Protecting health in Europe: Our vision for the future

ECDC targets and strategies 2007–2013

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This document is provided for information purposes only. *Protecting Health in Europe: Our Vision for the Future* summarises the key points of *ECDC's Strategic Multi-Annual Programme for 2007–2013* in a way that is easily understandable to a general audience. While we have tried to reflect the spirit of the original document, some important nuances may have been lost in the process of summarising it. Readers who wish to have an authoritative statement of ECDC's strategy and targets should consult the full text of the *Strategic Multi-Annual Programme for 2007–2013*. This is available online at: www.ecdc.europa.eu

Protecting health in Europe:
Our vision for the future

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"Our vision is of a European Union where all citizens enjoy the best protection from infectious diseases that the latest prevention and control measures allow."

Zsuzsanna Jakab, Director of ECDC

Preface – EU action against infectious diseases

The world has never been more interconnected than it is today. Millions of people and tonnes of food cross borders every day. On an average night in a major hotel in a European city you will find guests from a dozen or more countries. As SARS demonstrated in 2003, infectious disease outbreaks can spread internationally at speeds never seen before.

The good news is that in the 21st century the tools available for detecting and preventing disease outbreaks are better than at any time in history. The challenge is to make sure we use these tools to good effect. The European Centre for Disease Prevention and Control (ECDC) was created in 2005 to help the European Union (EU) and its Member States meet this challenge. Our mandate is to work with national and EU-level health authorities to facilitate cooperation, and to provide the evidence base needed for effective action.

But the number of infectious diseases capable of threatening the health of people in the EU is large. ECDC's resources are limited, and so choices need to be made as to our priorities. What are the key actions we can take at EU level that will really make a difference to protecting people's health? What are the diseases that we need to be most concerned about?

In 2007 our Management Board approved a Strategic Multi-Annual Programme for ECDC that attempted to answer these questions. The Programme was based on an analysis of the key infectious disease threats facing Europe and identified areas where ECDC could provide real added value to existing national and EU-level activities. This Programme provides us with a road map for our work up until 2013.

Protecting Health in Europe: Our Vision for the Future summarises the key points of ECDC's *Strategic Multi-Annual Programme for 2007–2013* in a way that is easily understandable to a general audience. I hope you find it interesting and informative

Zsuzsanna Jakab
Director of ECDC

The Tomteboda – ECDC headquarters

Introduction

The European Centre for Disease Prevention and Control (ECDC) was founded in 2005 to protect European Union (EU) citizens' health from infectious diseases. It serves as an information, knowledge and action centre to support and strengthen all EU institutions and countries in their work to detect, prevent and control infectious diseases.

In order to do this, ECDC has adopted a flexible approach based on targets, for the period 2007–2013. This approach, which is outlined in this paper, allows ECDC to focus its activities effectively, as well as measure their effectiveness. It will also allow ECDC to adapt its work to meet new challenges as they arise and take on board new scientific knowledge and methods.

ECDC pays attention to potentially dangerous developments of infectious diseases all over the world, and applies any resources that are necessary to this. However, as a new agency ECDC is building up its own functions and activities within the EU before it routinely takes a more active role outside the EU, at a global level. For this reason, ECDC work until 2010 concentrates on the 27 countries of the EU plus the three other European Economic Area (EEA) countries.[1]

ECDC strengthens its partnerships with all EU Member States and EEA countries by making formal and informal links to other agencies, such as the World Health Organization. This allows all partners to share knowledge, experience and scientific resources.

This paper summarises the key elements of ECDC's long-term (2007–2013) strategic plan. Firstly, it looks at past and current infectious disease threats in Europe. Secondly, it looks at factors which determine how vulnerable EU citizens are to infectious diseases (called 'determinants'). Thirdly, it presents ECDC's seven priority work areas (targets) and actions which ECDC plans to take to meet these targets.[2]

1. Iceland, Liechtenstein and Norway.
2. The ECDC published its first Strategic Multi-Annual Programme, for the period 2007–2013, in 2007. The full document is available at www.ecdc.europa.eu

Infectious disease threats

Infectious diseases have had a huge impact on people's health throughout history. The Black Death in 1348, for example, is thought to have resulted in as many as 50 million deaths in Europe, 30% to 60% of Europe's total population at that time.

