



SURVEILLANCE

OF COMMUNICABLE DISEASES

IN THE EUROPEAN UNION

A long-term strategy: 2008–2013



TABLE OF CONTENTS

Note. This document has been edited for readability. The original content has not been altered or modified.

Introduction.....	2
Executive Summary	2
Background	4
Definition and scope	4
Situation in 2007	7
Strategic Information for Disease Prevention and Control.....	8
Basic surveillance.....	8
Enhanced surveillance	8
Behavioural and risk-factor surveillance.....	8
Epidemic intelligence.....	9
Alternative surveillance methods.....	9
Monitoring and evaluation.....	9
Vision for 2013.....	9
Event-based surveillance.....	9
Indicator-based surveillance.....	10
For both event-based and indicator-based surveillance components:	10
Goals and objectives of infectious disease surveillance At the European level.....	10
Surveillance goals	10
Surveillance objectives	12
added value of European surveillance	13
Organisational Requirements of Surveillance in the EU.....	14
Integrated European indicator-based surveillance system.....	14
Integrated European event-based surveillance system.....	14
Case definitions for surveillance at the EU level.....	15
Principles of collaboration: data exchange, access and publication.....	15
Links to other international databases	18
Review of diseases under EU-wide surveillance.....	18
Integration of data from laboratories and ways of collaborating with them.....	18
National reference level laboratories (NRLs).....	20
Data analysis methods	21
Communicating the results – information for action.....	22
Support for Member States to meet the demand (needs assessment and ways to strengthen national systems).....	22
Quality management and assurance process.....	22
Annual review of objectives and priorities.....	23
External evaluation of ECDC, surveillance activity	23
Roadmap for implementation of the long-term strategy	24
Transition and transfer of the current Dedicated Surveillance Networks — 2010	24
Consolidation of surveillance activities — 2010–2013	25
Partnerships and collaboration	25
Annex 1. Roadmap for ECDC’s long-term surveillance strategy	27



INTRODUCTION

In 2005, a strategy for infectious disease surveillance in Europe was developed, outlining the transition from the then project-based approach led by the Commission to a more coordinated, sustained approach managed by ECDC. This strategy was approved by the ECDC Management Board in October 2005, together with a plan to develop a long-term vision for the future surveillance of communicable diseases in the EU.

EXECUTIVE SUMMARY

This long-term vision and strategy on the future surveillance of communicable diseases in the EU has been developed to help direct the decisions for the long-term development of the European surveillance system. This strategy covers the years until 2013, which aligns it with ECDC's multi-annual strategic plan (approved by the ECDC Management Board in June 2007). Moreover, synergetic effects with ECDC's laboratory strategy are foreseen.

The strategy attempts to define the terms and scope of surveillance, its aims and objectives, and its organisational requirements. It also outlines ways to support the Member States and presents an implementation roadmap.

The overall goal is to contribute to reducing the incidence and prevalence of communicable diseases in Europe by providing relevant public health data, information and reports to decision makers, professionals and health care workers in an effort to promote actions that will result in the timely prevention and control of communicable diseases in Europe. High validity and good comparability of communicable disease data from the Member States are imperative to reach this goal.

A more coordinated approach to surveillance will

- improve the regional comparability of data;
- reduce the complexity in surveillance across Europe;
- allow to tackle surveillance in a synergistic way;
- avoid duplication of work;
- provide better quality public health evidence in the long term, thanks to more relevant and reliable data;
- make it easier to strengthen the national surveillance systems;
- most likely be economically more efficient and sustainable;
- allow easier access to, and use of, the data;
- enhance the detection and monitoring of international outbreaks;
- contribute to capacity building; and
- ensure the inclusion of diseases into surveillance and research agendas according to European priorities.

ECDC is developing a system for infectious disease indicator-based surveillance at the European level, dubbed 'The European Surveillance System (TESSy)'. TESSy will be a valuable



tool to improve the collection, validation, storage and dissemination of surveillance data from the EU Member States and EEA countries. Initially, TESSy will collect a reduced set of core variables important for the routine surveillance of infectious disease cases. Once TESSy is generally accepted and used as the regional standard database, ECDC's long-term goals of further reducing the complexity and workload for all participants will be supported by

- standardising data collection on infectious disease surveillance;
- providing a 'one-stop shop' for reporting and retrieving data for the Member States;
- standardising the reports based on surveillance data; and by
- providing a consistent and easily available overview of the current situation in the EU.

The current problem of double reporting of some diseases, with various regional organisations involved in the surveillance of diseases — like WHO/Europe or EMCDDA — will also be addressed, with the aim to reduce and possibly eliminate the duplication of efforts.

An interim procedure on the principles of collaboration on data exchange between ECDC and Member States as well as ECDC and the Dedicated Surveillance Networks (DSNs) will have to be established to clearly define the role of data providers and data users, both in Member States and ECDC (and other parties, e.g. WHO). This interim procedure should also include the procedures for publishing the results of data analysis, among other details. Based on the experience with this interim procedure, a more detailed, final, longer-term procedure will be established with the involved stakeholders.

The future collaboration with the disease-specific experts (nominated by the Competent Bodies) will be structured in the following way: the diseases/pathogens will be divided into six main groups. Where necessary, more focussed (disease-specific) subgroups will be established within any of these six groups or task forces. There will be annual meetings for each of these six main groups where issues pertinent to the surveillance of the whole disease group will be discussed. If necessary, more disease-specific 'parallel session' symposia can be held at the same time. For each of the six main disease groups/task forces, a coordinating group will be established, and these groups will take over many of the functions carried out by the former DSN steering groups.

Good laboratory services in the countries are essential for strengthening EU-level surveillance. ECDC will build on the work already done and support the strengthening of laboratory capacity in the Member States, EEA-EFTA countries and the candidate countries in collaboration with the Commission, the ECDC Competent Bodies, and the Member States' National Microbiology Focal Points.

ECDC will work hard to ensure that every country has national reference level laboratory (NRL) services available, either directly or indirectly, enabling all countries to confirm the diagnosis, isolation and further characterisation of pathogens — as a basis for reporting confirmed and probable cases during normal times and emergencies. ECDC will link with these NRLs and help them to integrate their data with the epidemiological (and clinical) data at the national level. Quality assurance of laboratory methods is essential to ensure valid and accurate data, and European standards will also be promoted over this period.

ECDC will implement its surveillance strategy in two phases: phase one is a transition period that will last until 2010, with its main focus on the gradual integration of the current DSNs



with ECDC; during phase two (2010–2013), ECDC will have taken over full responsibility of surveillance and can subsequently focus on developing and consolidating the highest quality systems possible for Europe.

In order to keep this strategy and its objectives relevant and up-to-date, it will be re-visited by Member States and key stakeholders, so that emerging strategies and new evidence can be incorporated as required.

BACKGROUND

For the development of this long-term strategy, the following documents have been taken into account: MB4-10-9: Surveillance Strategy (2006–2008), MB10-7: Strategic Multi-annual Programme, MB11-11: Strategy: collaboration with laboratories, and the Report from the TESSy Working Group meeting from 14 to 15 February 2007.

In 2005, a strategy for infectious disease surveillance in Europe was developed, outlining the transition from the then project-based approach led by the Commission to a more coordinated, sustained approach managed by ECDC. This strategy was approved by the ECDC Management Board in October 2005, together with a plan to develop a long-term vision for the future surveillance of communicable diseases in the EU. It will be instructive in making the appropriate decisions for the long-term development of the European surveillance system.

This long-term strategy covers the years until 2013, which aligns it with ECDC's multi-annual strategic plan (approved by the ECDC Management Board in June 2007). Moreover, synergetic effects with ECDC's laboratory strategy are foreseen.

DEFINITION AND SCOPE

Public health surveillance has been referred to as the epidemiological foundation for modern public health.

