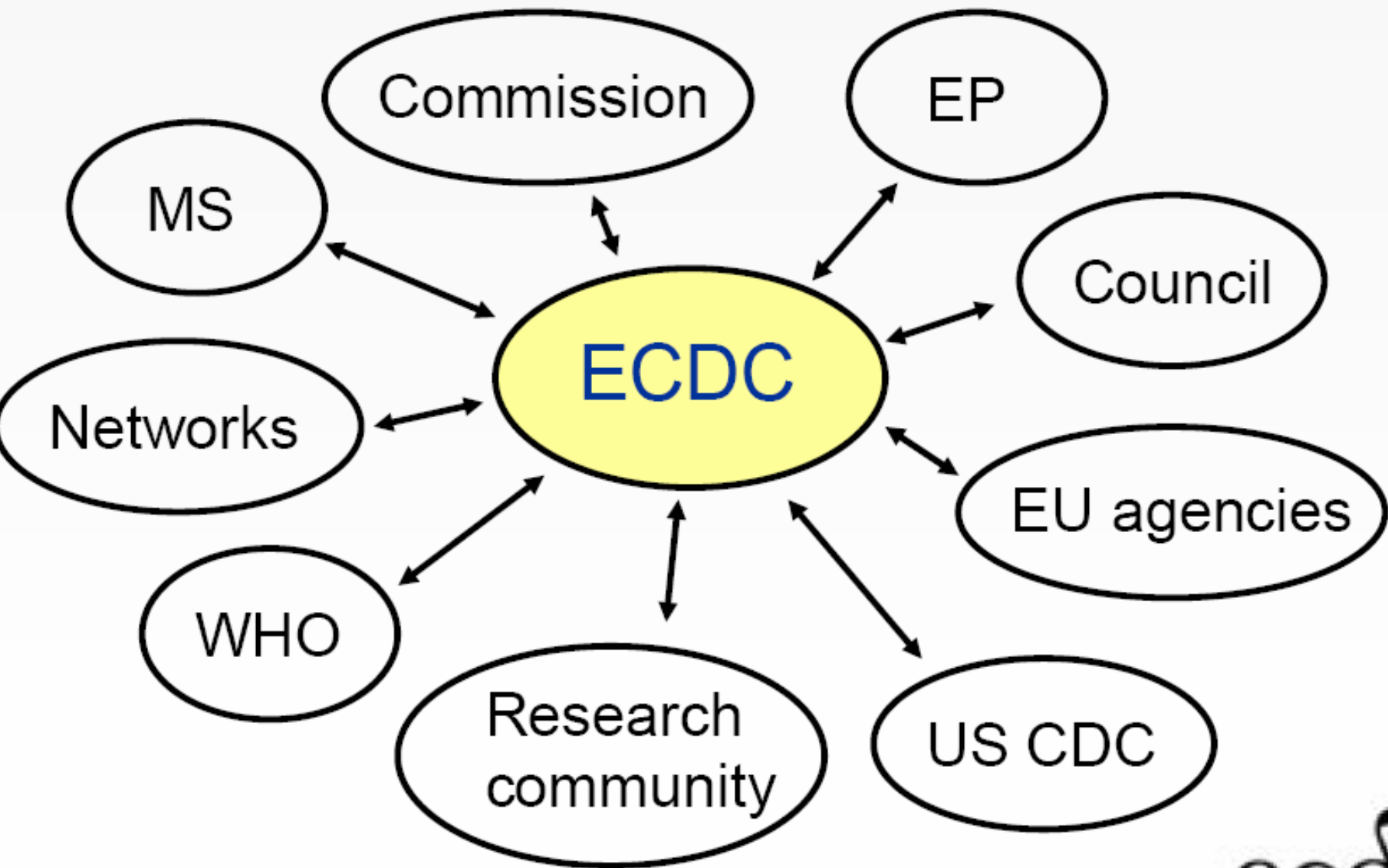
- **Surveillance**
- **Risk identification and risk assessment**
- **Preparedness planning**
- **Response to health threats**
- **Training**
- **Communication**
- **Scientific opinions**

Note: ECDC has no legal or regulatory powers;  
Commission and Council responsible for policy