The 20th century saw great improvements in the treatment and prevention of infectious diseases, such as antibiotics and vaccines. Improvements in vaccines have greatly reduced or eradicated some diseases (e.g. childhood infections, polio, smallpox). Progress in public and personal hygiene in EU and EEA countries has resulted in diseases like cholera, typhoid, and childbirth infections becoming largely a thing of the past.

But these benefits have not been evenly distributed across all countries — and within countries there are still some groups of people that have not benefited from these improvements. And new threats are appearing all the time. Changing life-styles (e.g. more global travel, mass catering, the global food market, overuse of antibiotics, changing sexual behaviour) and environmental change are putting in jeopardy many of the health improvements that have been achieved so far.

Factors shaping infectious disease risk in the EU today

Determinants

There is a wide range of infectious diseases which threaten the citizens of the EU.[3] The risk of catching these diseases is affected by a range of factors called 'determinants'. Some of the determinants of infectious diseases are listed in the box opposite.

Understanding the determinants of a disease is essential to knowing the best way to prevent and control it.

Coordination

The EU has many different institutions and countries that need to be involved in the fight against infectious diseases. Each Member State has its own health service, and they are all organized differently. One of the ECDC's biggest challenges is to build up the abilities of all the EU institutions and Member States to work together. The same applies to different public service sectors and organisations: for example, the avian flu outbreak showed the need for agriculture, health, wildlife and food safety organisations to work together.

Prevention

Another challenge is that as some diseases become less of a threat, people do not see the need to carry on the prevention work. This has been the case, for example, with some childhood infectious diseases, like measles and mumps. As more people decide not to have their children vaccinated against these diseases, the diseases are coming back. Many of the diseases that risk being re-introduced like this are most harmful to children and young adults.

New discoveries

New medical knowledge has shown that some medical conditions (e.g. cancer, ulcers) are linked to infectious

3. In June 2007 ECDC published its Annual Epidemiological Report on Communicable Diseases in Europe. This is the first ever full analysis of the threat posed by infectious diseases in Europe. It can be downloaded at www.ecdc.europa.eu or ordered from publications@ecdc.europa.eu.

Some determinants for infectious diseases in Europe

Changing populations: the proportion of elderly people, who may not be able to fight off diseases very well, is growing; there is significant migration and international travel taking place, which can provide opportunities for the spread of infectious diseases; and more urbanisation will lead to poorer inner-city areas, crowding and higher risks of infectious diseases.

Social conditions: poor people, people who are unemployed, and people who do not have proper housing are at higher risk of certain diseases. Social inequality may rise in the future, which would mean more groups at higher risk from some infectious diseases.

Lifestyles: more tourism and business travel increase the risk of diseases being imported; 'unsafe sex' is a major risk factor for sexually transmitted infections (STIs) and HIV, which are growing very fast in some parts of Europe; drug abuse is a major risk factor for hepatitis, HIV, STIs and septic infections; and changes in consumer behaviour are leading to more food-related infections.

Physical environment, technology & trade: environmental, ecological and climate changes (which can affect some infectious diseases) will accelerate with global warming; improvements in technology have led to reductions in some diseases (e.g. cholera), but have led to an increase in others (e.g. Legionnaires' disease); modern food production methods and the global food market can lead to large outbreaks of food-borne diseases which are hard to control, as food is transported around the world and sometimes stored for a long time.

diseases. For example, it is now thought that up to 20-25% of all cancers may have infectious origins. This means that health professionals from different disciplines will need to work together more closely.

Economics

Infectious diseases have a huge economic impact on EU countries. Although there have been no studies on the full costs of infectious diseases to the EU as a whole, there have been studies on individual countries. For example, treating infectious diseases in England costs the UK National Health Service about £6 billion a year; the 2003 SARS outbreak may have cost China and Canada about 1% of their Gross National Products; BSE in the UK in 1995 cost close to EUR 6 billion. Although more evidence is needed on the economic impacts of infectious diseases, it is clear that these are huge.

