



Strengthening Europe's defences against infectious disease





Preface

In today's world, infectious diseases can spread internationally with alarming speed. This was shown by the SARS outbreak in 2003, and we are seeing it again now with the spread of H5N1 avian influenza (bird flu) from Asia to Europe and Africa.

Though the threat to human health from the H5N1 bird flu virus in its current form is low, we must still be concerned about the risk it poses to people in close contact with poultry in regions where the virus is present. The very fact that H5N1 bird flu is capable of infecting people is worrying. It reminds us that the 21st century will undoubtedly have new diseases in store for us.

One of these may well be a pandemic strain of human influenza, though whether this will come from H5N1 or some other virus is impossible to say.

The health challenges of the 21st century require 21st century institutions to respond to them. This is what ECDC seeks to provide in Europe. Its mission is to reinforce and develop Europe's system of continent-wide disease surveillance, reinforce Europe's rapid alert systems against disease outbreaks, support the EU and its Member States in strengthening preparedness and response against epidemics, provide authoritative scientific advice on infectious diseases and the risks they pose, and to work closely with Member States and other partners to prevent and control such diseases.

Zsuzsanna Jakab
Director of ECDC





The Tomtebodan — ECDC's headquarters building

ECDC — European Centre for Disease Prevention and Control

'Strengthening Europe's defences against infectious disease'

In the field of infectious diseases, 2005 was a historic year for the European Union and its citizens. It saw the culmination of the process started by EU Member States, the European Commission and the European Parliament to establish a new independent European Centre for Disease Prevention and Control — ECDC. EU Member States and citizens now have a Centre dedicated to strengthening Europe's defences against infectious disease by facilitating cooperation and the sharing of health knowledge.

The process of setting up ECDC started in earnest in 2003, after the SARS outbreaks, and was completed in record time. The founding regulation, establishing ECDC and specifying its mission, was approved in less than a year. Following this example, the Director of ECDC (who took up her post in March 2005) and a core group of staff had, by the autumn of 2005, got the Centre located, staffed and functioning whilst also dealing with the threat of avian influenza.

Key facts about ECDC



Operational since:	May 2005
Seat of Agency:	Stockholm, Sweden
Director:	Zsuzsanna Jakab
Member States:	EU-27 plus the EEA/EFTA countries (see the list on page 7)
Founding regulation:	Regulation (EC) No 851/2004 of the European Parliament and of the Council

In 2006, the Centre had a budget of EUR 16 million and was set to have 100 staff. The Centre's budget will grow to over EUR 50 million by 2010 and its staff to 300 over the coming years.

The Centre's mission and tasks

ECDC's mission and tasks are set out in Article 3 of its founding regulation, the key parts of which are shown below. In all activities ECDC works closely with, supports and complements the Member States' public health authorities and the relevant institutions of the EU.



In order to enhance the capacity of the Community and the Member States to protect human health through the prevention and control of human disease, the Centre's mission shall be to identify, assess and communicate current and emerging threats to human health from communicable diseases. Within the field of its mission, the Centre shall:

- search for, collect, collate, evaluate and disseminate relevant scientific and technical data;
- provide scientific opinions and scientific and technical assistance including training;
- provide timely information to the Commission, the Member States, Community agencies and international organisations active within the field of public health;
- coordinate the European networking of bodies operating in the fields within the Centre's mission, including networks arising from public health activities supported by the Commission and operating the dedicated surveillance networks; and
- exchange information, expertise and best practices, and facilitate the development and implementation of joint actions.

The strategic thrusts of the Centre's programme

Derived from the mission statement and founding regulation, the overall aim of ECDC is to develop a scientific and evidence-based integrated surveillance and response infrastructure for the EU that will enhance its capacity to prevent and control human disease.

The four main pillars are:

- an integrated surveillance system which combines systematic monitoring of both routinely reported data and epidemic intelligence, for early detection of infectious disease outbreaks, epidemics and priorities;
- a communication and response system which provides timely and regular feedback to Member States and EU institutions and citizens and is ready for urgent and appropriate response to control and prevent the spread of infectious diseases;
- a knowledge system that underpins and supports surveillance and response with the best scientifically based guidelines, definitions and advice and which is at the cutting edge of infectious disease analysis and research;
- country support to strengthen Member States' capacities and to identify best practice for adaptation and dissemination to all.