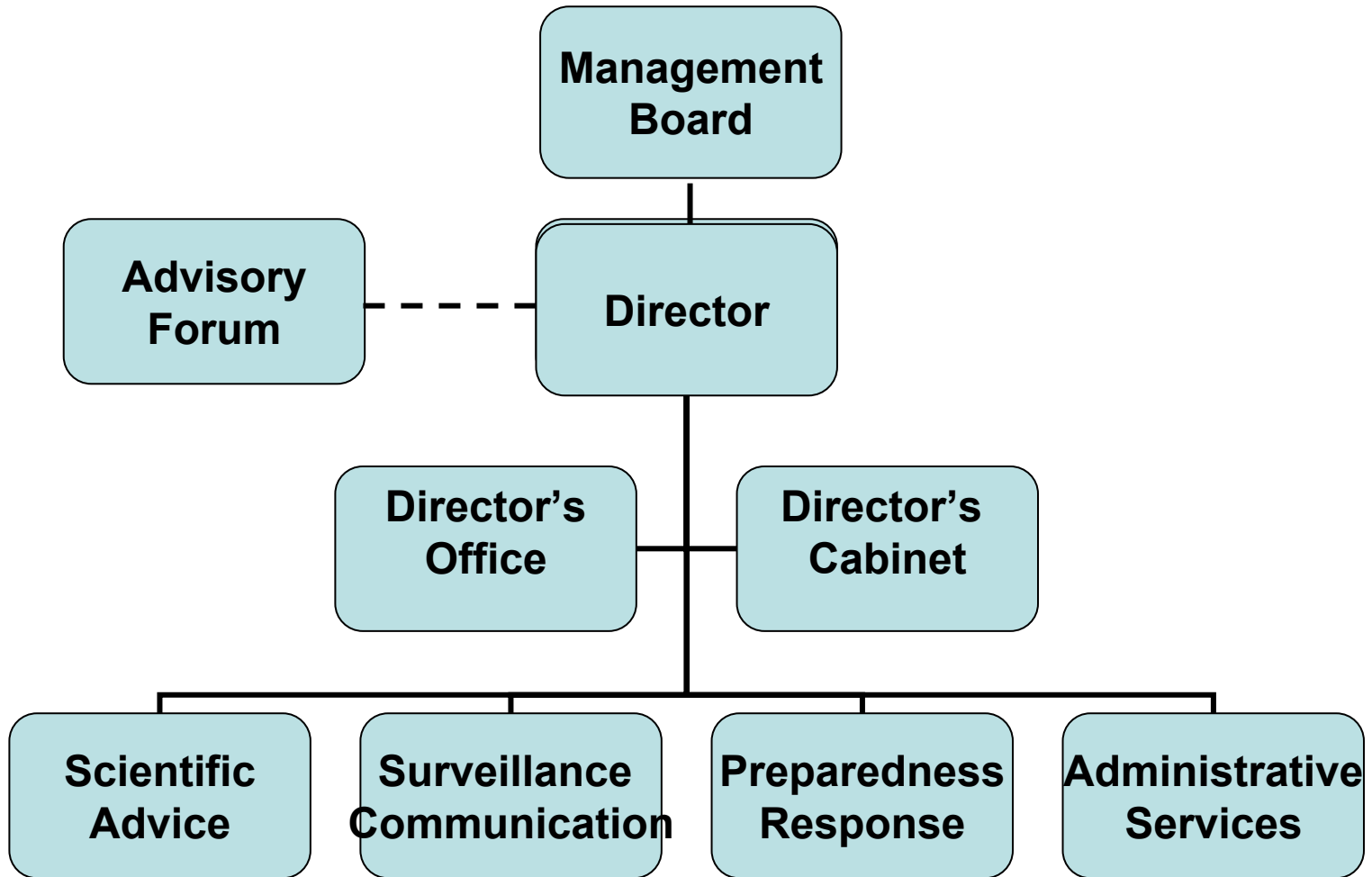
# Staffing and budget

- 2005: 29 staff 5 M €
- 2006: 5 staff 19 M €
- Proposal
- 2007: 170 staff 41 M €
- 2008: 170 staff 80 M €
- 2009: 220 staff 80 M €
- ... but review in 2007

