

ECDC: Excellence in prevention and control of infectious diseases

The European Centre for Disease Prevention and Control (ECDC), established in 2005, is the European Union agency with the responsibility to strengthen Europe's defences against infectious diseases. It is based in Stockholm, Sweden.

ECDC's mission is to identify, assess and communicate current and emerging threats to human health posed by infectious diseases, and to support and help coordinate European Union countries' preparedness and response capacities.

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“As public health professionals, the staff of ECDC are in the business of trying to protect and improve people’s health. We strive for excellence because we believe that public health matters.”

Marc Sprenger, ECDC Director

ECDC, helping to save lives

Infectious diseases are our business. We have to be vigilant, efficient and effective, because a lot depends on us. European governments understand that as infectious diseases know no borders, there is a constant need for surveillance and assessment of risks to provide a strong and reliable line of defence for all Europeans.

Our scientific work is closely linked with that of Health Ministries, national public health institutes, public health researchers, managers and practitioners in every country in Europe, with whom we are in daily contact, exchanging information, providing analysis, guidance and technical support.

Protecting Europe from infectious diseases is not a chance benefit. ECDC has been built on well-coordinated public health alert and response systems, rigorous independent scientific evidence and analysis, the capacity to take quick and decisive action and communication expertise to deliver reliable information rapidly to those who need it. All ECDC's central and field operations are organised to support and strengthen these vital public health functions, aiming to add value to country-led responses, particularly in times of financial constraint, and thus help save lives.

ECDC is a scientific and technical agency, not a political body. It is our role to let the European Commission, the European Parliament and national health policy-makers have the advice and evidence they need to make decisions and take action to protect health.

Working here is very special. Not only because we are on the front line of prevention and control of infectious diseases in Europe, but because of the enthusiasm, diversity and professionalism of our team.

ECDC is unique. We are proud to be at the hub of Europe's vast network of dedicated public health specialists, scientists, microbiologists and epidemiologists – over 10 000 in number – who work with us and other partners, like WHO, to protect people from infectious disease threats. We work hard to fine-tune these efforts so as to be worthy of Europe's continued trust and support.

With this brochure I invite you to learn more about how we work, what we do and what we offer.

Marc Sprenger, ECDC Director



ECDC staff meet daily to monitor disease outbreaks

Support to Preparedness and Response Ready when needed

Every morning ECDC experts meet in the Emergency Operations Centre (EOC), the hub of the EU Early Warning and Response System, the European Commission's secure messaging system that is linked to health authorities across Europe and other relevant players. At this daily round table ECDC staff:

- monitor overnight news and updates on outbreaks of infectious diseases in Europe and around the world;
- discuss and review 'signals' of possible new outbreaks picked up through media scanning, and from direct reports made by epidemiologists and health authorities worldwide;
- rapidly assess the likely significance of any new threats;

- review information requests from countries;
- chart progress on ongoing activities aimed at containing the spread of current outbreaks; and
- exchange information, experience and scientific advice with Member States and the European Commission.

After the meeting, relevant data and advice is disseminated to public health practitioners and the general public.

Since the agency's launch in 2005, ECDC's emergency preparedness and response systems have been continuously developed and enhanced through consultations with independent experts from all EU Member States and beyond, reviewed by governing bodies,



tested through global and regional simulation exercises and applied in real life. Preparing for crises is as important as responding to them when they happen. ECDC invests heavily in helping Member States prepare their own emergency operations centres and strengthen preparedness at national level.

Epidemic intelligence tools, scanning the horizon for early warnings

One of ECDC's main strengths is its capacity to detect and respond quickly to infectious disease threats. ECDC has developed a secure web-based communication platform (EPIS) which allows an international

exchange of technical information and early warnings on infectious disease outbreaks. Epidemiologists and microbiologists working in different disease areas can use EPIS to alert colleagues in other countries to cases of urgent concern and share their views and scientific analyses in the online forums.

Food-borne disease outbreaks

ECDC has supported and facilitated several multinational investigations of outbreaks of food-borne diseases that have been detected through the Food- and Waterborne Diseases and Zoonoses network. These collaborative activities resulted in fast and efficient exchange of information between relevant partners, involving public health and food safety authorities in the Member States as well as key actors at the EU level, like Rapid Alert System for Food and Feed (RASFF) and the European Commission. As a result, timely withdrawals of contaminated food in the Member States have protected consumers across Europe.