At the same time as starting to implement its programme, ECDC's other priority has been to set up a functioning centre with its own long-term premises, core scientific staff and an established network of partners to strengthen Europe's defences against infectious disease.



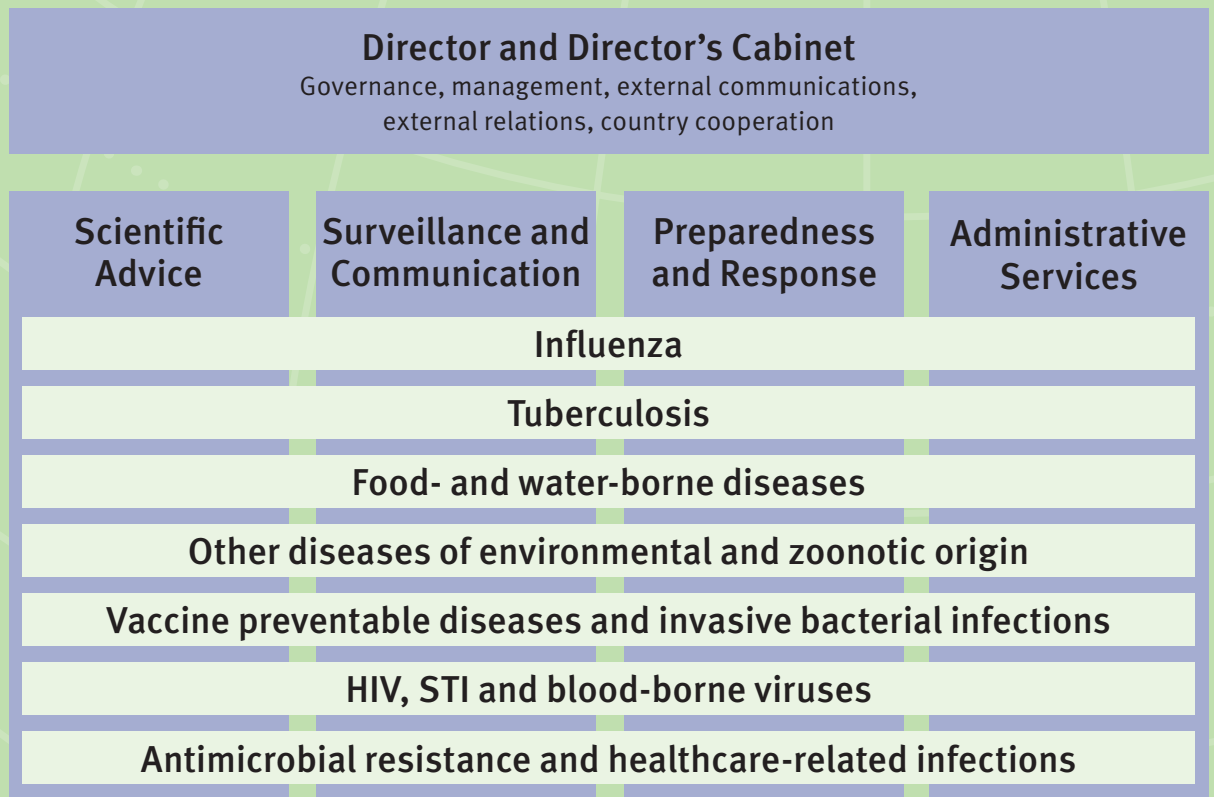
How the Centre is organised and works

The organisational structure of ECDC reflects its core functions, as spelled out in its founding regulation.

To rapidly build an organisation and technical infrastructure capable of dealing with ECDC's many broad and complex tasks, the Director decided at an early stage to create a structure based on key functions rather than disease groups. The organisation is thus built around three technical units (units for Scientific Advice, Surveillance and Communication, and Preparedness and Response) supported by a unit for Administrative Services. The responsibility for governance, leadership, overall coordination and external relations lies with the Director's Cabinet.

