Public Health indicators for the European Union:

Context, selection, definition

FINAL REPORT BY THE ECHI PROJECT
PHASE II

June 20, 2005

P.G.N. Kramers and the ECHI team

Centre for Public Health Forecasting

National Institute for Public Health and the Environment
PO Box 1, 3720 BA Bilthoven, The Netherlands
Tel.: +31-30-2749111; Fax: +31-30-2742971

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The National Institute for Public Health and the Environment
PO Box 1
3720 BA Bilthoven,
The Netherlands

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The project team of ECHI-2 (European Community Health Indicators, phase 2) consisted of the following persons (full affiliations are given in Annex 12):

- Austria: Mr. Richard Gisser, Statistics Austria, Vienna.
- Belgium: Prof. Herman van Oyen, Scientific Institute of Public Health, Brussels (replacements: Ms. Nathalie Bossuyt, Mr. Pieter-Jan Miermans).
- Denmark: Ms. Eva Hammerby, National Board of Health, Copenhagen (early phase: Ms. Christina Ecklon).
- Finland: Prof. Arpo Aromaa, National Public Health Institute, Helsinki.
- France: Mr. Gérard Badéyan, Haut Comité de Santé Publique.
- Germany: Mr. Thomas Ziese, Rober Koch Institute, Berlin.
- Greece: Prof. Aris Sissouras, University of Patras, Patras.
- Hungary: Dr. Zoltán Vokó, Ministry of Health, Budapest; School of Public Health, University of Debrecen.
- Ireland: Mr. Hugh Magee, Department of Health and Children, Dublin.
- Italy: Dr. Emanuele Scafato, National Institute of Public Health, Rome.
- Luxembourg: Mr. Raymond Wagener, General Inspectorate of Social Security.
- Netherlands: Dr. Pieter Kramers (project co-ordinator), Dr. Peter Achterberg, Mr. Rutger Nugteren, Ms. Eveline van der Wilk, National Institute of Public Health and the Environment, Bilthoven.
- Norway: Mr. Bjørn Heine Strand, Dr. Else-Karin Grøholt, Norwegian Institute of Public Health, Oslo.
- Portugal: Mr. Paulo Ferrinho, Mr. Rui Calado, Directorate General of Health, Lissabon (replacement: Ms. Judite Catarino).
- Spain: Dr. Enric Duran, Municipal Research Institute, Barcelona.
- Sweden: Ms. Susanne Holland, Dr. Mans Rosén, National Board of Health and Wefare, Stockholm (replacement: Dr. Magnus Stenbeck).
- United Kingdom: Dr. Hugh Markowe, Department of Health, London (replacement, Mr. Richard Willmer).
- WHO-Europe: Mr. Remigijus Prochorskas.
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FOREWORD

The European Commission is pleased to welcome this publication resulting from several years of work on developing a set of European Community health indicators. This work was supported successively by the programme of Community action on health monitoring, adopted by Decision No 1400/97/EC of the European Parliament and of the Council[1], 1997- 2002 and the current Community Public Health Programme 2003-2008[2].

The Council, in its resolution of 27 May 1993 on future action in the field of public health, considered that improved collection, analysis and distribution of health data, as well as an improvement in the quality and comparability of available data, are essential for the preparation of future programmes. The European Parliament, in its resolution on public health policy after Maastricht, stressed the importance of having sufficient and relevant information as a basis for the development of Community actions in the field of public health. In addition, the European Parliament called on the Commission to collect and examine health data from Member States with a view to analysing the effects of public health policies on health status in the Community.

The Commission, in its communication of 24 November 1993 on the framework for action in the field of public health, regarded increased cooperation on standardization and collection of comparable/compatible data on health, and the promotion of systems of health monitoring and surveillance as a prerequisite for the establishment of a framework for supporting Member States' policies and programmes; The area of health monitoring, including health data and indicators, has been identified as a priority area for proposals on multi-annual Community programmes in the field of public health.

In its resolution of 2 June 1994 on the framework for action in the field of Community health, the Council indicated that the collection of health data should be accorded priority and invited the Commission to present relevant proposals. The Council considered that data and indicators used should include measures relating to the quality of life of the population, accurate assessments of health needs, estimates of the avoidable deaths from the prevention of diseases, socio-economic factors in health among different population groups, and, where appropriate and if the Member States judge it necessary, health aid, medical practices, and the impact of reforms.

It follows that health monitoring at Community level is essential for the planning, monitoring and assessment of Community actions in the field of public health, and the monitoring and assessment of the health impact of other Community policies.

[1] OJ L 193, 22.7.1997, P. 1.
[2] OJ L 271, 09.10.2002, P. 0001 - 0012

On the basis in particular of knowledge of data relating to public health in Europe obtained by setting up a Community health monitoring system, it was hoped that it could be possible to monitor public health trends and define public health priorities and objectives.

Health monitoring, for the purposes of this 1997 Programme Decision, encompassed the establishment of Community health indicators and the collection, dissemination and analysis of Community health data and indicators.

Health monitoring at Community level was intended to enable measurements of health status, trends and determinants to be carried out, facilitate the planning, monitoring and evaluation of Community programmes and actions, and provide Member States with health information supporting the development and evaluation of their health policies. In order fully to meet requirements and expectations in this area, a Community health monitoring system was proposed, involving the establishment of health indicators, the collection of the data, in particular those needed ultimately to arrive at comparable health indicators, the establishment of a network for transmission and sharing of health data and indicators, and the development of a capacity for analysis and dissemination of health information. The 1997 Decision called for available options and possibilities for developing the various parts of a Community health monitoring system, including those making existing provisions more stringent, to be carefully examined with respect to the desired performance, flexibility and the costs and benefits involved. It considered that a flexible system is required which could incorporate features which are deemed valuable at present while adapting to new requirements and other priorities. Such a system should include the definition of sets of Community health indicators and the collection of the data necessary for the establishment of such indicators.

It was also stipulated that Community health data and indicators should draw from existing European data and indicators, such as those held by Member States or forwarded by them to international organizations, so as to avoid unnecessary duplication of work. The Decision notes that the situation with regard to the collection of data varies from one Member State to another. It was also considered that a Community health monitoring system could benefit from the establishment of a telematics network for the collection and distribution of Community health data and indicators. This was the logic for establishment of the HIEMS (Health Information Exchange and Monitoring System) and IDB (Injury Database) systems. The Decision states that the Community health monitoring system should be capable of producing data for the preparation of regular reports on health status in the Community and analyses of trends and health problems, and of helping to produce and disseminate health information.

The Community public health programme 2003-2008 mandates the creation of a health information and knowledge system, drawing on the work described above and developed in the former Community Health Monitoring Programme.

In this context, the ECHI project has been a central deliverable, drawing together experts from member state authorities, health institutes and academia to consider what indicators are needed at EU level, and what data could be needed to establish them.

In an effort to prioritise this work, a short list of Community health indicators was developed on the basis of the ECHI list, which is now the subject of an on-line reporting by the Commission on its website[3]. The collection of data by Eurostat in public health statistics is planned to take place according to the priorities and definitions established through the ECHI project.

The work on developing the remaining and future indicators is being taken forward in a working party established under the Community health programme health information and knowledge strand. This report will form a solid foundation for future indicators. The Commission is extremely grateful to the National Institute for Public Health and the Environment of the Netherlands RIVM, and in particular Dr. Pieter Kramers for his leadership of this project, but is also thankful for all the work of national representatives, public health specialists and of colleagues in Eurostat, the World Health Organisation and the Organisation for Economic Co-operation and Development, for making this a very successful European public health initiative.

John F. Ryan

Head of Unit C2, Health Information,
European Commission, Health & Consumer Protection Directorate-General,
Directorate C - Public Health and Risk Assessment.

[3] http://europa.eu.int/comm/health/ph_information/dissemination/echi/echi_en.htm

EXECUTIVE SUMMARY

1. Technical information

Area of activities / working party:	WP7 on indicators.
Title of project:	European Community Health Indicators, Phase 2 (ECHI-2).
Start date of the project:	01-10-2001.
Duration of the project:	38 months.
Project leader/organisation:	Dr. P.G.N. Kramers, RIVM National Institute of Public Health and the Environment, P.O. Box 1, 3720 BA Bilthoven, The Netherlands, pgn.kramers@rivm.nl.
Project number:	SI2.325304 (2001 CVG 3 – 506).
Sanco representatives:	H. Chamouillet, F. Sicard, A. Montserrat.

Countries involved:

Member states:

[x]	a (austria)	[x]	p (portugal)
[x]	b (belgium)	[ ]	pl (poland)
[ ]	cy (cyprus)	[x]	s (sweden)
[ ]	cz (the czech republic)	[ ]	si (slovenia)
[x]	d (germany)	[ ]	sk (the slovak republic)
[x]	dk (denmark)	[x]	uk (united kingdom)
[x]	e (spain)		
[ ]	ee (estonia)	Candidate countries:	
[x]	el (greece)	[ ]	bg (bulgaria)
[x]	f (france)	[ ]	tr (turkey)
[x]	fin (finland)	[ ]	ro (romania)
[x]	hu (hungary)	[ ]	cr (croatia)
[x]	i (italy)		
[x]	irl (ireland)	Efta/eea countries:	
[x]	l (luxembourg)	[ ]	(IS) Iceland
[ ]	lt (lithuania)	[ ]	(LI) Liechtenstein
[ ]	lv (latvia)	[x]	(NO) Norway
[ ]	mt (malta)		
[x]	nl (netherlands)	Others:	

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2. Content related information

Context/introduction:
ECHI-2 is the continuation of the ECHI-1 report, which ran from 1998 to 2000. It started in the frame of the EU Health Monitoring Programme (HMP) and addressed one of the Programme's core issues: the establishment of a list of health indicators for the European Union. This task was approached with close consideration of already existing work by the Commission Services at Eurostat, by WHO-Europe and OECD on data and indicators in an international context.

Aims and objectives of the project:
(1) the further development of the indicator list established by the ECHI-1 project, by implementing the results of forthcoming HMP projects and other relevant sources;
(2) the further implementation of the 'user-window' concept, i.e. the establishment of interest-oriented subsets of indicators;
(3) the establishment of a shortlist of indicators for priority implementation and presentation of actual data;
(4) the building of a web-based application for the comparable presentation of the definitions of ECHI indicators and indicators used by Eurostat, WHO-Europe and OECD, as a follow-up of WHO-Europe's ICHI (International Compendium of Health Indicators); and
(5) promoting the use of the ECHI frame as a common conceptual structure for the work on public health information both in the EU context and in the Member States.

Keywords:
Indicators; Health status; Health determinants; Health systems.

Performance process (activities / design / instruments):
The work was performed by seven meetings of the project team, in the period between October 2001 and October 2004. Three of these meetings were held together with a larger group of HMP project co-ordinators. The ECHI project co-ordinator has maintained frequent contact with many of these projects, as well as with the Working Party leaders, e.g. by joining meetings of all six Working Parties running under the 2003-2008 Public Health Programme. For the establisment of the shortlist, a rigid protocol was devised by the ECHI team, in close communication with DG Sanco C2.

Outcomes of the project / key health messages / added value for reaching the goals of the EU public health programme:
As a follow-up of ECHI-1, the ECHI-2 project has expanded the indicator list, with input from many projects under the Health Monitoring Programme and more recently the Public Health Programme. This has resulted in:
(1) the ECHI 'long list', which is above all an inventory of indicators proposed by the various projects, arranged according to a robust conceptual frame;
(2) the concept of 'user-windows' which allows for the interest-oriented selection of subsets of indicators;

(3) the ECHI shortlist, which is selected as a subset from the long list for first priority implementation; and
(4) a web-based application (ICHI-2, International Compendium of Health Indicators) in which the ECHI indicators are listed, with their definitions, along with the indicators used by Eurostat (rather as 'statistical indicators'), WHO-Europe (the HFA database) and the OECD (OECD health data).

Thus, the project has served two functions: first to develop a list of items and indicators for more comparable data collection among EU Member States; second, to act as a co-ordinating momentum or 'umbrella' for the activities and results of the variety of projects. This has contributed to a common structure within the EU programmes, as well as to a structure for the establishment of the EU Health Information System.

Conclusions:

ECHI-1 and ECHI-2 have shown that a broad consensus can be reached among public health professionals representing a large range of expertise, on a basic logical frame for the organisation of information, and on the selection of a list of priority topics. This does not imply that there are not many issues of debate remaining, but the outcomes of the project provide a reference for these discussions and therefore a starting point for the further development of concepts, indicators, comparable data collection and presentation of public health information.

Plan of dissemination of results:

The results of ECHI-2 will be available by the written report, also presented on the Europa website. The indicator lists will be available on the ICHI website: www.healthindicators.org. A publication in a scientific journal will be considered. A pamphlet for wide distribution will be prepared.

Needs for future policy development:

First of all, the ECHI list should be used and implemented, especially the shortlist. At the same time, the development of indicators is an ongoing process, and should be continued. Several Member States use ECHI as a guideline for the development of national health information systems. Eurostat is using it as a frame for setting up new systems of comparable data collection. DG Sanco C2 is building a database application for the shortlist. Several new projects use the shortlist as a starting frame. As one of these, the EUPHIX project will build a information system based on the ECHI structure. As the closest follow-up of the ECHI-2 project, the ECHIM/WP7 project (Working Party 7 on indicators) will work on the implementation of the indicators and will continue the development of the shortlist and the long list, together with representatives of all Working Parties under the Information Strand of the Public Health Programme. All of this work will help to identify areas of importance for which good indicators are lacking, and thus give guidance to prioritize issues in the yearly Work Programme of the Public Health Programme.

Beyond the development and improvement of indicator definition, the development and sustained existence of appropriate data collection systems at the Member State level, is the ultimate basis of any health information system. Therefore, it is important that the

Member States feel committed to safeguard long-term investments into these activities, instead of embarking on ad hoc decisions inspired by short-term political views. It is also important that databases which originate from the public domain, i.e. the citizen, do not become subject to power plays of private organizations.

All of this indicates the need, at EU level, for an organized structure (center) of public health expertise employing a critical mass of experienced professionals. This center should take care of the analysis and dissemination of information for policy support, and take a lead on the implementation and continuous improvement of an EU-wide health information system. The European Center for Diseases Prevention and Control has realized this model for the area of communicable diseases and one possible development route is for it to be expanded to the broad Public Health Area. These tasks should be performed together with Eurostat, with WHO-Europe, with OECD-health, and with the Member States' public health and statistical agencies.

THE FULL REPORT

1. Preface

This is the final report of the project 'ECHI-2' (European Community Health Indicators, phase 2). This project was started under the EU Health Monitoring Programme (HMP) and has run from October 1st, 2001 to December 1st, 2004. Like its predecessor, ECHI-1, the project was co-ordinated by RIVM, the Dutch National Institute of Public Health and the Environment, in Bilthoven, The Netherlands. The ECHI team consisted of participants from the EU-15, plus Hungary and Norway, and representatives or observers from Eurostat, WHO-Europe and OECD.

Paragraph 2 gives the objectives of ECHI-2. In *paragraphs 3 and 4*, the report gives background and definitions on what 'public health' is, and on how public health information can be structured, for the support of health policies. *Paragraph 5* gives an outline of how the goals of ECHI were approached. Next, *paragraphs 6 to 9* discuss the results, i.e., the indicator lists, the concept of 'user-windows' and the ICHI internet database. The lists themselves and further details are given in *Annexes 5 to 9*. *Paragraphs 10 and 11* give conclusions and perspectives for the future. The indicator lists are also accessible by internet under: www.healthindicators.org.

The ECHI team is happy to see that the results of ECHI-2 are being picked up and used. At the same time, indicator development is being continued, and will particularly be carried on by the ECHIM project which also covers the secretariat of Working Party 7 on Indicators. Whenever readers of this report want to comment on its contents or other issues of indicator development, they can get in touch with the WP7 secretariat: katri.hakulinen@ktl.fi. For more information on this, see *paragraph 11*.

2. Objectives of ECHI-2, as a follow-up of ECHI-1

ECHI-2 has been the follow-up of ECHI-1, of which the final report was produced by February 15, 2001. The main result of ECHI-1 was a list of indicators for the public health field, arranged according to a robust conceptual frame of public health and health determinants (cf. *paragraph 4*). In addition, the concept of 'User-windows' was devised. This means that from the overall set of indicators which is arranged following the standard conceptual frame, subsets of indicators can be defined from the viewpoint of specific interests or perspectives. The abridged version of the ECHI-1 report has been added to the present report as *Annex 1*.

The indicator list and its underlying structure were taken up by the Commission Services at DG Sanco, unit C2 (hereafter called: Sanco) as a useful frame of reference for much of the work within the Health Monitoring Programme (HMP), and later on in the 2003-2008 Public Health Programme (Strand 1 on information). During 2001 and 2002, many of the

HMP project reports produced recommendations of indicators, quite often following the ECHI frame. There were many presentations by the project co-ordinator, and many discussions between the respective projects and the ECHI co-ordinator. Stimulated by this ongoing debate, a proposal was submitted for ECHI-2.

The goals of ECHI-2 were formulated as follows:
(1) The further development of the indicator list established by the ECHI-1 project, by implementing the results of forthcoming HMP projects and other relevant sources.
(2) The further implementation of the 'user-window' concept, i.e. the establishment of interest-oriented subsets of indicators.
(3) The establishment of a shortlist of indicators for priority implementation and presentation of actual data (this goal became prominent in 2003).
(4) The building of a web-based application for the comparable presentation of the definitions of ECHI indicators and indicators used by Eurostat, WHO-Europe and OECD, as a follow-up of WHO-Europe's ICHI (International Compendium of Health Indicators).
(5) Promoting the use of the ECHI frame as a common conceptual structure for the work on public health information both in the EU context and in the Member States.

The work towards realization of these goals is described in the further paragraphs of this report, with many details in the Annexes. At the beginning of the project, comments were made on the high ambitions and high expectations from the project. It was agreed that the establishment of an indicator list is a crucial step towards the actual collection of data, but that data collection was not among the goals of ECHI-2. For more details on working procedures in ECHI-2, see *Annex 3*.

3. On public health information and indicators

Public health policies aim at improving the health of the citizen, including the reduction of health inequalities. In order to be effective, these policies must be based on factual information. Such information can effectively be summarized and presented in the form of 'indicators'. This area: health data, information and indicators, is the core business of Strand 1 (on information) of the European Commission's Public Health Programme 2003-2008.

The crucial next question is *which* information is needed for *whom*, and *when*, or *how often*. Here, we come to questions such as (1): what belongs to the public health field? (2): how do we arrange issues in a logical structure? and (3): how are we setting priorities for selecting topics. Examples of such topics are: occurrence of certain diseases, health behaviours, health care quality, etc. Addressing these questions has been the subject of the ECHI project. The approach has been to select policy-relevant public health topics, to arrange these topics in a logical structure, and where possible to define the topics in terms of 'indicators'. Therefore the project was named: European Community Health Indicators (ECHI).

What is an indicator? In the ECHI-1 report, it was described as 'A concise definition of a concept meant to provide maximal information on an area of interest'. This implies a few things: (1) an indicator should tell us something about an area of interest for (policy) action, sometimes defined as a concrete policy target (e.g., reduce the percentage of smokers to less than 20%); (2) an indicator should do this in a maximally efficient way, i.e. provide the simplest possible numerical presentation, calculated from basic data, to give a robust view of the situation (e.g. life expectancy as a measure for the overall age-specific mortality). One could also say that indicators are at the crossroads of policy questions and data sets. Their selection and definition will be directed, on the one hand, by the needs of health policies and actions, and on the other hand by the availability of data. The recently fashionable term 'performance indicators' does not refer to a basically different concept. Rather it implies a more explicit link to a specified objective of an activity or policy.

In the ECHI context, the word indicator has been used in a rather broad way, sometimes referring to 'topics' or 'issues' ('generic indicators'), and sometimes to precisely defined 'operational indicators'. The term 'alcohol use' is an example of the former. Specifications like 'percent of the male population over age 16 drinking 4 glasses per day or more', or 'percent of 14-18 year old drinking alcohol', are examples of operational indicators.

4. What belongs to the public health field? Conceptual models

The first criterion for selecting indicators was that, as a set, they should comprehensively cover the field of public health (see also paragraph 5). Already in 1997, Annex 2 to the Health Monitoring Programme (European Commission, 1997), gave a list of the main areas which should be included:

- Health status
- Lifestyle and health habits
- Living and working conditions
- Health protection (meant to include health services)
- Demographic and social factors
- Miscellaneous.