Migration and infectious diseases

The issue of migration and health has been high on the EU agenda in recent years. EU political commitment is reflected in policy instruments intended to ensure that migrants have access to healthcare and in the European Commission's 2003–2008 European Health Programme and 2008–2013 Second Programme of Community Action in the Field of Health. The latter includes projects on health inequities, migrant health status and infectious disease burden and models for provision of healthcare for undocumented migrants. ECDC has also invested resources over several years to improve understanding of the relationship between migration and public health. However, more can be done to address the health and healthcare needs of migrants. In the coming years, ECDC is committed to improving infectious disease surveillance and monitoring, to ensure that prevention and control programmes are responsive to changing patterns of migration and infectious disease epidemiology, and to ensure that healthcare services are responsive to the specific needs of migrant populations.



More people than ever are on the move



“People here are very enthusiastic! The staff represent the diversity of the region, and to me they personify the very precious idea of the European Union, which is working in peaceful cooperation”.

Andrea Ammon, Deputy to the Director

Surveillance

We compile and analyse the data

At the heart of ECDC is surveillance of infectious diseases: collecting, evaluating, analysing and disseminating relevant scientific and technical data. This is done through The European Surveillance System, known as TESSy. TESSy provides European countries with scientific evidence on infectious diseases so that they can make a better and targeted response.

Surveillance is a joint activity with Member States and the many experts and institutes of public health who contribute to the databases. EU legislation requires all countries to routinely report surveillance data to ECDC on an agreed list of 49 infectious diseases, and to report outbreaks that could spread to other EU countries.

The database includes and integrates information from many formerly separate disease-specific data surveillance networks. This has made access to European infectious disease data simpler and created a one-stop-shop.

ECDC compiles and analyses the epidemiological data and produces reports that provide both an EU overview and valuable and relevant comparative information for each individual Member State.