The disease-specific activities lie horizontally in projects, across the three technical units, thus creating a matrix organisation with both functional and disease-specific entry points. This structure enables efficient:

- implementation of the strategic programme covering both functional and disease-specific actions and outcomes;
- use of the scientific staff, who will be too small in number in the first years to be spread over disease-specific units, each of which would have to build its own scientific, surveillance and response capacities.



The Centre's governing bodies



As an independent EU Agency, ECDC reports to a **Management Board** whose members are nominated by the Member States, the European Parliament and the European Commission. The Management Board, as well as appointing the Director and holding her accountable for the leadership and management of the Centre, also ensures that the Centre carries out its mission and tasks in line with the founding regulation. The Management Board approves and monitors implementation of ECDC's work programme and budget, it adopts its annual report and accounts — all in all, it acts as the governing body of the Centre. It meets at least twice a year.

The **Advisory Forum** advises the Director of the Centre on the quality of the scientific work undertaken by ECDC. It is composed of senior representatives of national public health institutes and agencies, nominated by the Member States on the basis of their scientific competence, and a public health official from the European Commission. The European scientific associations and civil society groups also send observers to the Advisory Forum. The ECDC Director invites WHO to attend the meetings to ensure synergy in the work. As well as supporting ECDC's scientific work, the Advisory Forum is also a mechanism for exchanging information, pooling health knowledge and furthering public health cooperation. The Advisory Forum meets at least four times a year.

The 27 EU Member States					and the EEA/EFTA countries:
Austria	Estonia	Ireland	Netherlands	Spain	
Belgium	Finland	Italy	Poland	Sweden	
Bulgaria	France	Latvia	Portugal	United Kingdom	Iceland
Cyprus	Germany	Lithuania	Romania		Liechtenstein
Czech Republic	Greece	Luxembourg	Slovakia		Norway
Denmark	Hungary	Malta	Slovenia		

ECDC's units – facts and functions



Scientific Advice Unit

The unit's main task is to provide high-level independent scientific knowledge and evidence as a basis for EU public health decisions in the area of infectious disease.

To achieve this, the unit provides assessments which are based on scientific excellence and independent advice. To do so it uses its own expertise, accesses expertise existing in the Member States, consults the ECDC Advisory Forum, organises independent, ad hoc scientific panels and, if necessary, outsources specific tasks to other experts.

Activities currently under way include:

- producing guidelines to be used by Member States for various concrete public health problems;
- answering scientific and risk assessment questions received from EU institutions or Member States;
- setting up ad hoc scientific panels;
- securing ECDC cooperation with national laboratories;
- building up internal structure and capacity;
- providing knowledge management for the entire Centre.

The unit consists of a team of high-level experts in epidemiology, public health, infectious



disease, microbiology and medical knowledge management under the leadership of the Head of Unit, who also fulfils the role of Chief Scientist for ECDC. Besides the vertical structure of the Scientific Advice Unit's activities, there are a number of projects that cut across all ECDC units and which are led from the Scientific Advice Unit. Projects currently running are:

- influenza and avian influenza;
- HIV/AIDS;
- antimicrobial resistance;
- vaccines and immunisation.

Europe has a long tradition of excellence in the scientific fields of infection biology and clinical infectious disease medicine. Through cooperation and networking with the leading scientists in Europe, there is an added value to pooling resources for public health issues that cross geographical borders. Moreover, the current activities of the Centre aim to form closer links between life sciences and policy-making and accelerate the application of discoveries at the laboratory bench to current public health issues in the field.



Surveillance and Communication Unit

Consolidating and developing Europe-wide surveillance of infectious disease is one of the Centre's key responsibilities. The Surveillance and Communication Unit's strategic objective is to build a Europe-wide surveillance system that provides high-quality, comparable and easy-to-access information on all infectious diseases of interest at EU level. In the meantime, the unit consolidates the European level of cooperation on surveillance that is already in place, for example by the various EU dedicated surveillance networks (DSNs), and integrates the relevant parts of it into ECDC.

