

# ECDC STRATEGIC MULTI-ANNUAL PROGRAMME 2007–2013

**Public health activities, disease-specific  
programmes and multilateral partnerships**



The Tomtebodan – ECDC headquarters

**Editorial Note:**

This is an edited version of the document approved by the ECDC Management Board at its tenth and twelfth meetings in Vienna, 14–15 June 2007, and in Stockholm, 18–19 March 2008, including amendments made at these meetings.

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## FOREWORD BY THE ECDC DIRECTOR

The European Centre for Disease Prevention and Control (ECDC) was established in 2005 as a European Union (EU) agency to strengthen Europe's defences against infectious disease. The Centre's main task is to serve as a source of independent scientific advice, assistance and expertise for the European Commission, the 27 EU Member States and the three other countries of the European Economic Area.

In the first two years of ECDC's existence while organisational structures were still being set up, ECDC and its staff were already involved in a number of events that threatened the health of EU citizens. For example, in early 2006 the discovery of human cases of H<sub>5</sub>N<sub>1</sub> in Turkey called for ECDC action. Staff members from ECDC were rapidly on site, assisting the Turkish Government as part of a mission lead by the World Health Organization (WHO). At the same time several activities were undertaken to contribute to strengthening the Members States' capacity to deal with an influenza pandemic. ECDC continues to play an important role in fighting such threats.

After a successful start-up phase ECDC became fully operational in 2007. We were then in a good position to tackle the challenges presented by our mission. Hence, in 2007 a seven-year strategy for the years 2007–2013 was prepared with valuable input from ECDC's governing bodies and the resulting Strategic Multi-annual Programme for 2007–2013 was approved in June 2007 by ECDC's Management Board. This comprehensive programme outlines our vision and goals for the long and medium term and will guide ECDC's work in the coming years. The priorities laid out in the Strategic Multi-annual Programme reflect the task of the agency as stated in ECDC's Founding Regulation and the programme is the strategic framework for all our future activities. These long-term goals direct our Annual Programmes of Work that have a short term and a medium 2–3 year planning horizon.

At the core of the long-term strategy are seven targets to be reached by 2013. They fall into three broad categories: communicable diseases and related conditions; strengthening key public health functions to prevent and control communicable diseases; and cooperation with Member States, EU institutions and other relevant stakeholders. Sets of strategies are provided that describe the actions to be taken to reach each target.

In the medium term, from 2007–2009, it is ECDC's aim to further strengthen its own infrastructure and modes of operation and to foster its public health functions, as they are key to the effective fight against communicable diseases throughout the European Union. Furthermore, we will use this period to reinforce the collaboration with the European Commission, the Member States and the World Health Organization (WHO). Another focus will be on building basic tools for the scientific work, creating scientific networks and working on methodologies for the disease-specific work which is organised into six programmes. These disease-specific programmes will play an increasingly prominent role after 2010.

In striving to reach the set targets, ECDC will work closely with its partners in the European Commission, in Member States and with important stakeholders in the EU as well as with selected key institutions operating outside of Europe. Furthermore ECDC will continuously monitor the progress of its work and adapt the programmes if needed. In addition, an external medium-term evaluation in 2009 will give a valuable insight into the progress made.

As the director of a growing institution with dedicated staff and the support from our partners I am confident that we can reach the long-term goals set out in this multi-annual programme and that ECDC will contribute significantly to protecting European citizens against communicable diseases in the coming years.



***Zsuzsanna Jakab,  
Director of the European Centre for  
Disease Prevention and Control***

## FOREWORD BY THE EUROPEAN COMMISSIONER FOR HEALTH

The increased mobility of the European citizens can also result in a facilitation of the spread of diseases with greater speed and over larger distances. In response to this reality, the European Commission works closely with its partners across the Union to protect the health of its citizens. The European Centre for Disease Prevention and Control plays a key role in this endeavour and this long-term strategy is welcomed by the Commission as a tool to improve collaboration and to synchronise efforts in the battle against communicable diseases.

Established in 2005 as an independent EU agency to strengthen Europe's defences against infectious diseases, ECDC has from the outset worked effectively towards this goal. The Centre has been a positive influence in the area of public health in the EU and in the other countries of the European Economic Area through the various activities within its mandate. Throughout the start-up phase of the organisation, ECDC has been actively supporting Member States in their pandemic preparedness, facilitating the exchange of good practice in this and other areas, and has compiled and published the first Epidemiological Report on Communicable Diseases in Europe.

However, now that the internal structures are in place and the Centre is fully operational it is important to look further ahead. Therefore, in 2007 a strategic multi-annual programme was developed to guide ECDC's work over the coming years. Effective long-term strategic planning requires clear goals and targets, with indicators that will allow for a meaningful evaluation. These are the key elements of the programme described here.

ECDC is a strong aid for the Commission in the battle against infectious diseases and I believe that by working together in the direction laid out in this programme we can truly make a difference to the health of European citizens. We look forward to the continuation of our common efforts.



***Androulla Vassiliou,  
European Commissioner for Health***

## INTRODUCTION

Established in 2005, the European Centre for Disease Prevention and Control is a young institution within the European Union (EU) system, but one that deals with an area of fundamental importance to the health of the nearly half a billion citizens of the EU. The focus of its work is very complex and involves many risk factors that evolve over time. For ECDC to have a real impact on those issues, it has to take a long-range view.

### Guidance from the Management Board

The 7th meeting of the Management Board (MB) in June 2007 considered a document from the Secretariat (MB7/7/6) which outlined ECDC's future role and its managerial system for the years to come. A key feature would be a planning system with two inter-linking documents:

- A long-term strategic framework.
- An operational, short-term (annual) one, which would also contain a medium-term element through a "rolling plan horizon".

The document gave substantial guidance on how these two documents should be structured. The MB endorsed the proposed dual planning system and gave advice on its further development.

At the 9th meeting of the MB in March 2007, a first draft (MB9/10 "ECDC strategic multi-annual programme 2007–2013") of the first long-term strategic document was discussed. Based on a review of ECDC's mandate and the likely communicable disease (CD) challenges for the EU region during the 2007–2013 period the document proposed seven targets to be reached by 2013. For each target, a set of strategies was identified and explained in some detail. Furthermore, the document outlined the desired future development regarding ECDC's governance, management, organisation, resources, monitoring of progress, and evaluation.

MB9 gave a positive overall assessment of the document, finding it comprehensive, clear and well-structured. A number of suggestions for further refinement of the document were made: more specificity regarding outcomes, more emphasis on evaluation;

ECDC Management Board



a need for flexibility (in view of future changes in disease developments), more priority to surveillance and some diseases/groups; a review of the level of ambition in the document, more emphasis on support to staff, etc.

It was agreed that a mid-term evaluation should be carried out, and that it would aim at finalising the long-term strategic framework during MB10 in June 2007.

## ECDC's mandate

ECDC's founding regulation<sup>1</sup> gives a name to ECDC which indicates a very broad mandate – Disease Prevention and Control. It also identifies a mission confined to CDs and outbreaks of illnesses of unknown origin. This mandate has been used as the reference point in developing the 2007–2013 Strategic Framework<sup>2</sup>.

However, a Review Clause (article 31) of the founding regulation specifies that by 20 May 2007, an independent external evaluation of the Centre's achievements will be commissioned by the MB. That evaluation will also assess whether ECDC's mission should be extended to other relevant Community-level activities in the field of public health. The Strategic Multi-annual Programme would be updated if ECDC's mission were extended to other relevant Community-level public health activities.

## The structure and logic of the current document

The structure of the current document starts with an analysis of the challenges CDs will present for the EU Member States (MS) in 2007–2013. This is followed by an analysis of what role ECDC should play in helping the EU and its MS to better prevent and control those diseases. One significant chapter outlines (in three groups) a total of seven targets that ECDC will try to reach by 2013 to help reduce the CD threat faced by EU citizens. Each target includes a set of strategies outlining what ECDC intends to do to reach each aforementioned goal. In the following chapter, some reflections are made regarding ECDC's organisation, management and resources to undertake these tasks. A chapter on monitoring and evaluation of the strategic framework follows. The document's last chapter summarises its main points.

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<sup>1</sup> Regulation (EC) No 851/2004 of the European Parliament and of the Council of 21 April 2004.

<sup>2</sup> Whenever in this document it is indicated that "ECDC will support MS to improve their ..." or similar phrases, this implies the express agreement of the MS concerned.



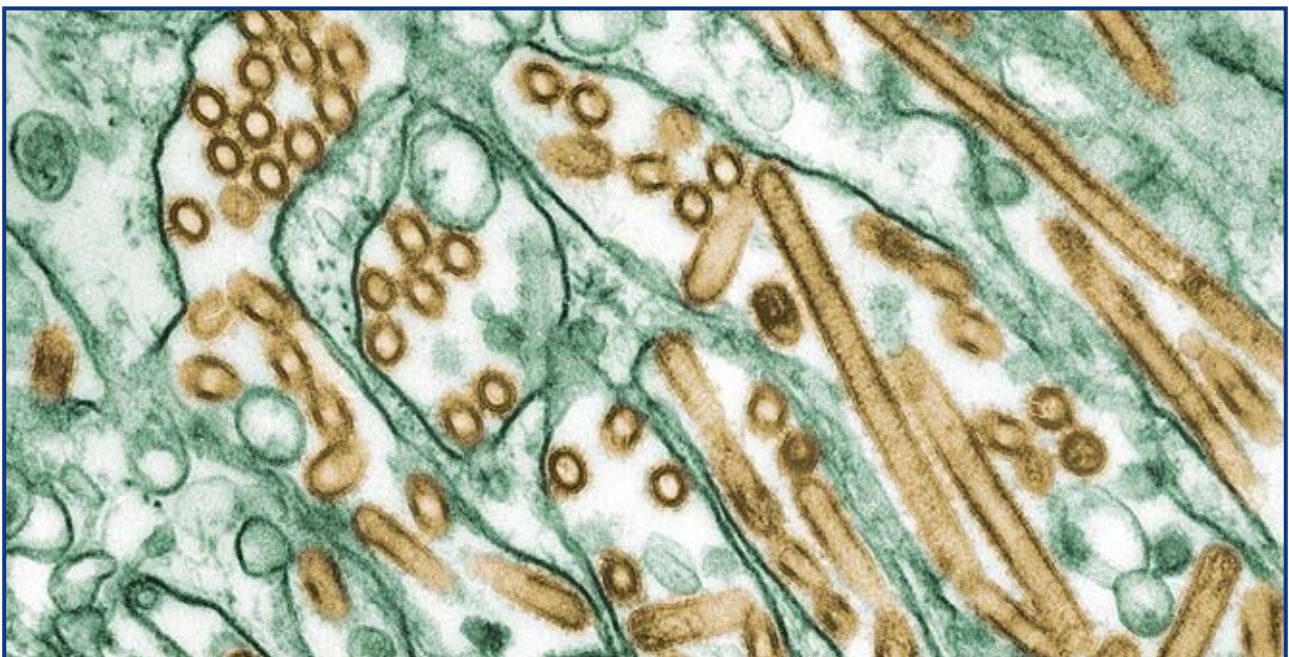
## THE COMMUNICABLE DISEASE CHALLENGES TO THE EUROPEAN UNION 2007–2013<sup>3</sup>

The EU region is exposed to a range of CDs. The incidence of some of these diseases is stable, while others are rising and others are on the wane. Three elements are of importance in looking at the situation that the region will face in the coming years:

- Health impact of CDs in Europe, referring here to the EU 27 and the three other European Economic Area countries<sup>4</sup>.
- The determinants that influence future CD developments.
- Economic impact of CDs in Europe.

Annex I gives a review of the expected developments of each of these three important elements.

Electron micrograph of Avian influenza A/H5N1 viruses



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<sup>3</sup> This chapter has been updated based on the findings in ECDC's first "Annual Epidemiological Report on Communicable Diseases in Europe".

<sup>4</sup> Iceland, Liechtenstein, Norway.

## ECDC'S ROLE IN 2007–2013

### ECDC's vision and mission

#### Vision

The current mandate of ECDC is laid down in its founding regulation. While not explicitly stating the vision of ECDC, the sum total of that regulation would indicate a vision of the following nature:

*An EU where all citizens enjoy the best protection from CDs that the “state-of-the-art” prevention and control measures allow, through the use of evidence-based methods applied by MS and the EU system in a mutually supportive manner.*

#### Mission

Article 3 of the founding regulation defines the mission, tasks and modes of operation of ECDC. The essence of this Article is:

- That ECDC's current mission should *concentrate on CDs* and outbreaks of an unknown origin.
- That ECDC should be *a proactive centre of excellence as regards information and scientific knowledge* on all aspects of CDs that relate to their detection, prevention and control.
- That ECDC be *an agent of change*, by actively supporting the EU system and its MS in their efforts to strengthen their capacity to improve CD Prevention and Control.