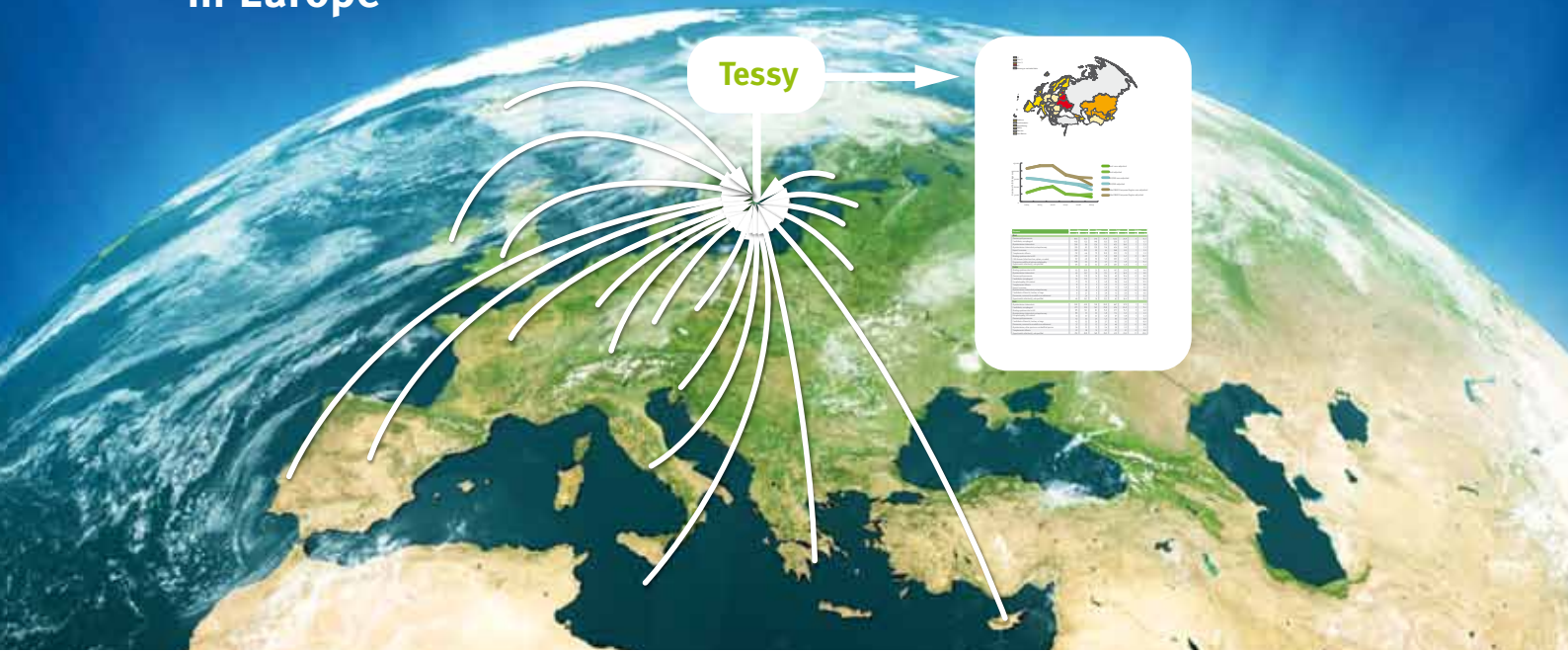
TESSy: a mine of information

TESSy is a highly flexible, integrated and interactive system that allows specific data searches and international comparisons. It offers user-friendly displays of selected results in various downloadable formats, such as tables, figures and maps.



Every year ECDC publishes the *Annual Epidemiological Report*, a unique publication which gives comparable figures on infectious diseases across Europe. The numbers are used not only to examine what has happened and what is happening, but also help identify future trends and policy directions.

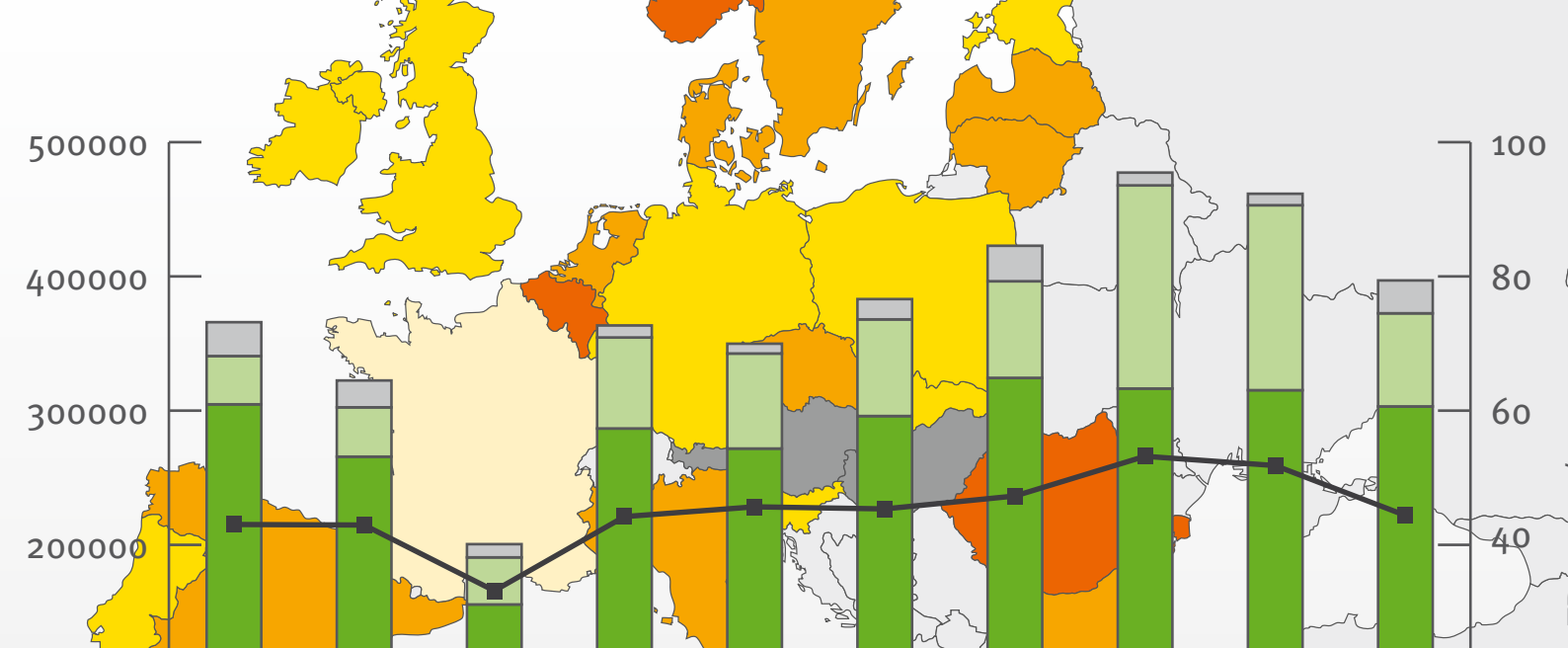
TESSy, a one-stop-shop for data on infectious diseases in Europe