Surveillance of health and disease has been defined by a number of authors^{1, 2, 3} with some variation, but all definitions incorporate the main elements of ongoing *data collection*, *analysis to convert this data into statistics*, *interpretation of this analysis* to produce information and *dissemination of information* to those who can take appropriate action. The most basic example of the practical utility of this work would be a surveillance system detecting an unusual number of infections from a specific strain of pathogens which triggers an alert and then leads to the early detection of an outbreak of disease and the communication of this outbreak to the public health authorities who have the legal mandate

¹ Heymann DL (editor). Control of Communicable Diseases Manual, 18th ed. APHA, 2004.

² Eylesbosch WJ, Noah ND, (editors). Surveillance in Health and Disease. Oxford University Press, 1988.

³ Last JM (editor). A Dictionary of Epidemiology, 4th ed. Oxford University Press, 2001.



to take action to control the source of the outbreak, preventing further infections, morbidity — in some cases mortality — and negative economic consequences.

Although the original surveillance methods were developed mainly for the control of transmission of infections and early detection of outbreaks, today the scope of surveillance is recognised to be much broader than just analysing communicable disease notification data (mainly measuring the impact of interventions or establishing a platform for research).

A good surveillance system could also link with — or incorporate — other sources such as

- mortality data (particularly useful for rapid surveillance during major outbreaks or surveillance in a pandemic);
- morbidity reports from health service patient records or hospital discharge data (especially in the surveillance of severe disease and infections such as severe acute respiratory infection [SARI]);
- laboratory data and activity (including serological status and molecular studies);
- outbreak data and field reports (linking outbreaks);
- vaccine and drug utilisation (AIDS was first discovered due to the abnormally high demand for a rarely used drug to treat *Pneumocystis carinii*);
- primary care surveillance (including sentinel systems, especially good for early warning signs of seasonal disease);
- various other sources like sickness absence data, sentinel system data, data on determinants of health and disease (including individual and population behavioural aspects); and, in certain circumstances,
- systematic survey data.

Linking this data to other systems, such as animal health data, enhances the effectiveness of the surveillance of health and disease even further.

Presently, the main difficulty lies with the fact that most of these additional data are not readily available to the Member States' institutes in charge of disease surveillance. There is a clear general trend among national databases to provide more and more record linkages at the national level, and this trend offers an exciting potential for enhancing the routine surveillance data over the coming years. However, ECDC will always discuss the usefulness and feasibility of such linkages with the Member States before extending its data collection activities beyond the usual surveillance level.

The traditional approach to surveillance of communicable disease consists of routinely collecting data from health care providers about the occurrence of predefined diseases or conditions. This notification process relies on case definitions for surveillance in order to ensure optimal comparability of the data across health care providers. The notifications are routinely compiled and analysed in order to produce indicators that point towards the existence of a threat. In some cases, a public health intervention may result from a single case of the disease, while in other situations a threshold may be applied to an indicator in order to detect an unusual incidence of the disease in a given community. This 'indicator-based' approach has proven to be very effective in monitoring threats related to known risks and in ensuring the prompt implementation of public health measures.

However, while the traditional approach remains the backbone of public health surveillance for communicable diseases, it has proven to be less effective in ensuring prompt recognition of emerging problems. Therefore, several additional approaches have been used to complement traditional surveillance in order to enhance its ability to detect public health threats. Some of these approaches remain indicator-based systems, relying on the routine collection of structured data, compiled as indicators, such as syndromic surveillance or activity monitoring. However, a new approach has emerged which takes advantage of the availability of advanced information technology. It continuously scans the Internet and other media to detect certain information that may lead to the recognition of emerging threats. This 'event-based' surveillance approach effectively complements the indicator-based surveillance approach. It uses unstructured data which then need to be studied and verified and which cannot be summarised as an indicator.

Both surveillance approaches — *indicator-based* and *event-based* — are referred to as the two components of *epidemic intelligence*, which encompasses all activities regarding the gathering of information relevant for the detection of emerging threats. It should be noted that while event-based surveillance aims primarily at the detection of emerging threats, indicator-based surveillance addresses additional objectives such as providing indicators useful for monitoring the performance and impact of communicable disease programmes.

The framework of epidemic intelligence is best described by the figure shown below:

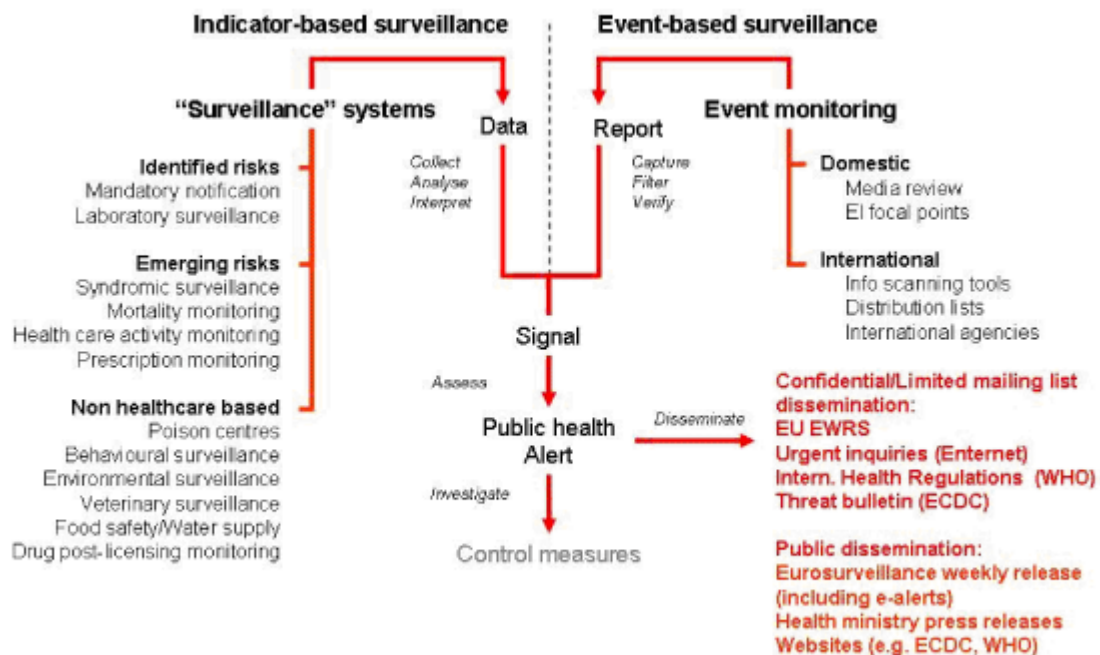


Figure 1. Schematic view of Indicator and Event Based Surveillance



This chart should not be misinterpreted: ECDC will not recommend that all these measures should be implemented at the EU level, or that all Member States need to change their systems in order to contribute to this system. This chart merely represents an outline of possible activities.

In the context of ECDC's remit, surveillance is defined as the ongoing collection, validation, analysis and interpretation of health and disease data that are needed to inform key stakeholders (in Member States and elsewhere) in order to permit them to take action by planning and implementing more effective, evidence-based public health policies and strategies relevant to the prevention and control of disease or disease outbreaks. The prompt dissemination of information to those who need to know is as essential as ensuring the quality, validity and comparability of the data.

The long-term surveillance strategy presented here primarily focuses on the indicator-based component of public health surveillance.

SITUATION IN 2007

Each of the 27 Member States has its own surveillance system and its own practices — sometimes long-established — that need to be taken into account. National surveillance systems and methods are very diverse, and the quality of data collated varies. Different case definitions (or interpretations of the same definition) and reporting systems (e.g. different reporting levels, ranging from the local physician/laboratory level to the regional and national level before reaching the international level), country-specific differences in health care systems organisation, and variability in facilities and equipment available for diagnostics, all contribute to the great diversity of national surveillance systems. Therefore, it is no surprise that these different surveillance systems often produce data that are not comparable.

Especially for smaller countries, participation in European surveillance activities poses particular pressures. Staff capacity in many of the Member States needs to be expanded to maintain and update surveillance methods and practices.