The added value of this coordinated approach to surveillance includes not only the standardisation of operating procedures of the networks but also standardisation of the databases and the outputs as far as possible. It also allows public health authorities to tackle infectious disease surveillance in a synergistic way, covering all diseases and avoiding duplication of work. Last, but not least, it will allow Europe to target priority diseases in a coherent way via both surveillance and research activities.

There are several critical components that will shape the direction of this work and will further develop information outputs on infectious disease in the EU:

- to evaluate existing networks, an integral part of which will be a review of the surveillance objectives for the diseases covered;
- to determine the functional specifications of the IT infrastructure;
- to review and update the current case definitions for EU surveillance;



- to integrate laboratory support into surveillance;
- a prioritisation exercise in collaboration with stakeholders.

The first three major components for ECDC's agenda for the future of European-level disease surveillance have already been defined, as indicated below.

- Routine surveillance with a core set of data for each of the 46 diseases that are currently notifiable at EU level.
- Enhanced surveillance for priority diseases that addresses priority issues in a more intense and coordinated manner. Decisions will be taken on a case-by-case basis whether the enhanced surveillance should be based at ECDC or in a Member State public health institute. Regardless of location, however, it will be fully integrated into ECDC's surveillance strategy.
- Studies or feasibility projects in order to evaluate new surveillance approaches, new laboratory methods or pilot surveillance for emerging infection. Such studies or projects could also be contemplated for new priority diseases or issues that had not been sufficiently addressed. They would typically be run by Member State public health institutes with terms of reference, coordination and funding provided by ECDC.



Preparedness and Response Unit

Infectious disease is a growing threat to the health of European citizens as the relentless expansion of trade and travel allows new or emerging diseases, and many old infections, to enter our continent. The SARS outbreak in 2003 illustrated how quickly a new virus could spread internationally in the modern age. This was one of the reasons why the EU decided to establish ECDC: to help strengthen Europe's defences against future disease outbreaks.

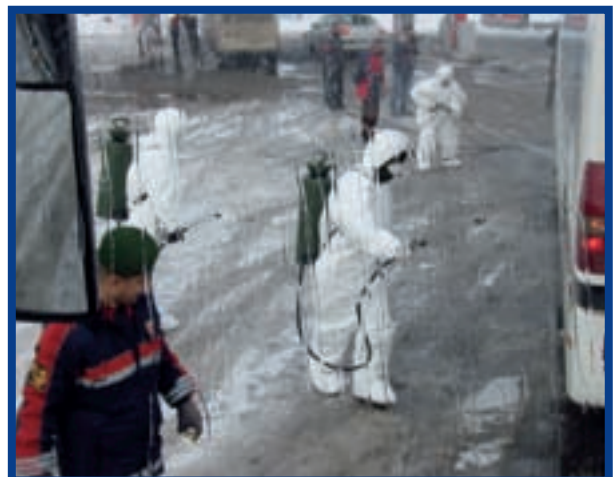
ECDC's Preparedness and Response Unit (PRU) monitors emerging threats in Europe and internationally, and supports the EU Member States in assessing, investigating and responding to them. The unit relies on a set of advanced information technology tools to detect potential threats, with special attention to events threatening more than one EU Member State. The assessment of such threats is carried out jointly with experts from the EU Member States.

The unit provides assistance to EU Member States, when required. It can mobilise outbreak assistance teams to help national authorities assess and respond to threats within the EU and it can contribute experts to international teams.

The unit began its work on threat monitoring and assessment in May 2005, when the Centre became connected to the EU's early warning and response system (EWRS). Since then, ECDC staff have assisted the European Commission in monitoring messages on EWRS 24 hours a day 7 days a week. As avian influenza

was approaching Europe in 2005, ECDC engaged in strengthening preparedness in Europe for tackling avian influenza and pandemic influenza. ECDC has sent experts to help national authorities in the European region, as well as further afield, to investigate and respond to human cases of H5N1. Public concern about avian influenza has focused political attention on the wider issue of preparedness against a human influenza pandemic. In partnership with the European Commission and WHO, ECDC has sent teams to various European countries to help them review their national preparedness plans. It has also helped organise a series of EU/WHO workshops on pandemic preparedness.