This was not a haphazard series of issues but reflects a logical grouping. Basically, it goes back to the public health model connected to the name of the Canadian health minister Marc Lalonde (1974). This model (see *figure 1*) says that health is determined by four domains, i.e., biological and genetic factors, lifestyle, the environment and the health care system. These four domains have later been called 'determinants of health'. The implication of this is twofold: (1) Health is viewed as more than the absence of diseases, and has components of functioning and wellbeing (cf. WHO definition of 1948), (2) public health policies and interventions try to improve health by acting on those four groups of 'health determinants'. One could make this explicit by turning *figure 1* around into *figure 2*. Then the model more clearly appears as a causal chain: (1) health is influenced by the set of health determinants, (2) many activities (prevention, health

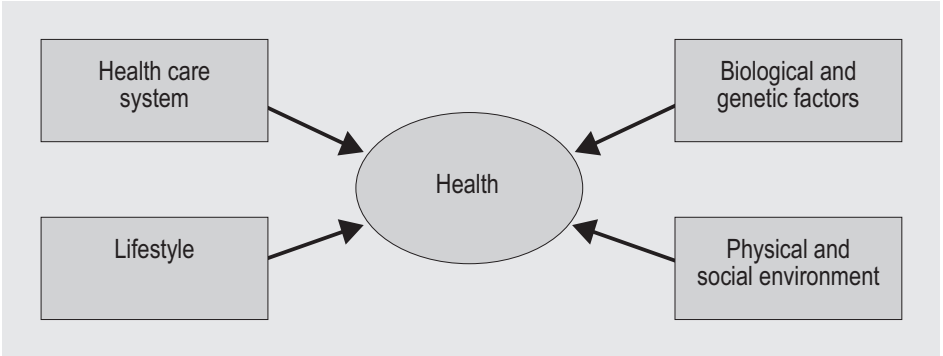

Figure 1. Basic health field model, after Lalonde (1974).

promotion) help to improve health by acting on the determinants, and (3) health (and health-related) policies create conditions in which these activities can work. These figures are simplified, of course, but they help to focus on the basic concepts.

Annex 2 gives additional examples and explanations of such models. The idea behind all of them is (1) that the ensemble of blocks and arrows represents the comprehensive public health field as we want to approach it, including the various issues and the relationships between them; and (2) that within each block, one can define topics and indicators on which data can be collected and indicators defined.

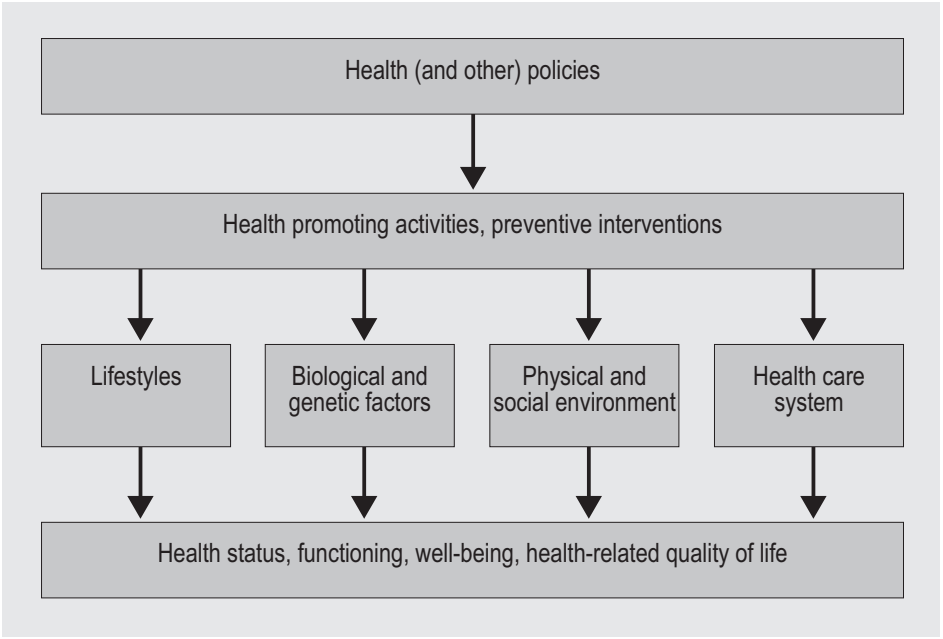

Figure 2. The basic health field model transformed to show the simplified causal chain.

Box 1: Main categories for the ECHI indicator set

1 Demographic and socio-economic situation
- 1.1 Population
- 1.2 Socio-economic factors

2 Health status
- 2.1 Mortality
- 2.2 Morbidity, disease-specific
- 2.3 Generic health status
- 2.4 Composite health status measures

3 Determinants of health
- 3.1 Personal and biological factors
- 3.2 Health behaviours
- 3.3 Living and working conditions

4 Health systems
- 4.1 Prevention, health protection and health promotion
- 4.2 Health care resources
- 4.3 Health care utilisation
- 4.4 Health expenditures and financing
- 4.5 Health care quality/performance

At the start of ECHI-1, it was clear that we needed a model like this to ensure that we would adequately cover the public health field, and to take care of a proper arrangement of indicators. During the first phase of ECHI-1, intensive discussions led to the arrangement of public health domains as shown in *Box 1*. Roughly, classes 2, 3 and 4 (on health status, health determinants and health systems) correspond with the layers in *figure 2*, except for the inclusion of health care in the chapter on health systems, and the merging of 'health promoting/preventive activities' with 'policies'. Also, class 1 was added to account for population and socio-economic variables. These are considered as important background variables in public health, although some of them can be seen as health determinants as well (e.g. income level, educational level, household status). It was decided that this arrangement was a rather robust average of existing models and sometimes conflicting considerations.

During ECHI-2, discussions have taken place with the EUHPID project team (EU Health Promotion Indicator Development). In the EUHPID report, a different conceptual model was proposed, implying a broad and dynamic view on health-promoting activities (also called 'salutogenic' approach) rather than focusing on aspects of ill-health. Annex 2 shows how the two models can be reconciled. These discussions also led to a change of the ECHI frame. Basic to this was the recognition that in the present Class 4 on health systems, it would be useful to discriminate between health promoting activities within the health services system (the areas of cure, care and classical disease prevention) and outside this system (health promotion in settings, health in other policies, etc.). Also, this would provide more weight to the broad area of health promotion that is explicitly

within the mandate of the European Commission. The change was implemented as a split of Class 4, health systems, as follows:

- Class 4: Health interventions: health services (including the 'medical' parts of 4.1, plus 4.2-4.5);
- Class 5: Health interventions: health promotion (including the non-medical parts of 4.1).

5. Selecting public health topics, defining indicators

Having chosen the boundaries and logical arrangement of the various domains in the public health field, the next step is the more precise selection of topics and indicators. This calls for a set of explicit criteria. The ECHI-1 final report has outlined and discussed these criteria quite extensively. They are recalled below, with short comments (see also *Annex 1*).

- The set of indicators should cover the comprehensive field of public health. This was dealt with in the paragraph above.
- The selection should take account of earlier work by international organisations. Consequently, many indicators defined and used by WHO-Euro (HFA database) and OECD (OECD health data), as well as variables used by Eurostat have been adopted in the ECHI list. In the indicator lists given in the *Annexes 5* and *6*, these links are mentioned.
- The indicator set should meet the needs of Member States' and the Commission's public health policy priorities. To account for this, policy documents were collected from the Member States and screened for priority topics. It was not meant to do this in an exhaustive manner, rather to identify main issues and directions. *Annex 4* gives an overview of such targets and issues for 13 Member States. *Box 2* gives a short overview of the main trends and differences that could be identified.
- The selection of topics and indicators should not only be data driven but also exploit possibilities for innovation. These could be based both on new scientific insights and new policy needs. It is here that many of the projects under the Health Monitoring Programme have made valuable contributions.
- The selection of topics and indicators should be guided by quantitative principles such as the size of a health problem at population level, or the degree of preventability of the problem.
- At the level of their precise definition, indicators should meet methodological criteria such as validity (does the indicator measure what it is intended to measure?), reliability (is the measurement reproducible?) and sensitivity (is the measurement sufficiently discriminative in space or time?).
- Finally, the set of indicators should allow for flexible use. This means that the underlying data collection which can only be a sustained effort should at the same time allow queries that vary rather quickly based on shifts in policy interests.

The above criteria have been applied implicitly or explicitly throughout the selection procedure. For individual indicators, however, it is often not feasible to tell which criteria

Box 2: short overview of main health policy issues in EU Member States

In ECHI-1, the exercise to collect Member State health policy issues was carried out for the first time. At that time, a quite remarkable similarity was noted between Member States in their priority topics. High-ranking issues were:

- Increase the number of healthy years lived, by tackling the main causes of death, ill-health and functional limitations (including physical and mental health aspects).
- Reduce health inequalities, by means of health policies but also by social policies.
- Improve effective health promotion and disease prevention especially aiming at lifestyle and at young people.
- Improve the quality and accessibility of care, including community care.
- Improve the quality of life and participation of the elderly.

This inventory has not changed in recent years. However, recent reports show a wider range of issues and approaches. On the one hand, we see an emphasis on medical diagnostic categories and their determinants (e.g. France, Netherlands). On the other, we also see an increasing emphasis on social conditions and health-promoting environments (e.g. Hungary, Sweden). Along this line, some topics emerge which were not so clearly present in the ECHI-I list shown above:

- Actions in health promotion and health promoting environments.
- Health system performance (effectiveness, safety, sustainability, efficiency).
- Involvement and empowerment of citizens/patients.

These issues are mentioned in the ECHI list, but there are not many reliable indicators yet, for which international comparisons can be made. Therefore, these are priority areas for indicator development.

were especially important for their selection. To cover this point as much as possible, the long list (see *paragraph 6* below, and *Annex 5*) specifies criteria for each section, and the shortlist (*paragraph 7* below, *Annex 6*) gives specific justifications for each indicator. It should be noted here that in many cases the justification for selection of indicators was given by the original sources such as the respective HMP project reports.

6. The comprehensive ECHI list ('long list')

Ideally, the end product of ECHI would be a list of indicators, all clearly referring to an operational definition and a preferred data collection approach. As was said before, the ECHI list has not been intended to be a database by itself, only to serve as a consensus reference about which data would be needed.

The end product of ECHI-1 (ECHI, 2001) was a list of 192 topics and indicators. (class I: 28; class II: 28, not split for ICD codes; class III: 49; class IV: 87. ICD = WHO's International Classification of Diseases). This number is somewhat arbitrary because of the grouping and splitting of items. In the course of the work in ECHI-2, this list has been growing steadily by the addition of new recommendations from HMP projects. The present version has more than 400 topics and indicators. It is given in *Annex 5*. The list gives the following information:

- Generic indicator or item.
- Operational definition(s), as derived from HMP projects or existing international indicator bases (Eurostat, WHO-Euro, OECD); stratification by gender, age, region or SES (Socio-economic status); remarks.

- An indication of the source type and data availability, often from the HMP project involved.
- The HMP project or other source from which the recommendations came.

In the second phase of ECHI, the co-operation with and the input from the HMP projects has been of greater importance than in the first phase, since many of these projects have produced their final reports in the period 2000-2004. In most cases the projects were carried out by appropriate networks of experts in the respective fields, which makes their recommendations an important innovative stimulus in indicator development. The other side of the coin is that expert groups not infrequently lack the insight of how the newly developed concepts and measurements can be translated into routine data collection in the variety of practices of 25 Member States. The result is that the ECHI list contains quite a few items for which a regular and comparable data collection is still many steps away. Admittedly, it was one of the goals of ECHI to be innovative and not only data-driven, but a balance is needed.

Another point of (im)balance resides in the fact that for some topics there happened to be projects in the HMP, and for others not. For example, the projects on cancer, cardiovascular diseases, COPD (chronic obstructive lung disease) and asthma produced a wide range of indicators, whereas for other important diseases, there is nothing. From a disease-specific viewpoint the recommended indicators are definitely valid and relevant, and the work performed is highly valuable. However, for a workable list of indicators covering the entire field of public health, which ECHI is meant to be, the addition of such sets of indicators for all major diseases or diagnostic groups would not be an option. In some instances, we have chosen to mention sets of recommended indicators as a group, with reference to the project report where the full list and background are given (e.g. levels of specific serum cholesterol fractions, detailed nutritional status indicators, indicators on the quality of care for disease X).

The dilemma has become that, on one hand, ECHI has chosen the role of putting the wide range of recommended indicators and topics into a logical arrangement, thus keeping consistency with the ensemble of results from the public health projects. On the other hand, it is not in the competence of the ECHI team to decide whether certain recommended indicators can be taken on board and others cannot, except in cases where proposals are conflicting with each other or are evidently beyond the scope of public health.

The strength of the list remains that it provides a logical and conceptually solid frame in which all indicator proposals can be accommodated, and by which the relationships between them become apparent. In addition, the imbalances reveal the areas for which information collection and indicator development is lagging behind. These can then be taken up as priorities for the further activities within the Public Health Programme, as laid down in the Annual Work Programme.

In conclusion, the ECHI long list has become, in the first place, a structured inventory of indicators and draft indicators proposed by many. From this inventory, further selections

can be made in the process towards harmonized data collection. The shortlist and also the user windows are examples of this.

7. The ECHI shortlist

The main goal of the ECHI list has always been to give guidance to harmonised data collection and presentation throughout the EU. For this purpose, the expanding long list (see above) gradually became less suitable. Therefore, the initiative was taken in 2003 to select a set of core indicators, as a subset from the comprehensive list. This so-called 'shortlist' should serve as a priority list for starting the collection and presentation of actual data and contents.

The selection of the shortlist from the long list was done by a panel of public health generalists, mostly consisting of the ECHI team, following an agreed procedure. The criteria used were:

- The indicator should be relevant from the point of view of the 'general public health official'.
- The indicator should be oriented towards the 'large public health problems', the 'large health inequalities' and the 'large possibilities for improvement', in terms of health impact and options of (cost-)effective intervention.

The availability of data was not taken as a primary selection criterion, in order to keep the innovative aspect on board. The assessment of data availability as a second step then would lead to a part of the list being ready for implementation and another part being the candidate list for further development work.

The first draft shortlist resulting from this selection round was issued in June 2003 and discussed in various Committees, and suggestions given by those were considered again by the ECHI team. By January 2005, the team released a version which it considered as final for the course of the ECHI-2 project, at the same time defining needs for further development. Further details of the procedures and subsequent evolution rounds of the shortlist are given in *Annex 7*.

The January 2005 final version of the shortlist includes 82 items, mostly defined as operational indicators. For 46 of these, data are considered relatively well available and comparable in the Member States. For 31 items, substantial developmental work is still needed because of problems with regular availability and/or comparability. Another 5 are items for which most developmental work still has to be done. The degree of data availability (assigned according to an assessment by Eurostat) is a gradual issue rather than a yes/no situation. Finally, the list has an Annex containing 32 items which have been proposed by various parties, but for which a balanced decision about inclusion has been postponed to later stages.

The list is added to this report as *Annex 6*, but given in *table 1* below in summary form. The two columns list the indicators by the degree of availability, as indicated above.

Table 1. The ECHI shortlist, divided by two grades of availability of data.

Indicator class	Regularly available, reasonably comparable	Partly available, sizeable comparability problems
Demographic and socio-economic factors	• Population by gender/age • Birth rate • Mother's age distribution (incl. teenage pregnancies) • Fertility rate • Population projections • Population by education • Population by occupation • Total unemployment • Population in poverty	
Health status	• Life expectancies • Infant mortality • Perinatal mortality • SDR Eurostat 65 causes, ages 0-64, 65+ • Drug-related deaths • HIV/AIDS incidence • Lung cancer incidence • Breast cancer incidence • (low) birth weight • Injuries road traffic • Injuries workplace • Perceived general health • Prevalence of chronic illness • Limitations of usual activities • Related health expectancies	• Smoking-related deaths • Alcohol-related deaths • Diabetes prevalence • Dementia/Alzheimer prevalence • Depression prevalence • AMI incidence • Stroke incidence • Asthma prevalence • COPD prevalence • Injuries: home/leisure, violence • Suicide attempt • General musculoskeletal pain • Limitations in physical functions • Psychological distress • Related health expectancies
Health determinants	• Regular smokers • Total alcohol consumption • Intake of fruit • Intake of vegetables • PM10 exposure	• Body mass index • Blood pressure • Pregnant women smoking • Hazardous alcohol consumption • Use of illicit drugs • Physical activity • Breastfeeding • Social support • Work-related health risks
Health interventions: health services	• Vaccination coverage children • Breast cancer screening • Cervical cancer screening • Hospital beds • Physicians employed • Nurses employed • Technologies (MRI, CT) • Hospital in-patient discharges • Hospital daycases • Daycase-discharge ratio • ALOS • GP utilisation (surveys) • Surgeries (PTCA, hip replacement, cataract) • Insurance coverage • Expenditures on health • Cancer survival rates	• Mobility of professionals • Other outpatient visits (surveys, besides GP) • Equity of access • Medicine use • Waiting times elective surgeries • Surgical wound infections • Cancer treatment quality • Diabetes control • Patient mobility
Health interventions: health promotion	• Policies against ETS exposure	• Policies on healthy nutrition • Policies/practices on lifestyles etc. • Integrated programmes in settings

An important note is that, where this is appropriate and possible, indicators should be presented by age group and gender, and also by socio-economic status and subnational region. For *age-group stratification*, it is proposed to take as a general starting point: 0-14, 15-44, 45-64, 65-84, 85+. This corresponds with the minimal recommendation included in the ICD-10, with deletion of the 1-year age cut-off and addition of the 85+ limit. Additional groups can be presented according to Eurostat standards. For some items, a more refined grouping in younger and old age will be needed. From the data side, there may be a problem of non-inclusion of certain age groups in interview surveys. For *socio-economic status*, the recommendation has been (project on monitoring of socio-economic difference in health, see *Annex 11*), on practical grounds, to stratify primarily by education and occupation, in the case of mortality data, and by education and income, in the case of interview surveys. For stratification by *subnational region*, the ISARE project has proposed regional subdivisions that would be relevant from the point of view of health responsibilities, for the EU-15 countries (ISARE-1 project, see *Annex 11*). In most countries, these subdivisions coincide with a 'NUTS'-level (territorial subdivisions for statistical use).

8. The concept of user-windows

At the start of ECHI-1, the wish was to have one list of 'core' indicators and another containing 'background' indicators. The group then considered that what could be considered as 'core', would depend a lot on one's point of view, which led to the creation of the 'user-window' concept. The principle of a 'user-window' is that it selects a *subset* of indicators from the full ECHI list, based on a particular perspective or interest. These particular perspectives can be manyfold, such as: 'health and health services for mother and child', 'health inequalities', 'cancer occurrence, prevention and care'. The subsets of indicators linked to such perspectives will normally be collected from most or all of the main groups of the ECHI hierarchy, which was made on the basis of the generalised conceptual scheme (see *paragraph 4*). The 'user-window' concept was introduced in the final report of ECHI-1 (see *Annex 1*), with a series of examples. Apart from the rather specialized examples like the ones mentioned above, there were two generalised ones: 'cockpit information', and 'EU priority list'. The first one would provide a quick overview of the overall public health situation, the second one would do the same, but more specifically towards issues selected as policy focus by the Commission. These two seem very close to the original idea of a set of core indicators. In fact, the ECHI shortlist (see *paragraph 7*) is the realisation of a user window from this perspective.

Besides the shortlist, this report proposes a series of additional user-windows. Whereas in the ECHI-1 report, the various examples given were all 'invented' behind the desk, we have now chosen the following two approaches:

1. Many HMP projects represent specific expert areas. The set of indicators recommended by these projects can be taken as a user-window to cover the area in question. The same may apply to areas covered by Working Parties under the Public Health programme.

2. For some important areas or perspectives, no project has proposed indicators, although it seems useful to create a user-window for that area. In these cases a user-window was conceived by the ECHI team.

All user windows proposed by those two approaches are given in *Annex 8*, with their sources. Each user window has been given a number. In the long list, this number is shown with each indicator. In the ICHI-2 internet application (see below), these user windows can be selected from the full list and presented separately.