In addition to the national surveillance systems, several EU-wide Dedicated Surveillance Networks (DSNs) have been established before ECDC was founded; some of these networks were set up in the early 1980s. They were funded during their research stage as concerted actions by the Commission and later as action in the field of public health. As a result, the surveillance networks differ in size, objectives, structure, and development phase. They have developed their own reporting rules, their own data validity checks, and their own report layouts. The networks receive data approved by their national members, usually sourced from national surveillance systems and/or national reference laboratories. In general, laboratory data — in particular the more advanced data such as molecular sub-typing — are not widely linked to epidemiological information. In 2006, a total of 17 such networks was being funded by DG SANCO. Their contracts will expire between 2006 and 2009, and ECDC will gradually take over the responsibility for coordinating these networks (see below). An overall weakness of the networks has been the poor sustainability of their essential surveillance components,

due to expiring fixed-term contracts and, occasionally, decreasing community funding and the subsequent need to add novel components in order to receive new funding.

STRATEGIC INFORMATION FOR DISEASE PREVENTION AND CONTROL

It is important for the key stakeholders and partners to have a clear concept of the European understanding of health and disease surveillance and its various elements, frequently referred to under the term 'strategic information'.

'Strategic information' is a term originating from the business sector that has found its way into epidemiology and public health jargon. In this context, it is used in reference to information produced following the analysis of surveillance data as well as other relevant data (including economic data, survey data, etc.). This type of information is essential for those who are in a position to take appropriate action in order to prevent or control disease.

There are several activities that fall under the broad term 'strategic information':

Basic surveillance

Basic surveillance systems aim to collect a minimum amount of data to provide a basic picture of all the diseases under scrutiny. These data and variables are undergoing continual but gradual refinement and expansion according to changing needs and objectives. All changes and adjustments will have to be agreed upon by the Member States. This results in a core set of indicators that can be compared across disease, time, place and person.

Enhanced surveillance

Certain agreed-upon priority diseases require the collection of more detailed variables, more data and the additional production of information. In this context, ECDC and the Member States will take decisions on a case-by-case basis.

Behavioural and risk-factor surveillance

A surveillance system focussing on risk factors collects data on any attribute, characteristic or exposure of an individual that increases the likelihood of developing an infection, disease or injury.

Behavioural Surveillance Systems (BSS) are the most widely developed risk-factor surveillance systems: if there is a high prevalence of a known risk factor for an infection in a certain area, then the possibility of future transmission of that infection is high. BSS are designed to systematically monitor trends in infection-risk behaviours over time, usually in target-risk groups and only for specific diseases. Monitoring is generally conducted through a series of repeated cross-sectional surveys at regular intervals. As for enhanced surveillance, ECDC and



the Member States will decide — on a case-by-case basis — which behavioural risk factors will be surveyed.

Epidemic intelligence

'Epidemic intelligence' can be defined as the sum of all activities related to the early identification of potential health threats, their verification, and their assessment and investigation in order to recommend public health measures to control them. It encompasses both indicator-based surveillance and event-based surveillance as defined above.

Alternative surveillance methods

As information technology continues to develop, several implications for surveillance activities evolve. There is the need to look beyond traditional methods and study the value of alternative methods and systems in order to assess whether they can be further developed in the context of the European Union. Such non-traditional methods include 'open web' surveillance, data linkage, automatic reporting through existing administrative data sources, and automatic syndromic reporting from electronic medical records. The most promising of these methods will be the subject of future studies and discussion on what is feasible in the Member States.

Monitoring and evaluation

Monitoring is the routine, daily assessment of ongoing activities and their progress — usually limited to prevention or health care activity indicators. By contrast, evaluation is the episodic assessment of overall achievements. Monitoring looks mainly at what is being done, whereas evaluation examines what has been achieved or what impact has been made. Surveillance data feed into Member States' monitoring and evaluation (M&E) systems, but M&E systems frequently include specific data collection systems (i.e. on-going user surveys) which produce information that would also be useful for the surveillance, prevention and control of a particular disease.

VISION FOR 2013

This strategy aims to achieve certain targets by 2013. These targets include:

Event-based surveillance

- all Member States have procedures and tools in place to monitor and assess early threats detected through event-based surveillance;
- all Member States use the ECDC Threat Tracking Tool to perform joint risk assessment in the event of a threat potentially affecting more than one Member State; and
- all Member States routinely report communicable disease threats through the Early Warning and Response System (EWRS), once their assessment has confirmed the existence of a threat affecting the EU (as defined in the EWRS regulation).

Indicator-based surveillance

- a statutory list of notifiable diseases limited to those notifiable diseases that are a priority for Europe (including anti-microbial resistance and health care-acquired infections); diseases are only included on this list if surveillance at the European level actually adds value;
- all Member States use one integrated European surveillance system based on The European Surveillance System (TESSy). This surveillance system covers all statutory communicable diseases with the appropriate level of detail according to their priority and follows EU-wide reporting standards and common principles of collaboration and agreements on data exchange, access and publication;
- uniform case definitions for surveillance accepted and in use by all Member States, with a reliable system for their revision to keep up with developments in the respective diseases;
- fully integrated epidemiology and laboratory surveillance databases and surveillance and reporting systems;
- effective quality-control programmes in operation for both the epidemiological and the laboratory data, thus significantly improving the comparability of data between all Member States;
- accurate and detailed systems in use to analyse surveillance data and provide sophisticated trend analysis methods and models, in conjunction with system algorithms to identify even subtle trends or low-level clusters or potential outbreaks; and
- common surveillance objectives accepted by all Member States and key stakeholders, updated regularly to ensure that they remain valid and relevant to the needs of the entire EU.

For both event-based and indicator-based surveillance components:

- good communication systems developed that ensure that the right information for action is reported and disseminated to policy makers, key technical stakeholders and the general public, thus facilitating the transfer into public health action.

GOALS AND OBJECTIVES OF INFECTIOUS DISEASE SURVEILLANCE AT THE EUROPEAN LEVEL

Surveillance goals

The overall goal is to contribute to reducing the incidence and prevalence of communicable disease in Europe by providing relevant public health data, information and reports to decision makers, professionals and health care workers in an effort to ensure informed decision making for actions that will result in the timely prevention and control of communicable diseases in Europe.



High validity and good comparability of communicable disease data between Member States are indispensable for the success of this goal.

Other main goals for surveillance are

- to monitor trends in communicable diseases over time, in order to better understand the present situation and to compare trends across Member States;
- to detect and monitor any international infectious disease outbreaks with respect to source, time, person, population and place, in order to provide a rationale for public health action. Event-based activities should detect threats on the basis of events reported or identified and assessed, while indicator-based activities should include the monitoring of indicators to assess the effectiveness, performance and impact of communicable disease prevention, response and control programmes;
- to detect and monitor health care-associated infections and pathogens that display clinically and epidemiologically relevant antimicrobial resistance in Europe, in order to respond to increases above warning thresholds and to implement appropriate action; and
- to evaluate and monitor infectious disease surveillance programmes that support prevention and control activities, in order to contribute to recommendations aimed at improving and strengthening these programmes in the Member States and at the regional level.

It is recognised that both ECDC and the Member States have responsibilities for building up a strong surveillance system at the European level, and it will be necessary to proceed in partnership. Member States will have to strengthen, maintain or set up the structures which are required to provide relevant data. This may require investments from Member States, to which ECDC may contribute. At the same time, ECDC will continue to develop the infrastructure and framework, including quality assurance systems and training support needed at the regional level. An idea that will be further explored is the possibility of introducing minimum standards considered to be essential for ensuring that surveillance in the Member States results in good data quality. All these initiatives will be developed in conjunction with the Competent Bodies (CB) for surveillance to ensure that only feasible initiatives are promoted.

ECDC's priority focus is on the greatest threats to human health from infections. Besides any emerging new threats (e.g. avian influenza, chikungunya), the immediate priorities in the first year were established as: HIV/AIDS, antimicrobial resistance (AMR), influenza, and zoonoses, with tuberculosis being added in 2006. ECDC's work on these diseases will not just cover surveillance; it will tackle them in a comprehensive way, including research and prevention aspects.