### ECDC's geographical area

The present mandate of ECDC covers the EU and its MS, but Article 30 of its founding regulation also provides for the participation of countries “which have concluded agreements with the Community by virtue of which they have adopted and apply legislation of equivalent effect to Community legislation in the field covered by this Regulation”. Should there be a wish to expand the mandate of the Centre geographically, that has to be discussed as part of the upcoming external evaluation. Any decision pertaining to expanding the geographical scope of ECDC's work would have to be taken subsequent to the completion of this review.



In ECDC's everyday work, the issue of expanding the organisation's vision beyond its geographical mandate is raised regularly. While the main focus of ECDC's work will clearly be the 27 MS and the three EEA/EFTA countries, ECDC must also pay attention to its neighbouring regions (to the east and south in particular) and also to the other regions of the world.

Initially this will be done through information exchange with the key public health institutions outside the EU. During the early years of its existence, ECDC will need all of its resources to build up the organisation's basic functions and activities for the EU MS. Subsequently, probably from 2010 onwards, ECDC's work can gradually be expanded to include a more proactive role outside the EU. This will put ECDC's work into a more European perspective, in particular by harmonising the strategies inside and outside the EU through WHO. Third countries, in particular applicants for membership or countries ac-

ceding to the EU (as outlined in Article 11 of the 2nd Community Action Programme), will be considered as priority areas for these types of actions. Discussions with the Directorate-General for Health and Consumer Protection (SANCO) and other DGs will be necessary to push this issue forward. Part of this development also envisages a good level of collaboration with WHO EURO.

Likewise, in the years to come, globalisation and the steady increase of business people and tourists travelling daily between Europe and the other regions of the world, will make it essential for ECDC to possess knowledge of potentially dangerous CD developments (and countermeasures taken against them) all over the globe. This will be vital in order to protect the people of the EU.

Sharing knowledge and experience, as well as scientific cooperation, will in the years ahead require ECDC to build very close and interactive partnerships with institutions and organisations that possess expertise in CD prevention and control at global and regional levels. WHO Headquarters and its regional offices around the world, as well as national CDCs, will be priorities for such partnerships. Pending future decisions on its geographical mandate, in a few years' time ECDC would be ready to support the Commission in its global functions, should it be so required.

## Setting targets and strategies

In order to facilitate the understanding of the intent of ECDC's efforts for a wide range of audiences, *outcome-oriented targets for 2013* have been selected in accordance with the priorities outlined above, taking into account ECDC's vision and mission. These targets identify areas of CD prevention and control where ECDC intends to have beneficial effects on the problems.

Targets will help focus ECDC's programme development and that of its collaborating partners on the long-range strategic direction set. As they are outcome-oriented they will stimulate thinking on possible alternative ways of reaching a given target; an important consideration in today's multi-faceted Europe. Setting a target also sharpens the scientific perspective, raising the question of knowing the baseline of the problem, as well as the expected effect of the proposed strategies. This in turn promotes transparency and stimulates the search for the scientific evidence of suggested actions. Finally, well-selected and well-phrased targets are excellent communication tools for a wide range of audiences, as they encapsulate a policy's essence in a few words.

*Strategies* are target-specific, long-term and describe the major categories of action that ECDC will undertake in order to reach the target. As the scientific knowledge base improves, strategic actions will increasingly be based on the scientific evidence regarding their effectiveness, cost and complexity in implementation.

Choosing strategies involves identifying possible gaps in knowledge and action; considering ECDC's mandate to deal with such gaps; and analysing possible ECDC actions and the resources needed to do the work. *Clearly, it will not be possible for this first planning of a Strategic Multi-annual Programme to provide all the data and analyses which one could have wished*, but in the years to come ECDC's systematic work will gradually improve this knowledge base.

## Overall programme priorities 2007–2013

ECDC is a young institution with a broad mandate, and it is important that its work with CDs rests on a solid framework, both "in house" and with regard to other EU structures, the MS and other partners. Therefore, its work priorities will be tailored somewhat differently in the following two time periods:



DNA hybridization analysis in laboratory

### 2007–2009

Top priority in this period will be given to developing the *public health functions* (Targets 2–6), as these are the essential preconditions for a more systematic, coordinated and effective fight against CDs throughout the EU.

While developing its public health functions, ECDC will also strengthen its own infrastructure and modes of operation as well as their interfaces with the Commission and MS. Other main concerns will be supporting capacity building in MS and ensuring smooth operations in the different target areas.

The *partnerships* with MS, EU institutions and WHO will be further strengthened through streamlining of cooperation principles, structures and practices.

As regards *disease-specific work* during 2007–2009, ECDC will work diligently towards building its basic tools for scientific work, its databases, its scientific networks and its methodologies. Operations will give highest priority to *influenza, HIV/AIDS, TB, vaccine-preventable diseases (notably measles – to support WHO's European regional elimination target) and healthcare-associated infections*.

### 2010–2013<sup>5</sup>

During this time period, ECDC will be focusing on strengthening the *disease-specific programmes*. Another major effort will be the systematic search for evidence-based CD prevention and control methods. The analysis of CD determinants will become a substantial part of the programme, and state-of-the-art analyses of current and future CD impacts will be performed regularly.

As regards the *public health functions*, their operational principles and methods will be further streamlined, and routine operations will function smoothly.

*Partnerships* will be further strengthened through increased support to MS (on demand), and the range of partnerships to selected key institutions and NGOs will be increased beyond Europe. Likewise, support will be offered to some selected neighbourhood countries of importance for enhancing the protection for the EU MS.

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<sup>5</sup> Priorities for this period will have to take into account possible modifications emerging from the experience gained during 2007–2013, as well as the outcomes of the External Evaluation of ECDC which the Management Board launches in 2007.

## ECDC TARGETS AND STRATEGIES

ECDC's founding regulation outlines in seven articles and 31 paragraphs ECDC's operational procedures. The 7th meeting of the MB in June 2006 endorsed the concept that the generic and disease-specific functions, technical cooperation, partnerships and ECDC's work in the overall European and global perspective represented the four "pillars" of ECDC's work.

In practical programme terms, these issues will be put into three groups that highlight ECDC's main work areas: the disease-specific work, the public health functions and the partnerships with MS and the EU structures and other important partners.

### Group I: Communicable diseases and related conditions

This target area deals with specific issues concerning individual (or groups of) CDs and conditions. The subsequent six target areas deal with the general systems required to prevent and control CDs in the EU region<sup>6</sup>.

#### Target area 1: Individual and groups of communicable diseases and related conditions

##### Main challenges 2007–2013

There are more than 55 CDs and conditions that now fall within ECDC's mandate<sup>7</sup>. *Annex I* gives an overview of the main CD challenges which the EU region and its MS are likely to face in the 2007–2013 year period. Clearly, it is not practical to set ECDC targets for all of these. ECDC will therefore use a pragmatic solution, setting *only one target for this whole problem area*.

However, within this one target area, ECDC's annual work programmes will be divided into several groups of *diseases and conditions*. This grouping is based on disease determinants, because that usually provides a guide to similar categories of intervention. *At present, ECDC has seven disease-specific projects but the plan is to gradually move towards the following six groups:*

1. STI, including HIV/AIDS and blood-borne viruses.
2. Acute respiratory tract infections.
3. Food- and waterborne diseases and zoonoses.
4. Emerging and vector-borne diseases.
5. Vaccine-preventable diseases.
6. Healthcare-associated infections and antimicrobial resistance.

*Annex III* gives the details of which diseases and conditions are found in each of the six groups.

ECDC must have a systematic approach to all its disease-specific work. To facilitate this, four "generic" strategies have been set as a framework for scientific analyses and categorisation of ECDC's work programme elements when the six groups or their individual disease is dealt with<sup>8</sup>.

6 Thus, virtually all of the knowledge produced through the work on Target area 1 will feed directly into the work that is described under Target areas 2–7 in the later part of this document.

7 Commission Decision 2000/96/EC Annex I lists 47 of them.

8 Thus, when ECDC's annual work programmes (with their three-year rolling time horizons) are developed, the programme structure will be as follows: For each of the six groups (or for individual priority diseases within them) the relevant programme components will be indicated by four "generic" strategies corresponding to the above-mentioned four categories of problems.

The four problem areas that the four “generic” strategies will address are:

***Problem area 1: the health, economic and societal impact of a disease or disease group on individuals and society.***

Without understanding the real threat a CD poses for individuals and societies now and in the future, no plans for setting priorities among them are possible. In today’s Europe, there is substantial information on the incidence and prevalence of the magnitude of CDs, but the reliability and completeness of data varies too much across countries and among diseases. Mortality data are generally also available, but data on morbidity may be less complete. Our ability to foresee future threats is also limited. Very little is known about the economic impact of CDs in the EU. Also, precious few studies have been conducted on the effects of CDs on society that go beyond the areas of health and economics.

Moreover, looking at the EU region as a whole is not enough. To fully comprehend the challenges that CD problems represent, a careful analysis of geographical variations and minority groups must be conducted for the complete picture to come into focus.

***Problem area 2: knowing the factors that are responsible for the emergence and spread of communicable diseases, i. e. their determinants.***

CDs do not emerge from a vacuum. There are specific causes behind such events. There are many such causes and they interact with each other to facilitate or hinder the spread of CDs.

One important determinant is the biological characteristic of the disease agent that is the primary cause of the disease (i.e. parasite, bacterium, virus or prion). If its composition suddenly changes through a mutation, a particular virus could become much more virulent. An increasingly serious issue is antimicrobial resistance (AMR) in many pathogens, reducing their effectiveness in patient care and giving them an “ecological advantage” that facilitates their spread within health services and the community.

Another determinant is the degree of resistance of the host whether it is a person who is infected, or for some CDs, an intermediate host like a snail or mosquito. Genetic disposition, age and socio-economic level also play an important part in an individual’s degree of resistance when exposed to an infectious agent.

An important determinant is also the way the disease agent travels to infect a human being, as exposure can come from air, water, food, direct contact with an infected person, or via contact with a specific vector (see above).

These determinants are again influenced by societal factors like housing quality, water, air, food, technology and travels. Particularly important is social inequity because sub-standard living conditions tend to expose individuals to a multitude of determinants that increases their risk of developing CDs; important are financial and other factors of inequity that tend to reduce their access to preventive services.

An important determinant is the availability of healthcare services. If an effective drug or vaccine exists and is available for all needing it, then an emerging epidemic would be much easier to curtail.

Finally, there are major changes in our global environment, in particular climate change, which will have profound influence on the spread of CDs, primarily through migration of disease vectors (mosquitoes, ticks, etc.) to areas in Europe previously not exposed to them.

For all of the above factors our current knowledge varies tremendously, and there is an urgent need for a more systematic approach to improve our understanding of these various disease determinants. This will allow us to be better able to defend Europe’s citizens against the spread of CDs.

However, which elements will be given priority must depend on the level of threat. Thus, there is a need for better understanding of the individual determinants and their interactions. For ECDC’s future work this presents two challenges.

The first challenge is to promote well-focused studies to improve the understanding of which determinants are most important for a specific disease, or group of diseases.

The second challenge is to assess the overall priority of each determinant. How can one most effectively try to reduce its presence or effect? Such a strategy offers the possibility of a very efficient way to reduce the risk of CDs for societies. It will also require close cooperation with sectors outside public health in developing effective interventions that are likely to be implemented.

***Problem area 3: the scientific basis for methods and technologies for prevention and control of a communicable disease or communicable disease group***

Understanding the health and social impact of CDs and what determinants promote or hinder their emergence gives us the necessary foundation for tackling our third challenge: Which tools are really most effective and efficient in preventing and controlling CDs?

There are a large number of different methods and technologies for prevention of CDs currently in use throughout Europe and beyond, but for many of them we do not know how effective they really are and what their individual costs may be. Thus, systematically improving the evidence base for assessing individual methods and technologies for prevention of CDs is an important and urgent task if one wants to enhance the protection against CDs for Europe's citizens.

Likewise, different clinical treatment methods are used for helping patients with infectious diseases. For many, gaping holes remain in our knowledge as regards their evidence base and cost-effectiveness. For many CDs, systematic and continuous monitoring of the evidence base and cost of such treatment is important for many reasons. They include the health of an individual patient and society as a whole. Future plans must take these elements into account.

***Problem area 4: improving programmes in the Member States and in the European Union institutions, to prevent and control communicable diseases.***

Vaccination against seasonal Influenza



Knowing the determinants and having good methods and technologies to prevent and treat CDs is a good starting point, but how can that knowledge be applied in practice through well organised programmes of prevention and control?

Within Europe, a number of different systems are used by individual MS to organise such programmes, and most of them give satisfactory results. However, much could be gained from a technical and an economic point of view, by enhancing the exchange of experience among MS<sup>9</sup>. Furthermore, an agreement on a set of science-based minimum common standards that a national vaccination programme should meet could clearly be beneficial for individual countries and the entire EU region.