9. The ICHI-2 indicator database: comparison of indicator definitions

ICHI stands for 'International Compendium of Health Indicators'. Its basic goal is to allow for an easy comparison of the indicator definitions used by international organisations. The first version of ICHI was prepared by WHO-Euro (supported by the European Commission) in the form of a book and an Access database, and was received with much enthusiasm (ICHI, 1999). It included indicators used by WHO-Europe (for the HFA database), OECD (for OECD health data) and Eurostat (for the New Cronos database).

In the frame of ECHI-2, ICHI-2 was developed as a web-based application, to allow for easier updating. It was structured according to the hierarchical grouping of indicators as applied in the ECHI list, and all ECHI indicators were included as well. A mechanism was conceived for the easy updating of the system with the annual or otherwise regular updates of WHO-Euro, OECD and Eurostat. Although recent updates were received from these organisations, the ideal way of updating still needs some development.

The rationale for building ICHI was that the development of indicators in the frame of the EU Health Monitoring Programme would take the existing sets of indicators as a starting point. So, it was meant in the first place as a supporting tool for those involved in indicator development in HMP projects. Additional users could be those engaged in collecting national data for reporting to the international databases. This would facilitate the establishment of a single national data repository for various international users, thus reducing the burden of reporting and helping to ensure that the same values for the same indicator are reported to different organisations.

The ICHI-2 application offers the following entries:

- By the ECHI taxonomy: you enter the indicator list by the classes of the ECHI taxonomy; you can choose to have all indicators within a given group or only the ones coming from one of the four lists (WHO, OECD, Eurostat, ECHI).
- Search by the individual indicator name: this gives users the possibility to search for specific indicators and their respective definitions directly.
- Select a user-window: besides the above possibilities, the application allows the user to select user-windows. All user-windows mentioned in Annex 8 have been implemented in the ICHI-2. In addition, there is the possibility to create one's own user-window.

- Hyperlink to organisations: this function provides hyperlinks to the websites of the participating organisations.

The web address of ICHI-2 is: *www.healthindicators.org*. Technical details are given in *Annex 9*.

10. Conclusions

As a follow-up of ECHI-1, the ECHI-2 project has expanded the indicator list, with input from many projects under the Health Monitoring Programme and recently the Public Health Programme. This has resulted in (1) the 'long list', which consists of an inventory of indicators structured within a robust conceptual frame, but with recognized imbalances reflecting specific areas covered by HMP projects; (2) the concept of 'user-windows' which allows for the interest-oriented selection of subsets of indicators; (3) the shortlist, which is selected as a subset from the long list for first priority implementation; and (4) a web-based application (ICHI-2, International Compendium of Health Indicators) in which the ECHI indicators are listed, with their definitions, along with the indicators used by Eurostat (rather as 'statistical indicators'), WHO-Europe (in the HFA database) and the OECD (OECD health data).

Thus, the project has served two functions: first to develop a list of items and indicators for more comparable data collection among EU Member States, and second, to act as a sort of co-ordinating momentum or 'umbrella', integrating the results of a variety of projects into a common structure.

Clearly this is not a type of activity that is finished by any sort of deadline. Policy views on what is important in Public Health change over time and may also converge within the EU. In accordance with this, data needs will change. Therefore, the development and improvement of indicator definitions is an ongoing process. For all of this, the development *and* maintenance of data collection systems is the ultimate basis.

This point needs emphasis because not infrequently policy-makers who are faced with budget shortages tend to decide rather easily on cutting down basic data collection and statistical work. These are however long-term investments which do not always show immediate results towards their short-term goals. When their successor policy-makers suddenly need the data, it may be too late.

Another danger is that indicators are too much reduced to administrative control tools, whereas they always reflect a world behind them. This means that we should use indicators merely as 'signals', and always keep the connection with the basic data, and to the possibilities to analyze *why* a certain indicator is going up or down.

All this indicates the need, at EU level, for an organized structure (center) of public health expertise employing a critical mass of experienced professionals. This center should work on interpreting, analyzing and presenting data and information, and take a lead in

the work towards improving the EU-wide health information system. The reason for having this center is that the establishment of a sustainable health information system can never be accomplished by series of two- or three-year contracts. In fact, the present European Center for Diseases Prevention and Control has realized this model for the area of communicable diseases and one possible solution could be the expansion of its role to the broad Public Health Area.

Needless to say but necessary to repeat again and again: These tasks should be performed together with, first of all, Eurostat, with WHO-Europe and OECD-health, and above all with the Member States' public health and statistical agencies. It is there where the basic work has to be carried out.

11. Follow-up of ECHI-2

First of all, the ECHI list should now be used and implemented, especially the shortlist. In terms of data presentation it should be mentioned that DG Sanco C2 is building a database application for the shortlist, using data available at Eurostat and other international data sources. The EUPHIX project (EU Public Health Information and Knowledge and Data Management System, co-ordinator Peter Achterberg, the Netherlands) will expand on this idea by building a structured information base which uses the ECHI scheme as a starting frame.

Regarding data collection, we mentioned earlier that several Member States have used ECHI as a guideline for the development of national health information systems (e.g., Italy, Hungary, Greece and others, see *Annex 3*). At the EU level, Eurostat is using ECHI in developing several areas of data collection, for instance in the area of health interview surveys, the so-called European Health Survey System. Notably in this area, the issue of the proper definition of indicators and survey questions in all EU languages, to also cover cultural differences, is a major effort in data comparability.

As the closest follow-up of the ECHI-2 project, the ECHIM/WP7 project (ECHI-Monitoring/Working Party 7 on indicators, co-ordinator Arpo Aromaa, Finland) will (1) work on the implementation of the indicators, by e.g. focusing on the actual quality of data collected and presented by the Member States, (2) continue the development of the shortlist and the long list, in the web-based ICHI application, and (3) carry the secretariat of the Working Party 7 on indicators. In this WP, together with representatives of all Working Parties under the Information Strand of the Public Health Programme (see *Annex 11*) the new results from projects concerning indicator development will be discussed and adopted for the ECHI list. At the same time, the Working Party wants to identify areas of interest where good indicators are lacking, and thus give guidance to prioritize issues in the yearly Work Programme of the Public Health Programme.

Finally, all of this should find its place in the EU Public Health Portal. In fact, the portal could use both the conceptual ECHI scheme and the concept of user-windows. As well as

other work the portal could, by its orientation towards a broad audience, be a platform for recognizing missing issues that could be picked up for indicator development.

12. List of Annexes

1. Abridged version of the ECHI-1 report of February 2001.
2. Examples and discussion of conceptual models of health.
3. From ECHI-1 to ECHI-2; procedures, meetings, dissemination of results.
4. Member State health policy issues.
5. The ECHI comprehensive list ('long list').
6. The ECHI shortlist, final version of April 30, 2005.
7. The ECHI shortlist, selection procedures.
8. List of user windows proposed.
9. Technical details of ICHI-2.
10. Reports of ECHI-2 meetings (this Annex is only available at the Europa website. In this report Annex 10 is a list of abbreviations):
    - ECHI-morbidity, october 2001.
    - 1st, 7 February 2002.
    - 2nd, 12 September 2002.
    - 3rd, 20 March, 2003, attached to HMP project co-ordinators.
    - 4th, 19-20 June, 2003, especially on the shortlist.
    - 5th, 19-20 February 2004, with HMP project co-ordinators, Working Party Leaders and Eurostat Core group Leaders.
    - 6th, 28-29 October 2004.
11. List of HMP projects used.
12. Members of the ECHI-2 team, with affiliations.

13. References

European Commission (1997). Decision No 1400/97/EC of the European Parliament and of the Council of 30 June 1997 adopting a programme of Community action on health monitoring within the framework for action in the field of public health (1997 to 2001). Official Journal of the European Communities No. L 193/1-11, 22 July 1997.

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ANNEX 1
ABRIDGED VERSION OF THE ECHI-1 REPORT

1. Why EC health indicators?
The European Commission's Health Monitoring Programme

The European Commission's Health Monitoring Programme (hereafter called HMP) was established in 1997 to take forward the enhanced public health responsibilities of the EU in the public health field. It has as its objective *'to contribute to the establishment of a Community health monitoring system'*, in order to:

1. Measure health status, its determinants and the trends therein throughout the Community;
2. Facilitate the planning, monitoring and evaluation of Community Programmes and actions; and
3. Provide Member States with appropriate health information to make comparisons and support their national health policies.

The activities under the HMP have been set out under three 'Pillars':

- Pillar A: Establishment of Community health indicators;
- Pillar B: Development of a Community-wide network for sharing health data;
- Pillar C: Analyses and reporting.

Under these pillars, projects are funded in specific areas to realise HMP's goals (see *Annex 6*).

2. The ECHI project
European Community Health Indicators

This report presents the results of a project under the HMP called 'Integrated approach to establishing European Community Health Indicators' (ECHI). As indicated by the title, the ECHI project was designed to address the core business of Pillar A. Its objective was formulated as:

'To propose a coherent set of European Community Health Indicators, meant to serve the three purposes formulated for the HMP, selected on the basis of explicit criteria, and supported by all Member States'.

The ECHI project group consisted of representatives from all MS, various international organisations and the Commission. It has defined the scope of the project as follows:

- First, to *define the areas* of data and indicators to be included in the system, following a set of explicit criteria;
- Next, to define generic indicators in these areas, again following these criteria;
- As a novel element, to imply a *high degree of flexibility* in the indicator set, by defining subsets of indicators, or 'user-windows', tuned to specific users; examples of such users are strategic planners, people involved in local health promotion actions, etc.

As to the use of the indicator list, the following was envisaged:

- To provide a guiding structure for the production of public health reports at (inter)-national or regional levels;
- To provide the logical framework for the development of the EUPHIN-HIEMS (Health Information and Exchange Monitoring System) electronic data exchange system being developed under the HMP, Pillar B;
- To identify data gaps and thereby help to indicate priorities for data collection and harmonisation, also as guidance for other projects under the HMP;
- To serve as a guiding framework for follow-up. The result of the project clearly is not a final stage and needs continuous elaboration and update. This can be taken up by the Commission's new Public Health Action Programme.

3. Which health indicators?
Prerequisites, criteria, backgrounds

Three general objectives of a European health indicator set have been defined by the HMP, i.e., *monitor trends throughout the EU, evaluate EU policies, and enable international comparisons*.

This calls for the explicit definition of a set of criteria. Thus, the indicator set should:

- *Be comprehensive,* i.e. the multi-purpose nature of the monitoring objectives require the coverage of all domains which are normally included in the public health field; in addition, the indicator set should be *coherent*, in the sense of *conceptual consistency*.
- Take account of earlier work in the area of indicator selection and definition, especially that by WHO-Europe, OECD and the Commission Services in Eurostat; thus *avoiding duplication of effort* and promoting cooperation between international organisations;
- Cover the areas in the Public Health field which Member States want to pursue *(MS policy priorities; also regions within MS may have their own health policies)*; in addition, it should meet the needs of Community Policies *(Community policy priorities)*;

In terms of the selection of indicators at the detailed level, the following prerequisites are formulated in addition:

- The actual selection and definition of indicators within a specific public health area should be *guided by scientific principles*.
- Indicators (and underlying data) should meet a number of methodological and quality criteria concerning e.g. validity, sensitivity, timeliness, etc. *(quality, validity, sensitivity and comparability)*;
- The probability of changing policy interests calls for a *high degree of flexibility*, made possible by current electronic database systems.
- Selection of indicators should be based, to start with, on existing and comparable data sets for which regular monitoring is feasible, but should also indicate *data needs and development areas*.

4. Applying the criteria

Comprehensiveness and conceptual consistency

Health is a broad issue and the eventual health indicator set should constitute a balanced collection, covering all major areas within the field of public health. Based on the HMP's Annex 2 and many other sources and considerations, the main categories of indicators were proposed as in the box below:

Box 1: Main categories for the ECHI indicator set

1 Demographic and socio-economic situation
- 1.1 Population
- 1.2 Socio-economic factors

2 Health status
- 2.1 Mortality
- 2.2 Morbidity, disease-specific
- 2.3 Generic health status
- 2.4 Composite health status measures

3 Determinants of health
- 3.1 Personal and biological factors
- 3.2 Health behaviours
- 3.3 Living and working conditions

4 Health systems
- 4.1 Prevention, health protection and health promotion
- 4.2 Health care resources
- 4.3 Health care utilisation
- 4.4 Health expenditures and financing
- 4.5 Health care quality/performance

Taking account of earlier work

As a precursor of the HMP, a study was carried out by the 'Working Party on Community Health Data and Indicators', chaired by the Danish Ministry of Health. In this study, an inventory was made of data available at WHO-Europe, The Commission and OECD. This effort was followed up by WHO-Europe (with Commission support) in 'ICHI': International Compendium of Health Indicators. In addition, the current updating of WHO's HFA 21 indicators, the 2000 version of OECD health indicators and the developments in the Commission's data collection at Eurostat have been closely taken into account.

Coverage of Member States and Community focus of interests

Member States' health policy priorities

Increasingly, EU Member States, or regions within MS, have formulated priority areas or targets for their health policies. From these sources, a short list of items appears to occur very frequently:

- Increase the number of healthy years lived, by tackling the main causes of death, ill-health and functional limitations (including physical and mental health aspects);
- Reduce health inequalities, by means of health policies but also by social policies;
- Improve effective health promotion and disease prevention especially aiming at lifestyle and at young people;
- Improve the quality and accessibility of care, including community care;
- Improve the quality of life and participation of the elderly.

Besides national governments, sub-national (regional) authorities very often have responsabilities as well as explicit policies in health.

Meeting the needs of Community Policies

In the first EU 'Framework for action in the field of Public Health' (1993), eight action programmes were proposed (AIDS and other communicable diseases, cancer, drug dependence, pollution-related diseases, injuries, rare diseases, the Health Promotion Programme and the Health Monitoring Programme). Recently, a new Programme of Community Action in the Field of Public Health has been proposed. Basically, three 'strands' of action have been addressed:

- Improving health information and knowledge;
- Responding rapidly to health threats;
- Addressing health determinants.

Another source is the publication 'Priorities for public health action in the European Union', which states the following Community priorities: Social gradients, alcohol, illicit drugs, tobacco, health surveillance, quality of health care, mental health, environment and food/nutrition.

Scientific principles and quality aspects

In working out the indicator selection, quantitative principles such as the size of a health problem, its total costs, or the degree of preventability of the problem have served as criteria. This particularly applies to the selection of cause-specific mortality, of disease-specific morbidity, and to the selection of indicators in the area of health determinants.

It is evident that in the actual operational definitions of the indicators, we should meet certain quality criteria. In the Danish Ministry of Health Study, nine such criteria were formulated. In short, an indicator should measure what we think it measures (validity), be sensitive to changes over time or by place, be comparable between countries or regions, to mention the three most important aspects.

Flexibility and the continuous improvement of indicators and data collection

Basically, flexibility means that a system of data and indicators should never be fixed, and is never final. Policy interests change, scientific views and electronic tools evolve, with associated shifts in data collection activities.

Many indicators currently in use reflect the availability of more or less comparable data sources. In some areas, however, data are not readily available in many Member States,

even though the need for fully comparable information is strongly felt. These areas deserve extra efforts in R&D. They include, a.o. (not exhaustive):

- Disease-specific morbidity at population level.
- Integrated measurement of generic health status (functional limitations, health-related quality of life, composite health measures).
- Health inequalities.
- Determinants of mental health, social determinants of health.
- Increased comparability of health care data.
- Indicators of the performance of health (care) systems.

Below we will address another aspect of flexibility.

5. Flexible approach to indicators: User-windows.

Applying the above criteria has resulted in a quite extensive indicator list. Yet, it is limited for each of the areas covered. It is anticipated that the system will be used by many different users, for many different purposes. This may require specific subsets from the total array of indicators. These subsets are named *'user-windows'*. Technically, a modern database systems (like HIEMS) should allow this sort of use. Specific user perspectives could be: (i) areas of health policy interest; (ii) thematic entries such as age groups, (iii) disease groups with their determinants and costs, etc. Examples are:

- *Cockpit information;* to have a quick view on the major trends in public health, including recent relevant signals, for medium or long-term policy strategies;
- EU priority list; to follow developments for specific EU policy areas or targets, programmes or projects; this user-window can be shaped as a guide or tool for EU action;
- *The WHO/HFA21 indicator set;* to follow this list of indicators for the countries of the EU;
- *Health and services for mother and child;* to focus on reproductive health, health of children and family structure.

Three of these examples have been implemented, by way of illustration, in *Section 8*. More examples have been mentioned in the full report.

The user-window concept is a more flexible approach of the original idea of 'core indicators'. Yet, policy development as well as focusing R&D activities need the formulation of priorities. We may in fact move in two divergent directions simultaneously:

(1) Choose a user-window named 'EU-priority list' as a set of 'core indicators', to focus on a *limited set of issues* thought the most important in EU public health policy and therefore as a priority focus for work on data harmonisation;
(2) At the other extreme, consider the entire 'multi-purpose' indicator set or whatever user-window not as a fixed entity as such, but mainly as a reflection of data collection activities. This implies that we are defining comparable data sources rather than indicators.

6. Future implementation, use and maintenance of EC health indicators

Thinking of the appropriate follow-up for this project, we may quote the newly proposed EU Public Health Action Programme now under discussion, stating (version of May 15, 2000): *'…. a comprehensive health information system …., based on the establishment of* ***agreed Community-wide indicators*** *for health status …. health determinants …. interventions …. costs ….'*. These quotations provide the grounds for the further development and future use of the indicator list proposed in this report.

The presently proposed indicator list (see *paragraph 7* and the full report) is by no means definitive. It sets a framework for further development, for a consistent arrangement of databases and for focusing further work, but much of its implementation and preparation for actual use still has to follow.

For this follow-up, we envisage that projects under the HMP and related initiatives should work together on the operationalisation and harmonisation of selected indicators. More important is what lays behind: the collection of the underlying data in a comparable manner, i.e. the definition of comparable data sources and data collection methods. All this work should be co-ordinated closely with the Commission's Services at Eurostat, with WHO/Europe and OECD. In order to support this process further, the ECHI project group has submitted a proposal to the HMP to continue the work on an EU Health Indicator list for another two years.

For the longer term, the maintenance of a system of indicators and data on health requires an infrastructure which has continuity and expertise. The new Public Health Action Programme mentions the 'development of a Community network to undertake analysis and reporting' (page 33). This idea has recently been endorsed by the European Parliament, although there is still much debate on this issue. In fact, it seems mandatory to think of a centralised, or at any rate co-ordinated body or facility with responsibility for the overall field of data collection prioritisation, data evaluation, analysis and reporting. This facility should have professional expertise and authority, but at the same time be a light and flexible structure. It should develop an agenda determined by the needs of the Commission and the Member States.

7. The proposed list of EC health indicators;

This list gives the *generic* names of the indicators. Part II of this report gives more details such as comments on age/gender/SES/etc. stratification, on similarities with existing indicators, possible data sources, or specific problems. It also addresses possible operationalisation.

Class 1. Demography and Socio-economic situation

These indicators provide a general picture of the situation in a country or region, and a frame of reference for many of the other health indicators. Moreover, the population data provide e.g. the denominator for calculating many other indicators.

1.1 Population

- Total population
- Median age of population
- % of population under 15 of age
- % of population age 65 and over
- Live births
- Aged mothers, teenage mothers
- Crude birth rate
- Total deaths
- Crude death rate
- Net migration
- Total fertility rate
- Annual in(de-)crease %
- Population by region
- Population by urbanisation level
- Population projections

1.2 Socio-economic factors

- Education attainment
- Education enrolment
- Literacy rate
- Population by employment type
- Population by occupational class
- Total labour force
- Total employment
- Total unemployment
- Population by ethnicity
- Population by household situation
- Population by income level/income distribution
- Gross Domestic Product (GDP)
- GDP Purchasing power parity

Class 2. Health Status

This section contains indicators on various aspects of the actual health situation of the population. Disease groups have been selected because of their substantial share in the total burden of ill-health or because of their reference to known risk factors or to identified activities in prevention and health care (e.g. avoidable mortality). In this context we have not used the term 'Health outcomes'. We prefer to reserve this term for situations where a clear link can be made to an intervention.