Over the coming years, there will be a need to regularly review the prioritisation of diseases for surveillance and risk assessment, using agreed-upon, objective criteria. It should be noted that priorities for surveillance may not always coincide with priorities for research or public health action: in many instances the development or maintenance of a reliable surveillance system must receive high priority just to provide continuing assurance that an already addressed public health problem remains under control. Another important concern is that surveillance for potential risk factors and determinants is not systematically established



throughout the region. Finally, ECDC will develop strategic guidelines on how to best deal with monitoring new diseases and specific pathogen threats that may emerge, e.g. surveillance of a new pathogen resistant to antibiotics.

Surveillance objectives

The long-term view for common future objectives for communicable disease surveillance in the EU aims to establish a harmonised set of objectives for surveillance and then re-visit these with Member States from time to time in order to ensure their suitability and relevance to the situation in the European Union.

The overall goal of providing relevant data for key public health decision makers, professionals and health care workers in Member States will be achieved by strengthening national capacities, harmonising and modernising surveillance methods for communicable diseases across Europe, and by providing a strong coordinated approach at the EU level. The validity and comparability of data on communicable diseases between Member States is a key issue for the future EU-wide surveillance system.

As referred to above under 'Definition and scope', the surveillance of communicable disease does not exclusively refer to national (usually compulsory) surveillance systems, but also involves other forms of surveillance, e.g. syndromic surveillance, sentinel surveillance, behavioural surveillance, etc. As part of the long-term surveillance strategy of ECDC, the use of these methods will be further developed, in particular with respect to the methodology of data collection, data interpretation, most beneficial use of data, the communication of results, quality assurance and continuous quality improvement.

Surveillance at the European level will continue to add value to the Member States' efforts in the field of healthcare by directly strengthening and supporting the national surveillance systems and by coordinating the standardisation of EU-wide surveillance to ensure the easier availability of comparable data between countries. It will reduce the complexity of surveillance across Europe and enhance insights into communicable disease epidemiology in Europe.

To be able to achieve this, the following broad objectives need to be met:

- collect and provide comparable information on communicable diseases by standardising and improving the technical frameworks for surveillance;
- strengthen and update methodologies and quality assurance to improve data collection, the effectiveness of surveillance systems and the analytical tools for surveillance;
- strengthen laboratory surveillance activities by promoting the standardisation of diagnostic methods and through improved coordination of laboratory networks on specific pathogens;
- strengthen outbreak detection and monitoring by developing more effective algorithms and protocols for reporting and through improved coordination of information exchange;
- strengthen surveillance of antimicrobial resistance and health care-related infections by promoting the standardisation of these specific surveillance systems;



- strengthen national capacities for surveillance by providing general country support; and
- strengthen surveillance, prevention and control programmes by monitoring and evaluating their effectiveness.

ADDED VALUE OF EUROPEAN SURVEILLANCE

The added value of a coordinated approach to surveillance at the European level is more than just the convenience of collecting data at one location. It will be visible at several levels:

- A coordinated approach to surveillance (leading to more standardised operating procedures at the more specialised dedicated surveillance networks, their databases and their output):
 - will improve the comparability of data, which is especially relevant when comparing trends, using the data for regional or sub-regional modelling or forecasting (to better inform strategy development);
 - will reduce the complexity in surveillance work across Europe and enhance insights into the current situation of communicable diseases in Europe;
 - would also allow to tackle infectious disease surveillance in a synergistic way and avoid duplication of work.
- The continuous efforts to standardise the data and improve the comparability of data will be a major added value. This general harmonisation of EU-wide surveillance tools and methods for communicable diseases (case definitions, TESSy, Threat Tracking Tool, etc.), together with an on-going review of the relevance of the collected data, leads to a refinement of the system and will provide better quality public health evidence, based on more relevant and reliable data. This evidence can then be used by decision makers, professionals and health care workers in Member States and European organisations.
- Important communicable diseases could more readily be included both in a surveillance and research agenda matching European priorities. Similarly, it would be easier to identify those diseases for which there is no added value of surveillance at the European level.
- Standardised, coordinated surveillance will facilitate the strengthening of the national surveillance systems in general and also in the context of the implementation of the International Health Regulations (revised in 2005).
- Having the surveillance coordination in one central place will most likely be economically more efficient and sustainable compared with the past arrangements.
- This should enhance the detection and monitoring of international outbreaks of infectious diseases — in particular those involving rare diseases/pathogen strains which are more easily detected at the EU level — and, in the longer term, strengthen the links to the public health response sector.
- Better surveillance enables the improved description of affected populations and makes for more accurate estimates of the burden of disease, so that policy makers can be better informed on the most effective prevention and control measures.

- Member States, technical institutions and key stakeholders will have easier access to — and use of — the data, and hence improve the quality of their reports and, at the same time, foster better European collaboration.
- A coordinated approach will enable closer cooperation with the people in field epidemiology training and provide more practical hands-on issues for the trainees.

ORGANISATIONAL REQUIREMENTS OF SURVEILLANCE IN THE EU

Integrated European indicator-based surveillance system

ECDC is developing a system for infectious disease indicator-based surveillance at the European level, The European Surveillance System (TESSy). TESSy will be a valuable tool to improve the collection, validation, storage and dissemination of surveillance data of the EU Member States and EEA countries. TESSy will start with the collection of a reduced set of 'core' variables relevant to the routine surveillance of cases of all infectious diseases. For some diseases, these variables will be extended so as to embrace a more 'enhanced' set of variables that so far have been collected by the DSNs. This — together with any aggregated data the DSNs may have collected — will gradually become integrated into TESSy, as ECDC takes over the coordination of the DSN. Close collaboration (see below) with the Member States and their Competent Bodies will ensure that their needs and expectations are always taken into account.

Once TESSy is generally accepted as the EU standard, ECDC's long-term goal of further reducing the complexity and workload for all participants will be greatly helped. This will be achieved by:

- standardising the data collection on infectious diseases surveillance;
- providing a 'one stop shop' for reporting and retrieving data for the Member States;
- standardising surveillance-data-based reports;
- providing a consistent and easily available overview of the current situation in the EU.

The current double reporting of some diseases — with various (EU or European wide) organisations involved in the surveillance of disease, like WHO/Europe or EMCDDA — will also be addressed. The aim will be to reduce and possibly eliminate double reporting by memoranda of understandings, taking advantage of technological advances in IT systems and their potential for greater interoperability.

Integrated European event-based surveillance system

ECDC has also developed an integrated information system for event-based surveillance at the European level, the Threat Tracking Tool (TTT or 3T).

TTT records all threats related to communicable diseases or to diseases of unknown origin which present a potential threat to Member States. The tool allows access to all data



regarding these threats, including their verification and assessment status. It produces a daily update bulletin as well as a comprehensive weekly threat bulletin (the Communicable Disease Threat Report — CDTR), circulated to Member States representatives nominated by the Competent Bodies for threat detection. In 2008, the TTT will be further developed into a full-blown Epidemiological Information System (EPIS) which will include discussion forums targeting alerts. Ongoing review and further refinement over the medium term will ensure that this system will remain an effective adjunct to the other surveillance systems at both the Member States and regional levels.

Case definitions for surveillance at the EU level

The original common case definitions for surveillance were revised in 2006 and will be finalised in 2007. However, an agreement on the case definitions is only a first step. ECDC will promote and support Member States during the implementation of these definitions as they are a fundamental cornerstone for standardising the collection of data. Over the coming years, their implementation will be followed up and evaluated, while the case definitions will be revised and updated as required. A review and update process for the list of case definitions will be developed and approved for surveillance by the Member States' Competent Bodies, thus ensuring that the statutory list remains relevant and continues to be focused on those priority diseases whose European-level surveillance promises to be most beneficial.

Principles of collaboration: data exchange, access and publication

Up until 2010, some of the DSNs will continue operating in their current format. During this transition phase, an interim procedure on the principles of collaboration on data exchange needs to be established between ECDC and the Member States — as well as between ECDC and the various DSNs. This interim procedure will define the role of data providers and data users both in the Member States and at ECDC and other parties, e.g. WHO. It will, among other details, map out the procedures for publishing the results of data analyses. Later on, a more detailed, final, long-term procedure will be established with the involved stakeholders, based on the experiences that, by then, will have been made with the interim procedure.