2005:  
US CDC: 4 billions US \$  
NCID : 1,500 staff



# ECDC Organization



# Management Board

- Composed of one member designated by each Member State, two members designated by the European Parliament and three members representing the Commission.
- Appoints and exercises authority over the director
- Ensures that the Centre carries out its mission and performs the tasks assigned to it on the basis of regular external evaluations every 5 yrs
- Adopts the Centre's programme of work, revised annually

# Advisory Forum

- The Advisory Forum supports the director in ensuring the scientific excellence and independence of activities and opinions of the Centre.
- The Advisory Forum is composed of
  - 25 members from technically competent bodies in the Member States which undertake tasks similar to those of the Centre
  - 3 members (and 3 alternate) without the right to vote nominated by the Commission and representing interested parties at European level, such as non-governmental organisations representing patients, professional bodies or academia.



# Organisation

Suszana Jakab

Director

Advisers

Johan Giesecke

Andrea Ammon

Denis Coulombier

Jef Maes

Chief scientist  
--  
Unit for  
Scientific  
Advice

Unit for  
Surveillance  
&  
Communication

Unit for  
Preparedness  
&  
Response

Management  
&  
Administration

ecdc

# Unit for Scientific Advice

- Provide independent technical and scientific advice
- Well acquainted with the front-line of research in all areas of CD control
  - Actively participate in all key scientific conferences and meetings
- Network of experts and scientists in Europe
  - Inventory of resources, independent scientific panels
- Build on the scientific competence and experience within the NSI and DSNs

# Unit for Scientific Advice

## Work Plan 2005-06 (I)

- Operating procedures
  - Rules for answering scientific questions
  - ToR for Scientific Panels
- Scientific Panels
  - Six panels with 11 members each
  - Support staff for panels
  - First meeting of Panels
- Collaboration with laboratories
  - Clear guidelines for how ECDC will cooperate with EU labs

# Unit for Scientific Advice

## Work Plan 2005-06 (II)

- Collaboration with learned societies to secure scientific input
  - OP for cooperation with learned societies
- ECDC guidelines on specific diseases/issues
  - Priority list
  - OP for producing guidelines
- Internal weekly summaries of new scientific findings & select release on Weekly Alert

# Unit for Surveillance and Communication (I)

- Gradually coordinate/integrate DG Sanco supported surveillance networks into ECDC
- Promote an increase in coverage and effectiveness of the surveillance networks
- Technical assistance to MS

# Unit for Surveillance and Communication (II)

- Avoid duplicate reporting
- Data standardisation and comparability
- Harmonisation of laboratory methods
  - Diagnostic, confirmatory, typing
- Integration of epidemiological typing data

# Unit for Surveillance and Communication (III)

- Public and privileged web pages
- Surveillance reports
  - Weekly (electronic) epidemiological report
  - Annual epidemiological report
  - Editorial office *Eurosurveillance*
- Articles in scientific journals
- Risk communication strategy for target groups

# Road Map for Future Surveillance

## 2005

- Agreements on data access
- Consultation process (national rep, learned societies)
- Technical systems for storing/accessing data
- Strategy document (several steps)