Surveillance networks

Specialised public health experts in each Member State from the following networks submit data to TESSy that is then validated and analysed by ECDC:

- European Influenza Surveillance Network
- European Food- and Waterborne Disease and Zoonoses Network
- European Sexually Transmitted Infections Surveillance Network
- European Invasive Bacterial Disease Surveillance Network
- European HIV/AIDS Surveillance Network
- European Tuberculosis Surveillance Network
- European Antimicrobial Resistance Surveillance Network
- European Healthcare-associated Infections Network
- European Legionnaires' Disease Surveillance Network
- European Diphtheria Surveillance Network
- European Antimicrobial Consumption Surveillance Network
- European Vaccine Preventable Diseases Surveillance Network
- European Creutzfeld–Jacob Disease Surveillance Network
- *European Hepatitis B/C Surveillance Network (from 2012)*



Scientific advice Evidence for action

ECDC provides the scientific advice and guidance which policymakers and public health practitioners can use to underpin their decisions. ECDC's dedicated scientists and epidemiologists carry out risk assessments at the request of the European Commission or a Member State. Their work ranges from commissioning literature reviews and statistical analyses to gathering scientific opinions from international experts. To develop official scientific advice and guidance, ECDC sets up ad hoc Scientific Panels to produce an initial opinion that is then debated, reviewed and approved by ECDC's Advisory Forum.

Independent opinions

The scientific advice and guidance from ECDC is rigorously independent and free from any commercial or vested-interest influence. Potential conflicts of interest of staff or experts are carefully evaluated. This is a key principle which ECDC is careful not to breach.



ECDC has formal agreements with the national reference laboratories

Public health microbiology – detective work on disease agents

Infectious disease control depends on laboratory detection and characterisation of disease agents. Instead of its own laboratories, ECDC has formal agreements with the national reference laboratories of key public health institutes in European Member States. ECDC facilitates the development and efficient operation of a public health microbiology system that can provide timely and reliable information for

infectious disease prevention and control in individual countries and at the European level. Laboratories are awarded contracts to support European surveillance activities and provide professional training. ECDC provides guidance on the public health microbiology functions of reference laboratories, works towards harmonisation of standards and monitors for quality performance.

A detailed microscopic illustration of the human throat. The background is dark, with numerous long, thin, hair-like cilia extending upwards. In the foreground, several spherical, translucent viruses are visible, some with red internal structures. A large, detailed view of a single virus is shown in the bottom right corner, revealing its complex internal structure with red and blue components.

Examples of recent requests

- What is the best way to use the new papillomavirus vaccine against cervical cancer?
- Q fever has broken out among goats in the Netherlands. What threat does it present to human health?
- How often should sperm donations be tested for viral diseases?
- If there is a new pandemic, should the European Union buy the vaccines for all countries, for maximum cost effectiveness, and how much would each country need?
- How do we handle the risk of human haemorrhagic fever (Junin virus) in transplants?
- Could the cholera outbreak in Haiti eventually present a threat to European citizens?