2.1 Mortality

2.1.1 Life expectancy & related indicators
- Life expectancy
- Chance of dying in age intervals

2.1.2 General mortality
- Crude death rate
- Standardised death rate
- Infant mortality
- Neonatal mortality
- Postneonatal mortality
- Perinatal mortality
- Inequality in deaths

2.1.3 Cause-specific mortality
- Numbers of deaths
- Crude death rates
- Standardised death rate
- Years of life lost (PYLL)
- PYLL fraction

Which causes of death (COD) to include? We propose (a) the 'main causes of death', in terms of size, using the European shortlist of 65 causes; and (b) a limited set of COD selected as relevant for certain risk factors or issues of prevention or health care.

2.2 Morbidity, disease-specific

- Incidence/prevalence of selected diseases/disorders

Which diseases/disorders should be selected for the indicator list? Getting comparable data on population incidence or prevalence of diseases/disorders is an important development area. Analogous to 'mortality', we propose (a) diseases that are responsible for a large share of the burden of ill health (large impact) in the population (based on Burden of Disease studies and WHO HFA list), and (2) a limited set of diseases selected as relevant for certain risk factors or issues of prevention and health care. Disease definitions should coincide with the causes of death, were applicable.

(a) Diseases/disorders of large impact
- HIV/AIDS
- Tuberculosis

- Sexually transmitted diseases
- All cancers
- Lung etc. cancer
- Breast cancer
- Cervix uteri cancer
- Colorectal cancer
- Prostate cancer
- Melanoma and other skin cancer
- Diabetes
- Dementia/Alzheimer
- Depression
- Generalised anxiety disorder
- Alcohol-related disorders
- Ischaemic heart disease
- Acute myocardial infarction
- Heart failure
- Cerebrovascular accident
- COPD (Chronic obstructive pulmonary disease)
- Asthma
- Decayed etc. teeth: DMF-12
- Musculoskeletal disorders
- Congenital anomalies
- Down's syndrome
- Road traffic injuries
- Occupational injuries
- Home/leisure injuries

(b) Diseases selected for other reasons
- Communicable diseases in vaccination schemes
- Water- and foodborne diseases
- Alcohol-related traffic accidents
- Occupational disease
- Creutzfeld-Jacob disease

2.3 Generic health status

- Perceived health
- Chronic disease general
- Functional limitations
- Activity limitations
- Global activity limitations indicator
- Short-term activity restrictions
- General mental health
- General quality of life
- Absenteeism from work
- Appropriate inequality measure

2.4 Composite measures of health status

- Disability free life expectancy
- Other health expectancies

Class 3. Determinants of health

This group contains all factors determining health, outside the health care system. It includes (i) the 'personal and biological factors'; (ii) health behaviours (lifestyle factors) and (iii) living and working conditions, more to be viewed as the wider environment. For all these categories of determinants, selection criteria have been: their importance in determining a substantial share of (ill-)health; the degree to which they can be influenced, and the cost-effectiveness of the interventions involved.

3.1 Personal and biological factors

3.1.1 Biological (risk) factors
- Body mass index
- Low birth weight
- Blood pressure
- Serum cholesterol
- Nutritional status indicators

3.1.2 Personal conditions
- Coping ability
- Sense of mastery
- Optimism
- Knowledge/attitudes on health issues

3.2 Health behaviours

3.2.1 Substance use
- Regular smoking
- Smoking in pregnant women
- Former smoking
- Amount smoked
- Alcohol use: non-drinkers
- Alcohol use pattern
- Total alcohol consumption
- (Il)licit drug use
- Road traffic accidents involving alcohol

3.2.2 Nutrition
- Energy from food
- % energy from fat
- % energy from sat. fatty acids
- % energy from protein
- Consumption of bread/cereals
- Consumption of fruit excl. juice
- Consumption of vegetables excl. potatoes
- Consumption of fish
- Consumption of micronutrients
- Breastfeeding
- Contaminants

3.2.3 Other health-related behaviours
- Physical activity
- Sexual behaviour
- Induced abortions
- Traffic behaviour
- Other health promotion behaviours?

3.3 Living and Working conditions

3.3.1 Physical environment
- Outdoor air
- Housing
- Drinking water supply
- Sewage system
- Ionising radiation
- Noise

3.3.2 Working conditions
- Physical workplace exposures
- Mental workplace exposures
- Accidents related to work
- Occupational diseases

3.3.3 Social & cultural environment
- Social support
- Social isolation/networks
- Life events
- Violence

Class 4. Health systems

This group includes indicators on the health services system, as well as on prevention and health promotion. In some areas indicator definition is tentative only.

4.1 Prevention, health protection and health promotion

4.1.1 Disease prevention
- Vaccination coverage
- Screening for breast cancer
- Screening for uterus/cervix cancer
- Screening for blood pressure/ cholesterol levels
- Prenatal screening
- Neonatal screening
- General preventive examination
- Integrated children's health monitoring

4.1.2 Health promotion
- Campaigns on health behaviours
- Mental health promotion

4.1.3 Health protection
- Regulations on public smoking
- Advertising restrictions
- Average price of cigarettes
- Regulations on alcohol and driving
- Regulation on seat belts, cycle helmets
- Regulations on food safety and quality
- Regulations on air/water quality

4.2 Health care resources

4.2.1 Facilities
- Hospital beds total
- Hospital beds acute care
- Hospital beds private in-patient
- Psychiatric care beds
- Nursing/elderly home care beds

4.2.2 Manpower
- Health services employment
- Physicians employed
- Nurses employed
- Midwives employed
- Dentists employed
- Pharmacists
- Paramedical professions
- Hospital staff ratio: acute care
- Nurses staff ratio: acute care

4.2.3 Education
- Number of physicians graduated
- Number of nurses and midwives graduated
- Number of pharmacists graduated
- Number of dentists graduated

4.2.4 Technology
- No. of units of specified equipment

4.3 Health care utilisation

4.3.1 In-patient care utilisation
- Beddays: in-patient/acute care
- Occupancy rate: in-patient/acute care
- Average length of stay: in-patient/acute care
- Discharges; total, by disease group

4.3.2 Out-patient care utilisation
- Out-patient contacts

4.3.3 Surgical operations
- CABG (Coronary Artery Bypass Grafting)
- PTCA (Percutaneous Transluminal Coronary Angioplasty)
- Hip replacement
- Knee replacement
- Cataract operation
- Caesarean section
- Others?

4.3.4 Medicine use/medical aids?
- Medicine use total
- Use of specific groups of medicines
- Peptic ulcer drugs
- Diabetes drugs
- Cholesterol/triglyceride reducers
- Cardiac glycosides
- Anti-arrhythmics
- Antihypertensives
- Diuretics
- Beta blocking agents
- Systemic antibacterials
- Analgesics
- Benzodiazepine derivatives
- Psychoanaleptics
- Antiasthmatics
- Use of medical aids

4.4 Health expenditures/financing

4.4.1 Health care system
- Key indicators for the structure/financing of the national health care system
- Insurance coverage
- Distribution of household expenditures on health

4.4.2 National expenditure on health
- Total/public/private expenditure on health
- Total/public/private expenditure on personal health
- Total/public/private expenditure on collective health

4.4.3 Expenditure on medical services
- Expenditure on in-patient care (total/public/private)
- Expenditure on out-patient care (total/public/private)
- Expenditure on ancillary services (total/public/private)
- Expenditure on home care services (total/public/private)

4.4.4 Medical goods dispensed to out--patients
- Expenditure on pharmaceutical goods and other medical non-durables
- Expenditure on medical appliances/other durables

4.4.5 Total health expenditure by age group
- Expenditure (%) 0-64 (m/f)
- Expenditure (%) 65-74 (m/f)
- Expenditure (%) 75+ (m/f)

4.4.6 Health expenditure by fund source
- By government/ social security/ own pocket, etc.

4.5 Health care quality/performance

4.5.1 Subjective indicators
- Perception of the health system
- Complaints

4.5.2 Health care process indicators
- Autopsy rate
- Waiting lists/times
- Number of surgeries-/interventions considered inappropriate
- Variations in numbers of specific surgeries/interventions
- Quality of blood products; amount of blood transfused

4.5.3 Health outcomes
- Avoidable Deaths
- Iatrogenic disease/death
- 30-days in-hospital mortality
- 28-day readmission rate
- Surgical wound infection
- Incidence of end-stage renal failure per 1000 diabetics
- Nosocomial Infections
- Antibiotic Resistance
- Cancer survival rates

8. Examples of user-windows

Example: 'Cockpit information'

The major purpose of this user-window would be the ability to get a quick glance of the overall situation in the Community and the MS, with reference to medium- and long-term policy strategies. It could include alerts for issues likely to influence these strategies. This user-window requires a limited though comprehensive set of general indicators, covering all aspects of public health. It might also present a basic set for comparison with countries outside the EU (accession countries, other OECD countries, etc.). A proposal is presented below:

- Population distribution
- Education attainment
- Unemployment
- Income variation
- Life expectancy at birth and age 65
- Infant mortality
- Selected health expectancy
- Body Mass Index, by SES
- Smoking prevalence
- Consumption of fruit/vegetables
- Housing
- Vaccination coverage

- Cardiovascular mortality
- Mortality by external causes
- Perceived health, by SES
- General quality of life measure, by SES
- Physicians per inhabitant
- Health expenditures as % of GDP
- Use of pharmaceuticals

Example: 'EU priority list'

This user-window is designed to follow developments for specific EU policy areas or targets. As it arises from the new EU policy, priority areas include: better information; reaction to threats; relevant determinants; health impact assessment (agriculture, transport, SES). Based on this, the present subset could be a mix of examples 2, and 4, with a few additions on communicable diseases. We propose:

- Fertility rate
- Population by urbanisation
- Education: attainment
- Unemployment
- Employment by ISCO class
- Income disparity
- GDP PPP
- Life expectancy
- Inequality in deaths, by a few main causes
- Injuries/deaths from road traffic accidents
- Occupational injuries/deaths
- Home/leisure injuries/deaths
- Perceived health by SES
- Absenteeism from work
- Body Mass Index
- Smoking prevalence
- Alcohol use
- Drug use
- Nutrition: energy from fat/protein
- Nutrition: consumption of bread/cereals; vegetables/fruit
- Physical exercise
- Housing
- Drinking water supply
- Sewage system
- Outdoor air quality
- Noise
- Emotional support
- Violence
- Occupational diseases
- Vaccination coverage
- Screening programmes
- Medicine use
- Health insurance coverage

Example: : 'Health and Services for Mother and child'

This subset, presented below, would serve the purpose of focusing on reproductive health, health of children, on the family situation, and on activities that relate to prevention and health services for children. Again we have not looked at the availability or operationalisation of these indicators.

- Median age of population
- Population under 5, 18
- Aged mothers/teenage pregnancies
- Mean age at delivery (from live births by age of mother)
- Crude birth rate
- Chance of death in ages 0-5-14
- Selected communicable diseases (incidence, mortality)
- Congenital disorders, incl. mental handicap (incidence, mortality)
- Incidence of asthma in children (other?)

- Total fertility rate
- Education enrolment
- Female employment (from total)
- Population by household situation
- Infant/neonatal/postneonatal mortality
- Perinatal mortality
- Life events
- Housing
- Vaccination coverage
- Perinatal/neonatal screening
- Low birth weight
- Smoking in pregnant women
- Breastfeeding
- Sexual behaviour
- Induced abortions
- Social support/networks
- Integral children's health monitoring
- No. of midwives/specialised nurses
- Caesarean sections
- 30-days in-hospital mortality below 1 year of age

ANNEX 2
EXAMPLES AND DISCUSSION OF CONCEPTUAL MODELS OF HEALTH

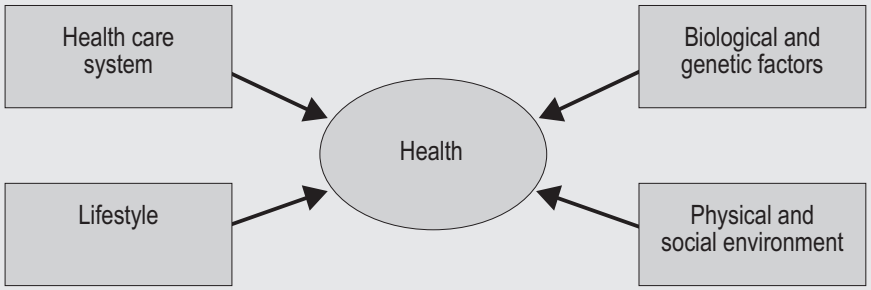

Figure 1. Basic health field model, after Lalonde (1974).

During the first phase of ECHI-1, many discussions were held on concepts of health, health determinants and health policies, since these should be at the basis of the arrangement of indicators. This resulted in the four classes and further (sub-)group divisions as shown in the main text, *paragraph 4, box 1*. Of these discussions and the underlying documents, very little was documented in the ECHI-1 final report. This led to the situation that the conceptual background which was actually there was not recognised by many readers.

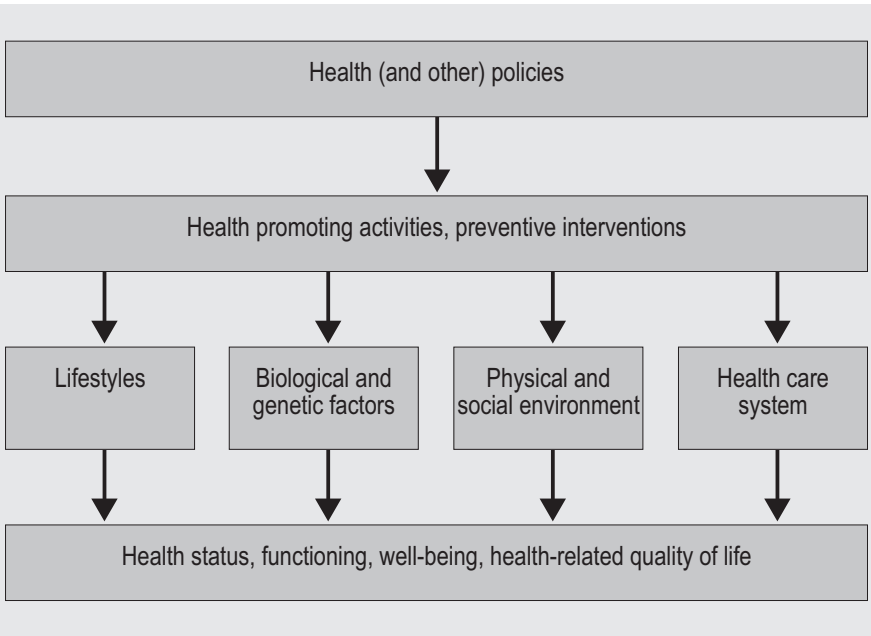

Figure 2. The basic health field model transformed to show the simplified causal chain.

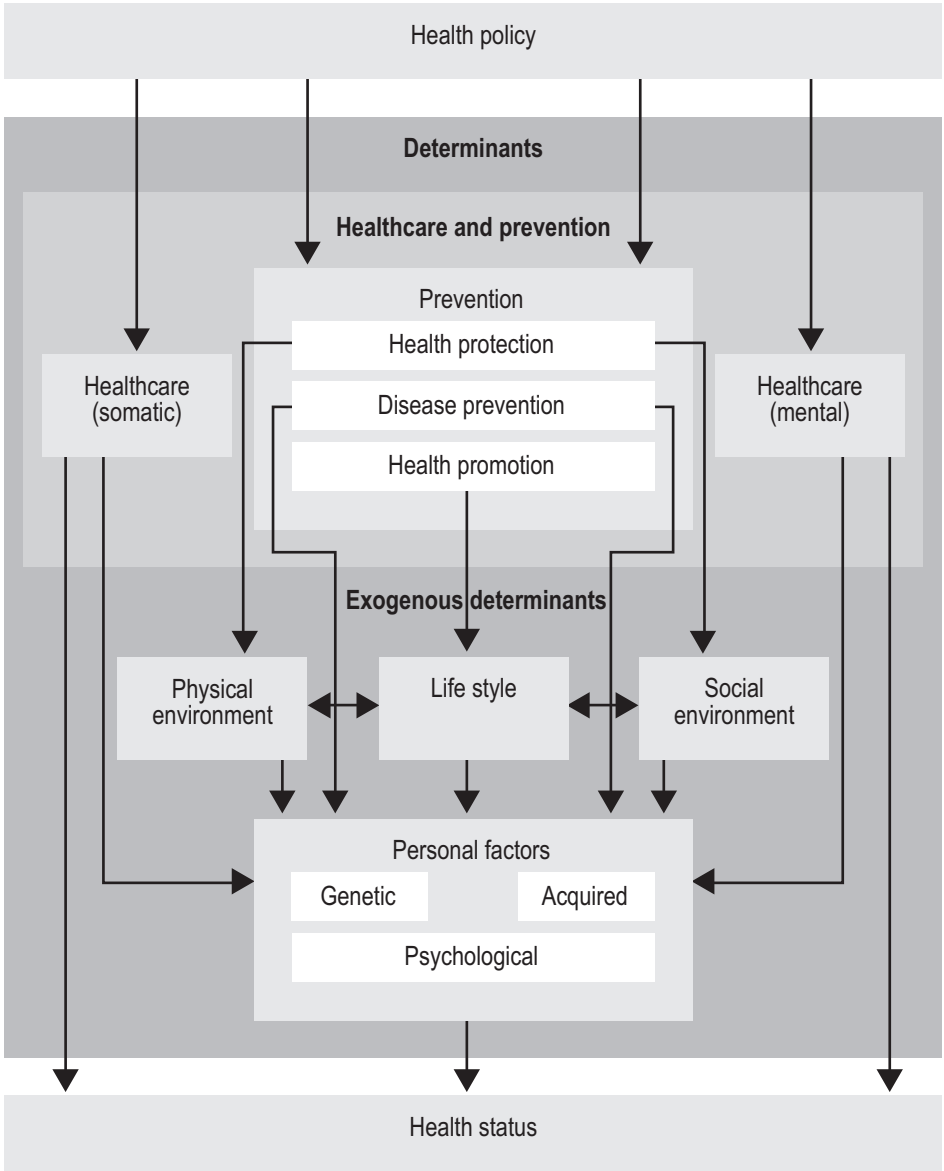

Figure 3. Elaboration of the health field model in the Dutch PHSF report (Van Oers, 2003)

The basis for the discussions in the ECHI-1 team was the Canadian model of Marc Lalonde (Lalonde, 1974), as it is shown in *figure 1* (also shown in the main text, *paragraph 4*), and a refinement of this model, as used in the Dutch public health reports of 1998 and 2003 (*figure 3*; the *figure 2* which is also shown in the main text, *paragraph 4*, is a simplified version of this). One of the refinements is the concept that a person is healthy as long as he/she can cope with the set of external influences he/she is exposed to. These influences can be physical (e.g. air pollution, noise) as well as mental (hostile social surroundings). In Lalonde's terms this comes down to an equilibrium between 'biological/genetic factors'

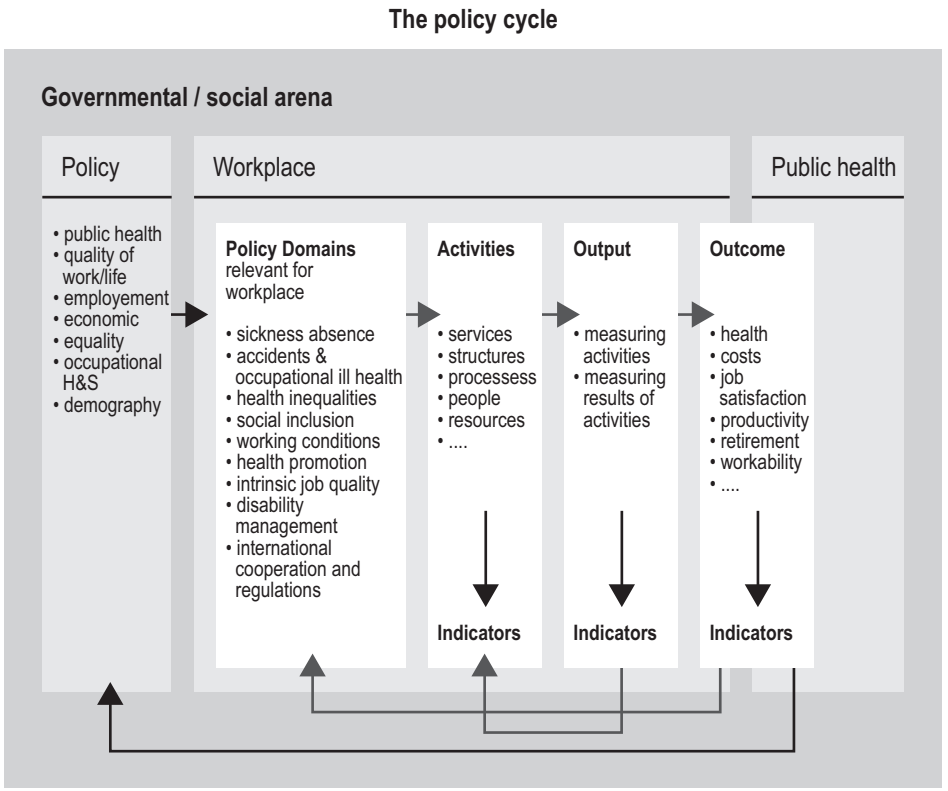

Figure 4. The policy cycle model of the Workhealth project

versus 'environment'. In this view, lifestyle is intermediate: it is a source of certain exposures, but can also be an expression of coping behaviour. The consequences are that the four determinant groups shown in *figure 1*, are not strictly of equal level.