## 2006

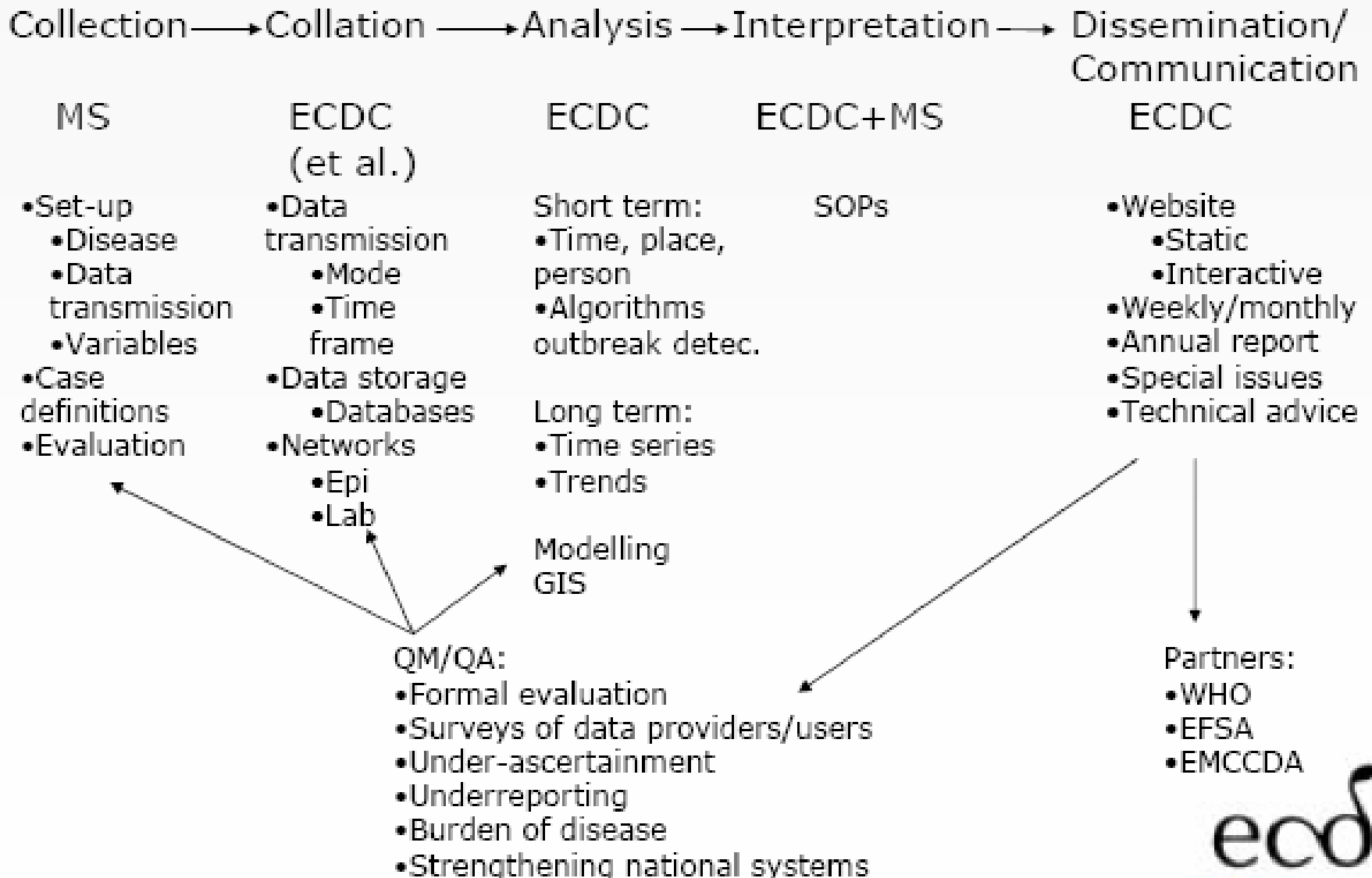
- Build close links to the DSN
- Detailed evaluation of networks (SURVEVAL)

## 2007/2008 (as present DG Sanco network contracts ends)

- Full coordination of all surveillance activities



# EU Surveillance System



# ECDC does not operate laboratories

- Build on what already exists in Member States to avoid duplication
- Support MS response capacity by knowing where appropriate lab. capacity is located
- Ensuring microbiological expertise through secondments and short-term positions
- Build up a system of reference labs

# Unit for Preparedness and Response

- Keep track of emerging health threats
  - ProMed, GOARN, GPHIN, GIDEON and other Community alert systems
- Have the organisation and capacity for timely advice on such threats
- Assist the Commission by operating the Early Warning and Response System (EWRS) with a 24h/7d duty system;
- Operate outbreak assistance team

# ECDC Priorities for 2005-06

- Build up capacity in all areas of communicable diseases and bioterrorism
- First areas:
  - Influenza
  - HIV/AIDS and STIs
  - Antimicrobial resistance
  - Zoonoses

# Pandemic and Avian Influenza

- Monitoring and assessing the threat day-by-day
- Developing surveillance of seasonal, epizootic and pandemic influenza
- Providing scientific opinion and guidance
- Coordinating risk assessment activities in the event of a pandemic influenza or an avian influenza public health crisis
- Strengthening European and country preparedness (assessment tool + country visits)