Meeting of Management Board at ECDC

Targets and actions: ECDC strategic plan 2007–2013[4]

ECDC's long-term strategic plan has been developed to give focus to all its work. All annual work plans are based upon and aligned with long-term targets each year. The contents of the plan have been drawn up to reflect the finances that ECDC expects to have available. The plan is divided into two periods:

In the first period, 2007–2009, ECDC focuses on building up its own basic functions and activities, and setting up strong relations with the EU and Member States, and other partners (e.g. WHO). It works on developing public health functions across the EU and Member States (e.g. surveillance, training of health professionals, knowledge about prevention and control of infectious diseases). ECDC also works on developing basic 'tools' for scientific work, such as databases, networks and scientific methods. The priority diseases in this period of work are influenza, HIV and AIDS, tuberculosis, diseases which vaccines can prevent (especially measles and other such 'childhood illnesses'[5]), and infections in hospitals and clinics.

In the second period, 2010–2013, ECDC will extend the focus on combating specific diseases. This will include building up a database of evidence for the most effective ways to prevent and control certain diseases; looking at their 'determinants'; and trying to work out what their likely impacts will be (current and future). The priorities in this second period may need to be adjusted, if ECDC's experience in the first period shows this is necessary.

4. This first Strategic Multi-Annual Programme covers the period 2007–2013. It is compatible with the EU's Second Programme of Community Action in the Field of Health (2007–2013). It is also consistent with current EU policy and priorities in public health.
5. All European countries have policies on the vaccination of children against infectious diseases such as measles, mumps, rubella, diphtheria, pertussis (whooping cough), etc. It is important to note, however, that adults can also catch these diseases, especially if they have not been vaccinated against them during their childhood.

ECDC experts on field mission

ECDC's 'targeted' approach

The work in the Strategic Multi-Annual Programme has been divided into seven target areas. Each target also has several actions attached to it which ECDC intends to carry out to reach the target.

ECDC chose to use this approach, using flexible targets with specified outcomes, for several reasons.

Specifying targets:

- Makes it is easy to see what ECDC is trying to achieve and how they intend to achieve it.
- Allows outcomes to be measured, so it is easy to see if the target has been achieved or not.
- Gives ECDC and the people who are working with them a clear plan detailing what needs to be done.
- Make the people responsible for achieving them think about different ways to deliver the outcomes.
- Improves scientific thinking by encouraging people to have to work out where we are now, what we want to achieve, and how we can get there.
- Can be adapted as the work progresses, and scientific evidence and knowledge improve.

The targets and activities are available on ECDC's website in English only. What follows here is a brief overview of each target, and the reasons why it has been chosen. This overview also looks at some of the more important actions that ECDC is taking to achieve the target.

The target areas are divided into three groups, which reflect the main work of ECDC related to knowledge creation, strengthening public health functions, and partnership development.

Group 1

Knowledge creation

There is only one target in this group.

Target 1 focuses on expanding knowledge to prevent and control the more than 55 infectious diseases (see page II) that ECDC actively monitors. These diseases are divided into groups, based on disease determinants. These groups currently include:

- Sexually transmitted infections (STIs), including HIV/AIDS and blood-borne viruses (such as hepatitis);
- Acute respiratory tract infections;
- Food- and waterborne diseases and zoonoses;
- Emerging and vector-borne diseases;
- Vaccine-preventable diseases; and
- Healthcare-associated infections and antimicrobial resistance.

This target identifies four action areas and states that by 2013, ECDC will have greatly increased scientific knowledge in each area.

The first action area focuses on increasing knowledge related to the health, economic and social impacts of these different infectious diseases on people and societies. Major gaps exist in the reliability and completeness of current data in this area. In order to plan and prioritise actions, these gaps need to be addressed. For example, very little is known about the economic impact of infectious diseases and their varying impacts in different geographical areas and population groups.

The second area covers scientific understanding about the 'determinants' of individual diseases. There are many factors that affect the emergence and spread of different diseases and how infectious they are (i.e. determinants). Biological factors include the disease agent, antibiotic resistance, genetics, age, route of spread (air, food, water, insects, etc.). These factors are in turn affected by other social, economic and environmental factors, such as housing quality, water, air, food, travel, access to healthcare services, and global climate and environmental changes. More needs to be known about which of these determinants are most important and how they interact. Such knowledge will help to identify the best ways to reduce the effects of each determinant.

The third area covers scientific evidence for the best methods to prevent and control individual infectious diseases. There are lots of prevention and control methods around, but some of them work better than others, or are better value for money. Studies need to be done to find out which methods work, and why, and how much they cost. There is also a great need to look for other, better, methods of prevention and control.