At the level of the EU institutions very important contributions to prevent CDs are possible through an intensified and better coordinated action on their determinants, in the relevant Commission programmes and through the acts of the Parliament and the Council.

***Target 1: By 2013, ECDC will have made significant contributions to the scientific knowledge base of communicable diseases and their health consequences, their underlying determinants, the methods for their prevention and control, and the design characteristics that enhance effectiveness and efficiency of their prevention and control programmes.***

**Strategy 1.1: To enhance the knowledge of the health, economic and social impact of communicable diseases in the European Union:**

- Map the present, and estimate future forecasts of incidence, prevalence and threat potential of the specific CD or group of CDs<sup>10</sup>.
- Develop methodology for, and undertake assessment of current and future forecasts of the economic impact of individual CDs, selected groups of CDs, as well as the totality of CDs.
- Develop a methodology for measuring other societal impacts of CDs and undertake current assessments and future forecasts of these.

**Strategy 1.2: To improve the scientific understanding of communicable disease determinants<sup>11</sup>:**

- Map existing science-based knowledge regarding CD determinants for individual or groups of CDs.
- Promote and support studies to enhance the priority areas of public health need.
- Analyse the relative public health importance of individual determinants and ways to deal with them.
- Promote and support further studies to enhance the scientific basis for such knowledge in priority areas of public health need.

**Strategy 1.3: To improve the range of the evidence base for methods and technologies for communicable disease prevention and control:**

- In order of priority, map the current range of prevention methods and control of individual, and groups, of CDs, assessing the current scientific evidence base for their effectiveness and cost; and to promote and support studies to further enhance such an evidence base in priority areas of public health need.

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<sup>9</sup> As an example: One EU MS vaccinates each child twice as frequently for a given CD as another MS – what is a sufficient schedule for ensuring the required level of protection?

<sup>10</sup> Using techniques such as e.g. applying Prioritisation Algorithm for considering future disease risks through DIM – detection, identification and monitoring – analyses (as done e.g. by the UK Government Foresight project “Infectious Diseases: preparing for the future”).

<sup>11</sup> The results will feed into Strategy 3.2



- Identify areas where new and improved methods and technologies of CD prevention are needed and to promote and support the search for and development of such methods and technologies.
- Undertake similar action (as in the two points above) with regard to treatment methods for individual or groups of CDs *in priority areas of public health need*.

**Strategy 1.4: To contribute to the strengthening of programmes for communicable disease prevention and control at European Union level and, upon request, in individual Member States:**

- Promote the interchange among MS of their experience with national CD prevention and control programmes.
- Develop a set of recommended minimum standards that MS could use to improve the quality and cost-effectiveness of their own programmes which would contribute to enhancing the protection against CDs for the entire EU.
- Identify which elements in European Commission programmes pertaining to health and other sectors could have a significant influence on CD determinants.
- Engage the relevant EU structures in discussions to advocate for and contribute support to such change.

## **Group II: Strengthening key public health functions to prevent and control communicable diseases<sup>12</sup>**

This group of targets shares an initial need for setting up infrastructure and many operational procedures; the links with MS; and the scientific networks that ECDC needs in order to carry out the work in each of the target areas referred to below. Therefore, work to establish such programme infrastructure will take priority in the first few years. After this work is completed, ECDC can redirect its priorities more to the disease-specific challenges.

### **Target area 2: Surveillance**

#### **Main challenges 2007–2013**

The current situation for the surveillance of infectious diseases in the EU poses a set of challenges arising from the different partners involved. Improving this situation and creating a strong and coordinated surveillance system throughout the EU region, is a fundamental requirement for improving the protection against CDs for the citizens of the EU. Supporting the development of such a system will therefore be a high priority for *ECDC during the 2007–2009 period*.

The overall effectiveness of a European surveillance network will depend on the quality of the national surveillance systems and the operational performance of the coordinating partners. The challenges to surveillance arise in four different areas: existing surveillance systems, analysis of data, dissemination of results and data quality and comparability.

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<sup>12</sup> The five Targets in this Group II correspond to the five “Core Functions” in chapter 3.1 of document MB 7/7/6.

## Existing surveillance systems

Each of the 27 MS has its own system and its own practices that need to be taken into account. National surveillance systems are diverse and the quality of data collected varies. Contributing to the great diversity in national surveillance systems are different case definitions and reporting systems (e.g. the local physician or laboratory level to national and further to international levels), country-specific differences in healthcare systems and variability in facilities and equipment available for diagnostics. Thus, with different surveillance systems the data are often not comparable. Especially for smaller countries, participation in the European surveillance activities creates particular pressures. Staff capacity in the MS therefore needs enhancement regarding surveillance methods and practice.

In addition to the national surveillance systems, EU-wide surveillance networks have been established. Some of the surveillance schemes were set up in the early 1980s. They were funded during their research stage by the European Commission and later as actions under the public health area. As a result, the surveillance schemes differ in size, details, structure of organisation, and development phase. The networks receive data agreed upon by their national members, usually sourced from national surveillance systems and/or national reference laboratories. However, in general laboratory data are not widely linked to epidemiological information. In 2006, a total of 17 such networks were funded. ECDC becomes responsible for their operation after their current contracts expire. The networks' overall problem has been the lack of sustainability of the essential surveillance components, due to time-limited contracts. Adding to the problem are the increase in community funding and requirements to add novel components in order to get new funding.

The added value on the European level of this coordinated approach to surveillance includes standardisation, as much as possible, of operating procedures

of the networks, databases and outputs. Taking this track would allow ECDC to approach infectious disease surveillance in a synergistic way and to avoid duplication of work. Having the surveillance coordination in a central place will likely be more economically efficient. Diseases could be included both in the surveillance and research agenda according to European priorities.

ECDC must address as a priority the greatest threats to human health from infectious diseases. HIV/AIDS, AMR, influenza, and zoonoses have been identified as immediate priorities. ECDC's work on these diseases will encompass surveillance, research and prevention. For the coming years, prioritisation of diseases for surveillance must be set in place with agreed upon criteria and should include a regular review of the priorities. An important concern is that surveillance for potential risk factors and determinants is not systematically established.

## Analysis of data

At the same time, work must continue to put in place the infrastructure for all the infectious diseases the Centre is required to cover, as well as providing the means to detect new diseases or syndromes arising in the EU. Particular attention will be paid to surveillance activities providing a clear EU added value to the national systems. These would provide timely detection of new trends in diseases or risk factors, earlier warning of threats to health inside and outside of our borders, earlier detection of untoward events and the rapid detection of those involving more than one MS.

This will mean that things like algorithms for the automated detection of unusual clusters within the surveillance data will be developed. The information provided by these algorithms will add to the other epidemic intelligence mechanisms being established in the Centre for an early identification and subsequent investigation (by national authorities with or without the assistance of ECDC) of health threats. Another added value would be the provision

of timely information on international events that require coordinated response for effective preventive action. Moreover, since analytic methods on EU level are mostly descriptive, more advanced analytical approaches, including modelling and forecasting of infectious disease developments in the EU region, should be implemented.

### **Dissemination of results**

European-level surveillance should provide information for action that may be useful for those working at the local as well as at the national level. The aim should be to influence local good practice through provision of high quality, timely information, but in no way to undermine the national surveillance function. Since data outputs on the EU level are not tailored for different stakeholders and audiences, they are not widely used for decision making and prevention.

ECDC stakeholders comprise MS, EU bodies, international agencies and non-governmental organisations. It is important to rapidly establish modus operandi for each of these, in particular with the European Commission's Directorate-General for Health and Consumer Protection and WHO (both Headquarters and the Regional Office for Europe). They must also be formulated for other EU agencies and institutions in neighbouring countries. Another generic priority will be the strengthening of the vital role that microbiology plays in the surveillance and control of infectious diseases.

### **Data quality and comparability**

Currently, the varying degrees of under-reporting and insufficient ascertainment render comparability of data highly problematic. It is envisaged that there will be a rolling programme of evaluations, since objectives may change with the development of new diagnostic methods, novel surveillance techniques and the availability of new methods for prevention and control. The need for enhanced or even new surveillance systems for a particular infection or syndrome may be identified through epidemic intel-

ligence. Quality assurance will be built into all of the surveillance systems from the outset. Performance indicators (validation, timeliness, frequency of outputs) should be an integral part of each surveillance system. Such quality assurance has to be built into each step of the surveillance systems so the onus is placed on the MS as well as on ECDC.

***Target 2: By 2013 ECDC will be the focal point for communicable disease surveillance in the European Union and the authoritative point of reference for strengthening surveillance systems in the Member States.***

**Strategy 2.1: To establish European Union-wide reporting standards and an integrated data collection network for surveillance including all Member States and covering all communicable diseases with the detail necessary according to their priority:**

- Develop long-term surveillance strategy.
- Build up a strong integrated European surveillance system.
- Evaluate the existing Dedicated Surveillance Networks (DSN).
- Develop, promote and evaluate the implementation of standard case definitions in the EU region.
- Develop an EU-wide data collection network that aligns reporting and data collection within the EU, but also with other institutions at European level (e.g. WHO EURO, European Monitoring Centre for Drugs and Drug Addiction).
- Integrate laboratory data, including data from molecular subtyping into the EU surveillance.
- Develop disease-specific surveillance according to agreed priorities.
- Include monitoring of potential risk factors where appropriate.
- Provide support to MS regarding infrastructure for surveillance.

**Strategy 2.2: To analyse trends of public health importance for the European Union and Member States regarding communicable diseases in order to provide a rationale for public health action on the European Union level and in Member States.**

- Regular analysis of data according to the timing which is appropriate for the respective disease.
- In addition to descriptive analysis, advanced methods are to be used to point out areas and issues for action.
- Develop and integrate new analytical approaches and spread knowledge to MS.
- Develop modelling as a regular part of ECDC's periodic surveillance analyses and reports.

**Strategy 2.3: To report on trends of public health importance for European Union and the Member States regarding communicable diseases in an appropriate manner for all stakeholders and foster transfer into public health action.**

- ECDC will produce and systematically improve an annual Epidemiological Report and a weekly bulletin within Eurosurveillance, and contribute to the annual European zoonoses report.
- To have a website with a regularly updated set of tables and an interactive part with a subset of the data for public health professionals and scientists.
- To have the website display disease-specific up-to-date information for the general public.
- To improve the various outputs according to user needs by regular user surveys.
- Issue-specific ECDC messages will be published as part of global actions (e. g. on TB and AIDS "days") and according to ECDC's own analysis.

**Strategy 2.4: To have a system for quality assurance and control of the surveillance data in place and work towards comparability of data between all of the Member States.**

- Establish procedures for assessing underreporting and under-ascertainment for all diseases.
- Estimate true incidence and burden of disease.
- Implement regular and continuous data quality controls.

### **Target area 3: Strengthening scientific support**

#### **Main challenges 2007–2013**

##### **Strengthening public health research**

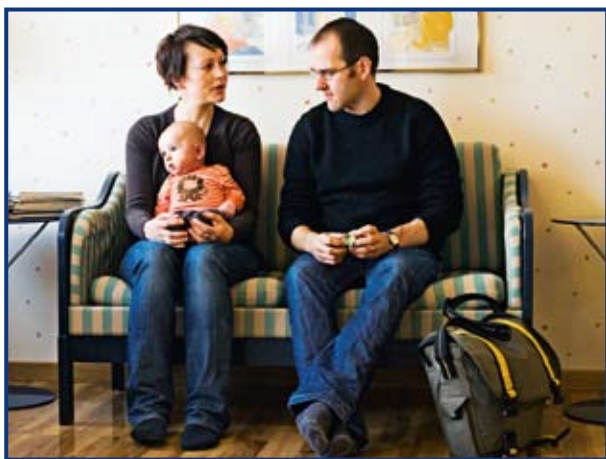
Although the EU has a long history of excellent research in microbiology and a number of outstanding scientific institutions and centres, this research has often been very laboratory based, focusing on issues such as microbial genetics and pathogenicity mechanisms. Such research is vital for our understanding of the infectious diseases and for finding new methods to treat and control them. For this research to have more practical use, the research at the laboratory bench must be complemented by operational research on the best concrete methods of prevention and control. A firm evidence base must exist for the actions we perform to protect people from infection.

However, the scale of resources in time and money required to carry out proper science on the evidence base for public health actions may often be more substantial than commonly realised. Lengthy studies involving large populations may be needed to answer seemingly simple, concrete questions.

The 27 countries of the EU and the EU institutions together possess formidable research resources, both as regards researchers and funds. However, there is currently no overall analysis in Europe that pinpoints what the current gaps in knowledge are, regarding

the evidence base for CD prevention and control strategies and methods. This weakens the possibility of promoting a more sensible overall European research effort in the CD field.

Furthermore, since ECDC does not have any laboratories of its own, it needs to build a close collaboration with microbiological laboratories across the EU to be able to perform its functions in surveillance, preparedness and response and scientific advice. This task includes not only linking to already existing centres of excellence, but also strengthening other microbiological laboratories in Europe, both for research and operational purposes.