# Europe makes progress in preparing for influenza pandemic, but further work needed

*Eurosurveillance Weekly* Nov 17, 2005

Olaf Horstick<sup>3</sup>, Reinhard Kaiser<sup>2</sup>, Massimo Ciotti<sup>1</sup>,  
Caroline Brown<sup>3</sup>, Denis Coulombier<sup>2</sup>, Angus  
Nicoll<sup>2</sup>, Franz Karcher<sup>1</sup>, Bernardus Ganter<sup>3</sup>

<sup>1</sup>European Commission, Direction General Health and Consumer Protection, Luxembourg

<sup>2</sup>European Centre for Disease Prevention and Control, Stockholm, Sweden

<sup>3</sup>World Health Organisation Regional Office for Europe, Communicable Disease Surveillance and Response, Copenhagen, Denmark

# Assessment of Pandemic Influenza Response Plans

Components of plan	March: 31 countries with plan	October: 46 countries with plan
	Number (%)	Number (%)
Clear division of responsibilities, obligations and mandates	25 (81%)	37 (80%)
Surveillance systems	30 (97%)	41 (89%)
Laboratory capacity and role	29 (94%)	38 (83%)
Healthcare organisation	27 (87%)	38 (83%)
Maintenance of essential community services	24 (77%)	27 (59%)
Strategy for antivirals	25 (81%)	36 (87%)
Strategy for vaccines/vaccination	27 (87%)	36 (87%)
Strategy for information to public and media	26 (84%)	36 (87%)
Other public health measures (social distancing etc)	24 (77%)	33 (72%)
Plan tested in simulation exercise	4 (13%)	5 (11%)

**March 2005 survey: 56 countries responded (25 EU and 31 non-EU)**  
**October 2005 survey: 48 countries responded (25 EU and 23 non-EU)**

# Assessment and Coordination of Pandemic Influenza Plans in Europe

The WHO/European Commission/ECDC are prepared to send expert teams to visit and assess the plans of any European country that invites them.

A third workshop on pandemic preparedness, to be hosted by the ECDC in 2006, will concentrate on inter-country coordination of plans in the event of a pandemic.



# Antimicrobial Resistance

- Coordinate and support ongoing EU activities
- Add resistance components in all relevant surveillance networks (TB, HIV, enteric infections, etc)
- Harmonisation and QA of surveillance data
- Combine data on resistance and consumption
- Inventory of actions in MS
- Evaluate the costs of AMR
- Evaluate the scientific basis for intervention
- Develop tools and guidelines

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## Lethal hospital bug cases rocket

The number of cases of a potentially lethal hospital infection has rocketed since the 1990s, figures show.

The Department of Health has revealed there were 44,488 cases of C. difficile in over 65s in England last year.



Elderly patients are more at risk

It was the first time mandatory surveillance of the diarrhoea-causing infection has been undertaken.

In the early 1990s there were about 1,000 cases a year, but by 2003 the total rose to 35,536, England, Wales and Northern Ireland data showed.

### BBC NEWS:VIDEO AND AUDIO

[Patient tells of his experience of contracting the bug](#)

 [VIDEO](#)

### BBC ACTION NETWORK



#### Take control

Advice and contacts on NHS healthcare to help you take action

### SEE ALSO:

- ▶ [The bugs hitting NHS wards](#)  
23 Jun 05 | Health
- ▶ [Patients killed by new bug strain](#)  
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07 Aug 04 | Health
- ▶ [Rapid diarrhoea test developed](#)  
18 Feb 04 | Health
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# Pandemic *Clostridium difficile*