The fourth area covers helping Member States in their fight against infectious diseases. ECDC does this by helping countries to share scientific knowledge and experience. ECDC also draws up a set of standards that Member States can use to improve the quality of their work in infectious diseases. ECDC facilitates coordination between Member States and EU institutions.

Vaccination against seasonal Influenza

Diseases covered by ECDC's scientific work

Respiratory tract infections

Influenza, TB, legionellosis.

STIs, including HIV and blood-borne viruses

Chlamydia, gonococcal infections, hepatitis B, hepatitis C, HIV and syphilis.

Food- & waterborne diseases and zoonoses

Campylobacteriosis, cryptosporidiosis, infection with EHEC, norovirus infection, salmonellosis, hepatitis A and E, listeriosis, botulism, brucellosis, Creutzfeldt-Jakob disease and other TSE, shigellosis, toxoplasmosis, trichinosis and yersiniosis, anthrax, cholera, tularaemia, echinococcosis, giardiasis, leptospirosis.

Emerging and vector-borne diseases

Malaria, Q-fever, chikungunya, hanta, dengue, yellow fever, West Nile fever, borreliosis, TBE, plague, SARS, smallpox, viral haemorrhagic fevers, emerging/other diseases of unknown cause.

Vaccine-preventable diseases

Haemophilus influenza type B, measles, meningococcal disease, mumps, pertussis, rubella, pneumococcal infections (invasive), diphtheria, tetanus, poliomyelitis, rabies, rotavirus infection, varicella, genital human papillomavirus (HPV).

Healthcare-associated infections and antimicrobial resistance

Nosocomial infections, antimicrobial resistant pathogens.

Group 2

Strengthening public health functions

The second group of targets is aimed at building up public health functions—setting up new functions and working practices where necessary, linking existing functions and institutions, setting up networks. This work will take priority in the first period of the Programme, because strong public health services are essential for other actions. Strong public health services and functions are vital, for example, to the success of the work set out in Target 1, dealing with individual infectious diseases.

There are six targets in this group, which cover surveillance, scientific support, being prepared for and dealing with infectious disease outbreaks, training, and communication about infectious diseases.

Target 2 deals with surveillance—this is the process of keeping track of infectious diseases across Europe, and worldwide, to enable the EU institutions and Member States to take effective action to protect their citizens. It looks at changing disease patterns, outbreaks of diseases, changes in existing diseases, etc.

At the moment there are lots of institutions and countries doing surveillance across Europe. Each has evolved its own way of doing things and collects different information (data), in different ways. And not all data collected is of the same quality. This makes it difficult for all the data to be put together to give one big picture of what is happening. ECDC is taking over responsibility for all EU infectious disease surveillance in the coming years. It aims to make sure that all the different networks, databases, ways of working, etc, can be organised and coordinated so that data will be produced that is correct and useful. Together with the European Commission, ECDC coordinates a process aimed at prioritising diseases to keep track of the list and make sure it is reviewed regularly. Special attention is being paid to ensuring that the early warning signs of an epidemic or a new disease (or changes in how a disease behaves) are not missed. Finally, ECDC is making sure that the right amount of information is made available to the people and institutions that need it, at the right time, and with the right amount of detail.

Target 3 covers science and forecasting, anticipating future threats from infectious diseases, etc. While there is a lot of scientific research and other work going on in the EU, it is spread across different institutions and Member States. ECDC makes it easier for everyone to exchange and coordinate their work and information. There has been a lot of work in the laboratory, looking at the causes of infectious diseases, how they spread, how they can be treated, etc. ECDC aims to stimulate more research work outside the laboratory, looking at the best ways infectious diseases can be prevented and controlled. Also, the results of such work have to be made available to all the Member States and EU institutions that need it. To make this possible, ECDC works on improving scientific research methods and evidence, and give more support to the public health laboratories across Europe. ECDC serves as a centre for scientific knowledge, research and advice. It also sets up studies in areas where more information is needed and issues guidelines for scientific research.