Flu viruses in the throat, artwork

Developing seasonal influenza guidance

In developing guidance on a new seasonal influenza, ECDC first conducts a risk assessment in-house, looking at early reports from national authorities to identify trends, patterns of transmission, severity, vulnerable populations and outcomes. Findings, analyses and proposed advice are then presented and reviewed by members of the ECDC Advisory Forum and other external experts. As the season evolves, the severity is closely monitored and if it becomes clear that it will be a more severe season than usual, ECDC issues alerts to Member State authorities, the public health community and provides information for the public. Virological analyses, confirmed by ECDC-coordinated field studies, assess the suitability of the vaccine for any given season. These confirmed, for instance, that the 2010 seasonal influenza vaccines did protect against the season's influenza viruses. ECDC's VENICE network (the Vaccine European New Integrated Collaboration Effort) also tracks national vaccine use. Following a request by the European Medicines Agency (EMA), two ECDC-coordinated multinational independent scientific enquiries investigated specific concerns over vaccine safety. All these concurrent activities contribute to the development



Sharing the latest on influenza

of policy, good practice and guidance on public preparedness and response measures which are then communicated to the appropriate professional, policymaker and general public audiences.



"If we can't find an expert who is not compromised by vested interests, what do we do? Keep hunting!"

Johan Gisecke, Chief Scientist



Public health capacity and communication

We listen and respond

Capacity strengthening support to Member States

History has taught us that it takes a lot of time and effort to build good public health systems to control infectious diseases. These systems are vulnerable and need to be constantly maintained and developed to function well. History has also taught us that failure to do so can allow large epidemics to rapidly develop that may be very difficult and costly to control. Maintaining efficient public health systems is therefore a sound investment for the future.

ECDC supports Member States in their efforts to build and maintain strong infectious disease control systems by assessing public health system capacities and needs, and by offering comprehensive long-term training programmes and continuing education for experts. Building on its knowledge and capacity

in prevention and control of infectious diseases and its solid understanding of public health structures in Europe, ECDC collates and shares evidence on effective and cost-efficient interventions in partnership with various stakeholders.

We make sure that information reaches those that need it

A key part of ECDC's work is to disseminate its scientific findings, and share knowledge on how to effectively deliver information to specific audiences, whether policymakers, scientists, the media or the general public.

Member States turn to ECDC for advice about risk communication, and communicating during a crisis, whether they are facing an acute threat, or fighting



the spread of an endemic disease. Communication is constantly evolving. New interactive media, for example, now play a role in helping many people obtain health information while others have limited access to, or interest in, these new technologies.

To address the new communication needs and challenges of Member States, ECDC is:

- working on an evidence base for health communication,
- identifying the best methods to communicate with different segments of the public,
- collecting and disseminating good practice and new ideas, and
- exploring the potential of new media.

ECDC publications

ECDC produces publications on a wide range of infectious diseases, from the comprehensive *Annual epidemiological report on communicable diseases in Europe* and the *Annual Threat Report*, an analysis of threats monitored in the EU, to technical reports and guidance. The scientific publications are aimed at experts and published in English. Publications for



the general public are produced in the 23 official EU languages, Icelandic and Norwegian.

Eurosurveillance

This weekly online scientific journal is one of the leading journals on infectious diseases in Europe. It is an open-access journal free of author fees. Known for its rapid turnaround on urgent topics, it was the first peer-reviewed journal to publish a preliminary analysis of the genome of the pandemic H1N1 influenza A virus.

Website

The ECDC website provides news, updates and detailed information on surveillance, scientific reports, training and other activities, including links to national and EU bodies.

COLD? FLU?



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WITHOUT
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**18 November
2009**

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antibiotic.ecdc.europa.eu

**EUROPEAN
ANTIBIOTIC**



*Campaigns across Europe mark
European Antibiotic Awareness Day*

Support to national campaigns

European Antibiotic Awareness Day

The European Antibiotic Awareness Day is an ECDC-led initiative that is held each year during the week of 18 November, to provide a platform for national campaigns on the prudent use of antibiotics. Resistance to antibiotics has been identified as one of the most pressing public health threats in Europe and correct use of antibiotics is essential to prevent the increase of resistant bacteria.

Since the first European Antibiotic Awareness Day in 2008, the initiative has specifically addressed the public, family doctors, and prescribing doctors and nurses in hospitals.