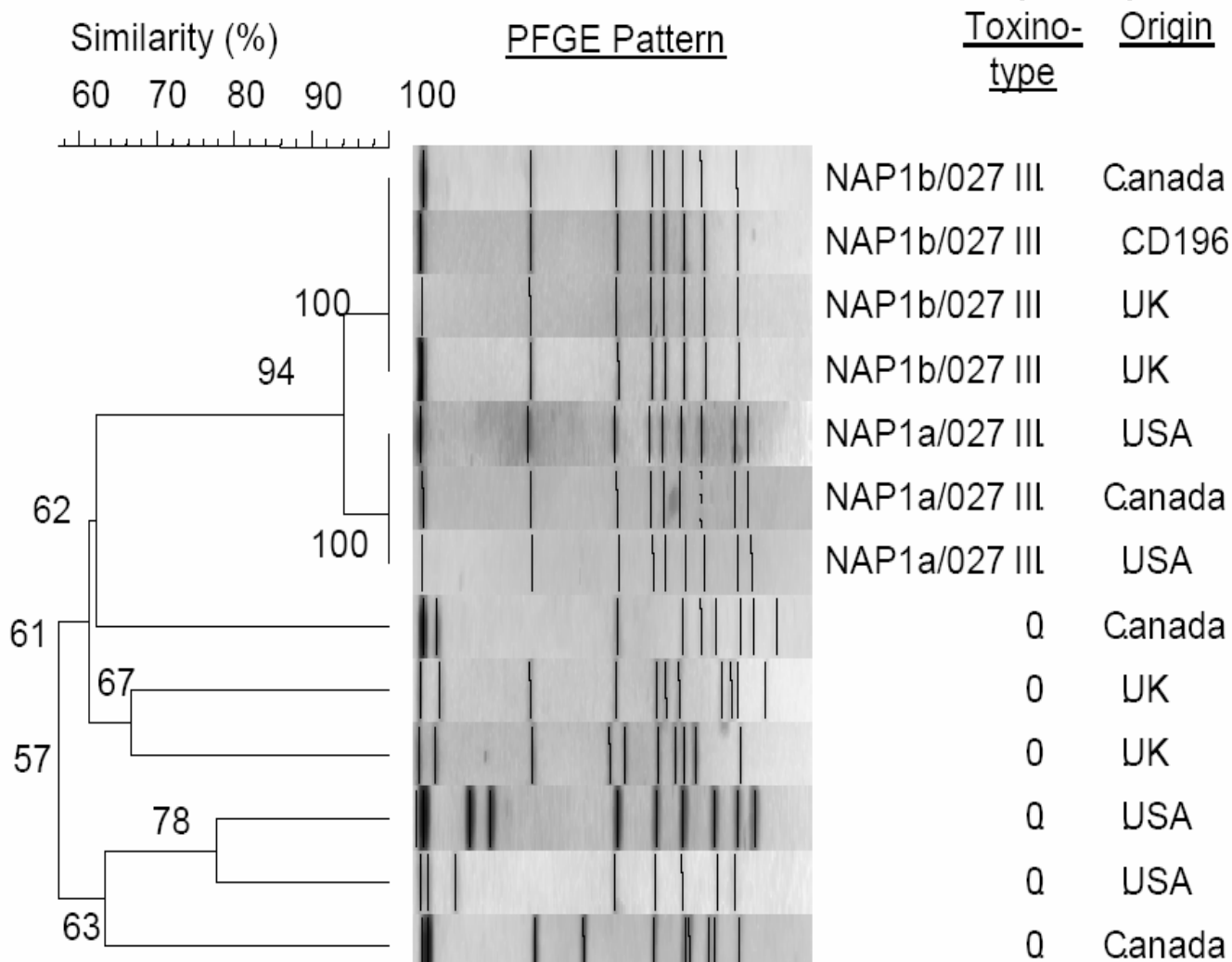
- Large and difficult to control outbreaks reported in North America, United Kingdom, and the Netherlands in 2004-05
- Severe course; increased rate of metronidazole treatment failure
- High mortality (5-10 %).
- Ribotype 027, toxinotype IIIb, binary toxin, *tcdC* deletion

McDonald C. *Infect Control and Epidemiol.* 2005;**26**:672-5;

*CDR weekly* 2005;**15**(24): news.