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

### **Improved methods and forecasting**

There is also a need for improving research methodologies regarding CD prevention and control, and to spread these methods in the MS.

A major challenge for ECDC is not just to concentrate on the CD problems of today, but also try to foresee what problems may arise over the coming years. To be prepared, research needs to be directed towards the possible future developments of CDs as well as their determinants. This research needs a very broad approach, bringing together experts from many different fields.

### **Implementing evidence-based methods**

Even when there is solid scientific evidence showing the superior value of one public health intervention method over another, this knowledge may not have influenced public health practice. This delay, or inertia, in implementation depends on a number of factors, just as the latest findings in therapy often take a long time to influence clinical practice.

One important factor ECDC could play a role in is that such evidence is quickly and systematically distributed around the EU region to all those who should know (i. e. not just researchers, but also system decision makers and practitioners). The lack of a common, easy entry point and effective distribution mechanisms for such scientific information in Europe makes the whole research effort much less effective.

### **Serving as a European centre for knowledge on communicable diseases**

The vast knowledge in the EU on matters concerning CD prevention and control is spread among many public health institutes and academic institutions. There needs to be one place where this knowledge is collected in an organised form and where researchers, policy makers and the public can access the information. The above issues are the challenges that ECDC will try to address in the years to come.

### **Strengthening microbiology laboratory support**

Microbiology is a crucial tool for understanding the nature of CDs, and it is therefore indispensable for a science-based approach to CD prevention and control. In view of today's rapid developments in molecular biology and biotechnology, there can be no doubt that microbiology laboratory services will become an even more important tool in the years to come.

To be prepared for this development, we need to better understand which changes occur in the disease agents (viruses, bacteria, etc.) at any one time, why the changes take place, where a new or modified strain starts to spread, and how such changes can be rapidly and reliably identified and quickly reported to the appropriate authorities for assessment and action.

Faced with the current CD threats, the individual countries of the European region and the EU must possess a smoothly functioning network of high quality laboratory services. This “protective shield” must be able to quickly and reliably identify new threats and monitor disease developments. It must also provide the necessary capacity for rapid diagnosis for both clinical and public health purposes. The network must possess such capacity for the different levels of microbiological security including “P4” level bio-safety labs that are the most demanding.

Such a network would also be able to provide invaluable support for the development and testing of a wide range of new diagnostic and treatment technologies that the medical industry will surely endeavour to develop in the coming years.

Today, the situation in the 27 EU MS varies substantially as regards the types, number and quality of microbiological laboratories. This situation needs to be improved in the years ahead. ECDC can play a valuable and catalytic role in this and there is a great need to improve this situation in the years ahead. Agreeing on minimum reporting systems, making tools available for the systematic enhancement of laboratory quality, promoting schemes for cooperation among countries (in particular as regards the provision of the most highly specialised diagnostic services for those Member States where developments of such facilities may not be cost-effective); and the promotion of joint research in areas of public health priority; and support to capacity building are all very important tasks

where ECDC can play a most valuable catalytic and supportive role in the years to come.

***Target 3: By the year 2013, ECDC’s reputation for scientific excellence and leadership will be firmly established among its partners in public health, and ECDC will be a major resource for scientific information and advice on communicable diseases for the Commission, the European Parliament, the Member States and their citizens.***

**Strategy 3.1: To function as a catalyst and “forum” for improving public health science, matching needs to available capacity and funding in the communicable disease field.**

- Identify and prioritise gaps in European public health scientific knowledge.
- Be continuously updated on available research capacity in the MS.
- Advise key research funding agencies at the EU and MS level.
- Link closely to microbiological laboratories in the MS and serve as a meeting place between their work and the public health needs.

**Strategy 3.2: To promote, initiate and coordinate research for evidence-based public health and to identify future threats.**

- Strengthen scientific methodology as applied to CD prevention and control that includes forecasting, risk assessments and operational studies.
- Initiate and/or undertake focused studies on future developments and key determinants of CDs in Europe like demography, migration, climate change and social inequity<sup>13</sup>.
- Initiate prioritised studies for the improvement of evidence-based prevention methods and corresponding operational guidelines.

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<sup>13</sup> The results from Strategy 1.2 will feed into this work; see also Strategy 4.1 which concentrates on the health threats. The work in these 3 strategies will be very closely coordinated.

**Strategy 3.3: To produce guidelines, risk assessments and scientific answers, and work with Member States to implement evidence-based prevention and intervention.**

- Develop public health guidelines regarding CD prevention and control.
- Produce risk assessments and oversee the risk assessment procedure in ECDC.
- Provide answers to scientific questions.
- Develop tool kits and standardised sets of prevention indicators to assess prevention in MS.

**Strategy 3.4: To serve as the prime source of scientific advice on communicable diseases for the European Parliament and the European Commission, as well as a major one for international and government users, and for the general public.**

- Operate a range of knowledge management services and a scientific library and function as an internet hub for related data and knowledge bases; (reference is also made to Target area 6 below regarding Communication.)
- Act as a “clearing house” for the exchange of new findings in CD research of public health importance.
- Serve other ECDC programmes as an advisor or support on scientific methodology and as controller of the scientific quality of ECDC’s work.

**Strategy 3.5: To promote and support the strengthening of microbiological laboratory support for communicable disease prevention, control and scientific studies in the European Union region.**

- Through networking with key professional organisations and selected national laboratories, to promote and lead the development of minimum core

competencies and *unified* sub-typing schemes for microbiological data required for the prevention and control – including routine surveillance as well as outbreak detection, investigation and response<sup>14</sup>.

- Map, maintain and make available directories of national reference microbiology laboratory capacities and international networks.
- In particular, continuously update a database on the availability and capacity of “P4” and other specialised microbiology laboratories in the 27 EU MS.
- When needed, promote the development of cooperative agreements among MS regarding the provision of such services, both for routine and emergency outbreak situations.
- Promote and support capacity building of microbiological laboratory services in MS, including the mapping of training needs, development of training schemes, staff exchange programmes, and networking of training institutions.
- Promote and support the development of an EU-wide system for quality control of microbiological laboratories.
- Help identify the need for new or improved microbiological diagnostic technologies for CD prevention and control, and promote, facilitate and participate in such developments<sup>15</sup>.
- Foster closer links between human and veterinary microbiology laboratory investigations and reporting to enhance the quality and exchanges necessary for zoonotic disease surveillance<sup>16</sup>.

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<sup>14</sup> Thus, this is not a separate reporting system.

<sup>15</sup> Active participation would be in areas of high priority from a public health point of view and in tasks where ECDC could make a particularly valuable contribution.

## Target area 4: Enhancing preparedness and response

### Main challenges 2007–2013

The main challenges to reaching this target are the complexity of the EU environment, the number and diversity of stakeholders with different competencies at the EU and MS level and the large range of health services organisations in the EU. It will require detailed, agreed upon operating procedures, supported by state-of-the-art information and communication technology.

In addition, ECDC will need to promote a uniform approach to preparedness and response to anticipate and cope with emerging threats. The anticipation of threats represents a challenge that ECDC should address by modelling and ad hoc threat assessment, covering a wide range of organisms. ECDC will need to reach an appropriate balance in its activities between enhancing European preparedness as a whole and addressing specific MS needs.

### Need for a coordinated approach to threat detection

The paradigm for the detection of emerging threats has changed dramatically over the past 15 years. Most of the recent emerging threats in the world were initially detected by informal sources, challenging the capacity of traditional surveillance systems. The concept of epidemic intelligence emerged, aimed at complementing the traditional surveillance systems used to monitor known threats with searches for events signalling a threat in the media and on the internet. The emergence of this new paradigm was concretised by the adoption, in May 2005, of the WHO revised International Health Regulations. However, a lot remains to be done to efficiently implement this new approach to the detection and assessment of emerging threats.

### Need for a coordinated approach to outbreak investigation and response

Investigating and controlling outbreaks requires a coordinated approach in the EU, given the mobility

ECDC experts assess information received by the EOC



16 The surveillance reporting should be part of the general surveillance, see Target 2, Strategy 2.1.



of populations and the speed of spread of the transmission of CDs. The past 15 years have seen the development of standardised approaches for tackling these outbreaks at the European level, but much still needs to be done to ensure a smooth and efficient coordination of these activities. There is an urgent need in the EU to implement a centre equipped with state-of-the-art information and communication technology to coordinate the risk assessment functions related to the control of threats.

### **Strengthening preparedness in the Member States and the European Union**

Improving the health security of EU citizens requires strengthening the detection of emerging threats to enable MS to mitigate them as early as possible. However, enhancing preparedness is vital to enable health authorities to respond to major threats like pandemic influenza that may affect large segments of the population. Threats related to CDs will remain in the future. Therefore, enhancing preparedness should be a continuous process resulting in an increased level of health security for EU citizens, but requiring sustained funding and efforts.

***Target 4: By the year 2013, ECDC will be the reference support point in the European Union for the detection, assessment, investigation and coordinated response to emerging threats from communicable diseases, including threats related to intentional release of biological agents, and diseases of unknown origin.***

**Strategy 4.1: To develop an efficient integrated early warning system about emerging threats in Europe, by developing European infrastructure, tools and procedures, and supporting the Member States by the provision of guidance and assistance, in the context of the implementation of the revised 2005 International Health Regulations (IHR).**

Expand the sources of epidemic intelligence for threat detection and ensure comprehensive coverage of all EU countries, with strong international relations.

- Establish a network of epidemic intelligence officers in the MS supported by state-of-the-art information and communication technology.
- Develop the tools for information and communication, ensuring optimal synergies between risk assessment and risk management functions.
- Efficiently operate the Early Warning and Response System (EWRS) and adapt it to the needs expressed by MS and the European Commission.
- Prepare guidance for EU MS for harmonising epidemic intelligence activities and ensuring the smooth implementation of the revised IHR.
- Integrate threats related to intentional release of biological agents into the threat detection and assessment activities of ECDC.
- Develop and implement methods allowing for a better anticipation of health threats in relation with their determinants e.g. climate change, globalisation of food processing<sup>17</sup>.

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<sup>17</sup> This work will be undertaken in very close collaboration with the work previously described under Strategy 3.2 (which deals with all CD, while 4.1 focuses on health threats).

**Strategy 4.2: To develop a mechanism for the support and coordination of the investigation and response to health threats in Europe, through the provision of guidance to the Member States, the establishment of a mechanism for the mobilisation of laboratories and the deployment of outbreak assistance teams.**

- Establish a network of partner laboratories for the diagnosis and investigation of threats of unknown origin.
- Consolidate procedures for the coordination of investigation and response to emerging threats, including the capacity to mobilise a network of laboratories.
- Define the role of ECDC in risk assessment of health threats related to the intentional release of biological agents.
- Identify priority areas requiring guidance, with a special focus on these areas bringing a clear added value at the European level.
- Implement an Emergency Operations Centre in ECDC efficiently linked to similar centres in the MS and in the EU and alert systems.

**Strategy 4.3: To strengthen the Member States' and European Union preparedness for communicable disease threats, through the provision of guidance, agreed upon procedures, tools, training and simulation exercises.**

- To translate lessons learnt in engaging in pandemic flu preparedness towards generic preparedness.
- To develop guidance and operating procedures for the smooth implementation of the 2005 revised IHR.
- Identify and develop guidance for situations representing an increased risk for emergence of health threats, e.g. in the aftermath of natural disasters, during large mass gatherings of people or as a result of a large influx of refugees.

## **Target area 5: Strengthening capacity through training**

### **Main challenges 2007–2013**

Approaches to prevention and control of CDs differ across the EU, reflecting the different public health structures and history. The emergence of new threats has clearly highlighted the need for a more coordinated assessment, investigation and response. Training activities represent an opportunity to contribute to the harmonisation of approaches and sharing of experience.

Substantial differences in the capacity for prevention and control of CDs are a reality across the MS of the EU. This can manifest itself as a difference in the number of trained professionals, in the scope of competencies covered and in the quality of training given. It is important to define what the qualitative and quantitative differences are and address the specific needs for improvement.

The following represent the three main challenges in the EU that will influence ECDC training strategies in the years ahead.

### **Identifying core components for training and training needs to develop European Union capacity for prevention and control of communicable diseases in the European Union**

The scope of CD prevention and control is broad and the required competencies for professionals in this area differ. Currently, the European Programme for Intervention Epidemiology Training (EPIET) and the national Field Epidemiology Training Programmes (FETP) in four MS, are relevant initiatives in the area oriented to the “specialisation” of public health officials in field epidemiology and consisting of a two-year residence based in public health surveillance institutes, therefore using a methodology of learning by doing. The main topics covered in these programmes are public health surveillance, outbreak investigation and epidemiological research in public health.



Professor Angus Nicoll of ECDC in Ankara as part of the international assistance team

It is, however, necessary to develop expertise and cover other professional targets in public health. While the emphasis on field activities is important, there is also a need to cover more areas, such as basic epidemiology, risk assessment and risk communications.