Many of the DSNs developed out of small networks of microbiologists or epidemiologists with personal connections and with a strong shared interest in a particular disease or disease group. The DSN network hubs are often manned by experts with a varying degree of expertise in surveillance — even if the DSNs are connected to surveillance institutes. The overall need for a specific network — or the division of resources between them — has never been critically assessed at the European level. The term 'resources' not only implies the amount of funding from the Community, but also includes the amount of work put into each of the DSNs by the Member States' surveillance institutes. Usually, the routine work between these network members was organised via email and through annual meetings with all members. Most of the DSNs also established smaller groups such as 'steering groups' or 'scientific advisory committees', etc. These groups were made up by network members as well as external experts who met between annual meetings in order to follow up on the progress of activities and prepare proposals to be presented to the whole group. Any plans

for the transition of the coordination of these networks need to take these structures into account.

With the integration of the coordination of the work of these DSNs into ECDC, some practical changes will be necessary. In accordance with Regulation (EC) No 851/2004, Member States have nominated Competent Bodies to work in various areas within the ECDC’s remit, including surveillance. This means that ECDC will rely on the Competent Bodies for surveillance to confirm (or replace) the current DSN members and to nominate epidemiological and laboratory contact points for each of those diseases where no network is in place (with one person possibly covering more than one disease). (See Figure 2.)

Members of „Task Forces“

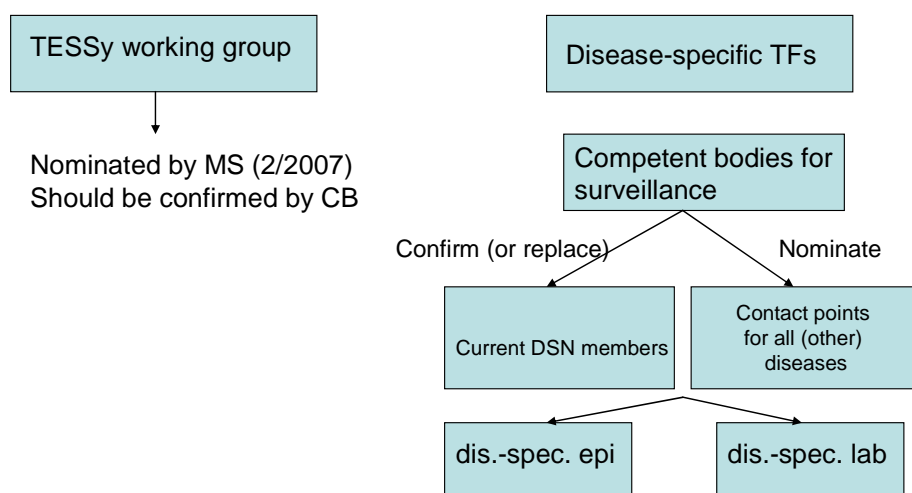


Figure 2. Foreseen nomination process for disease-specific contact points in future EU surveillance activities (MS: Member States; CB: Competent Bodies; TF: Task Force).

The collaboration (for both indicator- and event-based surveillance) with all experts will be structured as follows: The diseases/pathogens will be divided into six main groups (see Figure 3). Where necessary, more focussed (disease-specific) subgroups can be established within any of these six broad groups. Each of these main disease groups will be coordinated separately from the two specific Task Forces already in operation (one working on developing the principles of collaboration, the other advising on IT issues, mainly TESSy and TTT). (See Figure 3).

Annual meetings will be held for each of these six main groups. During these meetings, issues pertinent to the surveillance of the whole disease group will be discussed. It is likely that additional, more disease-specific ‘parallel session’ symposia will be held at the same time,

if necessary. For each of the six main disease groups, a coordinating group will be established and these coordinating groups will take over many of the functions carried out by the old DSN steering groups.

The main tasks of these coordinating groups will be to:

- discuss and advise ECDC on the topics to be included in the ECDC annual workplans for specific disease groups;
- discuss and advise ECDC on the items to be included in the annual disease group meeting agenda;
- discuss and advise ECDC on which more-disease-specific subgroup task forces should be established (if any) and what should be included in the terms of reference for these more-disease-specific subgroups; and
- liaise closely and work in conjunction with any ECDC disease-specific consultation groups within the horizontal disease-specific programmes that will be set up to advise on strategic or technical issues.

There are plans to establish several disease-specific consultation groups to advise ECDC on a number of disease-specific issues. Wherever possible, the work of these disease-specific consultation groups will be coordinated with that of the main disease task force coordination groups, to avoid duplication and unnecessary travelling. In addition to annual meetings of the six main disease groups, ad hoc sub-groups on specific issues will be formed. Additional more-disease-specific workshops can be held as required.

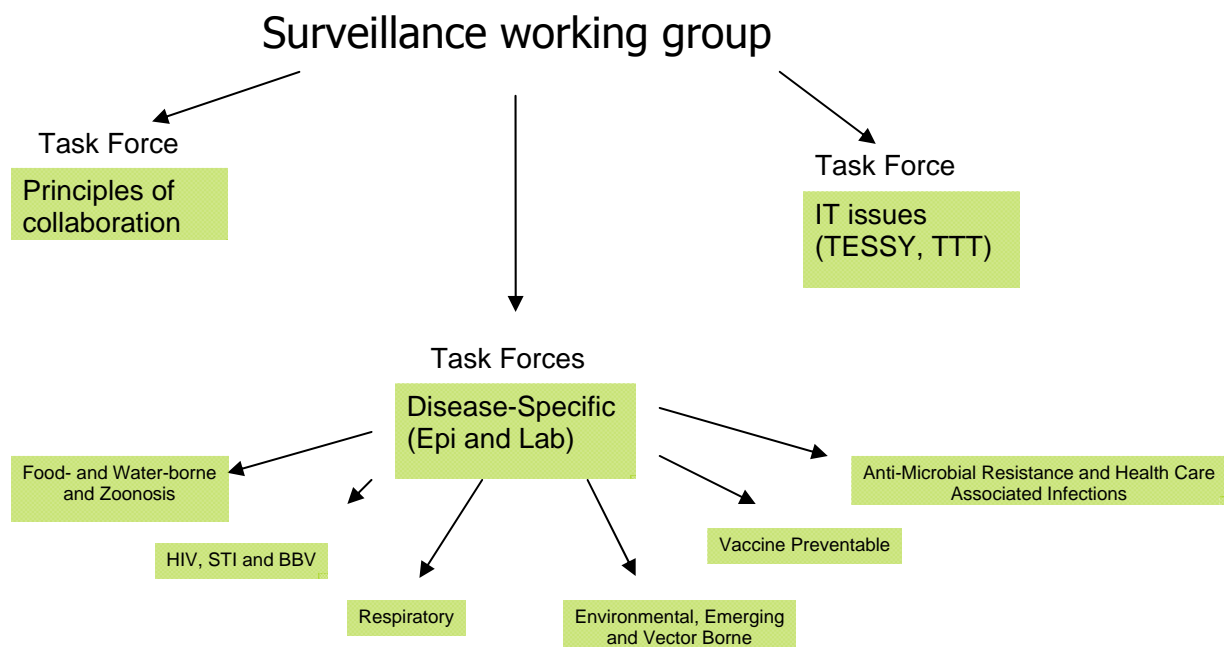


Figure 3. Proposal for future disease-specific work in surveillance. The disease-specific task forces will be coordinated within the overall disease-specific work of ECDC currently taking place in horizontal disease-specific programmes.

Horizontal disease-specific programmes also serve as common structures for prevention, scientific advice, guidance, and preparedness and response issues.

Links to other international databases

Links will be established with relevant databases outside of ECDC to complement the data available at ECDC (e.g. Eurostat, EMCDDA, WHO). Agreements on disease-specific data and surveillance have already been reached with a number of international host organisations and will continue to be consolidated over the coming years. One element to be kept in mind when discussing these agreements is the burden on the surveillance system staff in the Member States, and every effort will be made to reduce the reporting and validation work required at the Member States level.