The unit has a strong focus on strengthening the EU Member States' capacity for outbreak investigation and response through organising training for epidemiologists. It coordinates the European programme for intervention epidemiology training (EPIET), which has trained more than 130 European epidemiologists through a two-year fellowship over the past 10 years. Shorter courses are currently being developed to further strengthen this capacity in the EU Member States.





Director's Cabinet

The Director is responsible for the overall coordination and leadership of ECDC. The Cabinet supports the Director in overseeing the strategic development of the Centre and ensuring coordination. Within the Cabinet are separate functions for governance, external relations, country support, information and communication, and internal coordination, with the Strategic Advisor playing a coordinating role.

The Cabinet's governance function takes care of the ECDC's relations with and meetings of its governing bodies (the Management Board and the Advisory Forum — see pages 6 and 7). The Cabinet is the main focal point for the external relations of the Centre, maintaining contacts with European Union institutions, agencies and networks, Member States and third-country governments, WHO, the research community, NGOs, pharmaceutical companies and many others. It is also the focal point for ECDC's country support activities, including the creation of an inventory of national assets and expertise in the area of disease prevention and control. ECDC's media relations are coordinated by the Cabinet and conducted by the ECDC press spokesperson. The Cabinet also controls publication on the ECDC website (<http://www.ecdc.europa.eu>) and relations with the EU-funded infectious disease journal *Eurosurveillance*. This journal has a weekly and monthly electronic 'release' (as well as a quarterly print version) and disseminates timely, short, authoritative reports on significant infectious disease events and original scientific articles. *Eurosurveillance* will be the main scientific voice of the ECDC, through which the Centre will channel epidemiological information from the surveillance networks, scientific advice and opinions, and epidemic intelligence reports. This process was initiated in 2006 and in March 2007, the ECDC assumed full responsibility for the journal.



Administrative Services Unit

The Administrative Services Unit facilitates the operational activities of ECDC by ensuring that its human and financial resources are properly managed, and that EU staffing and financial control regulations are adhered to. It provides information technology (IT) and other logistical support for the Centre and is responsible for running ECDC's publications programme.

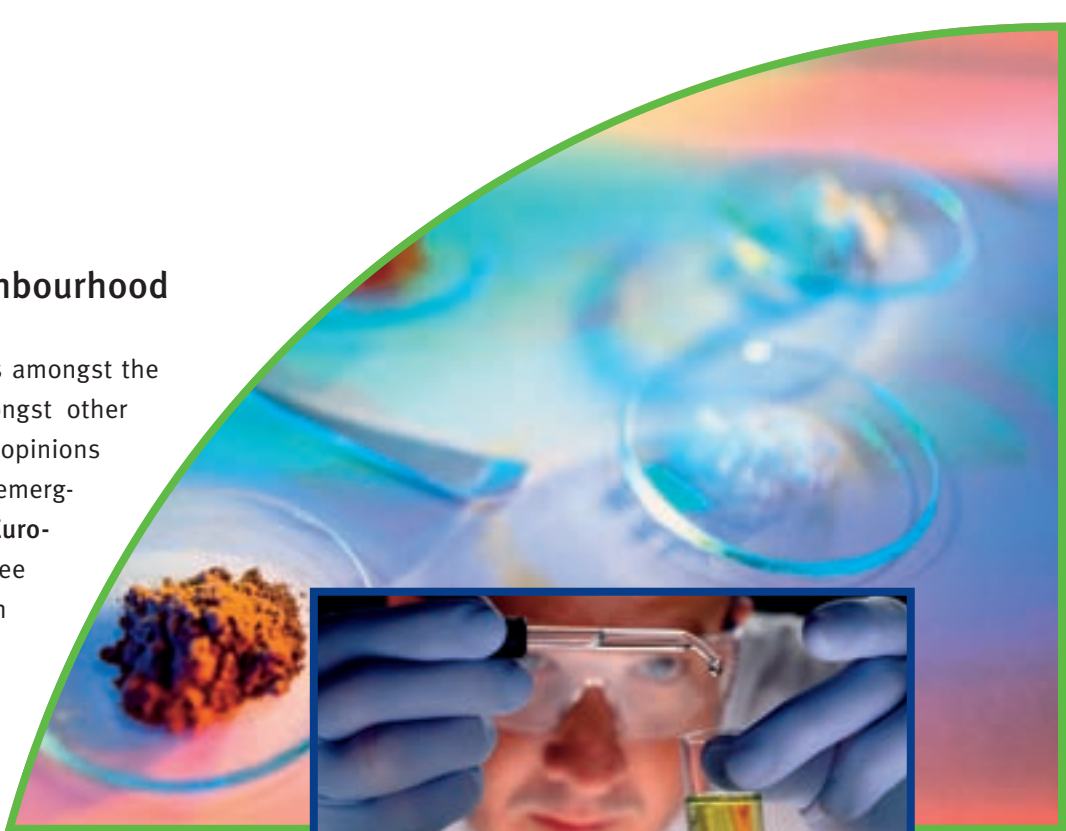
The Administrative Services Unit played an important part in helping ECDC become operational in 2005 — in terms of rapidly recruiting a core staff and establishing ECDC in its permanent headquarters building. As the build-up of the Centre's staff and infrastructure continues throughout 2007 and beyond, the unit has a central role to play in ensuring that development of the Centre runs smoothly.