Mitigating the effects of an emerging threat requires the involvement of many stakeholders, like microbiologists, veterinarians, sanitation officers and healthcare providers. All of these may have different approaches, mandates, perceptions and techniques. Joint training activities represent an opportunity to share these approaches, resulting in a better understanding of the roles and contributions of each to the prevention and response to CDs. In addition, training targeting these specific stakeholders needs to be developed.

The development of training curricula needs to rely on a set of agreed core competencies for epidemiologists engaged in CD prevention and control activities. These core competencies will then serve as a basis for developing an accreditation scheme for training programmes as an inspiration for the improvement of national training programmes. Existing training networks and institutions will be invited to participate in the development of core competencies and curricula to promote a feeling of ownership.

Countries (or regions in federal states) lacking national training programmes need to be supported, based on a needs analysis of their national situation. Existing training institutions could be invited to review and update their own training programmes.

### **Need for networking European Union training programmes**

The EU comprises many institutions conducting training programmes in the field of ECDC activities and some initiatives link these institutions like the Association of Schools of Public Health in the European Region (ASPHER) and Universities.

However, more needs to be done to interconnect these initiatives, contributing to the development of a harmonised approach to preventing and controlling CD threats in the EU.

### **Need for a European training function for prevention and control of communicable diseases**

Many initiatives have taken place in the past 15 years in Europe regarding the development of training in applied epidemiology for public health. Yet, these initiatives are still scattered in Europe and would greatly benefit from the establishment of a reference function where the initiative could come for launching the key elements of the above proposal.

If ECDC performed this function, it could also be a clearing house for information on available training institutions and programmes, a facility where training materials could be accessed, new training methods explored and special courses and internships conducted.

Distance learning activities could also make it possible to reach a larger audience in the EU making full use of our current information technology.

***Target 5: By 2013, ECDC will be the key reference support centre in the European Union for strengthening and building capacity through training for the prevention and control of communicable diseases and diseases of an unknown origin.***

**Strategy 5.1: To develop European Union capacity on prevention and control of communicable diseases through training.**

- Assess specific training resources and needs in MS, identifying ways of supporting national or regional activities to reduce inequalities among the MS.
- Increase the training capacity of EPIET (with the long-term goal of covering all MS).
- Support the requests of EU countries for assessing the feasibility of developing an FETP.
- Define different targets for training to adjust to changing needs, like increases in graduate and post-graduate programmes in epidemiology.
- Use the developed core competencies in public health epidemiology to develop similar curricula for other professional target groups.

**Strategy 5.2: To develop network of training programmes**

- Aiming at a catalytic role, ECDC will strengthen networking with carefully selected training programmes in National Institutes of Public Health, Schools of public health and ASPHER, Universities, NGOs, the private sector, EU institutions and professional associations<sup>18</sup>.
- Explore the EU's European credit transfer system and accreditation of public health training programmes, for the future accreditation of training programmes.
- Promote a common language in epidemiology in the EU, strengthening interactive links between the EPIET and the FETPs.
- Consider supporting training activities in candidate and neighbouring countries, as well as being involved in regional EU and WHO projects.

**Strategy 5.3: To create a training centre function within ECDC**

- Promote the use of the ECDC Field Epidemiology Manual.
- Start exploring possible ECDC distance and self-learning programmes.
- Continue organising short priority modules i.e. “train the trainers” and modules in public health epidemiology regarding CD surveillance and response.
- Increase the involvement of ECDC staff expertise in conducting training activities.

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<sup>18</sup> Including an annual meeting with major partners interested in promoting ECDC's training strategy.

## **Target area 6: Communicating information on communicable disease prevention and control**

### **Main challenges 2007–2013**

#### **Communications with health professionals**

A “raison d’être” of ECDC’s is to provide the background information and evidence needed for public health actions in the area of CD prevention and control. Today, CD-related information in Europe is scattered in many places, making it very hard for health professionals and policy makers to find useful information. ECDC will need to provide the communication entry points for rapid and easy access to all the European-level information that is needed by public health professionals in their daily work. This can only be achieved with a combination of excellence and independence in its scientific work and effective communication of its results.

#### **Communications to the public and the media**

European citizens place a high value on their health. Therefore, there is a high demand for health information from the public and the media. ECDC needs to manage this attention correctly and use it as an opportunity to convey accurate health information to European citizens. The most powerful and cost efficient channels to reach the public are the media and the internet. A major issue when addressing the public is multilingualism with proper translations, and having information adapted to national and cultural contexts. The way Europeans receive information, and the relative importance of various media, has changed greatly over the past ten years with development continuing in this area for years to come. ECDC will need to be on the frontline of these new developments and technologies to be able to communicate in the most effective ways possible.

#### **Country support in the field of health communication**

The main responsibility to communicate with the public and local health professionals on CDs rests with the MS. However, the communications resources vary considerably between the countries and in many of the national institutes. Major communication activities are today maintained by senior epidemiologists already burdened with a very high workload.

During country visits, and other contacts, a significant number of counterparts in national institutions have identified communication as an area where they would like technical support from ECDC. A useful role of ECDC would therefore be to provide support to the Competent Bodies of the MS on health communication, i. e. the study and use of communication strategies to inform and influence individual and community decisions that enhance health. Elements of health communication relevant to the Competent Bodies include risk communication, support of citizens’ and professionals’ search for and use of health information, construction of public health messages and campaigns, and assessments of the population’s perceptions of health risks and adherence to health recommendations (behavioural surveillance). ECDC could facilitate the same pooling of knowledge and exchange of good practice on health communications that it facilitates in the other areas of its work. ECDC could provide training, give technical support and otherwise support the national health communications efforts. Where appropriate, ECDC could also be a partner with MS, EU institutions and other interested parties in public health campaigns.

***Target 6: By the year 2013, ECDC’s communication output will be the main European source of authoritative and independent scientific and technical information in its field and will be the reference support point in the European Union for risk communication on communicable diseases.***

**Strategy 6.1: To efficiently communicate ECDC's scientific and technical output to professional audiences.**

- Promote ECDC through a presence and active participation in important meetings and other forums for public health professionals and health-care workers, including an ECDC annual scientific conference.
- Improve the scientific quality and actively promote Eurosurveillance, in order to make it the leading European scientific journal in its field.
- Build a state-of-the-art web portal for comprehensive information on CD prevention and control, with easy access to ECDC databases, technical and scientific output and other resources.
- Establish a knowledge repository as a source of easily navigable information.
- Establish a common, shared consistent terminology for matters within ECDC's scope as a tool for semantic interoperability of related information systems.
- Network with the national websites and EU-level sites for efficient sharing and cross-linking of information.
- Provide top of the line publishing services for ECDC scientific and technical reports.

**Strategy 6.2: To develop the means, procedures and necessary partnerships for efficient and coordinated communication of key public health messages and information to the media and to the European public.**

- Further develop procedures and partnerships with the MS and the EU institutions for coherent risk communication.
- Extend the active media work to national and regional media, where appropriate.
- Set up a visitor and media centre at ECDC, that could effectively serve visitors from the public and the media.
- Establish a multilingual ECDC website, with important public health messages and information in all the official EU languages, and agree with the MS on reciprocal linking between the respective websites.
- Develop an appropriate partnership between the ECDC web portal and the Commission's EU public health portal.
- Utilise new internet-based media and techniques to communicate ECDC's messages.
- Explore with the MS and the EU institutions, how ECDC could support public health campaigns.



ECDC information stand

**Strategy 6.3: To support the Member States' health communication capacities.**

- Form networks and partnerships bringing together health communicators from the MS that could include the press, communications officers and editors of national bulletins.
- Establish a health communication resource centre that would pool expertise and provide advice on how to best communicate health messages and to evaluate the impact of such communication.
- Provide specialist training courses on health communication issues like scientific writing and editing and risk communication.
- Facilitate the sharing of experiences and best practices between the MS.
- Facilitate peer reviews of the communications infrastructure and strategies in the MS.
- Facilitate dialogue and partnership between government bodies and civil society, where appropriate.
- Support interoperability between web systems (national and ECDC).
- Provide a terminology of key words and other standards to be used for accessing data on national and ECDC websites

## **Group III: Cooperation with Member States, European Union institutions, IGOs, NGOs, and scientific institutes**

### **Target area 7: Building partnerships**

#### **Main Challenges 2007–2013**

##### **European Union Member States**

EU membership is growing, and a number of countries, each with their own CDs and other health problems, may enter into various forms of cooperative agreements with the EU. MS will face increasing burdens from CDs as elderly populations grow, and also for other reasons (Annex I refers) the communicable disease burden may well increase in the years ahead. MS may face increasing difficulties with regard to their capacity to cope with these different challenges.

The establishment and the development of the activities of ECDC, as planned by Regulation (EC) No 851/2004, creates new obligations for the EU MS, such as to provide ECDC with scientific and technical information relevant to its missions, to communicate to the Centre messages forwarded to the early warning and response systems, and to identify Competent Bodies and experts available to assist in community responses to health threats.

As defined in the same Regulation, ECDC has to perform a number of missions for and with the MS, such as to operate dedicated surveillance networks and networking activities of the Competent Bodies recognised by the MS. It also has to provide scientific opinions and studies at the request of MS and ensure that the MS have the capacity to respond in a coordinated manner to health threats. ECDC must also provide scientific and technical expertise and assistance to the MS, cooperate with the MS for the identification of emerging health threats, develop in collaboration with the MS the collection and analysis of data, and act in concert with the MS to promote coherence in the risk communication on health threats.

It is for these reasons that ECDC must build a clear, strong and coherent partnership with the MS to support their efforts to fight CDs. This is also a partnership based on common, agreed rules.



ECDC partners

A second challenge is the growing EU membership, with an increasing heterogeneity of health systems and problems. This calls for a shared review of the national situations in the fields covered by ECDC and for individualised solutions of cooperation and partnerships, depending on the national situation, organisation, and needs. Furthermore, cooperation with the EU candidate and acceding countries will require additional efforts from ECDC.

A third challenge is the need to increase the cooperation and support to MS, and with the EU, on specific problems and situations where a common approach could be useful and efficient. The risk of an increase of CD among the elderly; spread of CD among drug users; the inward flow of migrants with specific CD challenges; and the necessity of a common approach for CD surveillance and control in the EU border regions are some such examples.

#### **Cooperation with the European Union institutions**

Many parts of the EU system have programmes that can make significant contributions to the prevention and control of CDs in the EU region. In the Commis-

sion, DG SANCO is ECDC's close partner, with extensive influence on many important issues. This partnership is something ECDC will continue to give high priority to in the future. Several other Directorates General can have important influence on important CD determinants, and this could become an interesting and strategically important field of cooperation between ECDC and the Commission in the years ahead. Furthermore, the EU's DG for External Relations (RELEX) will be a good partner for cooperation in CD prevention with countries bordering the EU. DG Research could be extremely helpful in financing ECDC-recommended CD prevention or control studies of high public health priority for the EU MS. ECDC is fully committed to exploring the many interesting opportunities the Commission's programmes present for CD prevention and control.

Likewise, the Council and Parliament, through their respective roles, can provide support for strengthening the fight against CDs in the EU.

Finally, other EU agencies like the European Food Safety Authority, European Environmental Agency, European Medicines Agency and EMCDDA are working in areas of importance to CD prevention and control, and ECDC will seek to establish close working relations with them in various technical areas of work.

#### **Cooperation with other organisations**

As globalisation spreads rapidly, the CD developments outside the EU will often be a direct and serious threat to the CD protection for the MS of the EU. A high level of coordination will also be required with many partners outside the EU system. This will be essential with regards to early warning and response. However, ECDC needs its scientific work to be in the forefront of developments and needs to maintain close working relations with leading centres of excellence around the world.

WHO EURO has important CD programmes, the main thrust of which address the situation east of the EU



region. Similarly, WHO's Regional Offices for the Eastern Mediterranean and the African regions border on EU's southern MS. WHO Headquarters has a large global CD programme. Thus, WHO is an important player within the field of CDs, both at the European level and on the wider international stage. Increasing coordination and collaboration between WHO and the EU will continue to be a priority for ECDC in the years ahead.

A number of non-governmental organisations (NGOs) are becoming increasingly active in the health field, either at the field operations level or as major funding agencies for many country programmes. Similarly, an increasing number of large foundations have substantial interest in and the resources for CD prevention and control. ECDC will explore cooperation with them in selected partnerships or projects.

The degree of coordination and cooperation among these many organisations will vary over time, based on the urgency of problems, and depending on the disease. There is substantial untapped potential for synergy in action and it can only be realised with guidance from good leadership. Those leading these efforts must treat their roles as a partnership among equals. Exploiting this potential in a productive way will be a stimulating challenge for ECDC in the years ahead.