Review of diseases under EU-wide surveillance

The added value of surveillance of specific diseases at the European level is clearer for some diseases than others. Also, certain threats require just as much effort during phases of low activity as during their peak to ensure that they never grow into a problem. The recent past has shown that new and emerging threats are continuously arising, and it is clear that over the medium term there may well be communicable diseases that will need to be added to those already under surveillance. It is therefore necessary to introduce an objective system or process (ECDC, DG-SANCO and Member States) that allows constant reviewing and adjusting of the list of those priority diseases (old and new) that require EU-wide surveillance. This system should also include the criteria (burden, consensus about which disease, feasibility studies, official procedure, etc.) that lead to the inclusion or exclusion of diseases from the list.

Integration of data from laboratories and ways of collaborating with them

Good laboratory services in the countries are essential for strengthening EU-level surveillance. Much work has been done — through the public health and research laboratory networks, in the former DSNs and the DG-Research-funded projects — to improve and standardise laboratory methodology and systems. ECDC will build on this work and support the strengthening of the laboratory capacity in the Member States, EEA-EFTA countries and the candidate countries, in collaboration with the Commission, the ECDC Competent Bodies, and the recently nominated Member States National Microbiology Focal Points.

The next section deals more specifically with how the laboratories will support the surveillance of communicable disease. These strategies will also be integrated into the overall ECDC strategy for collaboration with laboratories.

The following general principles guide the development of cooperation with the laboratories from a surveillance perspective:



- Every country should have either close access to or its own reference-level laboratory to confirm the diagnosis, isolation and further characterisation⁴ of pathogens⁵ as a basis for reporting confirmed and probable cases during normal times and emergencies. As stipulated in the revised 2005 International Health Regulations, each country should have the capacity to provide support to regional and community levels for laboratory analysis of samples, either domestically or through collaborating centres⁶.
- National reference laboratories or laboratories carrying out reference functions at the national level (both referred to as NRLs in this text) would be the main link for ECDC to the primary diagnostic laboratories in the countries. Several excellent European surveillance and research laboratory networks already exist, and these networks could form the basis for establishing a collaboration with ECDC.
- Links between the NRLs and the nationally responsible epidemiological departments/institutes need to be established where they do not already exist. The structure of some DSNs, having both epidemiological and laboratory contact points, would be a useful starting point for those diseases that are covered by the DSNs. In general, the laboratory and epidemiological (and clinical) data should be linked at least at the national (better local) level before they are reported to ECDC.
- For zoonoses/food-borne diseases, a strong link between data from public health, animal health, and food safety laboratories and epidemiological data should be the ultimate goal. Different options on how to achieve this need to be explored and utilised — in close collaboration with the appropriate stakeholders, e.g. the Commission, EFSA, and WHO.
- Wherever relevant, the integration of molecular sub-typing data with epidemiological (and clinical) data will be promoted by ECDC.
- Quality assurance of laboratory methods is essential to ensure valid and accurate data. Accurate laboratory results are essential for the true comparability of laboratory data. Standardisation of analysis methods should be promoted whenever feasible. Similarly, the procedures when taking samples should be standardised. For external quality assurance, the availability of schemes for advanced laboratory techniques such as molecular typing needs to be ensured. More detailed strategies to support quality assurance in the laboratories would be developed in collaboration with the NRLs and will be explained in the ECDC strategy on collaboration with laboratories.
- Training in laboratory techniques and methods should be ensured. Some of the DSNs have successfully organised laboratory training, and this experience could be used to develop further training activities, in accordance with EU needs. In addition, closer cooperation between epidemiologists, microbiologists and other relevant stakeholders

⁴ Further characterisation means e.g. antimicrobial susceptibility testing (including antivirals) or sub-typing (both phenotyping and genotyping).

⁵ Here we refer to the pathogens set out in 2000/96/EC: Commission Decision of 22 December 1999 on the communicable diseases to be progressively covered by the Community network under Decision No 2119/98/EC of the European Parliament and of the Council.

⁶ Revised International Health Regulations, annex 1.6. Available from: http://www.who.int/csr/ihr/IHRWHA58_3-en.pdf



efficiently to strengthen these services at both the EU and Member States level, to help raise standards and to better define core competencies and improve links to epidemiological work. The results of this project will also contribute to the work of the Commission which is preparing a general framework on laboratory cooperation in Europe.

Aside from this activity, there is a clear surveillance role for NRLs. NRLs need to collaborate closely on pathogen- or pathogen-group-specific issues in a sustainable but flexible structure that enables the integration of public health microbiology in selected disease-specific or area-specific fields and activities. NRLs need to be able to improve their collaboration with their epidemiology counterparts, provide training and technical support in the laboratory methods for the regional and local public health laboratories, promote harmonisation of practices related to laboratory investigation of clinical samples, and support the availability of External Quality Assessment (EQA) schemes and quality-assurance methods for clinical diagnostic methods.

One NRL (disease-specific or disease-group specific) will be selected through an open call to take on a coordinating function at the European level to ensure that all specified activities are performed. This NRL will also act as ECDC's main contact point for microbiological expertise on surveillance aspects (Figure 4). This process is also highlighted in ECDC's overall laboratory strategy which will be coordinated with the European Commission's plans for a general framework on laboratory cooperation in Europe.

As a rule, data on laboratory-confirmed or probable cases will be processed by one nationally responsible epidemiological department or institute and then be uploaded to ECDC. The data flow details for alerts of international clusters and/or outbreaks — identified through pooled laboratory data — will be agreed upon by the Member States. Some of the DSNs have built-in alert functions, and as ECDC gradually takes over the coordination of these network activities, many of these functions will be merged with and integrated into ECDC activities and developed further — in close collaboration with Member States and in line with the International Health Regulations (IHR).

Data analysis methods

The infrastructure for the data on those infections that the Centre is required to cover will continue to be developed, as well as the means to detect new diseases or syndromes arising in the EU. Particular attention will be paid to surveillance developments that can provide a clear added value to the national systems. For the system to achieve the objectives listed above, regular analysis of the disease data will be required.

This implies, for example, that algorithms have to be developed that automatically detect unusual clusters within the surveillance data. The information derived from these algorithms will contribute to the other epidemic intelligence mechanisms being established in the Centre and will result in a more comprehensive early identification and investigation system on health threats (operated by national authorities with or without assistance from ECDC). Moreover, since analytic methods at the EU level are mostly descriptive, more advanced analytical approaches, including modelling and forecasting of infectious disease developments in the EU region, will be implemented and further developed.

COMMUNICATING THE RESULTS – INFORMATION FOR ACTION

Results will be communicated in two principle ways: as direct feed-back to the data providers and as 'information for action' that will be disseminated to all relevant stakeholders.

The main stakeholders are the Member States' public health authorities and policy makers (national and local levels), various EU bodies such as DG SANCO, EMCDDA or EFSA, other international agencies such as WHO (both Headquarters and the Regional Office for Europe) and various leading non-governmental organisations and civil society groups. Also, the audience may range from technical epidemiologists and public health policy makers to laboratory specialists and non-technical policy advisors. Also, some basic results and tables will be made available to the general public through ECDC's web portal.

It is recognised that such a disparate collection of partners cannot be reached with a one-size-fits-all method of feedback of surveillance information. ECDC will be studying how best to improve and expand on the existing array of communication channels (Annual Epidemiological Report, Eurosurveillance, weekly CDTR, website/portal, direct mailing lists, new/other outlets) in order to make sure that the relevant information reaches the right people in the most timely fashion.

ECDC will:

- produce and improve an Annual Epidemiological Report and a weekly bulletin within the CDTR and/or Eurosurveillance and contribute to the annual European Zoonoses report;
- make available key surveillance data and analyses to public-health professionals and scientists via the ECDC web portal and in a format that meets their needs;
- display key facts, figures and analyses for the general public on its web portal;
- improve the various outputs based on user feedback, advances in dissemination technology and best practices;
- issue specific ECDC reports, bulletins and messages as part of global actions (e.g. on TB or AIDS Days) and according to ECDC's own analysis;
- hold annual meetings (during scientific conferences or separately organised by ECDC); and
- publish scientific literature.