Toolkits

ECDC communication toolkits are provided for national public health authorities to assist with raising awareness for prevention and control of specific infectious diseases. The toolkits include key messages and materials that can be adapted to national or local health communication campaigns.



Campaign posters can be easily adapted to local needs



“It is essential to get the message over that the safety of the European citizen from infectious disease is not a happy coincidence, it is due to hard work, and could easily change if that work is not done.”

Karl Ekdahl, Head of Public Health Capacity and Communication Unit



Mosquitoes can pass on diseases like malaria and dengue fever

ECDC disease programmes

What we cover

The EU Member States have committed themselves to sharing information on a range of infectious diseases. In this regard, ECDC's programmes support the development of specific EU policies as well as their implementation, monitoring and evaluation. Areas of activity and diseases include:

Antimicrobial resistance and healthcare-associated infections

Antibiotic use, resistance to antibiotics and various types of infections in hospitals and other healthcare facilities.

Vaccine-preventable diseases and invasive bacterial infections

Vaccination issues and the diseases that vaccines can prevent, such as diphtheria, infections with *Haemophilus influenzae* type B, measles, meningococcal disease, mumps, pertussis, pneumococcal infections, poliomyelitis, rabies, rotavirus infection, rubella, tetanus, human papilloma virus (HPV) infections and varicella.

Tuberculosis

Tuberculosis and the problem of drug resistance. Also co-infection with HIV.



Prevention is key



Simple hygiene measures can limit the spread of infections

Influenza

Seasonal influenza, pandemic influenza and avian influenza. The programme also works on issues related to influenza vaccination, antiviral drugs and emerging resistance to them.

Food- and waterborne diseases and zoonoses

Diseases that can be transmitted from animals to humans ('zoonotic' diseases) such as botulism, brucellosis, campylobacteriosis, legionellosis, Creutzfeldt-Jakob disease and other transmissible spongiform encephalopathies, cryptosporidiosis, echinococcosis, giardiasis, hepatitis A, hepatitis E, infection with *Escherichia coli*, listeriosis, norovirus infection, salmonellosis, shigellosis, toxoplasmosis, trichinellosis and yersiniosis.

Emerging and vector-borne diseases

Diseases that are carried by insects and other 'vectors', travel-related diseases and new or potentially re-occurring diseases: chikungunya fever, dengue fever, hantavirus infections, Lyme disease (borreliosis), malaria, plague, Q fever, severe acute respiratory syndrome (SARS), smallpox, tick-borne encephalitis, tularaemia, viral haemorrhagic fevers, West Nile fever and yellow fever.

HIV, sexually transmitted infections and other blood-borne diseases

Chlamydia, gonorrhoea, syphilis, hepatitis B, hepatitis C and HIV/AIDS.



Infectious diseases

Some of the major threats

Antimicrobial resistance and hospital acquired infections

Infections due to bacteria that are resistant to antibiotics have become a huge and rapidly growing problem, especially in hospitals. Because it is difficult to kill these bacteria, such infections result in prolonged illness and hospital stays, and carry a higher risk of death.

HIV/AIDS

An estimated 30% of the 700 000 people that are living with HIV in Europe do not know that they have it. As a consequence, these individuals are not able to benefit from available treatment and might unknowingly transmit HIV to others, such as partners or unborn children.

Tuberculosis (TB)

The number of cases of TB is rising among vulnerable groups such as migrants and HIV-positive people. Cases of drug-resistant TB, which are very difficult or even impossible to treat, are being seen across the EU.



Influenza

Each winter, hundreds of thousands of people in the EU become seriously ill with seasonal influenza. Of these, several thousand will die in an average influenza season, often unnecessarily as effective vaccines are available for people at risk.

Climate Change

Climate change may lead to new patterns of disease in Europe by, for example, shifting the transmission ranges of vector-borne diseases such as hantavirus, West Nile virus, tick-borne encephalitis, Lyme disease, malaria and dengue fever.

Low vaccination coverage

Due to low vaccination coverage in some countries, diseases such as measles are not under control, and are making a comeback. If vaccination coverage levels continue to fall, there is a risk that diseases such as polio, which has been eliminated from Europe, will return.