This applies also to the determinant 'health care system'. The models shown in *figures 2 and 3* make a distinction between the determinants, on the one hand, and the health-promoting and prevention activities acting on them. In this way of presentation, the health care system is a health-promoting activity, but at the same time it works in most cases directly on the sick person, i.e. on health status, and not via one of the other health determinant classes.

Several HMP projects went into the exercise of producing conceptual models of health. Examples are the policy cycle model developed by the Workhealth project (Kreis & Boedeker, 2004; *figure 4*) and by the EUHPID project on health promotion indicators (Davies et al., 2004; *figure 5*). On close inspection, these models are much more similar than they look like. In the Workhealth model, for example, the orientation from activities to health is now directed from left to right. Differences with the other examples arise because besides health other endpoints have been chosen as relevant, such as productivity and costs, which are not primarily health-related.

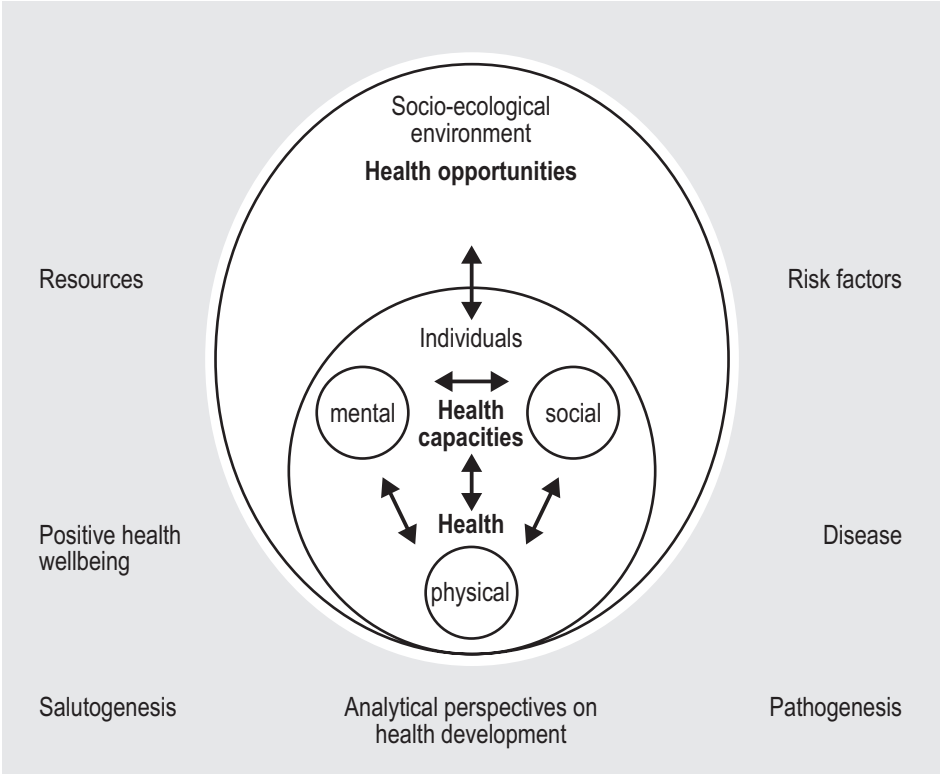

Figure 5. The health development model of the EUHPID project

It should be pointed out that many HMP projects have made efforts to fit their indicator proposals into the ECHI framework. Although it was acknowledged that different types of models could serve the purpose, they indeed succeeded to introduce all indicators they considered important.

The EUHPID model again looks very different, but has many similarities to *figures 2* and *3*. Health is explicitly worded in its positive (left) and negative (right) notions. The concept of 'health capacities' turns out to be very close to the 'personal factors' of figures 2 and 3, whereas the resources, risk factors and 'health opportunities' represent the other groups of health determinants. It is also crucial to this model that health is viewed as a dynamic process ('health development') like in the Dutch model described above. In *figure 6*, the correspondences between the ECHI scheme, as based on *figures 2* and *3*, and the EUHPID scheme has been specified, emphasizing again the similarities which exist in spite of the different terminologies (partly based on schemes from the EUHPID report which are not shown here). One important conclusion from the discussion with the EUHPID team was that there is a substantial lack of good data and indicators on the functioning and effectiveness of health promotion activities.

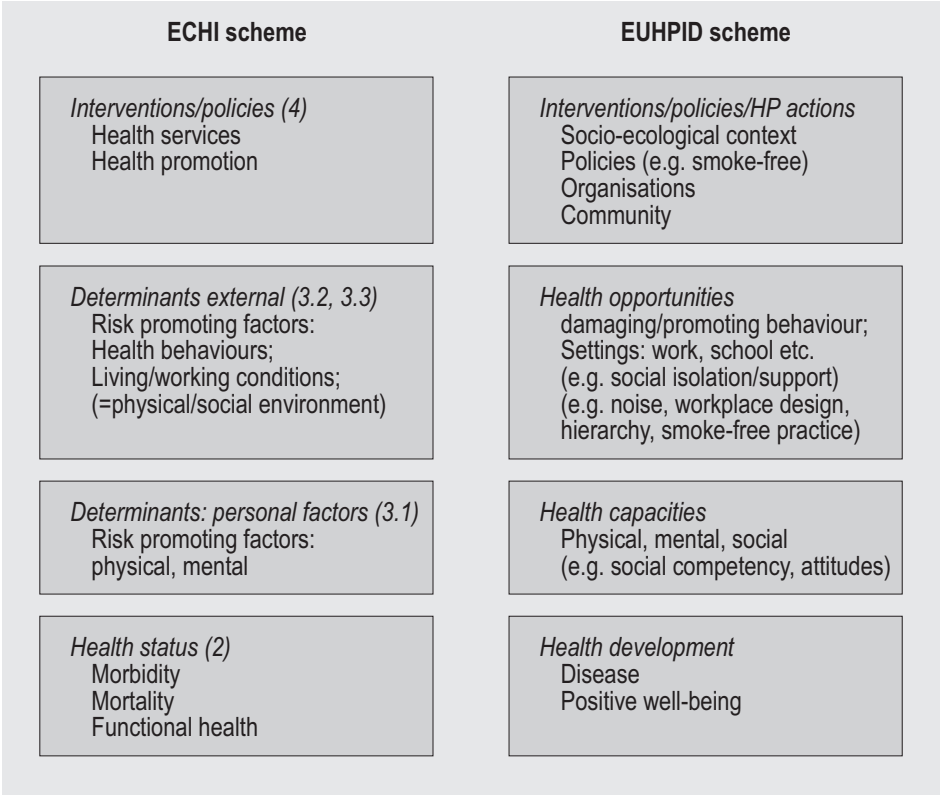

Figure 6. Correspondances between the ECHI and EUHPID conceptual models

Many recent models are centered around the term 'performance'. Schematically, there are two variants. The first, broad one deals with 'health (system) performance'. It basically covers all aspects that produce health, and therefore is quite similar to the model discussed earlier. The second variant rather focuses on the specific goals of the health services system and should be characterized as 'health care system performance'. This type of model includes, apart from producing health, issues like 'responsiveness' (responding to the citizen's justified expectations) and financial aspects, often covered by the term 'sustainability', which is the ability to sustain the system financially in the long run.

One example of a mix of these two variants is the recent Canadian 'Health indicators framework' (CIHI/Statistics Canada, 1999), shown in *figure 7*. On the one hand, it is *figures 2* and *3* upside down, with the living/working conditions and the environment split up. On the other hand, the bottom part with its specification of goals makes it at the same a model for health care system performance. It should be noted that in this model, preventive and health promotion activities are not explicitly mentioned. This is perhaps an expression of its hybrid character, trying to be a general health model as well as a system performance framework.

Health Status			
Health Conditions	**Human Function**	**Well-Being**	**Deaths**
Alterations of health status, which may be a disease, disorder, injury or trauma, or reflect other health-related states	Alterations to body functions/structures (impairment), activities (activity limitation), and participation (restrictions in participation)	Broad measures of physical/mental/social well-being of individuals	Age or condition-specific mortality rates and other sderived indicators
Non-medical Determinants of Health			
Health Behaviours	**Living and Working Conditions**	**Personal Resources**	**Environmental factors**
Aspects of personal behaviour and risk factors that influence health status	Socio-economic characteristics and working conditions of population that are related to health	Measures the prevalence of factors, such as social support and life stress, that are related to health	Environmental factors that can influence health
Health System Performance			
Acceptability	**Accessibility**	**Appropriateness**	**Competence**
Care/service provided meets expectations of client, community, providers and paying organizations	Ability of clients/patients to obtain care/service at the right place and right time, based on needs	Care/service provided is relevant to client/patient needs and based on established standards	Individual's knowledge/ skills are appropriate to care/service provided
Continuity	**Effectiveness**	**Efficiency**	**Safety**
Ability to provide uninterrupted, coordinated care/service across programs, practitioners, organizations, and levels of care/service over time	Care/service, intervention or action achieves desired results	Achieving desired results with most cost-effective use of resources	Potential risks of an intervention or the environment are avoided or minimized
Community and Health System Characteristics			
Characteristics of the community or the health system that, while not indicators of health status or health system performance in themselves, provide useful contextual information.			

Figure 7. Canadian Health Indicators Framework.

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ANNEX 3
FROM ECHI-1 TO ECHI-2: PROCEDURES, MEETINGS, DISSEMINATION OF RESULTS

1. Activities after ECHI-1

The ECHI-1 project was carried out in the frame of the Health Monitoring Programme (hereafter: HMP) and produced its final report by February 15, 2001. The main result was a list of 'indicators' for the public health field, arranged according to a conceptual view on health and health determinants. In the report, many 'indicators' still were not covered by a clear-cut definition, but were rather 'topics' for which a need of information had appeared. It was concluded that indicator development is an ongoing process, never ending in a 'final solution'. For the criteria applied in the selection of the indicators (derived from the goals of the HMP itself), see the main text, *paragraph 5*, and *Annex 1*.

Besides the list, the concept of 'User-windows' was devised. This means that from the overall set of indicators which is arranged following the standard conceptual frame, subsets of indicators can be defined from the viewpoint of specific interests. The ECHI-1 report has given examples of these *(Annex 1)*.

The indicator list and its underlying structure were taken up by the Commission Services at DG Sanco, unit C2 (hereafter called: Sanco) as a valuable frame of reference for much of the work within the Health Monitoring Programme and its projects, in spite of the fact that quite a few elements were not yet worked out in a satisfactory way. During 2001 and 2002, many of the HMP project reports produced recommendations of indicators, quite often following the ECHI frame. In many cases this involved discussions between the respective projects and the ECHI-1 project co-ordinator, which continued after the ECHI-1 project had formally finished.

On several occasions, the results of ECHI-1 were presented and discussed. Presentations by the project co-ordinator included:

- October 2000: Ottawa conference on measuring health status, organised by UN-ECE and WHO-Geneva.
- November 2000: Eurostat Working Group on Public Health Statistics. This led to the proposal by Eurostat to start using the ECHI list for prioritising Eurostat work, in spite of its unofficial status.
- November 2000, February 2001, October 2001, February 2002: meetings of HMP project co-ordinators; discussions on the match and uptake of HMP project results to the ECHI frame. During this period, there was increasing commitment of the HMP project co-ordinators with the indicator development by the ensemble of projects as an important part in the realisation of the HMP goals.
- April 2001: Eurostat workshop on Health Interview Survey topics. ECHI was used here as a 'proxy' for the information needs.

- December 2001: EUPHA (European Public Health Association) conference, Brussels, in the frame of a workshop on HMP projects.
- January 2002: meeting in Brussels on Disability Measurement.

2. Preparation of the second phase of ECHI; objectives of ECHI-2

At the last meeting of ECHI-1 of October 2000 in Athens, the team agreed to submit a proposal for a second phase, as many felt the work should be carried on and much of the ongoing work of the HMP projects then could be incorporated. The goals of this second phase were the following (slightly different from the original wording and arrangement):

1. The further development of the indicator list established by the ECHI-1 project, by implementing the results of forthcoming HMP projects and other relevant sources;
2. the further implementation of the 'user-window' concept, i.e. the establishment of interest-oriented subsets of indicators;
3. the establishment of a shortlist of indicators for priority implementation and presentation of actual data (this goal became prominent in 2003);
4. the building of a web-based application for the comparable presentation of the definitions of ECHI indicators and indicators used by Eurostat, WHO-Europe and OECD, as a follow-up of WHO-Europe's ICHI (International Compendium of Health Indicators);
5. promoting the use of the ECHI frame as a common conceptual structure for the work on public health information both in the EU context and in the Member States.

These goals were elaborated as follows:

1. This first goal covers the communication with the HMP projects, other international initiatives such as WHO-EuroHIS, the System of Health Accounts, etc., and the inclusion of their results in the ECHI list. There was a need to improve the rationale on why certain indicators are included or not. The intention was to improve the list not only by adding appropriate indicator definitions but also on the point of including preferred data source types.
2. The second goal would imply the further definition and development of a series of user-windows, including the technical aspect of applying these in information systems.
3. The establishment of the shortlist was made explicit as a separate goal in 2003, because of the strong wish at DG Sanco to have a concise indicator list to start the implementation.
4. As the implementation of this fourth goal it was foreseen to develop a web-based application for the comparative presentation of all health indicators used by the international organisations WHO-Europe, OECD and Eurostat, with their definitions.
5. Under this fifth goal, the view was to use the ECHI conceptual frame for further indicator development by projects, but also for structuring activities under the new EU public health programme. This would include the arrangement of the Working

Parties, the structure of data information systems and the contents structure of health reports. Towards the Member States, the goal implied the feedback of ECHI-1 results to national authorities and the update of current health policy priorities as a source of topics that should be covered in the indicator list.

At the beginning of the project, comments were made on the high ambitions and expectations from the project. Questions concerned the status of the project as an umbrella of all HMP projects, the role of the HMP project co-ordinators in the further process, and the intentions of the Commission to give the list a formal status. It was also said that an expanding indicator list would create the need of an abbreviated core list (see goal no. 3), and that the process should move forward to actual use in terms of data collection. It was agreed however, that actual data collection was not among the goals of ECHI-2.

3. Working procedures in ECHI-2

The ECHI team constituted the core of the process. The team included experts from all 15 EU Member States plus Norway and Hungary, from WHO-Euro and (observer status) from OECD. The team had seven meetings. *Annex 10* gives the reports of all meetings. The main issues covered by the meetings are summarized below. For the main contractor, the RIVM in Bilthoven, the Netherlands, Pieter Kramers served as the project co-ordinator. He took care of the preparation of meetings and documents and the updating of indicator lists. He maintained the communication with DG Sanco and with many of the HMP project co-ordinators. He was assisted by Peter Achterberg and Eveline van der Wilk for parts of the work, and especially by Rutger Nugteren, who was responsible for developing the ICHI-2 web application for the inventory of indicators used by international organisations.

In addition to the ECHI team, there was a steady and strong involvement of quite a few HMP project co-ordinators. This involvement was reflected by their explicit participation in three of the seven meetings: the ECHI-morbidity meeting, the 3rd and the 5th meetings. In this way, the important role of the other projects in the ECHI work was emphasized, and the communication between the ECHI team and the other projects maximized. Another expression of the role of the HMP projects were the numerous bilateral contacts of the ECHI co-ordinator with individual HMP project co-ordinators, notably on the manner in which the project's recommendations were to be implemented in ECHI.

Contacts of the ECHI co-ordinator with the project officer at Sanco in Luxemburg were numerous as well. Because of the central role of ECHI in the frame of the HMP and PHP work, all meetings were held in Luxemburg in order to allow Sanco officers to participate. The contacts were especially close in the process of developing the shortlist, which was a very explicit wish of Sanco C2. After the first phase of developing the shortlist (March-June 2003), these contacts involved the presentation and discussion of the shortlist in several meetings within the frame of the Public Health Programme's strand 1.

These included meetings of the NCA (Network of Competent Authorities), the NWPL (Network of Working Party Leaders) and of all the separate Working Parties (Mortality/morbidity, Mental health, Health systems, Lifestyles, Accidents/injuries, Environment/Health). The discussions in these meetings were important in the finalization of the shortlist. Another important input were the (preliminary) assessments by Eurostat of the availability of data connected with the selected indicators. In fact, the results of all these discussions were fed back into the ECHI team and led to the establishment of the 'final ECHI-2 version'. This version is given as *Annex 6* to this report. All details on the agreed procedures of selecting the shortlist are given in *Annex 7*.

Beyond the work in the HMP and PHP projects, several other international activities involved in indicator development were taken into account in developing ECHI. These include: the 'Structural indicators' developed by Eurostat, the Health Care Quality indicators developed by OECD, the indicators developed under the Environmental Health Programme, and recently the SHA-Minimal Data Set project sponsored by Eurostat as well as the indicators on health and long term care developed under the DG Employment's Social Protection Committee. Fortunately, there is a lot of commitment to avoid double work and to match the various activities, but indeed this requires continuous attention.

4. ECHI-2 meetings

Annex 10 gives the full reports of the seven meetings arranged under the ECHI-2 project. Below, we give the core issues covered in each of the meetings:

- *ECHI-morbidity, October 2001:* The focus was on disease-specific morbidity. This information can be derived from a variety of primary sources. HMP projects deal with either a disease (group) or a particular data source. The central question was how to implement the matrix in which for every disease the preferred data source is identified, from the point of view of population disease burden.
- *1st meeting, February 2002:* Review of activities and increasing focus on ECHI during the past year. Review of new HMP project results. Plans for the ECHI-2 phase.
- *2nd meeting, September 2002:* Revision of the indicators selected until now, in subgroups by ECHI chapter. Update of the Member State's policy priorities and of new HMP project results. First demonstration of the ICHI-2 indicator database.
- *3rd meeting, March 2003, annex to the meeting of HMP project co-ordinators:* Critical reflection on the current processes within Sanco. After an attempt to make a shortlist selection during the meeting, the decision was taken to take up this task in ECHI-2.
- *4th meeting, June 2003:* Intensive discussions on the result of the shortlist selection. Discussion on the finalisation of the long list. Update on the status of the ICHI-2 database.
- *5th meeting, February 2004, with HMP project co-ordinators:* Group discussions on whether the project results are incorporated correctly into the ECHI long list. Discussions on the user-windows proposed, on the shortlist, on the status of ICHI-2, and on the possible follow-up of ECHI.

- *6th and last meeting, October 2004:* Discussion on the draft final report of ECHI-2, on the presentation of the shortlist and long list, and on the relation between the paper version of the report and the ICHI-2 web application. Establishment of the shortlist version to go into this report and to be handed over to the Commission for further work. Presentation of the successor of ECHI-2: ECHIM/WP7.