***Target 7: By 2013 ECDC will have a structured communicable disease cooperation programme with all of the Member States, the Commission and other relevant European Union agencies, and it will enjoy a close partnership with WHO and other selected partners at regional and global levels.***

**Strategy 7.1: To develop programmes of ECDC cooperation and support on communicable diseases with each Member State.**

- Develop principles, processes and standard frameworks for country cooperation including coordinated planning with the relevant Commission Directorates General.
- Develop country cooperation programmes with all interested MS.
- Establish and maintain databases on resources, capacities, programmes and gaps and needs in the CD field in individual countries.

**Strategy 7.2: To ensure a close and productive cooperation with all European Union structures whose activities can contribute to prevention and control of communicable diseases.**

- In close cooperation with the Commission, map CD relevant elements in all Directorates General and possibly prioritise areas of action.
- Establish clear agreements of cooperation with such Directorates General.
- Do the same with regard to other EU agencies.
- Keep the Commission, Council and Parliament well informed of new developments in the CD field that would be of importance to it, and on demand provide support to their work within ECDC's field of competence.

**Strategy 7.3: To maintain effective working relationships with WHO and other IGOs, NGOs, scientific institutions and foundations of key importance to ECDC's work.**

- Maintain Memoranda of Understanding with WHO and establish such with selected IGOs, scientific institutions, NGOs and foundations.
- Create cooperative groups and networks with such partners for joint action in selected fields of CD.

# ECDC GOVERNANCE, MANAGEMENT, ORGANISATION AND RESOURCES

## Governance

Given the scope of the Strategic Multi-annual Programme, ECDC will grow substantially in the coming years, finding new ways of working, entering different working relationships and expanding its resources. It will be important to ensure that ECDC does this in effective and innovative ways, while at the same time keeping within the mandate laid down by its founding regulation (Regulation (EC) No 851/2004).

The founding regulation also specifies the composition and functions of the Advisory Forum that supports the Director of ECDC in ensuring the scientific excellence and independence of activities and opinions of the Centre.

Once the MS designate the Competent Bodies in the MS and the MB has compiled the list, ECDC will start to develop an effective collaboration with these national collaborating institutions. This will be the challenge for 2007–2009.



ECDC Advisory Forum meeting

In accordance with Article 14 of that Regulation, a clear governance structure has been established for ECDC through a Management Board with one representative designated by each MS, two by the European Parliament and three by the Commission. During the 2007–2013 period, in addition to its routine oversight functions, the MB will have an important role in commissioning an independent and external evaluation of ECDC every five years. The first of these will start in 2007, and when its results are known, the MB will need to consider whether any changes to the Centre’s mission, scope or its working practices should be recommended.

## Management and organisation

ECDC is managed by a Director, independent in the performance of his or her duties, without prejudice to the respective competencies of the Commission and the MB. Managerial responsibilities and delegations of authority will continue to be adjusted to fit the developments of ECDC, ensure transparency, motivate staff, promote efficiency and assure alignment with the Centre’s regulations. A staff development system will link personal objectives to clearly defined deliverables and indicators and will constitute the basis for accountability for all staff.

As of 2007, ECDC's organisation has a matrix structure, organised with Target areas 2–7 in a “vertical” dimension and Target area 1 in a horizontal one, i. e. along functional lines that broadly reflect the separation of operational duties set out in the founding regulation. As already mentioned, Target area 1 is subdivided into six groups of programmes (*Annex III*) incorporating all the diseases and conditions covered by ECDC's mandate as set out in Decision No 2119/98/EC.

With the rapid growth projected for ECDC over the coming years, it is inevitable that the current organisational structure will need to be adjusted to meet new challenges, possibly more than once. The Annual Programmes of Work will show the organisational structure of ECDC on a year-by-year basis. However, it is expected that the strategic areas of work outlined in this paper will not change between 2007 and 2013. During this period, each annual work plan will take its point of departure from this strategic programme framework, rather from the organisational structure that will apply that particular year.

Some of the strategy-specific indicators outlined in Annex II may well be used to set specific, carefully selected “benchmarks” for ECDC to achieve in the medium or annual perspective<sup>19</sup>.

ECDC's management system will continue to be developed in an integrated way. Annual work programmes will be explicitly linked to the multi-annual strategic plan which takes its point of departure from the articles in the founding regulation. By submitting these documents to the MB for approval, the Centre intends to discharge its functions under the guidance and authority of, and with full accountability to, the MB, as foreseen in Article 14 of the Regulation.

Activity-based work plans were already initiated for 2006 and were further refined for 2007, in line with internal control standard nine of the Commission's 24 Internal Control Standards that ECDC has to adopt.

The key elements of the activity-based work plans are as follows:

- They provide an overview of all products and services to be delivered by ECDC in the course of a year, broken down into specific activities.
- All deliverables are programmed by a quarterly timetable, thus enabling management to monitor implementation.
- Performance indicators have been included for all products and services, thus further facilitating subsequent monitoring and follow-up of implementation.
- Annual products are linked to “Projected outcomes for the medium term with a time frame of 2–3 years,” thus providing a “rolling planning horizon.”

With the development of a longer-term Strategic Multi-annual Programme, the structure of the annual work plans will need to follow the same individual strategies that are outlined in the Strategic Multi-annual Programme document. This will ensure that the short- and medium-term actions are directly linked and can be assessed while keeping in mind longer-term perspectives.

Day-to-day management and monitoring of implementation will be supported by an integrated programme/resources management system (SAP).

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<sup>19</sup> This would respond to the issue raised by one MB 9 member regarding more precise and time-specific targets for ECDC.

## Resources

As regards ECDC's financial resources, the content and scope of ECDC's Strategic Framework for the next seven years have been adjusted to the realities of the expected financial resources for the Centre. The projections presented in the following tables are based on the premise that the Centre's mandate will continue to be limited only to CDs. This is by no means a foregone conclusion, as the external evaluation mandated in Article 31 of Regulation (EC) No 851/2004 clearly points to "a possible need to extend the scope of the Centre's mission to other relevant Community-level activities in the field of public health ...". Were that to be recommended by the MB, and were those recommendations to be accepted by the European Parliament which subsequently would amend ECDC's founding regulation, then this would indeed call for a reconsideration of the Centre's financial and human resources.

Following the inter-institutional agreement on the Community Financial Perspective 2007–2013 (at 2006 figures), a compromise consensus was settled between ECDC and the Commission. This included € 50 million per year for ECDC from 2010 to the end of the financial period in 2013, with a gradual build up during 2008 and 2009. Using an inflation adjustment factor of 2% per annum, the ECDC budget perspectives are shown in the table below.

ECDC's staffing projections are based on the premise that priority will be placed in ECDC to build up a stable internal core capacity at the Centre. A significant and gradually increasing amount of research and specialist studies will no doubt be contracted by ECDC to external partners in the years to come, but the core functions laid down by the relevant articles in the founding regulation will, to the extent possible, be covered by the Centre's own, internal expertise.

Under this scenario, core staffing in the form of Temporary Agents will make up approximately 50–60% of the overall staffing level, with additional categories of staff being brought in on time-limited contracts as and when such needs arise.

The table below summarises the staffing projections based on the best available information as of 2007.

To the extent that there are well-established rules for the budgeting of Temporary Agents as the core staffing of the Centre, the above projection of this category of staff is likely to be reasonably accurate. For the other categories of staff, however, the detailed requirements can never be accurately assessed before the annual work plans are developed, when new or emerging priorities are taken into account and planned in detail. Consequently, at this early stage, there is a fair degree of uncertainty with regard to both the mix and number of such additional categories of staff.

### ECDC budget perspectives, 2007–2013

| 2007     | 2008     | 2009     | 2010      | 2011     | 2012     | 2013     |
|----------|----------|----------|-----------|----------|----------|----------|
| € 26.5 M | € 39.1 M | € 49.7 M | € 56.45 M | € 57.5 M | € 58.7 M | € 59.8 M |

### ECDC staffing projections, 2007–2013

| Staff category   | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|------------------|------|------|------|------|------|------|------|
| Temporary Agents | 90   | 130  | 170  | 200  | 200  | 200  | 200  |
| Total staff      | 180  | 250  | 300  | 350  | 350  | 350  | 350  |

## MONITORING AND EVALUATION

The long-range success of ECDC will depend on the quality of its work and on its support from MS, the EU Council, the European Parliament and the European Commission. Such support will only be sustainable if ECDC's work provides transparency and gives satisfactory results, both of which require a well thought through system of monitoring and evaluation for the Strategic Multi-annual Programme 2007–2013. This system will be so designed as to give prime consideration to the question of whether ECDC's work has achieved the positive change that its founding regulation and the 2007–2013 Strategic Multi-annual Programme aimed for. The setting of clear, outcome-oriented targets and the assignment of evaluation indicators (fed by a routine data collection system for monitoring progress) will be one important element for guiding the evaluation in the right direction.

Half way through the programme period, the MB will make an assessment of progress. As regards the final evaluation of the Multi-annual Programme's achievements by the year 2013, this will be so timed that the MB has the results in hand when deciding on the next Strategic Multi-annual Programme, i. e. the one for 2014–2020.

In addition to the above, it might be useful for the MB to undertake an in-depth evaluation in one major programme area (e. g. training or external relations).

Finally, as mentioned above, ECDC staff will at the end of each year systematically evaluate the implementation of that annual work plan, jointly assessing the quality of its products and the efficiency of the implementation process. Highlights of this evaluation will be part of the Director's annual report to the MB.

## CONCLUSION

The EU and its 27 MS will face considerable challenges regarding CDs in the years to come. Recognising this, the European Parliament and Council established ECDC (inaugurated in May 2005), in order to strengthen the scientific basis of, and the concerted action for, the fight against CDs in the EU region.

ECDC's MB decided in June 2006 that in addition to its Annual Programmes of Work, the long-term development of ECDC should be guided by *seven year Strategic Programmes*. The current document is the first such programme (covering the 2007–2013 period), based on the results of the first ECDC annual epidemiological report and an analysis of the trends in CD determinants. It is structured around seven major targets that ECDC will strive to reach by the year 2013. The achievements of the programme will be systematically monitored by a set of indicators or scorecards (detailed in Annex II) that the MB will endorse. These indicators will monitor progress and be used (along with other information) in the final evaluation of the 2007–2013 Strategic Multi-annual Programme in 2013.

It is expected that the MB's approval of this long-term strategic programme framework will be a major milestone in ECDC's development, as it will substantially increase transparency, accountability and discipline in ECDC's work. It will also hopefully be an instrument of inspiration and positive guidance for ECDC's staff, the MB and ECDC's many partners in the work to improve the health of the citizens of the EU region.

## ANNEX I: COMMUNICABLE DISEASE CHALLENGES FOR THE EUROPEAN UNION REGION 2007–2013

As mentioned above, there are three elements that will be of key importance in assessing the CD challenges that the MS and the EU institutions will face in the years ahead:

- The health impact of CDs.
- The determinants that influence the future CD developments.
- The social and economic impact of CDs in Europe.

### Communicable diseases in Europe

Throughout history, CDs have had a huge impact on the health of the peoples of Europe, cutting decades off their average life span and sending sweeping epidemics ravaging the very fabric of societies. The 20th century brought major improvements in the treatment of CDs through new preventive programmes and antibiotics. As Europe enters the 3rd Millennium, it is clear that CDs continue to occupy a place of prime concern, although problems and priorities change as societies develop.

A new ECDC report gives a comprehensive and extensive review of the current situation, providing the scientific basis for ECDC's Strategic Multi-annual Programme as regards CDs in Europe<sup>20</sup>. Some issues merit highlighting here.

In many European countries the classic childhood infections (measles, diphtheria, etc.) have become quite rare. Polio and smallpox have been completely eradicated from the region. None of this would have been possible without effective childhood vaccination programmes. However, in certain groups and some countries the vaccination programmes are not effective enough, leaving lingering problems.

Cholera and typhoid have also largely disappeared from Europe, a development made possible by progress in environmental and personal hygiene.

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<sup>20</sup> Annual Epidemiological Report on Communicable Diseases in Europe, document MB 9/13

The same cannot be said about food-borne infections, where mass catering, intensified poultry farming, industrial food production, and a largely international food market create wide-ranging pathways for infectious disease agents to spread. The intriguing “sophistication” that food infections may possess was revealed by the surprise finding, in the famous Bovine Spongiform Encephalopathy (BSE) epidemic several years ago, that prions (infectious agents smaller than viruses) could spread through the food chain from cattle to humans, leaving devastating brain infections in both animals and man in its wake.

Improved hygiene and treatment have largely removed our grandparents’ dread of the lethal child-birth infections, except for those pregnant women who are not covered by essential healthcare. The same factors have made healthcare and surgery safer. Unfortunately, that is only one side of the coin. A rising trend in the indiscriminate use of antibiotics by the health services is creating a very serious AMR problem. With alarming speed, this phenomenon threatens to deplete one of our most powerful weapons against infections. One result is that it threatens a number of fundamentals of modern healthcare, like modern prosthesis and transplant surgery, as well as intensive cancer treatment. Furthermore, hospitals and other healthcare institutions are often harbingers of dangerous and difficult-to-contain infections that complicate patient care.