Partnerships

In Europe and its neighbourhood

ECDC has a number of partners amongst the **EU institutions** to whom, amongst other things, it provides scientific opinions and evaluations of current and emerging health threats. Within the **European Parliament**, the Committee for Environment, Public Health and Food Safety (ENVI) closely follows ECDC's work. The ECDC Director has addressed this Committee on a number of occasions. A delegation of Committee members visits ECDC once a year and the ECDC Director makes an annual statement to the Committee. **As regards the Council and Presidency of the European Union**, the EU health ministers meet regularly in the Employment, Social Policy, Health and Consumer Affairs Council (EPSCO). The ECDC Director attends informal Council meetings on issues concerning infectious disease. When requested, ECDC also contributes to the preparation of specific agenda items, e.g. recently on influenza. From the start, ECDC has been in regular contact with and supported by the **European Commission**. ECDC's official contact point is the Directorate-General for Health and Consumer Protection. Regular contacts take place both at senior management level — including between the ECDC Director, the Health and Consumer DG's Director of Public Health and its



Director-General for Health and Consumer Protection — and at the scientific and technical levels (particularly with units dealing with health threats, health measures, health information and, in the area of zoonoses such as avian influenza, units dealing with veterinary issues). Where appropriate, the ECDC Director also liaises with the Commissioner for Health and Consumer Protection and his cabinet. All these contacts have ensured a smooth working relationship between the Commission and ECDC and a very effective collaborative response to health threats such as avian influenza. Collaboration between ECDC and the Commission's Directorate-General for Research relates to funding of research activities. The remit of ECDC is complementary to those of some other EU agencies and ECDC has to coordinate activities with these partners. Close links have been established with the European Food Safety Authority (EFSA) on issues concerning reporting under the zoonoses directive (2003/99/EC) and avian influenza. ECDC is in contact with the European Medicines Agency (EMA) on a range of issues including antimicrobial resistance, vaccines, and pandemic preparedness. Links are also being forged with the European Envi-

ronment Agency (EEA), the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), and the European Monitoring Centre on Racism and Xenophobia (EUMC).

ECDC has a programme of country visits and support to assist Member States in reviewing their preparedness against a possible influenza pandemic. This covers all 27 EU Member States, EEA/EFTA and many neighbouring countries. In parallel with this, the ECDC Director continues to pay official visits to EU Member States, at their invitation.

ECDC works closely with the EEA/EFTA countries (Norway, Iceland and Liechtenstein), who are all represented in its Management Board and the Advisory Forum. Contact points are being established for future work with neighbouring countries and the Russian Federation.