5. Dissemination of ECHI in the Member States.

In quite a few Member States, presentations were given on ECHI by team members, or people have used ECHI as an example or guide in their work in developing health information. Examples are:

- Austria: Richard Gisser gave a presentation at the kick-off meeting of the national platform GISneu (Health Information System new) in Vienna, Austria, May 2004. He also presented ECHI at the 13th Statistical Days in Radenci, Slovenia, November 2003.
- Italy: Emanuele Scafato gave several presentations on indicators. The results of ECHI-1 were used in the updating of various statistical and information systems in a collaboration of the ISS (National Institute of Public Health), the Ministry of Health and ISTAT (Italian Statistics). This included the definition of categories of indicators for the monitoring of the health services (specific Minister of Health decree in 2003), the integration of specific recommended indicators in the ISTAT 'Multiscopo' surveys (lifestyles), and the Health Monitoring Systems on Lifestyles that is being developed by the Ministry of Health.
- Greece: Also here, the ECHI experience has helped in setting up a system of indicators for national and regional use.
- Hungary: The ECHI-1 report and the recommended taxonomy and indicators have been taken into account in the development of the national health monitoring system in Hungary. E.g. it was used as a point of reference in the development of the national health indicator system.
- Netherlands: The ECHI shortlist will be used as a frame for the next Public Health report, due 2006. It was also used in selecting national indicators in the area of prevention and health promotion, as well as for health care quality.
- Portugal: The interest is high at the General Directorate of Health. The intention is to use the ECHI shortlist in the Public Health Information Sysytem and the National Health Plan. It is also planned to use an internet portal for the dissemination of indicators.

6. Publications on ECHI

Kramers PGN, on behalf of the ECHI team. The ECHI project: Health indicators for the European Community. European Journal of Public Health 2003; 13 (no. 3, supplement): 101-106.

Kramers PGN, on behalf of the ECHI team. Le projet ECHI: Indicateurs de santé pour la Communauté Européenne. Actualité et dossier en santé publique, 42, mars 2003: 36-38.

ANNEX 4
MEMBER STATE HEALTH POLICY ISSUES

Below is a concise review of issues and directions emphasized in recent health policy documents, for most of the Member States which were represented in the ECHI project. These include the EU-15 plus Hungary and Norway. Within the context of ECHI-2, it was not feasible to go beyond this set of countries. The rationale of preparing this overview is that the selection of ECHI indicators should be guided by health policy priority issues in the Member States.

1. Austria

By 2002, the Programme for the Advancement of Health in Austria formulated the following basic policies:

- Ensure equal access to health care, according to current medical standards;
- This applies throughout the Austrian Federation.
- Improve patients rights and responsibility, as well as community help programmes.
- Examine the possibilities for replacing the current mandatory insurance scheme by private inurance requirement.
- Promote quality assurance in all health care sectors.
- Place more emphasis on preventive care, especially within the medical setting by intensification of check-ups for persons at risk as well as elsewhere in society.
- Promote research on cost-effectiveness of interventions.
- Contain the cost of pharmaceuticals.

In 2003, national targets were formulated, among other things, for reducing the incidence of cardiovascular disease, stroke and cancer by 25%. This should be reached, among other things, by doubling the number of preventive examinations.

2. Denmark

In 2002 the government put forth a number of health priorities in the government programme *'Healthy throughout life'*. The publication outlines the targets for the public health policy of the Government of Denmark in the period from 2002 to 2010. The priorities are divided into a number of objectives covering overall targets, risk factor targets and targets regarding major preventable diseases and disorders.

Overall targets:

- Life expectancy in Denmark should be increased substantially.
- The number of years with high quality of life should be increased.
- Social inequality in health should be minimized.

Risk factor targets:

- Smoking: The number of smokers should be reduced considerably through smoking cessation and by reducing the number of new smokers. Smoke-free environments should become widespread.
- Alcohol: The number of heavy consumers of alcohol should be reduced considerably, alcohol consumption among young people should be reduced and children should not consume any alcohol.
- Diet: The number of people who eat a healthy diet should be increased considerably, and healthy dietary habits should be a natural part of everyday life.
- Physical activity: The number of people who are physically active should be increased considerably, and physical activity should become a natural part of everyday life.
- Obesity: The increase in the number of people who are obese should be stopped.
- Accidents: The numbers of road, home and leisure accidents should be reduced substantially.
- The working environment: The total negative burden of the working environment on health should be reduced substantially. This should be achieved through such initiatives as targeted activities to improve occupational safety and health and integration with targeted health promotion activities.
- Environmental factors: The negative effects of environmental factors on health should be prevented, and a high level of environmental protection should continue to be ensured.

Major preventable diseases and disorders:

- Non-insulin-dependent diabetes: The growth rate in the number of people with non-insulin-dependent diabetes should be reduced. Complications among people with diabetes should be prevented through such means as initiatives by individuals to improve their own health.
- Preventable cancer: The number of cancer cases should be reduced by reducing the exposure of the population to risk factors known to be associated with the development of cancer.
- Cardiovascular diseases: The number of new cases of ischaemic heart disease should be reduced. The progression of disease among people at high risk should be prevented through such means as cardiac rehabilitation for patients diagnosed as having cardiovascular disease.
- Osteoporosis: The rate of growth in the number of people with osteoporosis should be reduced. The development of osteoporosis among people at high risk should be prevented through such means as measures to prevent falls and fractures.
- Musculoskeletal disorders: The number of new cases of musculoskeletal disorders should be reduced, and the exclusion from the labour market caused by musculoskeletal disorders should be prevented.
- Hypersensitivity disorders (asthma and allergy): The growth in the number of people with hypersensitivity disorders should be reduced. The progression of disorders and complications should be prevented through such means as self-care initiatives.
- Mental disorders: The prevalence of mental disorders should be reduced. Special initiatives should be taken in relation to children in families with a parent who is mentally ill or a substance abuser.

- Chronic obstructive pulmonary disease: The growth in the number of people developing COPD should be reduced. Complications and progression of the disease should be prevented among people with COPD through such means as smoking cessation activities.

New Government targets:
In addition to the above mentioned targets there is a number of other targets laid down in the *Government Platform, New Goals*, of March 2005:

- The overall principle in Denmark is that The National Health Service must offer high-quality services, ensure short waiting times and coherent treatment programmes.
- The waiting time for hospital treatment must be as short as possible. At present all citizens can choose treatment in a private or foreign hospital that has concluded an agreement with the counties, if waiting times for the public hospitals exceed two months. As an element in the 2005 Government programme New goals, the Government will as of 2007 improve this scheme, granting citizens the right of enhanced free choice if the public hospital is unable to offer treatment within one month.
- Activity based financing must account for 20% of the financing from the hospital owner (the counties and the Copenhagen Hospital Corporation) to the individual hospital. The government aims to increase activity based financing to 50% over a number of years.
- The Government works for openness and transparency regarding treatments in hospitals. One target is therefore to develop precise and comparable information regarding quality between hospitals and wards.

3. Finland

By 2001, Finnish health policy objectives, to be reached in 2015, were formulated as follows (on top of the earlier aims of 'more years and more health to life', 'reduction of health inequalities'):

Age group specific aims:

- Improvement of children's well-being and health, decrease of disorders related to insecurity.
- Decrease of smoking among the young (<15% of 16-18 year-old); no increase of alcohol- and drug-related health problems, and adequate care for these.
- Decrease by one third of accident/violence mortality among young adult men.
- Development of working (and functional) capacity and working life so that people can work longer and retire 3 years later than presently.
- Functional capacity at ages 75+ continues to improve.

Aims common to all age groups:

- Finns will live in good health about two years longer than in 2000.
- Satisfaction with health care, perceived health and perceived environmental health remain at least at the current level.

- Inequity must be reduced, and the health situation of the weakest groups improved. Mortality differences between men and women, and between educational and occupational groups must be reduced by one fifth.

The central prerequisites of those aims are:

- Health must be an important guiding principle in all sectors and levels of public life and organisations, in all policies, and in the private sector.
- This will be provided in settings like schools, homes, workplaces, leisure time environments, traffic, public services. In will include the citizen's possibilities to influence decision-making concerning his/her own environment.
- All of these premises will be strengthened during the whole life-cycle.

4. France

France has formulated 100 quantitative objectives for the period 2004-2008 in the field of public health. For each objective, one or more indicators were named. The system has been given the status of law. The objectives can be grouped as follows:

- 65 out of the 100 objectives on 'decreasing mortality, morbidity or functional limitations' for a range of ICD diagnoses, by preventive or appropriate health care interventions.
- 3 objectives on reducing functional limitations and pain in general.
- 13 objectives about smoking, alcohol use, healthy nutrition and physical activity.
- 4 objectives on improving health and safety at work.
- 8 objectives on improving healthy environments (radon, air pollution, water quality, noise).
- 5 objectives on iatrogenic events and safety in health care.
- 2 objectives on inequalities in health and access to health services.

5. Germany

In Germany, a set of health targets ('Gesundheitsziele.de') was formulated for the national level, by the Forum Health Targets Germany. The Forum is a joint initiative of the German Federal Ministry of Health (Bundesministerium für Gesundheit - BMG) and the Association for Social Security Policy and Research (Gesellschaft für Versicherungswissenschaft und –Gestaltung - GVG). It is funded by the Ministry and has brought together experts from a wide range of areas in the health care system. In the selection of targets, the impact of health problems and risk factors the following aspects were taken into account as follows:

- The health problem results in high mortality and health burden.
- The health problem is widespread.
- The health problem results directly in high expenditures (e.g. in-patient treatment).
- Chances that the health problem can be improved are good.
- Instruments and processes for improving the problem are available.

- There is a network of partners together with whom the health targets can be translated into action.
- The problem is of concern to the general public and to politicians.
- Opportunities exist to improve health inequalities.
- Improvements can be measured.
- Members of the public and patients can actively contribute to the health target process.
- There are no ethical reservations related to the health target.

In order to promote the acceptance and effectiveness of the target strategies to be developed within the project, representatives of patient and self-help groups are involved in each phase of the selection and development of exemplary health targets. The selection of targets was debated and closed in Berlin on October 31st, 2001. In order to reach the greatest possible number of population groups, four broad topic areas (A-D) were created and targets were selected for each area. Of the total of eight targets selected from all four topic areas, five (1, 2, 6, 7a, and 8) are currently being developed by working groups:

1. Disease-related health targets:
    1. Diabetes.
    2. Breast cancer.
    3. Depression.
    4. Coronary heart disease.
    5. Chronic back pain.
2. Health promotion and prevention targets:
    6. Reduction of tobacco consumption.
3. Targets for specific age and population groups:
    7. Fit for the Future – an integrated programme for the under-20's age group:
        a) Diet, exercise, stress.
        b) Vaccination status.
4. Citizen- and patient-orientated health targets:
    8. Empowerment of citizens and patients regarding their own health:
        a) Improve transparency.
        b) Reinforce rights.
        c) Strengthen competence.

All health targets to be realized must fulfil the following cross-sectional criteria:

- Equal opportunity.
- Integration of actors from all sectors of public health.
- Prevention.
- Citizen and patient orientation.
- Reinforce self-help.

These criteria are taken into consideration when creating a detailed design for sub-targets, strategies, and interventions as well as during subsequent evaluation. The working groups engaged in the development of these targets are equipped with the necessary expertise, competence and the tools to translate them into action.

The Association for Social Security Policy and Research (GVG) web site www.health-targets.de provides up-to-date information on all activities, including programme results and interim results. The web site also serves as a public discussion forum.

6. Greece

In Greece, it is a priority to build a so called 'Health Services Map' which will be a systematic information system. This will include:

- data collection on health services and utilisation.
- the development of health indicators.
- the selective use of indicators for policy making and operational management at regional and national level.

The ECHI experience contributed a lot in the desigh of the system of indicators.

7. Hungary

In 2003, the 'Johan Béla' National Programme for the Decade of Health' was approved by the Parliament. It is a target based programme with the primary goal to increase the life expectancy at birth in Hungary by 3 years by 2012. Explicit health targets are defined. This has a boosting effect on health monitoring, since the information on the processes, outputs and on the targets should be provided. ECHI has a direct link to these activities. The programme has formulated goals under four main chapters, as summarized below.

A. Creating a health-promoting Social Environment

- *Healthy youth:* Guaranteeing an opportunity for a healthy life to everyone, from the moment of conception; making the school, in addition to the family, the fundamental setting for health development; parenthood counseling, prevention of childhood conditions, exercise, health-promoting schools, etc.
- *Improving the health of the elderly:* Improve the quality of life for an ageing population.
- *Equal opportunity for health:* Improve the health of socially excluded population groups – the Roma, persons with disabilities, the homeless; tackling causes of health inequality; equal access to health care and prevention programmes; improving attitudes and knowledge of medical personnel.
- *Health Promotion in Settings of Daily Life:* Health-promoting practices in living settlements, schools, workplaces, health care; health as organic part of local development plans; more prevention and health promotion in health care; health in curricula and training.

B. Programs of healthy lifestyles, reducing risk factors to human health

- *Cutting back tobacco smoking:* Reduce young people starting; reduce passive smoking by smoking restrictions; reduce social acceptance of smoking.
- *Alcohol and drug prevention:* Reduce alcohol and drug consumption, prevent health and social damage they cause.

- *Healthy nutrition and food safety:* Reduce nutrition-related disorders, improve the general state of health through healthy nutrition; improve quality of food production, better information, better food safety.
- *Promoting physical activity:* Promote an active lifestyle in the broadest sense; increase sports participation and education; more leisure sports opportunities.
- *Public health and epidemiological safety:* Develop ability for rapid reaction to health threats (chemical, microbiological, radiation).
- *National Environmental Health Programme:* Promote health-supporting environment; safe and clean air water, and soil, reduce noise disturbance, etc.

C. Preventing avoidable mortality, morbidity and disability

- *Reducing coronary heart disease and stroke:* Cut premature mortality due to these causes by 20%; increase appropriate screening and treatment of risk groups.
- *Reducing cancer:* Stop the rising mortality due to tumours; improve oncology prevention and care.
- *Strengthening mental health:* Improve the population's mental health; primary prevention; early recognition; reduce suicide rate.
- *Reduce morbidity by locomotor diseases:* Improve quality of life for people with locomotor diseases; improve prevention and care; retain mobility as long as possible.
- *Prevent AIDS:* Reduce incidence, improve diagnosis; improve prevention, especially in high-risk groups.

D. Strengthening the institutional system of health care and public health to improve health

- Public health screenings: Reduce cancer mortality by 5-10% in under-70 population by screening; breast, cervical and colorectal cancer.
- Improving the provision of care: Development of the health care system in line with public health priorities; expand primary care; improve prevention and rehabilitation within health care.
- Resource development: Build infrastructure for education in public health; information, education, training at all levels.
- Monitoring – information technology: Monitor the progress of the programme, with appropriate indicators, regular data collection.

8. Ireland

At the end of 2001, a National Health Strategy for Ireland was approved by Government following widespread consultation. The Strategy is titled, *Quality and Fairness: A Health System for You* and is based on four principles. These are:

- Equity.
- People-centeredness.
- Quality.
- Accountability.

These principles are to be advanced under the headings of four National Goals. These are:
- Better health for everyone.
- Fair access.
- Responsive and appropriate care delivery.
- High performance.

In turn, attainment of the National Goals will only be possible through the implementation of an identified set of Frameworks for Change comprising:
- Strengthening primary care.
- Reform of the acute hospital system.
- Funding the health system.
- Developing human resources.
- Organisational reform.
- Developing health information.

Encompassing both the National Goals and the Frameworks for Change a detailed Action Plan forms part of the Health Strategy and includes 121 specific actions designed to effect the necessary progress and improvements. These actions identify priorities related to specific population groups, major health status and health determinant issues, to organisational reforms and to service delivery and evaluation requirements.

Since 2002, each of the 6 Frameworks for Change has been further developed through specific Strategy Reports relating to each framework. 'Developing health information', for example, is represented by the National Health Information Strategy which was published in 2004. Based on these reports, a major Health Service Reform Programme is now in the process of implementation which involves the replacement of the existing Health Boards with a central Health Service Executive for the whole country and the creation of a Health Information and Quality Authority.

9. Italy

The Italian National Health Plan 2003-2005 provides a strategic approach, expressed in a series of main objectives, principles and guidelines. It does not formulate specific long and short-term targets.
The stated policy priorities that form the basis of the NHP are:
1. To favour the family and to increase the national birth rate.
2. To support disabled people.
3. To fight against extreme poverty.
4. To favour self sufficiency, in particular for elderly people.
5. To actively promote employment (welfare to work).
6. To fight juvenile problems and favour vulnerable groups.
7. To promote equal opportunities between men and women.
8. To prevent drug-addiction and drug dependency.

The NHP measures described in the document regard several policy priorities and address the EU Objectives in the following way:

- Under EU Ob. 1.1 (Facilitating participation in employment), the promotion of employment and skills with a particular attention to women and persons living in South Italy, increasing the activity rate of persons over 55, the labour insertion of disabled people, the social and labour insertion of convicts, the regularisation of illegal employment, the support of geographical labour mobility, the development of CSR (corporate social responsibility), the development of lifelong training.
- Under Ob. 1. 2 (Facilitating access to resources, rights, goods and services for all), the support to family centrality and increasing the national birth rate, networks of family services, custody and adoption of minors, family and work time conciliation in favour of maternity, services for disabled people and people aged over 65.
- Under Ob. 2 (Preventing the risks of exclusion), the reduction of the school drop-out rate.
- Under Ob. 3, (Helping the most vulnerable), extending ICT – services for disable people, the creation of training courses for immigrants to learn the Italian language, the formation of a Commission of practitioners and experts on drug dependency, the social and labour insertion for drug-dependent persons, the fight against extreme poverty, multi-level initiatives in favour of convicts, the CI - EQUAL, the integration between different policies through territorially integrated plans (PIT), monitoring systems on social policies and education quality, the elaboration of systemic statistics on the wide range of indicators on social and related policies.
- Under Ob. 4 (Mobilising all relevant bodies), no specific measures are formulated that follow subsidiarity principles in relation to the significant changes which have occurred in the institutional structures after 1997.

To monitor the progress of the plan, a long list of indicators was devised (SINDIS, Set di INDIcatori per la Salute) under the SISTAN (Italian Health Statistical System - Sistema Statistico Nazionale), for national use but in close agreement with the Italian Regions. Also a core set was developed, for the periodical evaluation of the National Health Plan and to produce a feasibility study to be implemented in collaboration with the specific Regional bodies devoted to Health Monitoring. Part of this work has already been translated into laws. In developing these lists, the ECHI example has played an important role, for instance in the monitoring of health and lifestyle issues by Health Interview Surveys.

10. Netherlands

In December 2003, the Ministry of Health, Welfare and Sports issued a Public Health Strategic Paper. It focuses on 6 priority disease groups, based on their population burden and cost:

- Cardiovascular diseases.
- Cancer (especially of the lung, breast, colon, rectum).
- Asthma and other chronic lung disease.

- Diabetes mellitus.
- Mental disorders (especially depression, anxiety disorders, alcohol dependence).
- Musculoskeletal disorders.

Considering the effective ways to prevent these diseases, three focus items are chosen for action, i.e. smoking, overweight, and diabetes. The latter includes appropriate diabetes care.

There is some attention for integrated approaches in settings (school, work, 'making the healthy choice the easy choice', etc.) and also for health problems in lower socio-economic groups and in deprived groups in the big cities. In terms of action, however, these issues are not carried further. The dominant political climate behind the paper is one of 'everybody should take his/her responsibility', and abstinence of too much governmental interference.

11. Portugal

Recently, there has been much emphasis on health care reforms. Among the objectives and associated tools are:

- Improving health by minimizing differences.
- A strong focus on the patient.
- Improve access to health service, by reducing waiting times and improving the availability of local GP's.
- Improve vertical prevention programmes (e.g. cancer screening).
- Ensure financial sustainability, by a 'regulated competitive market'.
- Improve effectiveness and efficiency of health care.

In terms of health information major developments have been:

- Ongoing work on indicators and on statistical concepts.
- The post of High Commissioner for Health was created (2001), to coordinate all health information related issues, supported by a technical secretariat.
- Preparatory work initiated for a first HES in 2 to 3 years from now.
- The Portuguese Health Systems Observatory, was established in 2001. It is a consortium of 4 university departments. Every spring they produce a report.

12. Sweden

In 2003, national goals have been formulated, as being based on scientific evidence. The goals focus on determinants of health rather than on specific diseases or conditions. These determinants are formulated in a rather broad social context, starting from the humanitarian view that the major differences in health between different groups should be reduced. Health is viewed as a partly subjective issue with a strong functional and social component. The overarching aim of Sweden's national public health policy is

formulated as: 'to create social conditions that will ensure good health, on equal terms, for the entire population'. There are 11 public health objective domains which cover a number of established policy areas including economic policy, social welfare, the labour market, agriculture, transport and the environment. These are:

- Participation and influence in society.
- Economic and social security.
- Secure and favourable conditions during childhood and adolescence.
- Healthier working life.
- Healthy and safe environments and products.
- Health and medical care that more actively promotes good health.
- Effective protection against communicable diseases.
- Safe sexuality and good reproductive health.
- Increased physical activity.
- Good eating habits and safe food.
- Reduced use of tobacco and alcohol, a society free from illicit drugs and doping and a reduction in the harmful effects of excessive gambling.