Influenza and other respiratory tract infections continue to attack Europe, infecting millions every year. Most seriously affected are the elderly and chronically ill. Three times during the 20th century particularly dangerous strains of the influenza virus struck Europe with devastating pandemics – and the danger that a new influenza pandemic again should strike, although small, is nevertheless always present. The recent A/H5N1 influenza virus epidemic in birds has

suddenly brought this question to the forefront, as scientists fear that a mutation of the virus could suddenly create the danger of a human pandemic of this very dangerous (some 60% mortality among infected humans) CD.

The recent re-emergence of HIV in a number of countries, mainly through sexual transmission, is also the cause of some concern. Sexual transmission is a major (but not the only) means of transmission of HIV. Unfortunately, it is not the only sexually transmitted infection (STI). The more “classical” ones remain a problem. They attack different groups in society to a different degree. Gonorrhoea and syphilis are more prevalent in gay men. Chlamydia is found more in heterosexual women. The more recent discovery of the link between human papilloma virus (HPV), and (a much later) development of cervical cancer, reinforces the seriousness of this situation and propels STIs even higher up the list of concerns. The links between STIs and changing lifestyles and sexual behaviours further underline the formidable difficulties of effectively preventing this serious CD problem.

That Europe, with the increasing criss-crossing of European tourists and businessmen to all corners of the globe, as well as increasing immigration to our continent, is faced with an increasing risk of importation of dangerous CDs from tropical countries, is a well recognised fact. However, few expected 25 years ago that a very serious, albeit slow, epidemic of a totally new disease would invade Europe the way that HIV/AIDS has. Although new drugs have prolonged the life of many of its victims, this disease continues to present an epic human tragedy. It has also created a formidable public health problem for the EU region, from the prevention, treatment and cost points of view. Furthermore, the reduced immunity which is its hallmark, has also led to concomitant infections of other types like tuberculosis.

Although TB incidence appears to be declining in almost all MS where it is now mostly a disease of the elderly (being re-activated after a primary infection many decades before), the burden of disease is still very high. This decline notwithstanding, certain sections of the population, like prisoners, people living with HIV (PLHIV), the Roma, the homeless and drug users continue to suffer from this debilitating disease. Migrants to the EU from countries with a large TB problem (e.g. sub-Saharan Africa, parts of Asia and eastern Europe) retain their risk of developing TB even after moving to the EU. Cases of difficult-to-treat drug-resistant TB are being detected across the EU, particularly in the Baltic States.

The link between CDs and development of cancer is not confined to HPV infections. A link between *Helicobacter pylori* and gastric cancer seems clear, as are the links between hepatitis B and C and hepatocellular carcinoma. The association between hepatitis C and non-Hodgkin lymphoma has also been clearly demonstrated.

That up to 20–25% of all cases of cancers may have an infectious origin (single or multi-factorial cause) seems not unlikely, a finding that may give CD research, prevention and control a new focus and even stronger urgency in the years to come.

It should, however, be recognised that the last 100 years' progress in hygiene, antibiotics and vaccines have improved the health of the people in Europe in a way with few historical parallels. One of the major problems of a sustainable control of CDs is that these advances are now considered almost a “natural” state of things. There is a risk that the on-going necessary routine preventive work to maintain this situation will be neglected. There is a famous quote in public health, illustrating the so-called “paradox of prevention”:

“All successful prevention undermines the reasons for its own existence”.

This is true to a large extent for CD control.

This is most clearly demonstrated by the increasing resistance to childhood vaccinations in many rich countries. If the disease is no longer around us, why subject my child to a painful injection that may have side effects? However, one must never forget that there is a thin wall between “them and us” and that there are many dangerous infections around. This wall must be maintained and improved all the time. Without this work, the CDs that prove the most fatal to children and young adults, like diphtheria, TB and dysentery, will return with a vengeance. This has already been seen with mumps and measles in some countries.

One of the essential tasks for the EU public health community – of which ECDC is an important part – is therefore to demonstrate to policy makers and the general public that most of the investments in CD control will have to be kept at a high level – forever.

In conclusion, although the large majority of Europeans have profited from the advances made in public health and patient treatment during the last century, important groups have fallen through this “safety network”. New initiatives are necessary to reach them. Furthermore, new and different challenges (West Nile fever, SARS) have arisen as the CDs seem to display ingenuity in finding new methods of attack, seemingly tailored to confront Europe's changing society at the start of the 21st century.

## **The determinants that influence future communicable disease developments**

Whether a particular disease agent (parasite, bacterium, virus, or prion) becomes infective, how seriously it affects a person and how easily it spreads to others, depends on a range of factors. These include characteristics of the agent itself, the immunity of the host, and the many elements in the social and physical environment that determine the amount and nature of exposure of the population to the infectious agent. How these determinants develop in the years ahead will influence the future occurrence



of CDs. Actions to prevent and control CDs therefore need to take into account how these determinants should be dealt with. How will these determinants develop in Europe in the years ahead?

### **Population**

The 27 MS of the EU have a combined population of close to 500 million, and the proportion that is elderly is likely to continue to grow. Since the elderly have weaker immune systems, this will lead to a growing group of citizens at higher risk from certain CDs.

Europe attracts migrants from the east and south, and this influx is not likely to slow in the years to come. Like other travellers, they may bring with them serious CDs.

The majority of Europeans live in cities. Over the last decades, urbanisation and migration have resulted in the emergence of impoverished inner-city areas in many European cities. Without active intervention, these areas could play a significant role in the outbreak and spread of many CDs.

### **Social inequality and related conditions**

Unfortunately, the growing wealth of Europe is also associated with increasing gaps in wealth and health. Among the socio-economically disadvantaged, average life expectancy is consistently shorter, and the risk of certain CDs higher.

Unemployment, particularly long-term, is a health risk affecting many. In 2004 about 10% of the population between 18 and 59 years old in the EU region lived in jobless households. Another disadvantaged group are semi-nomadic populations like the Roma; eight to 12 million of whom currently live in the EU. Their exposure to certain CDs is higher and organising services for them is more difficult than for the rest of the population.

While no comprehensive study of the impact of socio-economic factors on the health of the population in the whole of the EU region exists, various studies indicate that the problem is widespread. In Den-

mark, for example, children from mothers with only basic schooling and low income are more likely to be hospitalised for infectious diseases. Childhood TB is a serious public health concern in low-income Paris suburbs. Sexually transmitted disease rates are higher among immigrants and individuals with low socio-economic status in Greece.

Closely linked to the socio-economic risk factor is housing quality, an important determinant for the spread of a disease like TB. Rates of CDs, like TB and HIV are higher among the homeless, as they are a group more likely to be in ill health. This problem may grow as the number of homeless people seems to have been increasing in Europe since the 1980s, particularly among young people and women.

The bottom line is that social inequality may well rise in the EU region in the years ahead, expanding groups at higher risk for CDs and presenting particular challenges for the design of CD prevention and control programmes.

### **Lifestyles**

The increased tourism and business travel – likely to rise further in the years ahead – means greater vulnerability to the spread of old, re-emerging and new diseases. Of particular concern is “adventure/eco” tourism to remote areas in tropical countries, travels that bring a steadily growing number of tourists into direct contact with wild species of animals and birds and thus also with their infective agents.

Personal lifestyle is one of the most important determinants for the risk of contracting an infectious disease. A well-educated public, able to make informed decisions on personal hygiene and behaviour-related risks, will help to prevent the spread of many infections. One positive lifestyle trend, breast feeding, has been on the rise in Europe for the last decade, increasing the immune protection against CDs in infants.

“Unsafe sex” is the major risk factor for STIs, including HIV. While the emergence of the HIV infection

in the early 1980s changed the sexual behaviour of high-risk groups towards practising safer sex, in later years the public's perception of HIV/AIDS – and consequently sexual behaviour – has changed. Therefore, the incidence of HIV infection and other STIs is now rapidly increasing in many parts of Europe, not least among young people. The relatively recent discovery that the HPV also causes cervical cancer in women, further underlines the serious health implications of this trend.

Drug abuse is another serious problem since the practice of sharing contaminated needles among drug addicts is a major direct risk factor for blood-borne viral infections (such as HIV infection, hepatitis B, hepatitis C) and bacterial septic complications. Such drug use also indirectly contributes to the spread of STIs, when users engage in risky sexual behaviour under the influence of drugs, or when they trade sex for money or drugs.

Changes in consumer behaviour also have an influence on the situation. Untreated, raw foods are considered healthier than treated ones and more meals are consumed outside the home resulting in higher number of persons exposed to catering and with less knowledge of the home preparation of food.

### **Physical environment, technology and trade**

Environmental, ecological and climate changes contribute to the emergence, maintenance and transmission of vector-borne and other infectious diseases, some of which are imported from regions where they are endemic, e. g. West Nile virus in 2005. The effect of global warming on Europe in the coming years can increase this danger.

Technological improvements have led to major reductions in the transmission of infectious agents through the provision of safer drinking water and improved sewage disposal. However, in other areas technological developments have led to increased risk of infectious disease. An example of this is that the increased use of cooling towers in European cities has resulted in several large outbreaks of Legionnaires' disease.

Production and distribution of foods has led to a situation that one contaminated food can affect a large number of individuals, often in geographically distant areas. Modern food production technology and the globalisation of trade means that raw products from one country can be processed in another, shipped abroad and stored frozen for a long time before being sold and consumed. This can result in large outbreaks of food-borne infections and outbreaks that are much more difficult to prevent and control. Other risks are new animal husbandry practices, deforestation and an increasing demand for animals for food.

### **Miscellaneous factors**

The complex nature of the EU is a challenge for the organisation of CD prevention and control initiatives requiring the involvement of multiple actors at various levels in countries with different organisations of public services. The threat represented by the introduction of A/H5N1 avian influenza virus in Europe in late 2005 revealed the need to establish a strong coordination between the agricultural, health, wildlife and food safety sectors, from the local community to the European level.

On the positive side, information and communication technologies have resulted in tools that allow countries to better monitor threats and detect an outbreak in a timely manner. The rapid growth in information from a large number of sources can be helpful, but it can also make it much more difficult to assess the situation.

Some infectious diseases or treatments may weaken a person's resistance to infections in general. A classic case is HIV/AIDS and subsequent TB infections. Another is the use of immunosuppressive therapies. Most dramatically, inappropriate use of antibiotics can result in a significant increase of AMR, a very serious public health problem that may increase in the years ahead.

## **Bioterrorism**

Finally, the risk of the intentional release of biological agents by terrorists is real in Europe; whether it is large or small, stable or growing is a matter of debate. The anthrax case in the USA revealed that selected CDs can indeed be used for terrorism-related purposes, relatively easily and on a large scale. Clearly, there has to be preparedness in the years to come for such an eventuality in Europe, i.e. the possibility of such attacks, using certain CDs, or their toxins.

## **Economic impact of communicable diseases in Europe**

Translating risk and impact information into economical terms helps to better understand the full impact of CDs on society and can point to the prioritisation of cost efficient options. No studies are currently available that can demonstrate the full economic impact of CDs in the EU region, nor how this may develop during the 2007–2013 time period.

However, some individual studies can shed some light on the situation. It has been estimated that the annual cost to the British National Health Service of treating infectious diseases in England is around £6 billion. Regarding individual CDs, the 2003 SARS outbreak may have cost China and Canada about 1% of their Gross National Products, primarily through lost tourism and travel revenues. In the UK in 1995 the occurrence of BSE and variant Creutzfeldt-Jakob disease led to mass cattle slaughters and a three-year beef embargo, costing the British economy close to US \$6 billion.

As these and many other examples show, CDs represent a very substantial economic burden for the countries of the EU. Thus, not only due to their negative health effects, but also for economic reasons, CD prevention and control should receive high priority in the region's health development programmes in the years to come.

## ANNEX II: INDICATORS FOR MONITORING AND EVALUATING THE ECDC STRATEGIC MULTI-ANNUAL PROGRAMME 2007–2013<sup>21</sup>

As mentioned in the chapter on *Monitoring and Evaluation*, Target-specific indicators must be selected at the start of the Strategic Multi-annual Programme. These indicators will subsequently be used throughout the period (together with the evaluation of individual Annual Work Plans) to monitor progress towards achieving the Targets, and they will provide key information for the mid-term review (2010) and the final evaluation of the degree of Target achievement in 2013.

The following principles have been used in developing the indicators below:

- *Each Target* should have one or *more indicators*, selected in such a way that their information will clearly make it possible to assess whether/to which degree the Target outcome has been/is being achieved.
- Preference was given to indicators that tended to measure more *quality, outcome* and *European Added Value* of the activities.
- The phrasing of each criteria should be *clear*, and as brief as possible.
- The number of criteria shall be *as few as possible*, but must together be able to achieve the purpose.
- The criteria must be *measurable*, in a realistic way, and with a reasonable work effort.