Family with child after vaccination at paediatric vaccination centre, Stockholm, Sweden 2008

Target 4 covers infectious disease threats—detecting them, preparing for possible outbreaks of infectious diseases, and protecting EU citizens from them. It covers investigating and controlling outbreaks of infectious diseases that potentially affect several EU countries. Special attention is given to the detection and verification of early warning signals originating anywhere in the world and that would indicate the start of a new epidemic of infectious disease, similar to SARS in 2003 or a new influenza virus that would cause a pandemic.

There are many different EU institutions and Member State public health institutions involved in the fight against infectious diseases, and they all work in different ways. ECDC contributes to coordinating all these different institutions, so that the detection and response to infectious disease outbreaks is more systematic and efficient. New methods of learning about outbreaks are being taken on board, such as the internet and state-of-the-art information technology. ECDC has set up an efficient early warning system and supports EU institutions and Member States in detecting disease outbreaks.

ECDC offers advice and help to Member States and EU institutions in dealing with any outbreaks of infectious diseases, and making plans for possible future outbreaks. It mobilises teams of experts that are sent in the field to support investigation and control activities not only in the EU, but also internationally when requested.

Target 5 covers training. Member States all have different histories, and different approaches to dealing with the prevention and control of infectious diseases, and outbreaks. New infectious disease threats, however, have shown the need for more coordinated action. Training offers the opportunity for people to share experiences, and for people from different institutions and public services to talk to each other and find out what role each plays in the fight against infectious diseases.

ECDC is coordinating the European Programme for Intervention Epidemiology Training (EPIET). Currently, 16 to 20 fellows are enrolled in the two-year programme every year, and are posted in a national public health surveillance institute in another Member State. During their two-year assignment, they are coached by a senior epidemiologist while practising field epidemiology in real situations, thereby gaining valuable experience.

In addition, ECDC contributes to developing short training programmes to assist EU countries to strengthen their human resource capacity. This involves linking training institutions together.

Target 6 covers communication about infectious diseases. This target states that by 2013, ECDC should be the main European-level source of information about infectious diseases. ECDC should also provide support to

ECDC information stand

national health communication activities and become a centre of expertise on good practice in emergency risk communication.

There are two main target audiences for ECDC's communication: public health experts (including experts in national authorities and the wider public health community), and the general public (with the media acting as one of the main channels of information to the public). ECDC will provide different information for each of its audiences using the most appropriate methods and channels of communication available to it.

For public health experts, ECDC communicates through important scientific meetings and conferences. On the internet, it publishes scientific information on infectious diseases. This includes data on the incidence of infectious diseases, fact sheets, risk assessments, news about outbreaks, and reports on issues relevant to disease prevention and control. ECDC acts as a central resource for scientific information and knowledge about infectious diseases. ECDC also links with national and EU websites for more efficient sharing of knowledge. ECDC's goal is to make it easier for public health experts to get the information they need about any aspect of infectious diseases.

For the general public and the media, ECDC recognises their need to have information that is both reliable and accurate. When a disease outbreak happens, the public and the media will want this information to be made available quickly. Health authorities need to behave in an open and honest way towards these audiences in order to win their trust.

ECDC can support the health communication activities of Member States by providing specialised training on topics such as communicating during health emergencies. ECDC can develop toolkits to help Member States communicate on specific topics, and it can even support joint campaigns. ECDC helps Member States share information with EU-level bodies and with each other, and fosters the development of joint media lines when appropriate. It can also link national officials, journalists and editors so that experience and knowledge can be shared.

Group 3

Developing and maintaining partnerships

This group contains just one target, **Target 7, which covers cooperation and building partnerships**. Many of the 'determinants' of infectious diseases are connected with other sectors, such as housing, food safety, agriculture, or environmental agencies. Everybody must work together to fight the threats posed by infectious diseases. Nobody can do it on their own. Although countries may have their own problems, there will be countries with similar problems who can share knowledge and experience. As ECDC starts to look at infectious diseases worldwide, it will also have to work with a wider range of institutions that are also working at a global level.

ECDC partners

Conclusion

As the threats from infectious diseases grow, it is anticipated that this Strategic Multi-Annual Programme will help ECDC to lead the EU and Member States in their work to protect the health of citizens. The Programme is flexible enough to meet challenges that may occur in the future. The targets make it easy to monitor ECDC's progress and achievements, and also make sure that everything that needs to be done will be done. It is also hoped that this Programme will inspire and act as positive guidance for ECDC staff and partners in the fight against infectious diseases.

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