The objective domains cover the most important determinants of Swedish public health. The benefit of using determinants as a basis for policy is that they enable us to evaluate progress. This in turn supports political decision-making as determinants can be influenced by certain types of societal measures.
For more information: http://www.fhi.se/templates/Page____567.aspx

13. United Kingdom

(separately for England, Scotland, Wales and Northern Ireland) :

England

The government document *'Saving Lives: Our Healthier Nation'* (The OHN White Paper, published July 1999) identified two goals and four priority areas. This public health strategy forms a component of the broader NHS Plan published in July 2000. For each of the four areas, a target was formulated for 2010 and an interim milestone for 2005.
The two goals are:

- To improve the health of the population as a whole by increasing the length of people's lives and the number of years people spend free from illness.
- To improve the health of the worst-off in society and to narrow the health gap.

The four priority areas are:

- Circulatory Disease.
- Cancer.
- Accidents (not included in NHS Plan – see below).
- Mental health.

For these areas, the *targets* for 2010 are:

- Circulatory disease - a 40% reduction in the mortality rate.
- Cancer - a 20% reduction in the mortality rate.
- Accidents - a 20% reduction in the mortality rate.
- Suicide - a 20% reduction in the mortality rate.

For each of these four areas, a list of *associated indicators* will be defined, which will allow the assessment of progress, in terms of:

- The targets themselves.
- Improvements in associated risk factors.
- Movement in underlying factors which reflect social, environmental and economic change which the evidence shows to have an influence on health and inequality.
- The implementation of effective programmes/activities (including the development of capacity and capability in public health).

The definition of indicators will be an ongoing task. This approach maintains *the focus and clarity* of selecting only a very limited number of targets. Aside from general monitoring and reporting of progress, there is a more general commitment in the White Paper to review and publish changes at national level to:

- Expectation of life.
- Healthy life expectancy.
- Health inequality.

In addition there are a number of other topic-specific 'supporting strategies' that are identified in the White paper and these are also being taken forward:

- Sexual health strategy.
- Alcohol strategy.
- Communicable disease strategy.
- Smoking White Paper.
- Fluoridation/dental health.
- Drugs strategy.

The *NHS Plan* published in July 2000 set out a wider strategy for the development of the National Health Service. It reinforced and developed some of the public health themes set out in Our Healthier Nation. In particular it gave added focus to work relating to cancer, heart disease and mental health, older people, and health inequalities (including efforts to increase and improve primary care in deprived areas, introduce screening programmes for women and children, step up smoking cessation services and improve the diet of young children by making fruit freely available in schools for 4-6 year olds.

A series of *National Service Frameworks* (NSF's) have been established to improve services through setting national standards to drive up quality and tackle existing variations in care. These NSF's cover prevention as well as treatment issues. NSF's have been completed for: Mental health, Coronary Heart Disease, Cancer (The NHS Plan for Cancer), Older People's Services, and Diabetes. NSF's are in preparation for: Paediatric Intensive

Care, Children's Services, Renal Services and Long-term conditions (with special focus on neurological disease and brain and spinal injury).

On 16 November 2004, A new English White Paper policy document on public health was published: *Choosing Health: Making healthy choices easier*.

This new white paper has a twin purpose – to improve health and tackle health inequalities. It sets out practical action to help ensure that people can make informed and healthy choices and that all can benefit from living in a healthier society. Its overarching priorities are:

- Reducing the number of people who smoke.
- Reducing obesity.
- Increasing exercise.
- Encouraging and supporting sensible drinking.
- Improving sexual health.
- Improving mental health and well being.

As the White Paper is based on a thorough public consultation, it has enabled identification of the mandate for change among the public. It has also allowed development of practical policies that are tailored to the needs of people's lives today so shifting policy into effective practical support.

Choosing Health is built on three principles:

- Informed choice:
  - Personalisation: supporting people to make healthy choices especially for deprived groups and communities.
  - Working together through effective partnership.
- It encourages individuals to make sensible choices about their own health by the positive marketing of health, readily accessible and credible sources of accurate information personally tailored to individual needs.
- It proposes establishing a *Health Information and Intelligence Task Force* to lead action to develop and implement a comprehensive public health information and intelligence strategy.

Scotland

The Scottish Executive has a clear and well-established commitment through *Towards a Healthier Scotland* [1999], *Building a Better Scotland* [2002], *Our National Health: A plan for action, a plan for change* [2000] and *Improving Health in Scotland: The Challenge* [2003] to improving health and shifting the emphasis away from ill health to one that focuses much more on prevention and health improvement. As part of that commitment, and aligned with the Executive's strategies for promoting social justice and closing the opportunity gap, there is a particular focus on tackling health inequalities as the 'overarching aim' of the health improvement agenda. The commitment to improving health, integrated with the pursuit of social justice, includes the need to bridge the

opportunity gap for all equally, regardless of age, gender, sexual orientation, geographical or economic position, ethnicity, disability or faith.

The seminal health strategy White Paper *Towards a Healthier Scotland* [1999] focused on:
- Reducing Inequalities in Health.
- Improving health of children and young people.
- Prevention of Cancer and Coronary Heart Disease (the two major killer diseases).

Headline Targets for 2010 were specified for:
Coronary Heart Disease, Cancer, Smoking, Alcohol Misuse, Teenage Pregnancy, Dental Health in young children.

A range of health strategy documents have been published subsequently, developing structures and methods to deliver the overarching health targets.

Our National Health: A plan for action, a plan for change (2000) identifies the priorities:
- Rebuilding a truly National Health Service through changes to governance and accountability.
- Increasing public and patient involvement in the NHS.
- Service change and modernisation.

Building on the principles stemming from *Towards a Healthier Scotland* a 'next steps' strategy for health service delivery was published on 15 December 2004, entitled: *Fair to all, Personal to each. The next steps for NHSScotland.*

The document reiterates the fundamental principles of healthcare in Scotland and notes that success in improving the health of children and young people and in reducing premature mortality from the big killers has not produced a reduction in inequalities in health. A variety of public health measures are proposed to further improve health with an emphasis on reducing health inequalities. Importance is placed on the active role of individuals in preventative health care, a role that is supported by comprehensive and high quality health services that are free at the point of use. A range of service targets are set for 2007 covering waiting times from GP referral to outpatient appointment and maximum waits for specific conditions are capped.

Northern Ireland

A Healthier Future: A Twenty Year Vision for Health and Wellbeing in Northern Ireland 2005-2025 [2005] *A Healthier Future* is organised around five main ideas or themes:
- Investing for health and wellbeing.
- Involving people – caring communities.
- Responsive combined services.
- Teams that deliver.
- Improving quality.

Key policy directions include:
for *'Investing for health and wellbeing'*:

- A focus on bad habits – smoking, alcohol-related harm, drug misuse, obesity and lack of exercise.
- Outcomes relating to cancer, circulatory diseases, respiratory diseases and diabetes.
- Promoting joined-up action across agencies involves with health, education, employment, sport and the arts.
- Emphasising health promotion amongst vulnerable groups.

For *'Involving people –caring communities'*:

- Active involvement of people in promoting health and wellbeing, managing chronic conditions and designing and managing services.

For *'Responsive combined services'*:

- Break down barriers between services delivered and communities.
- Focus on disadvantage.
- Clear standards of access.
- Develop community based multi-skilled teams.
- Improve the role of hospitals in supporting community based services.
- Tailoring services to the needs of particular groups.

For *'Teams that deliver'*:

- Health and social service providers to become 'employers of choice' to recruit and retain staff.
- Develop shared learning skills across all sectors of employment.
- Plan for the development of changing roles and skills across health and social services.

For *'Improving quality'*:

- Meeting clear quality standards.
- Setting in place flexible plans, appropriate structures and efficient processes to support putting the health strategy into practice.
- Continue to promote a positive, active and responsive relationship with private, community and voluntary sectors.

A Healthier Future develops and extends the overarching goals in *Investing for Health* [April 2002], which are on:

- Improving life expectancy and healthy life expectancy.
- Reducing Inequalities in Health.

Key Targets for 2010: In addition to targets on improvements in Life Expectancy and Health Inequalities, other key targets (related to the prime objectives of the strategy) are on:

- Reducing poverty and improving housing for households on low incomes.
- Improving educational attainments in young people.
- Promoting mental health and emotional well being.

- Reducing accidental injuries and deaths – home, workplace and road traffic accidents.
- Improving neighbourhoods/wider environment (quality of air and water) - with special focus on reducing levels of respiratory and heart disease.
- Enabling people to make healthier choices (smoking, nutrition, exercise) with special focus on obesity, and in very young children - dental decay.

Wales

Better Health Better Wales [for the period 1999-2002] focused on improving health and well-being and reducing health inequalities. Targets formulated include the following conditions: Cancer, Coronary Heart Disease, Stroke , Accidents and Suicides, Mental Health, Low Birth Weight, Smoking, Alcohol, Consumption of Fruits and Vegetables, Dental Caries, Back pain, and Arthritis.

Promoting health and well being: Implementing the national health promotion strategy was published in 2001. Five priorities were identified that needed to be addressed as part of a co-ordinated and sustained effort to improve health. The priorities were:

- Helping communities to develop a shared responsibility for health and to take action to improve people's health.
- Promoting healthier lifestyles as part of wider action to address the social and economic factors that affect people's health.
- Better communication on health issues – improved quality of information and people's access to it.
- Developing the tools, resources and skills for health promotion
- Ensuring action is effective.

The strategy's overall message was that everyone could contribute to promoting health and well being. Individuals can take greater responsibility for health and should do what they can to look after their own health and that of their families. Some individuals can help to improve the health of others through their jobs and the roles they play in local authorities, health services, businesses, voluntary and community groups, and more generally within communities and families. The strategy urged organisations in all sectors to reflect on how they contribute or could contribute to promoting better health as part of their role.

ANNEX 5
THE ECHI COMPREHENSIVE INDICATOR LIST (LONG LIST) VERSION OF JULY 7, 2005

This is version 7 July, 2005, of the ECHI comprehensive indicator list, hereafter called 'long list'. It is the last version issued within the frame of the ECHI-2 project. Further developments will be taken up under the ECHIM/WP7 project.

This 7 July version is the follow-up of the 16 February 2004 version. While the latter was an MSWord file, the present version is a print from the ICHI web-application (see main report, paragraph 9 and Annex 9). This application will be available shortly on the internet (www.healthindicators.org). Further developments will be imported and appear in this application.

By content, the list has the following characteristics:

- Arrangement of the indicators: All indicators are arranged in the ECHI framework, i.e. in the four classes: (1) Demography/socio-economic situation, (2) Health status, (3) Determinants of health, (4) Health systems, and their subdivisions. The agreed division of the class Health systems into 'health services' and 'health promotion' has not yet been implemented in the ICHI application.
- Origin of the indicators: In the list, quite a few indicators are derived from WHO-Euro (HFA database), from OECD (OECD health data) or Eurostat (Variable in New Cronos). Many indicators are included as recommendations of projects run under the Health Monitoring Programme (HMP).
- Justification for selection: In most of the headings to the sections in the list, the rationale is given of why we have indicators in the particular section, what the section is intended to cover, and what kind of selection criterion was used, within the section. For specific indicators, the justifications for selection are mostly given in the project reports which recommended the indicator.
- Status of indicators: Some 'indicators' are not really indicators but rather topics for which information is needed but for which a proper definition has not yet been proposed. In some cases, recommendations from HMP projects were presented group-wise, in order to keep the list within reasonable length.
- Items given for each indicator: For each indicator, the list presents:
  - The name of the indicator or topic.
  - If available, the definition(s), indications on stratification by gender, age, SES or region, and further comments, with reference to the origin of the indicator.
  - If available, the type of data source involved. Sometimes this refers to existing data sources, but quite often also, it refers to a preferred means of data collection (e.g. surveys) which has not been realised.
  - If available, the international database, HMP project or other source from which the indicator was derived.

- User windows: the allocation of an indicator to one or more user windows is shown in the first column (as UW-x). As explained in the main text of the report, user windows are formulated as subsets of indicators, selected from a specific perspective. The numbers of the user windows shown correspond with the list given in *Annex 8* to the report. This list is reproduced below in an abbreviated form. In the ICHI web application, these user windows can be selectively presented. It should be noted that the 'User windows devised by ECHI' are tentative examples only.
- The user window UW-0 (zero) is identical to the ECHI shortlist, which is a subset of this long list, like all other user windows defined.

Clearly, the status of this ECHI long list is that of a *structured inventory* of indicators proposed by many. At the lower level of detail, the list may seem unbalanced sometimes, resulting from the various ways in which the contributing projects have worked towards proposing indicators. From this long list, user windows can be defined for further practical work in data collection and harmonisation. At the same time, the list will be developed and improved continuously.

User windows referred to in the comprehensive indicator list: based on recommendations of HMP projects and Working Parties:

- UW-1, Mental health: recommendations of the Mental Health project, recently the Working Party on Mental Health.
- UW-2, Cancer: Eurochip and CAMON projects.
- UW-3: Diabetes: EUDIP project.
- UW-4: Cardiovascular disease: Eurociss project.
- UW-5: Lung disease: IMCA project.
- UW-6: Musculoskeletal disorders: MSD project.
- UW-7: Oral health: Oral health indicators project.
- UW-8: Injuries: Working party on accidents/injuries.
- UW-9: Perinatal health: Peristat project.
- UW-10: Child health: CHILD project.
- UW-11: Reproductive health: Reprostat project.
- UW-12: Health in intellectually disabled: POMONA project.
- UW-13: Lifestyle indicators connected to cardiovascular disease, diabetes and others: EHRM project.
- UW-14: Nutrition: 3 projects: EFCOSUM, Dafne and Public Health Nutrition; the latter includes the former two (also physical activity).
- UW-15: Environment and health: ECOEHIS project.
- UW-16: Working environment: Workhealth project.
- UW-17: Health promotion in various settings: EUHPID project.

User windows referred to in the comprehensive indicator list: based on proposals by ECHI:

- UW-18: Health of the elderly.
- UW-21: Socio-economic health inequalities.
- UW-22: Health system performance.

Below is the index of the chapters of the indicator list, with the subdivisions:

1 DEMOGRAPHY AND SOCIO-ECONOMIC SITUATION

1.1 Population

1.1.1 Population status

1.1.2 Population dynamics

1.2 Socio-economic factors

1.2.1 Education

1.2.2 Employment

1.2.3 Income distribution

1.2.4 Household situation

1.2.5 Ethnic origin, citizenship

1.2.6 General economics

2 HEALTH STATUS

2.1 Mortality

2.1.1 Life expectancy and related indicators

2.1.2 General mortality

2.1.3 Infant and perinatal deaths

2.2 Mortality, cause-specific

2.2.1 Infectious/parasitic

2.2.2 Neoplasms

2.2.3 Blood/immunology

2.2.4 Endocrine

2.2.5 Mental/behavioural

2.2.6 Nervous system/sense

2.2.7 Circulatory system

2.2.8 Respiratory system

2.2.9 Digestive system

2.2.10 Skin

2.2.11 Musculoskeletal system

2.2.12 Genitourinary system

2.2.13 Pregnancy etc.

2.2.14 Perinatal conditions

2.2.15 Congenital malformations

2.2.16 Symptoms, ill-defined causes

2.2.17 External causes

2.2.18 Certain specific (avoidable) causes

2.3 Morbidity, disease-specific

2.3.1 Infectious/parasitic

2.3.2 Neoplasms

2.3.3 Blood/immunology

2.3.4 Endocrine

2.3.5 Mental/behavioural

2.3.6 Nervous system/sense

2.3.7 Circulatory system
2.3.8 Respiratory system
2.3.9 Digestive system
2.3.10 Skin
2.3.11 Musculoskeletal system
2.3.12 Genitourinary system
2.3.13 Pregnancy etc.
2.3.14 Perinatal conditions
2.3.15 Congenital malformations
2.3.16 Symptoms, ill-defined causes
2.3.17 External causes
2.3.18 Certain specific (avoidable) causes

2.4 Perceived and functional health

2.4.1 Perceived health
2.4.2 Chronic disease general
2.4.3 Functional limitations
2.4.4 Activity limitations
2.4.5 Short-term activity restrictions
2.4.6 General mental health
2.4.7 General quality of life
2.4.8 Absenteism from work
2.4.9 Appropriate inequality measure

2.5 Composite health status measures

3 DETERMINANTS OF HEALTH

3.1 Personal and biological factors

3.1.1 Biological risk factors
3.1.2 Personal conditions

3.2 Health behaviours

3.2.1 Substance use
3.2.2 Nutrition
3.2.3 Other health-related behaviours

3.3 Living and working conditions

3.3.1 Physical environment
3.3.2 Working conditions
3.3.3 Social & cultural environment

4 HEALTH SYSTEMS

4.1 Prevention, health protection and health promotion

4.1.1 Disease prevention
4.1.2 Health promotion
4.1.3 Health protection

4.2 Health care resources

4.2.1 Facilities
4.2.2 Manpower

4.2.3 Education
4.2.4 Technology
4.3 Health care utilisation
4.3.1 In-patient care utilisation
4.3.2 Out-patient care utilisation
4.3.3 Surgical operations and procedures
4.3.4 Medicine use, medical aids
4.4 Health expenditures and financing
4.4.1 Health care system
4.4.2 National expenditure on health
4.4.3 Expenditure on medical services
4.4.4 Medical goods dispensed to outpatients
4.4.5 Total health expenditure by age group
4.4.6 Health expenditure by fund source
4.5 Health care quality/performance
4.5.1 Subjective indicators
4.5.2 Health care process indicators
4.5.3 Health outcomes

1 DEMOGRAPHY AND SOCIO-ECONOMIC SITUATION

These indicators give a general picture of the situation in a country or region, with respect to health-relevant issues.

1.1 Population

The demographic data provide the denominator for calculation of many other indicators, including the stratification by gender, age or region, and the calculation of standardised rates (i.e. corrected for differences in population structures between countries).

1.1.1 Population status

Population by gender/age; UW-0, UW-5, UW-14, UW-18

- Numbers, percent, minimally presented by age bands 0-14, 15-44, 45-64, 65-84, 85+ (ICD-10 minimal recommendation, with the 1-year limit deleted and the 85+ limit added); optionally by age bands 0, 1-4, 5-14, 15-24, 25-34, 35-44, 45-54, 55-64, 65-74, 75-84, 85+ (ICD-10 optional recommendation with 85+ added, being the Eurostat grouping for mortality data in Key Data on Health 2002). Also age dependency ratio: 0-14 plus 65+ divided by 15-64. Total/male/female. PhNut project: Median age of population; % population under 15; % population 65 and over.
- Basic demography
- Eurostat; WHO; OECD. These age classes to be used when stratifying other variables by age. Also in Social Protection Committee indicators. PhNut project.

Population by subnational region

- Eurostat: by NUTS levels. Isare project gives health-policy-related regions.
- Eurostat. Isare project.

Population by urbanisation level

- Eurostat: Urban population as % of total.
- Population statistics.
- Eurostat; WHO.

Total population

- Total population number.
- Population statistics.

1.1.2 Population dynamics

Annual population change
- Number, percent.
- Population statistics.
- Eurostat.

Birth rate, crude; UW-0
- No of live births per 1000 population.
- Population statistics.
- Eurostat; WHO; OECD. Also in Social Protection Committee indicators.

Death rates
- Total deaths; Crude death rate: deaths per 100.000 population. Workhealth project inventory: 18-65 years old, by occupation, branch (definition?).
- Population statistics.
- Eurostat. Workhealth project.

Distribution of parity; UW-9
- Distribution of the number of previous live/still births of women delivering a live or stillbirth.
- Civil/medical birth registries; perinatal health surveys.
- Peristat project: note varied registration of previous stillbirths or multiples.

Fertility rate; UW-0, UW-11
- Mean number of children per woman during childbearing age; i.e., the number of births a woman would have if she experienced the current age-specific fertility rates throughout her childbearing life (definition Eurostat, WHO).
- Population statistics. Also Eurostat Sustainable Development indicator.
- Eurostat; WHO; OECD. Reprostat project.