A dedicated information system for the systematic collection and analysis of the data required for monitoring each indicator will be instituted at ECDC. Similarly, more detailed definitions of each indicator (including exactly what it measures, how to measure it, source of numerator and denominator where relevant, strengths and limitations, etc.) will be elaborated together with specific protocols for the collection of data and their sources by the Strategic Management section of the office of the Director. As recognised by the Management Board, all the indica-

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<sup>21</sup> Revised from Annex II of SMP 2007–2013, discussed by MB10 on 13 June 2007.

tors will need to be kept under regular review, starting with a progress report on the use of all indicators in 2009 as requested by the Management Board.

***Target 1: By 2013, ECDC will have made significant contributions to the scientific knowledge base of communicable diseases and their health consequences, their underlying determinants, the methods for their prevention and control, and the design characteristics that enhance effectiveness and efficiency of their prevention and control programmes.***

Target 1 refers to ECDC's disease-specific work on the 49 diseases and conditions under its mandate (the public health function specific work is covered by Targets 2 to 6). In order to focus attention on a manageable number of particularly important European communicable disease initiatives where ECDC plans to make an important contribution during the 2007–2013 period, a selected number of Disease-Specific Indicators have been identified that concentrate on the main expected outcome over this period. Recognising that the ECDC disease-specific programmes are at various stages of development, the ECDC Management Board decided to postpone formal adoption of Target 1 indicators until the mid-term evaluation in 2010 to give the programmes time to reach the same level of development, implementation capacity and maturity.

## **1.1. Respiratory tract infections**

### **1.1.1. Influenza**

1.1.1.A. ECDC initiatives to support Member States in significantly increasing seasonal Influenza vaccination coverage in the EU.

Data source: ECDC guidance documents, MS vaccine uptake and use data; MS initiatives, ECDC programme information system.

Availability: ECDC information: good; country data: not always easy.

Reliability: Primary data fairly good; causal linking at times difficult.

1.1.1.B. ECDC guidance documents and ECDC initiatives that support Member States to significantly improve Influenza pandemic preparedness in the EU.

Data source: ECDC information system: country visits and other liaison activities; EU-wide assessment using commonly agreed preparedness scale.

Availability: Requires a specific data collection effort.

Reliability: Medium.

### **1.1.2. Tuberculosis**

ECDC initiatives to support the implementation of the EU TB Action Plan.

Data source: ECDC information system and ad hoc survey.

Availability: Part easy, "success of initiatives" part to be set up.

Reliability: High to medium.

## **1.2. STI, including HIV and blood-borne viruses**

1.2.A. ECDC initiatives to support the Member States and the European Commission in the implementation of the EU Action Plan to fight HIV/AIDS.

Data source: ECDC information system and ad hoc survey/s.

Availability: None, to be set up, "success" of initiatives may need new surveys/other assessment.

Reliability: High to medium.

1.2.B. Development and advanced implementation of an EU Action Plan for one STI/hepatitis disease.

Data source: ECDC information system and ad hoc survey/s.

Availability: None, to be set up.

Reliability: High.

### 1.3. Food- and waterborne diseases and zoonoses

Strengthen collaboration between Public Health, Food and Veterinary authorities in the EU to better prevent and control foodborne clusters and outbreaks.

Data source: TESSy reports, TTT reports, ECDC information system focusing on improved timeliness in detection and response and reduction of size and number of clusters/outbreaks by specific pathogen types.

Availability: Mainly already available.

Reliability: High.

### 1.4. Emerging and vector-borne diseases

The development and advanced implementation of action plans for:

- 3 priority vector-borne diseases, together with entomologists;
- Legionnaires' disease;
- (Re-)emerging diseases.

Data source: ECDC information system and ad hoc survey.

Availability: Part easy, part to be set up.

Reliability: High to medium.

### 1.5. Vaccine-preventable diseases

1.5.A. ECDC tools, guidance and procedures used by Member States to strengthen national immunisation programmes

Data source: ECDC information system and ad hoc survey/s on vaccination coverage, AEFI, disease burden.

Availability: None, to be set up.

Reliability: Medium.

1.5.B. ECDC tools used by Member States to reach the goal of elimination of measles and congenital rubella in 2010.

Data source: ECDC information system.

Availability: None, to be set up.

Reliability: Medium.

### 1.6. Antimicrobial resistance and healthcare-associated infections

1.6.A. ECDC initiatives to support Member States in developing national strategies and implementing action plans to prevent and control antimicrobial resistance.

Data source: ECDC information system and ad hoc survey.

Availability: To be set up, "success" of initiatives may need surveys/other assessments.

Reliability: High to medium.

1.6.B. ECDC initiatives to support Member States in developing national strategies and implementing action plans to prevent and control healthcare-associated infections in line with appropriate Health Council recommendations.

Data source: ECDC information system and ad hoc survey.

Availability: To be set up, "success" of initiatives may need surveys/other assessment.

Reliability: High to medium.

***Target 2: By 2013 ECDC will be the focal point for communicable disease surveillance in the European Union and the authoritative point of reference for strengthening surveillance systems in the Member States.***

2.1. Proportion of CD surveillance data that meets a high level of completeness, timeliness and validity at European level.

Data source: ECDC information system (Standard Operating Procedures – specific tools developed to measure level of completeness), TESSy, specific validity index to be developed to measure the quality of the data, including the application of the European case definitions.

Availability: Moderate.

Reliability: High.

2.2. Successful evaluation and subsequent integration, where appropriate, of all the Dedicated Surveillance Networks (DSNs) activities.

Data source: ECDC information system, TESSy, TESSy users' survey, conclusions and recommendations of the DSN's evaluation and assessment, considerations of cost-effectiveness, disease priority and staff capacity.

Availability: Good.

Reliability: High.

2.3. Number of reports and publications that refer to or use ECDC surveillance data.

Data source: User survey, journal scan, citations index, TESSy data downloads/hits.

Availability: Good.

Reliability: Medium.

2.4. Proportion of Member States that have analysed in detail those factors in their surveillance and health systems, which negatively influence the comparability of their data.

Data source: ECDC information system (evaluation system).

Availability: Good.

Reliability: High.

***Target 3: By the year 2013, ECDC's reputation for scientific excellence and leadership will be firmly established among its partners in public health, and ECDC will be a major resource for scientific information and advice on communicable diseases for the Commission, the European Parliament, the Member States and their citizens.***

3.1. Availability, impact and reputation of ECDC's scientific output.

Data source: Number of publications in different areas, number of citations of ECDC work (science citation index and ProMed citations), impact factor of Eurosurveillance, qualitative and quantitative analysis of the degree ECDC scientific output is used by MS.

Availability: Relatively easy.

Reliability: Good.

3.2. Impact of evidence-based opinions and use of guidance produced by ECDC.

Data source: Following up implementation of ECDC-produced advice.

Availability: Complicated.

Reliability: Medium.

3.3. Strengthen and build scientific networks to promote dissemination and use of EU public health science, including by hosting meetings.

Data source: Internal ECDC information; one example is success of ESCAIDE meeting.

Availability: Relatively easy.

Reliability: High to medium.

***Target 4: By the year 2013, ECDC will be the reference support point in the European Union for the detection, assessment, investigation and coordinated response to emerging threats from communicable diseases, including threats related to intentional release of biological agents, and diseases of unknown origin.***

4.1. Use of the ECDC tools, guidance and procedures by Member States for the detection and assessment of emerging threats.

Data source: ECDC information system and ad hoc survey/s.

Availability: None, to be set up.

Reliability: High.

4.2. Proportion of threats (also globally) that meet EWRS notification criteria and for which ECDC produced threat assessments.

Data source: ECDC information system, TTT, EWRS records, including global scanning for emerging and/or rare diseases when relevant to the EU.

Availability: Easy.

Reliability: High.

4.3. Proportion of threats that meet EWRS notification criteria and for which ECDC coordinated or supported the risk assessment component of the EU response.

Data source: ECDC information system, TTT, EWRS records.

Availability: Easy.

Reliability: High.

***Target 5: By the year 2013, ECDC will be the key reference support centre in the European Union for strengthening and building capacity through training for the prevention and control of communicable diseases and diseases of an unknown origin.***

5.1. Number of professionals who attended ECDC organised practice-oriented training activities.

Data source: ECDC training activities cover outbreak investigation, vaccine-preventable diseases, laboratory methods & epidemiology, leadership in outbreak control. Data will be from registry of EPIET fellows and other participants to ECDC-organised modules, courses, workshops and training of trainer sessions sub-divided by Member State to reflect current capacity/needs.

Availability: Easy.

Reliability: High.

5.2. Number of requests from MS and partners for ECDC to contribute to and support their training efforts.

Data source: ECDC information system, specifically: registry of requests to ECDC for support/ contribution to national and international training activities, number of trainers provided, number of training materials developed or reviewed, number of other training resources shared.

Availability: Easy.

Reliability: High.

5.3. Citation index of articles in peer-reviewed journals written by professionals trained through ECDC training activities compared to rest.

Data source: Initially *Eurosurveillance* could be monitored to compare the citation index of authors that went through ECDC/EPIET training with authors that did not.

Availability: Easy.

Reliability: High.

***Target 6: By the year 2013, ECDC communication output will be the main European source of authoritative and independent scientific and technical information in its field and ECDC the reference support point in the European Union for risk communication on communicable diseases.***

6.1. Usage, user-friendliness and comprehensibility of ECDC web portal.

Data source: Web statistics (number of pages and number of visitors to English and multilingual content, update rates), user satisfaction surveys, qualitative evaluations of content.

Availability: Relatively easy.

Reliability: High.



6.2. Availability and use of ECDC's scientific and technical publications.

Data source: Number (total and trend) of subscribers/requests for paper copies of ECDC's scientific/technical reports, number of downloads of ECDC publications from website, number of subscribers to Eurosurveillance.

Availability: Easy.

Reliability: High.

6.3. ECDC influence on and added value to public debate and opinion, and facilitation of coordinated EU-wide risk communication messages on topics falling within its mandate.

Data source: Systematic media scanning by contracted company(ies), public opinion surveys.

Availability: Relatively easy.

Reliability: High.

***Target 7: By 2013 ECDC will have a structured communicable disease cooperation programme with all of the Member States, the Commission and other relevant European Union agencies, and it will enjoy a close partnership with WHO and other selected partners at regional and global levels.***

7.1. Effective working relationships with all the MS competent bodies, WHO and relevant Commission DG and EU agencies.

Data source: Partner/stakeholder/user survey.

Availability: Relatively complicated.

Reliability: Medium.

## Supporting activities

There are a number of activities that are mainly carried out by the governance and administrative services of ECDC that are vital to the success of this SMP and to the achievement of all these Targets. These supporting activities will be monitored with the following indicators.

s.A.1. Support to the Management Board and Advisory Forum to fulfill their Governance and advisory role.

Data source: ECDC information system (number and frequency of meetings, timely preparation of the documentation to ensure well-informed discussions and decision) and ad hoc survey (follow up on the decisions).

Availability: Relatively easy.

Reliability: Good.

s.A.2. Provide leadership by setting strategic and operational direction, evaluating and monitoring implementation and managing ECDC.

Data source: ECDC information system (draft the ECDC multi-annual strategic programme and the Annual Programmes of Work and monitor their implementation; support the external evaluation; and implement internal peer reviews and managerial and coordination procedures and processes).

Availability: Easy.

Reliability: Medium.

s.A.3. Availability of high quality resources.

Data source: ECDC information system and ad hoc surveys covering IT infrastructure, building, and professional and administrative staff.

Availability: Easy.

Reliability: Medium.

s.A.4. Availability of an effective quality assurance system.

Data source: ECDC information system and ad hoc survey covering audit, legal support, risk management concepts and business continuity.

Availability: Easy.

Reliability: Medium.

## **ANNEX III: ECDC GROUPING OF DISEASES AND CONDITIONS**<sup>22</sup>

### **Respiratory tract infections**

Influenza, tuberculosis, legionellosis.

### **STIs, including HIV and blood-borne viruses**

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

### **Food- and waterborne diseases and zoonoses**

Campylobacteriosis, cryptosporidiosis, infection with enterohaemorrhagic *E. coli* (EHEC), norovirus infection, salmonellosis, hepatitis A and E, listeriosis, botulism, brucellosis, Creutzfeldt-Jakob disease and other transmissible spongiform encephalopathies (TSE), shigellosis, toxoplasmosis, trichinellosis 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, tick-borne encephalitis (TBE), plague, severe acute respiratory syndrome (SARS), smallpox, viral haemorrhagic fevers, emerging/other diseases of unknown cause.

### **Vaccine-preventable diseases**

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

### **Healthcare-associated infections and antimicrobial resistance**

Nosocomial infections, antimicrobial-resistant pathogens.

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<sup>22</sup> Broadly based on the main determining feature of these diseases.

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