International links

These are vital as microbes do not respect borders. So ECDC is forming partnerships with public health agencies across the world.

The World Health Organisation (WHO) is one of ECDC's most natural and important partners in this respect. Considerable progress has been made at the political, strategic and operational levels with WHO/HQ and the WHO Regional Office for Europe (WHO/EURO) on global and European issues, respectively. A memorandum of understanding be-

tween ECDC and WHO/EURO has been signed and has been followed by regular high-level meetings and mutual attendance at governing bodies' meetings. At the operational level, WHO and ECDC have collaborated closely on the international response to health threats such as H5N1 avian influenza.

The list of international missions on which ECDC and WHO have collaborated includes avian influenza investigations in Romania, Turkey, China, Azerbaijan and Iraq and missions to strengthen pandemic preparedness planning in a number of other countries. Mutual participation in each other's technical meetings continues as do joint meetings and workshops (e.g. on influenza pandemic preparedness, tuberculosis and HIV/AIDS). A WHO/EURO staff member has been seconded to the ECDC for two years to further strengthen the partnership. Contacts and exchange visits have also taken place with the United States of America (Department of Health and Human Services and the Centers for Disease Control and Prevention — CDC — in Atlanta).

Similar contacts and visits have also been made to Asia (India, Thailand and the WHO regional offices concerned).



List of infectious diseases that are notifiable at EU level

Decision No 2119/98/EC of the European Parliament and of the Council established a network and created a legal framework for EU-wide surveillance, committing Member States to share information on a range of infectious diseases. The list of diseases notifiable at EU level currently comprises 46 diseases defined in this decision, plus a further three diseases that Member States have subsequently agreed should be notifiable at EU level.

Diseases preventable by vaccination

Diphtheria; Infections with Haemophilus influenza group B; Influenza; Measles; Mumps; Pertussis; Poliomyelitis; Rubella; Smallpox; Tetanus

Sexually transmitted diseases

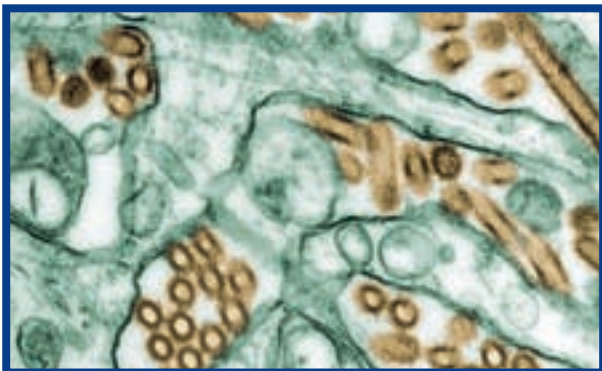
Chlamydia infections; Gonococcal infections; HIV infection; Syphilis

Viral hepatitis

Hepatitis A; Hepatitis B; Hepatitis C

Food- and water-borne diseases and diseases of environmental origin

Anthrax; Botulism; Campylobacteriosis; Cryptosporidiosis; Giardiasis; Infection with Enterohaemorrhagic E. coli; Leptospirosis; Listeriosis; Salmonellosis; Shigellosis; Toxoplasmosis; Trichinosis; Yersinosis



Other diseases

- Diseases transmitted by non-conventional agents:
Transmissible spongiform encephalopathies; variant Creutzfeldt-Jakob's disease
- Air-borne diseases:
Legionellosis; Meningococcal disease; Pneumococcal infections; Tuberculosis
- Zoonoses (other than those listed in the section 'Food- and water-borne diseases of environmental origin'):
Brucellosis; Echinococcosis; Q-fever; Rabies; Tularaemia
- Serious imported diseases:
Cholera; Malaria; Plague; Viral haemorrhagic fevers

Special health issues

- Nosocomial infections
- Antimicrobial resistance

The three further diseases added to the list are:

- SARS
- West Nile Virus
- Human cases of avian influenza

Who's who at ECDC

Director of ECDC

Mrs Zsuzsanna Jakab

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Arun Nanda, Adviser to the Director and

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