How you can get involved

Training

Training is central to ECDC's work, and provides expertise to professionals from public health institutes across the EU. ECDC also trains trainers, develops training material and supports training programmes in conjunction with partners to strengthen the public health work force in Member States. Course topics have included: epidemiological aspects of vaccination; time series analysis; descriptive methods and introduction to modelling and forecasting; and joint training on managerial, epidemiological and microbiological aspects of outbreak investigation.

The ECDC-coordinated European Programme for Intervention Epidemiology Training (EPIET) provides a two-year course and practical experience in intervention epidemiology for surveillance and control of infectious diseases.

In parallel, ECDC and partner agencies run the European Public Health Microbiology Training Programme (EUPHEM) which is another two-year course run at training sites in laboratories across Europe.

ECDC also facilitates mutual support between countries through online exchange and twinning schemes, sharing labs and protocols.



ECDC engages external experts

ECDC invites scientists with relevant expertise to participate in the Centre's scientific panels and working groups and assist the Centre in its activities. In order to widen its roster of potential experts, ECDC has set up a Candidate Expert Directory, to which all experts with relevant expertise and scientific competence are invited to submit an application.

In addition, ECDC issues calls for tender and calls for proposals for grants, to carry out specialised areas of work.



“We are training epidemiologists as they trained builders of cathedrals in the past – they had to learn a job by doing it, and only then did they get to join the Guilds. We do that. One of our schemes involves around 50 highly trained people from universities and public health institutes who need concrete experience, and we place them outside their countries, paid for, to learn by doing. The public health cathedral – we may not see it in its all glory yet but we are building the essential foundations, and hope it will never be torn down.”

Denis Coulombier, Head Surveillance and Response Support Unit



The Director with Members of ECDC's Management Board

Key facts about governance

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 appoints ECDC's Director and holds him or her accountable for the leadership and management of the Centre. It must also ensure 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, 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. European scientific associations and civil society groups may also send observers to the Advisory Forum. The ECDC Director invites WHO to attend the meetings to ensure synergy between its scientific work and that of ECDC. In addition to advising ECDC, the Advisory Forum also acts as a channel for exchanging information and pooling health knowledge between Member States. The Advisory Forum meets at least four times a year.



ECDC **Competent Bodies** are institutions or scientific bodies providing independent scientific and technical advice or capacity for action in the field. They have been designated by the Member States' governments. They provide support to ECDC, and equally ECDC cooperates with them in all its activities, particularly on preparatory work for scientific opinions, scientific and technical assistance, collection of data, identification of emerging health threats and in public information campaigns.

Operational since: **May 2005**

Location of agency: **Stockholm, Sweden**

Director: **Marc Sprenger**

Member States: **EU 27 and the three other EEA countries**

Founding Regulation: **Regulation (EC) No 851/2004 of the European Parliament and of the Council of 21 April 2004 establishing a European centre for disease prevention and control**