SUPPORT FOR MEMBER STATES TO MEET THE DEMAND (NEEDS ASSESSMENT AND WAYS TO STRENGTHEN NATIONAL SYSTEMS)

Quality management and assurance process

A more effective national surveillance system is able to produce better quality data. ECDC, together with the Competent Bodies (CBs) will develop and utilise a tool for assessing the needs of national surveillance systems and then identify the best way of supporting the Member States, so gaps can be defined and filled. As an ongoing activity, ECDC and the CBs



will consider developing a set of minimum-standards criteria for operating effective national surveillance systems that meet EU demands. In addition to using these criteria for planning, they could also be used for advocacy with policy makers to ensure that these key public health activities are suitably resourced. ECDC will accept invitations by Member States to visit the country and contribute to self-assessments of national surveillance systems. In this context, ECDC will provide specific technical advice and support, as requested by the Member States. Surveillance systems are very well established in most Member States, so ECDC will take advantage of their good practices to help promote policies that will improve data quality in other countries. A mapping exercise of the quality-assurance systems used by the surveillance systems in the Member States should provide information on how to develop a tool that evaluates the data quality in the Member States' surveillance systems. A suitable methodology will then be developed by ECDC and the CBs on how best to utilise such a quality-assessment tool in the continuous upgrading of data quality. From time to time, studies will be carried out to determine the main issues/problems with data comparability, surveillance-system efficiency and under-ascertainment/under-reporting in the Member States. Actions will be recommended and implemented to reduce any shortcomings.

ECDC and the CBs will also work on developing and implementing quality management and assurance protocols. They will continue to develop standard analytic strategies and pilot advanced methods of analysis (including developing new analytic approaches where necessary) in order to continue to improve the relevance and impact of the surveillance information for all Member States.

Wherever possible, all activities and systems developed should have little or no impact on the basic workload of the Member States. This can be achieved by introducing, for example, by automated plausibility checks during data upload to TESSy.

Annual review of objectives and priorities

Objectives and priorities will be subject to change over the next seven years. The more detailed 'specific' objectives will be reviewed regularly, based on the findings of the Annual Epidemiological Report, advances published in the scientific literature, and discussions from other major forums. During this process, data-flow and collection systems will also be evaluated and modified accordingly. These reviews will help develop better procedures for assessing under-reporting and under-ascertainment for all diseases. They will also provide a look into new priorities such as the more accurate estimation of true incidence or burden of disease.

External evaluation of ECDC, surveillance activity

Apart from the annual review of objectives and priorities, ECDC as a whole — including its event-based and indicator-based surveillance activities — will undergo an external evaluation. Article 31 of ECDC's Founding Regulation (EC) No 851/2004 provides for an independent external evaluation of the Centre. The main purpose of this evaluation is to independently and objectively evaluate ECDC's achievements, measured against its objectives and work programme. The evaluation aims to identify possible shortcomings and necessary improvements regarding structure, management and working practices. The external

evaluation will also look at any possible improvements relating to relevant EU legislation, ECDC's relations with the Member States and their public health institutes, and the possible need for an extension of ECDC's mandate, while taking into account the financial implications of such an extension. The timing of future external evaluations is laid down in ECDC's Founding Regulation; evaluations are scheduled every five years. The results of such evaluations will most likely impact the objectives and possibly also the strategy of surveillance. All this needs to be reflected in ECDC's surveillance strategy, therefore a comprehensive review of the strategy is provisionally scheduled after each external evaluation.

In addition, internal and external peer reviews at varying levels will be designed.

ROADMAP FOR IMPLEMENTATION OF THE LONG-TERM STRATEGY

ECDC will implement its surveillance strategy in two phases: phase one is a transition period that will last until 2010, with its main focus on the gradual integration of the coordination of the current DSNs with ECDC; during phase two (2010–2013), ECDC will have taken over full responsibility of surveillance and can subsequently focus on developing and consolidating the highest quality systems possible for Europe. A broad overview of the main steps in this roadmap is presented in Annex 1.

Transition and transfer of the current Dedicated Surveillance Networks — 2010

According to its mandate, ECDC will set up an integrated European surveillance system with one central database. Part of this process is the integrated operation of the 'old' Dedicated Surveillance Networks and their activities. ECDC will also assume responsibility for the surveillance of all diseases outlined in Decision No 2000/96/EC. To achieve this, individual transition plans have to be developed, outlining how these networks will continue their activities after their current contract expires. There are two possible approaches: integrate their activities into ECDC or outsource specific activities through an open call. Network-specific decisions will be based on several considerations:

- Are the diseases covered by the network among the priorities of the future enhanced EU surveillance system?
- Which epidemiological and laboratory surveillance activities need to be implemented through further activities in accordance with the future surveillance objectives?
- Which strategy will be employed to integrate the specific epidemiological data with the laboratory surveillance data?
- What do the results of a standardised evaluation and assessment of the network suggest?
- What is the staff capacity at ECDC and the required workload to allow conducting the activities at least at the same level as before?



- Will the suggested measures be cost-effective?

The aim is to continue providing at least the same level of activity as is currently displayed by the network hub and then discuss and implement improvements over the medium term.

Once the decision has been taken to integrate the work of a network hub into ECDC, a transition plan is prepared. Such a transition plan provides a framework for the transition, continuation and integration of the network's activities into ECDC, and the way how this is accomplished. The plan will contain the following activities, which will be adapted to accommodate the specifics of the network:

- evaluation and assessment of the network;
- IT transfer: transition of the database and the website;
- focus on work responsibilities;
- preparation of calls;
- collaboration with Member States;
- implementation of future surveillance.

These activities are supposed to ensure that the establishment of the hub activities at ECDC is maintained at a level equal or above the current one. For the future development of the network activities, ECDC will closely collaborate with the network members — usually starting with an initial workshop — to discuss the network's future. Usually, the former coordination hub is also consulted and plays an important part in this activity.

Consolidation of surveillance activities — 2010–2013

Phase two continues to the end of 2013. During this phase, ECDC, in conjunction with the CBs, will focus on the consolidation of the surveillance systems in the Member States, striving to ensure that all main gaps are filled and that ongoing quality-assurance programmes are in routine operation. A system to discuss and revise the lists of priority notifiable diseases will be in operation, and ECDC will be focussing on how to further strengthen the integration of epidemiological and laboratory surveillance. Other activities relevant to the consolidation of the European surveillance system will also be carried out during this phase, particularly in reference to the comparability of data, where progress must be made.

Partnerships and collaboration

In the years ahead, the sharing of knowledge and experience as well as scientific cooperation requires that ECDC will build close and interactive partnerships with selected institutions and organisations that have strong programs and expertise in the prevention of communicable diseases and control at the global and regional level. Priority partnerships will include WHO (in particular its Regional Office for Europe), other EU agencies (e.g. EFSA, EMCDDA, EEA, EMEA) and a variety of research networks in the EU.



ROADMAP FOR ECDC's LONG-TERM SURVEILLANCE STRATEGY

Target 2: By 2013, ECDC is the central focal point for communicable disease surveillance in the EU and the authoritative point of reference for strengthening surveillance systems in MS.