Kuijper EJ. *Ned Tijdschr Geneeskd.* 2005; **49**:2087-9

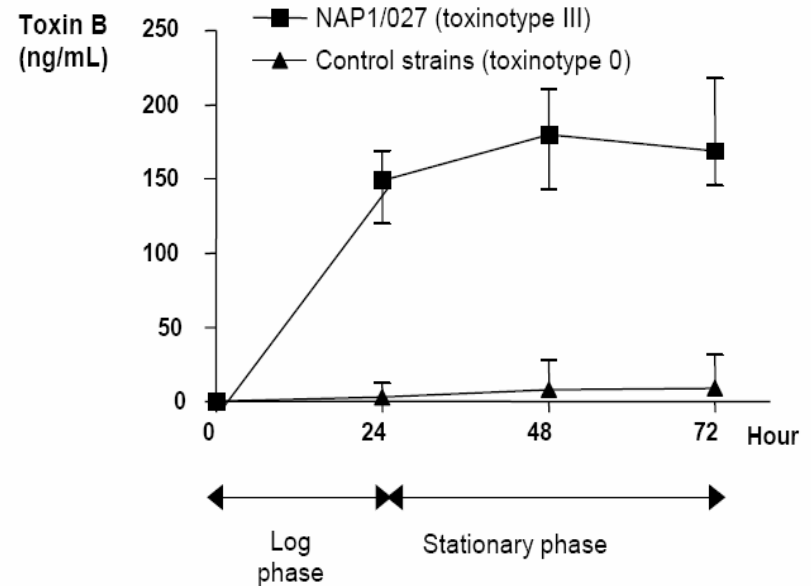
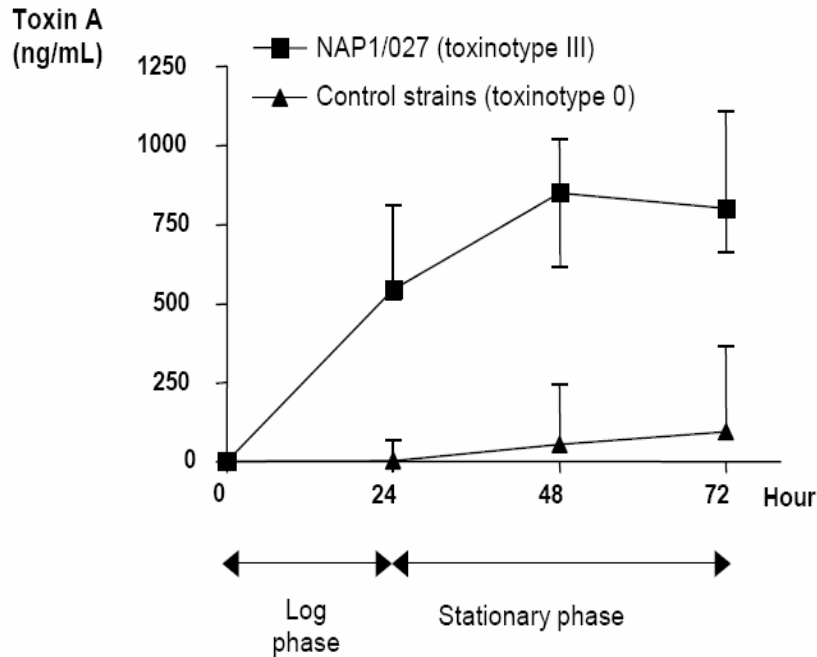
# Clonal Relatedness of *C. difficile* Strains Causing Outbreaks of Severe Disease in North America and Europe (UK)



Warny et al. *Lancet* 2005; 366: 1079-84

# In vitro Production of Toxins A and B by *C. difficile* Isolates:

Toxinotype III- Ribotype 027 strains are hypertoxinogenic



Warny et al. *Lancet* 2005; 366: 1079-84

# First isolation of *Clostridium difficile* PCR ribotype 027, toxinotype III in Belgium

Rafael Joseph<sup>1</sup>, Danny Demeyer<sup>1</sup>, Dirk Vanrenterghem<sup>1</sup>, Jan den Berg<sup>2</sup>, Ed Kuijper<sup>2</sup>, M. Delmée<sup>3</sup> *Eurosurveillance* **10**

- By 19 September 2005, four patients from the Leper, had been infected. There was a significant increase in associated diarrhoea increased from 10 per 10 000 patient admissions in 2004 to 33 per 10 000 patient admissions in 2005.
- The strain was identified as PCR ribotype 027 and toxinotype III. It also contained the toxin regulator gene (*tcdC*). It is similar as the strain isolated in the United States, Canada, the UK and the Netherlands.

The next pandemic to be tackled by ECDC ?

# The ECDC Future ...

- Demonstration of added value in response to pandemics
- Support from member states
- Support from clinicians and scientists
- Integration of laboratory, clinical and public health disciplines