Budget: **€56 million in 2010**

Staff: **350**

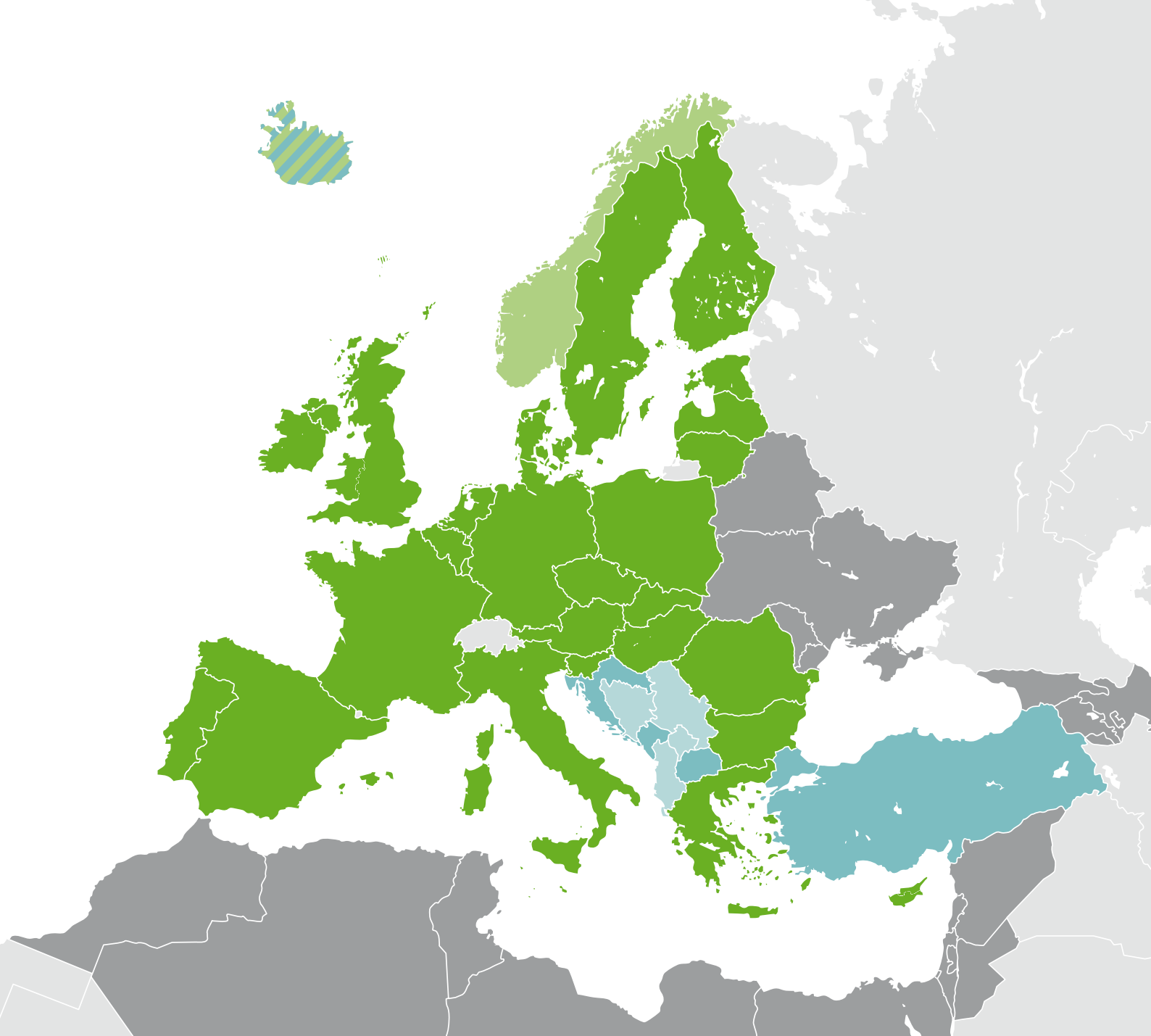


Interacting with our partners

ECDC actively supports the whole EU system and its Member States in their efforts to improve the prevention and control of infectious diseases. We provide advice and evidence to key EU partners – notably the European Commission, the European Parliament and EU Presidencies – to support actions at the EU level. We also provide advice and, when requested, practical assistance to our national partners in the Member States.

In addition to the EU Member States, ECDC works with the other EEA countries Iceland, Liechtenstein and Norway. It has also begun to involve EU Candidate Countries (Croatia, Montenegro, the former Yugoslav Republic of Macedonia and Turkey) in its work, as well as the EU Potential Candidates and the European Neighbourhood policy countries. ECDC cooperates closely with WHO and other key global counterparts such as the United States Centres for Disease Control and Prevention, the Chinese Centre for Disease Control and Prevention and the Public Health Agency of Canada. ECDC also engages actively with civil society groups.

- **European Union (EU)**
27 Member States
- **EEA/EFTA**
Iceland, Norway, Liechtenstein
- **EU candidate countries**
Croatia, Iceland, Montenegro, the former Yugoslav Republic of Macedonia, Turkey
- **Potential candidate countries**
Albania, Bosnia and Herzegovina, Kosovo under UN Security Council Regulation 1244/99, Serbia
- **European Neighbourhood Policy**
Algeria, Armenia, Azerbaijan, Belarus, Egypt, Georgia, Israel, Jordan, Moldova, Morocco, Lebanon, Lybia, Palestinian Authority, Syria, Tunisia, Ukraine



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