2008	2009	2010	2011	2012	2013
Q1 Q2 Q3 Q4	Q1 Q2 Q3 Q4	Q1 Q2 Q3 Q4	Q1 Q2 Q3 Q4	Q1 Q2 Q3 Q4	Q1 Q2 Q3 Q4

main work
possible work
provisional study

Strategy 2.1: To establish EU wide reporting standards and an integrated data collection network for surveillance including all MS and covering all CDs with the detail necessary according to their priority

i Further develop The European Surveillance System (TESSy).
 General disease core variable inputs – basic data for all 49 diseases
 Incorporation of enhanced variable datasets – former DSN databases
 Implement and expand on GIS
 Introduce signal detection algorithms and modules
 Support to National TESSy compatible IT Surveillance systems
 Molecular epidemiology module: to integrate laboratory data, including molecular subtyping data
 Develop additional features: webtools, syndromic surveillance systems, risk factor monitoring data, etc
 General TESSy operational maintenance and upgrading
 Develop links to other databases and data sources
 Developing accessibility to the databases by the general public

ii Prioritisation of diseases for surveillance
 Develop and agree disease/disease group specific objectives
 Develop and agree on criteria for prioritisation of diseases
 Apply criteria and revise list of diseases
 Network Committee approves list and publishes

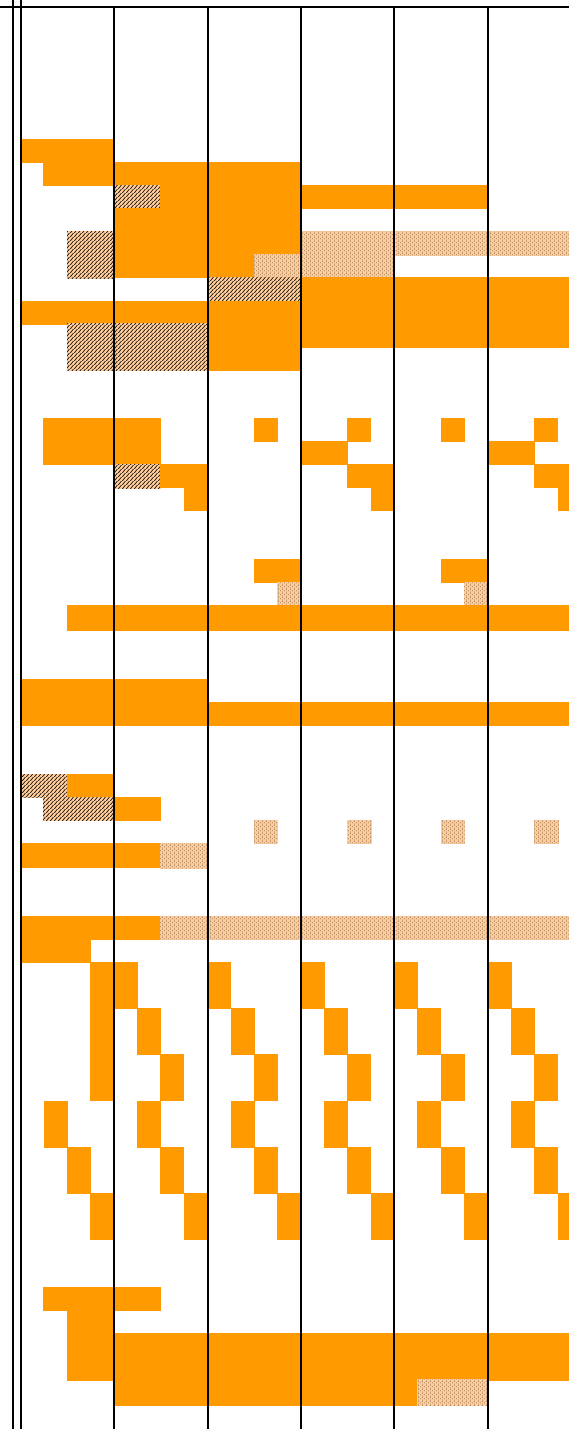
iii Revision of case definitions
 Discuss and agree on new definitions (if considered necessary)
 Network Committee approves new definitions (if considered necessary)
 Promote and evaluate the implementation of the standard case definitions in EU

iv Ensure the sustainability of the essential surveillance components of the DSNs
 Evaluation of all DSNs completed and suitable transition plans prepared
 Coordination of relevant DSN activities transferred to ECDC, including out-sourced activities

v Principles of collaboration on data exchange, access and publication
 Interim Procedure on Collaboration, agreed and signed with MS
 Final Procedure on Collaboration agreed and signed with MS
 Review and revise the Procedure on Collaboration with MS (if considered necessary)
 Align data collection and reporting methods with key stakeholders (WHO, EMCDDA, etc.)

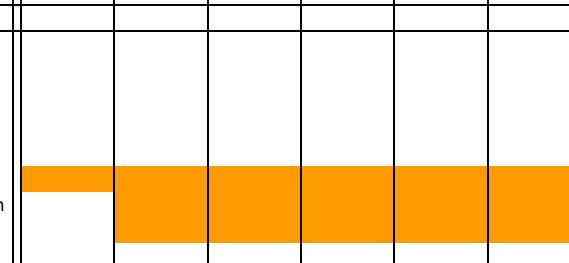
vi Working with disease specific contact points/Task Force members
 CB nomination or re-confirmation of Disease Specific CPs
 Establishing Disease Coordinating Groups (former steering committees)
 Meetings of RES Disease Coordination Groups
 Meetings of ARM/HCAI Disease Coordination Groups
 Meetings of EZO Disease Coordination Groups
 Meetings of FWD Disease Coordination Groups
 Meetings of VPD Disease Coordination Groups
 Meetings of HIV/STI Disease Coordination Groups
 Meeting of RES Disease Task Force, review surv objectives and further develop disease specific surv.
 Meeting of ARM/HCAI Disease Task Force, review surv objectives + further develop disease specific surv.
 Meeting of EZO Disease Task Force, review surv objectives and further develop disease specific surv.
 Meeting of FWD Disease Task Force, review surv objectives and further develop disease specific surv.
 Meeting of VPD Disease Task Force, review surv objectives and further develop disease specific surv.
 Meeting of HIV/STI Disease Task Force, review surv objectives and further develop disease specific surv.

vii Integration of laboratory surveillance data
 Mapping of laboratory surveillance potential
 Develop principles of collaboration of laboratory surveillance
 Select NRL to coordinate laboratory surveillance activities and on-going coordination work
 Promote harmonization of testing practices and reporting systems and pilot advanced methods of analysis
 Develop further the integration of epidemiological surveillance and laboratory surveillance



Strategy 2.2: To analyze trends of public health importance for EU and MS regarding CDs in order to provide a rationale for public health action on the EU level and in MS.

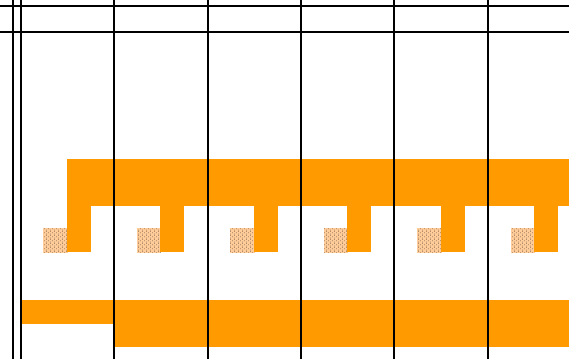
i Develop the analysis of the data
 Regular analysis of data according to the timing which is appropriate for the respective disease
 Develop advanced methods of analysis and integrate new analytical approaches to identify areas and issues for action
 Develop and use modeling as a regular part of ECDC's periodic surveillance analyses and reports



Strategy 2.3: To report on trends of public health importance for EU and the MS regarding CDs in an appropriate manner for all stakeholders and foster transfer into public health action

i Communicating the results
 Develop Web portal outputs for various audiences and ensure regular updates
 Improve and expand on existing communication channels
 Hold or participate in various Annual Meetings to present results (including those listed in 2.1.vi. above)
 Contribute to an improved Annual Epidemiological Report

ii Foster the principle of information for action
 Promote the use by policy makers of the main conclusions from the surveillance reports
 Monitor the key stakeholder and MS reports and publications that refer to or use ECDC surveillance data



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 MS

i Support MS to strengthen national systems and improve the data quality
 Develop 'minimum standards' criteria for MS surveillance systems
 Develop self -assessment tool for surveillance systems
 Provide support to MS regarding infrastructure for surveillance
 Develop a tool to evaluate the quality of data in MS surveillance systems.
 Develop data quality management and assurance protocols for both laboratory and epidemiological data
 Study how to improve the comparability of data
 Implement recommendations to improve comparability of data
 Implement procedures for assessing underreporting and under-ascertainment
 Develop methodologies to estimate true incidence and burden of disease

ii External evaluation of surveillance
 Review and revise strategy with evaluation report recommendations