Induced abortions; UW-11
- Number and rates of induced abortions per 1000 live births; also: induced abortion per 1000 women 15-49 of age. WHO-HFA: number of induced abortions per 1000 live births; total, <20, >35 age mother.
- Reprostat project.

Maternal age at 1st birth; UW-11
- Mean and median age of women at first delivery.
- Birth registers, vital statistics, Council of Europe.
- Reprostat project.

Migration
- Net migration; immigration and emigration separately.
- Population statistics.
- Eurostat.

Mother's age distribution (teenage pregnancies, aged mothers); UW-0, UW-9, UW-11
- No. births per 1000 women 15-19; per 1000 women 20-34; per 1000 women 35-49. Option: specify under 16 and under 18. Peristat: distribution of age in years at delivery. Reprostat: % live births in women under 20; WHO: % live births in women over 35.
- Birth registers, census, perinatal health surveys.
- Eurostat; WHO. Reprostat, Peristat projects.

Population projections; UW-0
- Population up to 2050, by gender, age groups.
- Population statistics and modelling.
- Eurostat.

1.2 Socio-economic factors

The indicators included here represent population background factors that have been selected since they are important 'distal' determinants of health; they can be used for stratifying other indicators according to socio-economic status (education, occupational class, income); more extended data and indicators in this area are available by Eurostat.

Note on stratification by SES level: According to SES project, use rate ratios and absolute rate differences; preferably by extreme groups for education and income (occupational class). WHO/HQ: inequality to measured as such, not with reference to any gradient. ECHI subgroup: noneed for separate inequality indicator; tackle the point by proper stratification of other issues.

1.2.1 Education

Justification for selection: education level is one of the most clear-cut elements of SES as a determinant of health, and well measurable.

% of 18-24-y old not in education and with low qualifications
- Eurostat key indicator.
- Eurostat.

Early school leavers; UW-10, UW-21

- % children leaving school before statutory age. CHILD project: associated with mental and social problems. By gender, age group. Laeken indicator: share of persons aged 18-24 with only secondary education (highest level ISCED 0, 1 or 2), and with no education past four weeks.
- Education statistics. Eurostat Laeken indicator (Labour Force Survey).
- CHILD project.

Education enrolment

- No, %, 4 ISCED classes.

Education environment of children

- % children with 'current mother' in each of the 4 ISCED classes; by gender, 5y age groups < 17.
- Population census; household survey.
- Child project.

Education in working population; UW-16, UW-17

- % of working age population participating in education and training.
- Workhealth project.

Education of mothers; UW-9, UW-10

- % of women delivering babies in each of the 4 ISCED classes. Also: distribution of education levels of women delivering, as highest completed level or number of completed years of education.
- Birth registers, perinatal surveys.
- Peristat project.

Literacy rate

- Percent population 15+.
- WHO.

Population by education; UW-0, UW-5, UW-14, UW-18

- No, % in 4 classes: elementary, lower secondary, upper secondary, tertiary (ISCED); by gender,age, region.
- Registry; survey.
- SES project; classes to be used when stratifying other data to SES. Eurostat; WHO; OECD. PHNut project.

Pre-primary education age 3-5; UW-10, UW-21

- % children aged 3 and under 5 in pre-primary education. CHILD project: association with later achievements. By gender, SES.
- Survey, register.
- CHILD project.

1.2.2 Employment

Justification for selection: employment type is one of the important elements of SES as a determinant of health, and well measurable.

Children by household occupational class; UW-10
- In children: % of children living in households of each of 6 ISCO classes (highest of father/mother), by gender, 5y age groups <17.
- Population census; household/labour force survey.
- Child project.

Employment of intellectually disabled; UW-12
- Pomona project: Employment and daily occupation of intellectually disabled; to be worked out.
- Pomona project.

Population by employment type; UW-5, UW-16
- ISCO classes 2-digit; useful in health context? Workhealth project inventory: consider contract types, employement type, second jobs, part-time work, supervision.
- Eurostat. Workhealth project.

Population by occupational class; UW-0
- No, % in current or last occupation group. SES project mentions 6 groups: upper non-manual, lower non-manual, skilled manual, unskilled manual, self employed, farmer. A new 'European Socio-Economic Classification (ESEC)' scheme is in preparation (Eurostat project). Also to be used for stratifying other data by SES.
- Registry; survey.
- SES project; classes to be used when stratifying other data to SES; PHnut project. Eurostat.

Total employment; UW-16
- Employment rate, 15-64, by gender, age groups, region. Workhealth project inventory: additional variables.
- Labour Force Survey.
- Eurostat. Workhealth project.

Total labour force

Total unemployment; UW-0, UW-14, UW-16
- Eurostat: proportion unemployed in active population; longterm: >12 mnts (for 15-24: > 6 mnts), by gender, age groups, region. Workhealth project inventory: also by disabilities, in minority groups.
- Eurostat: Labout force survey (LFS); Laeken indicator.
- Eurostat; WHO; OECD. PHnut project, Workhealth project.

1.2.3 Income distribution

Justification for selection: income level is one of the important elements of SES as a determinant of health, and well measurable.

Children below poverty line; UW-10, UW-21
- % of children living in households with income below 60% of national median, in at least two of the previous three years; by gender, 5y age groups < 17.
- Household surveys.
- Child project.

Income distribution; UW-16
- 80/20 share ratio of total income by quintile. Workhealth project inventory: also variables on payment systems.
- Workhealth project.

Income of intellectually disabled; UW-12
- Pomona project: income and source of income; to be worked out.
- Pomona project.

Population below poverty line; UW-0, UW-5, UW-14, UW-21
- Eurostat: % of population with income below 60% of national median.
- Survey.
- Eurostat: Laeken indicator. PHnut project.

1.2.4 Household situation

Population by household situation, justification for selection: household situation is an important socio-economic determinant of health, and well measurable.

Children with single-parent; UW-10, UW21
- % of children in single-parent household; by gender, 5y age groups <17.
- Census; household survey.
- Child project.

Living arrangements of intellectually disabled; UW-12
- Pomona project: Proportion of intellectually disabled living in six different arrangements (residential settings etc.).
- Registers, survey.
- Pomona project.

Population by household situation; UW-18
- % of households (or persons?) in each of 5 classes: 1-person, one parent, couples with/without children, other. Eurostat indicator; by gender, age, region.
- Registry; survey
- Eurostat.

1.2.5 Ethnic origin; citizenship

Population by ethnicity; justification for selection: etnicity or nationality may be associated with specific health situations or problems.

Children seeking asylum; UW-10

- % of children seeking asylum, alone or as part of a family, per 1000 resident children; by gender, 5y age groups < 17.
- Child project.

Mothers by country of origin; UW-9

- For development.
- Civil/medical birth registries; perinatal health surveys.
- Peristat project.

Population by ethnic origin and/or citizenship; UW-5, UW-21

- General: which definitions feasible? Only 'nationality'?
- Immigration and population data.

1.2.6 General economics

GDP PPP

GDP; UW-5.

2 HEALTH STATUS

This class contains various aspects of the health situation of the population. It includes mortality as well as morbidity with its functional consequences. It includes both general and diseasespecific indicators.

2.1 Mortality

2.1.1 Life expectancy & related indicators

Chance of dying in age intervals
- 0-5-15-45-65-85-+, by gender; WHO: 0-5, per 1000 live births, by gender.
- Mortality data.
- Eurostat.

Life expectancy of intellectually disabled; UW-12
- Pomona project: At birth, ages 1, 15, 45, 65, 75, by gender, by level of intellectual disability, separate for Down's syndrome.
- Pomona project.

Life expectancy; UW-0, UW-18
- WHO-HFA: At birth, ages 1, 15, 45, 65, by gender and total; Wiesler's method. For shortlist: at birth and 65.
- Mortality data. Also Laeken indicator. Also Eurostat Sustainable Development indicator.
- Eurostat, HFA, OECD; calculations done by WHO and Eurostat give different results; resolve! Eurochip: present lifetables.

2.1.2 General mortality

Death rates are basic indicators for health; even more so are age-specific mortality rates, especially of younger age groups.

Death rates (crude) by age; UW-10; UW-18
- Deaths per 100,000 population; by gender and 5-year age band; SES project: use for SES comparison; Child project: Crude rate age 0-5 per 1000 live births, crude rate age 0-20 per 100,000 population; by gender, SES.
- Mortality data.
- Child project; SES project.

Death rates (crude); Eurostat 65 causes; see under mortality cause-specific

- Crude rate; for 17 ICD chapters and some subdivisions: All infectious/parasitic, tuberculosis, meningitis, AIDS, viral hepatitis. All cancers, lip-oral-pharynx, oesophagus, stomach, colon, anorectal, liver & intrahepatic bile ducts, pancreas, larynx/trachea/ bronchus/lung, melanoma, breast, cervix, other uterus, ovary, prostate, kidney, bladder, lymphatic & haematopoietic tissue. All causes blood/immunology. All endocrine, diabetes. All mental/behavioral, alcohol abuse, drug dependence. All nervous/sense, meningitis other than under infectious. All circulatory, ischaemic heart disease, other heart disease, stroke. All respiratory, influenza, pneumonia, COPD, asthma. All digestive, stomach/duodenum ulcer, chronic liver disease. All musculoskeletal, rheumatoid arthritis and osteoarthritis. All congenital malformations, nervous system, circulatory system. All symptoms, sudden infant death, unknown causes. All external, transport, falls, poisoning, suicide, homicide, undetermined. By gender, 5-year age bands, region. Workhealth project inventory: 18- 65 years old, by occupation, branch (definition?).
- Mortality data.
- Eurostat. Workhealth project.

Death rates standardised (SDR), Eurostat 65 causes, ages 0-65, 65+; see mortality cause-specific; UW-0, UW-18

- Standardised rates; for 17 ICD chapters and some subdivisions: infectious/parasitic: tuberculosis, meningitis, AIDS, viral hepatitis; cancers: oral, oesophagus, stomach, colon, ano-rectal, liver, pancreas, lung, melanoma, breast, cervix, other uterus, ovary, prostate, kidney, bladder, haematopoietc tissue; endocrine: diabetes; mental/ behavioral: alcohol abuse, drug dependence; nervous/sense: other meningitis; circulatory: ischaemic heart disease, other heart disease, stroke; respiratory: influenza, pneumonia, COPD, asthma; digestive: stomach/duodenum ulcer, chronic liver disease; musculoskeletal: reumatoid arthritis and osteoarthritis; congenital: nervous system, circulatory system; symptoms: SID, unknown; external: transport, falls, poisoning, suicide, homicide, undetermined. By gender, region.
- Mortality data; by gender and 5-year age band.
- Eurostat; Use European standard population. Some causes of death also in WHO, OECD.

Death rates standardized (SDR); UW-3

- Standardized rate all deaths; 0-64, 65+, by gender, by region. Use European standard population.
- Mortality data, by gender and 5-year age band.
- Eurostat.

Inequality in deaths; UW-21

- Rate ratios and absolute rate differences. SES project: preferably by extreme groups for educational or occupational class.
- SES project.

PYLL Eurostat 65 causes; see mortality cause-specific

- PYLL (potential years of life lost); calculate by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State'; to be decided! Also as fraction of total PYLL. For 17 ICD chapters and some subdivisions: infectious/parasitic: tuberculosis, meningitis, AIDS, viral hepatitis; cancers: oral, oesophagus, stomach, colon, anorectal, liver, pancreas, lung, melanoma, breast, cervix, other uterus, ovary, prostate, kidney, bladder, haematopoietc tissue; endocrine: diabetes; mental/behavioral: alcohol abuse, drug dependence; nervous/sense: other meningitis; circulatory: ischaemic heart disease, other heart disease, stroke; respiratory: influenza, pneumonia, COPD, asthma; digestive: stomach/duodenum ulcer, chronic liver disease; musculoskeletal: reumatoid arthritis and osteoarthritis; congenital: nervous system, circulatory system; symptoms: SID, unknown; external: transport, falls, poisoning, suicide, homicide, undetermined. By gender, region.
- Mortality data.
- Eurostat.

2.1.3 Infant and perinatal deaths

Death rates are basic indicators for health; even more so are age-specific mortality rates, especially of younger age groups.

Causes of perinatal mortality; UW-9

- For development.
- Peristat project: development.

Fetal mortality; UW-9

- Fetal mortality rate; no. of fetal deaths at/after 22 weeks/1000 live + stillbirths in a given year; by gestational age, birth weight and plurality.
- Mortality data; civil/medical registers.
- Peristat project: sensitive to underreporting at low gestational ages.

Infant mortality; UW-0; UW-9, UW-10

- Eurostat, WHO-HFA: Deaths under 1 year per 1000 live births; by gender, SES; Peristat: deaths under 1 year after live births at or after 22 completed weeks of gestation, per 1000 live births. Also by gestational age, birth weight, plurality.
- Mortality data; civil/medical registers.
- Eurostat, HFA, OECD; Child project; Peristat project. Also in Social Protection Committee indicators.

Neonatal mortality; UW-9

- WHO-HFA: no. of deaths under 28 days per 1000 live births; subdivide by early (0-6 days), and late (7-27 days). Normally include births over 500 g birthweight. Additional from Peristat: by gestational age, birth weight and plurality; only births of at least 22 week gestation.
- Mortality data; civil/medical registers.
- Peristat project.

Perinatal mortality (fetal deaths and early neonatal mortality); UW-0, UW-9

- Eurostat, HFA: fetal deaths (over 1000 g) plus early neonatal deaths (0-6 days) per 1000 live + stillbirths. Peristat: fetal deaths at/after 22 weeks gestation, per 1000 live- and stillbirths; and early neonatal deaths (0-6 days) at/after 22 weeks gestation, per 1000 live births; to be calculated separately. Peristat project does not officially recommend perinatal mortality rate, although the indicators neonatal and fetal mortality can be combined to compute a perinatal mortality rate.
- Mortality data; civil/medical registers.
- Eurostat, HFA; Peristat project. Also in Social Protection Committee indicators.

Postneonatal mortality

- WHO-HFA: Deaths 28 days – 1 year per 1000 live births.
- Mortality data; civil/medical registers.
- Eurostat. Peristat project.

2.2 Mortality Cause-specific

For the causes of death we follow the 65 European shortlist established by Eurostat; this includes all ICD chapters plus a few main groups within these which represent a large share of total mortality. This shortlist was also selected for applicability of regional and age/gender partitions, and for usability across ICD versions. In addition, some specific causes are selected beyond the 65 Eurostat shortlist, as recommended by HMP projects, or as not assignable to a single ICD chapter.

2.2.1 Infectious/parasitic

Mortality AIDS; UW-0

- In Eurostat 65 causes; ICD10: B20-B24; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender. CHILD project: crude rate by ages 0, 1-4, 5-9, 10-14, 15-17, and SES.
- Mortality data.

Mortality all causes infectious/parasitic diseases; UW-0, UW-10

- In Eurostat 65 causes; ICD10: A00-B99; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender. CHILD project: crude rate by ages 0, 1-4, 5-9, 10-14, 15-17, and SES.
- Mortality data.

Mortality meningitis; UW-0

- In Eurostat 65 causes; ICD10: A39; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender. CHILD project: crude rate by ages 0, 1-4, 5-9, 10-14, 15-17, and SES.
- Mortality data.

Mortality tuberculosis; UW-0

- In Eurostat 65 causes; ICD10: A15-A19, B90; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender. CHILD project: crude rate by ages 0, 1-4, 5-9, 10-14, 15-17, and SES.
- Mortality data.

Mortality viral hepatitis; UW-0

- In Eurostat 65 causes; ICD10: B15-B19; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender. CHILD project: crude rate by ages 0, 1-4, 5-9, 10-14, 15-17, and SES.
- Mortality data.

2.2.2 Neoplasms

Mortality all childhood cancers; UW-2, UW-10

- Crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender. CHILD project: crude rate by ages 0, 1-4, 5-9, 10-14, 15-17, and SES; also survival acute lymphatic leukemia.
- Mortality data.
- CHILD project.

Mortality all neoplasms; UW-0, UW-2

- In Eurostat 65 causes; ICD10: C00-D48; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender. CHILD project: crude rate by ages 0, 1-4, 5-9, 10-14, 15-17, and SES.
- Mortality data.

Mortality anorectal cancer; UW-0, UW-2

- In Eurostat 65 causes; ICD10: C19-C21; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender. CHILD project: crude rate by ages 0, 1-4, 5-9, 10-14, 15-17, and SES.
- Mortality data.

Mortality bladder cancer; UW-0, UW-2

- In Eurostat 65 causes; ICD10: C67; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender. CHILD project: crude rate by ages 0, 1-4, 5-9, 10-14, 15-17, and SES.
- Mortality data.

Mortality brain/CNS cancer; UW-2

- In 23 cancer causes of Camon project; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender. CHILD project: crude rate by ages 0, 1-4, 5-9, 10-14, 15-17, and SES.
- Mortality data.
- Camon project.

Mortality breast cancer; UW-0, UW-2

- In Eurostat 65 causes; ICD10: C50; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender. CHILD project: crude rate by ages 0, 1-4, 5-9, 10-14, 15-17, and SES.
- Mortality data.

Mortality cancer of head/neck; UW-2

- In 23 cancer causes of Camon project; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender. CHILD project: crude rate by ages 0, 1-4, 5-9, 10-14, 15-17, and SES.
- Mortality data.
- Camon project.

Mortality cancer of lanynx/trachea/bronchus/lung; UW-0, UW-2

- In Eurostat 65 causes; ICD10: C32-C34; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender. CHILD project: crude rate by ages 0, 1-4, 5-9, 10-14, 15-17, and SES.
- Mortality data.

Mortality cancer of the gallbladder; UW-2

- In 23 cancer causes of Camon project; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender. CHILD project: crude rate by ages 0, 1-4, 5-9, 10-14, 15-17, and SES.
- Mortality data.
- Camon project.

Mortality cancer of the lip, mouth, pharynx; UW-0, UW-2

- In Eurostat 65 causes; ICD10: C00-C14; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender. CHILD project: crude rate by ages 0, 1-4, 5-9, 10-14, 15-17, and SES.
- Mortality data.

Mortality cancer of the liver and intrahepatic bile ducts; UW-0, UW-2

- In Eurostat 65 causes; ICD10: C22; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender. CHILD project: crude rate by ages 0, 1-4, 5-9, 10-14, 15-17, and SES.
- Mortality data.

Mortality cancer of the lymphatic & haematopoietc tissue; UW-0, UW-2

- In Eurostat 65 causes; ICD10: C81-C96; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender. CHILD project: crude rate by ages 0, 1-4, 5-9, 10-14, 15-17, and SES.
- Mortality data.

Mortality cervix cancer; UW-0, UW-2

- In Eurostat 65 causes; ICD10: C53; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender. CHILD project: crude rate by ages 0, 1-4, 5-9, 10-14, 15-17, and SES.
- Mortality data.

Mortality colon cancer; UW-0, UW-2

- In Eurostat 65 causes; ICD10: C18; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender. CHILD project: crude rate by ages 0, 1-4, 5-9, 10-14, 15-17, and SES.
- Mortality data.

Mortality Kaposi's sarcoma; UW-2

- In 23 cancer causes of Camon project; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender. CHILD project: crude rate by ages 0, 1-4, 5-9, 10-14, 15-17, and SES.
- Mortality data.
- Camon project.

Mortality kidney cancer; UW-0, UW-2

- In Eurostat 65 causes; ICD10: C64; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender. CHILD project: crude rate by ages 0, 1-4, 5-9, 10-14, 15-17, and SES.
- Mortality data.

Mortality melanoma; UW-0, UW-2

- In Eurostat 65 causes; ICD10: C43; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender. CHILD project: crude rate by ages 0, 1-4, 5-9, 10-14, 15-17, and SES.
- Mortality data.

Mortality mesothelioma; UW-2

- In 23 cancer causes of Camon project; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender. CHILD project: crude rate by ages 0, 1-4, 5-9, 10-14, 15-17, and SES.
- Mortality data.
- Camon project.

Mortality oesophagus cancer; UW-0, UW-2

- In Eurostat 65 causes; ICD10: C15; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender. CHILD project: crude rate by ages 0, 1-4, 5-9, 10-14, 15-17, and SES.
- Mortality data.

Mortality other uterus cancer; UW-0, UW-2

- In Eurostat 65 causes; ICD10: C54-C55; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender. CHILD project: crude rate by ages 0, 1-4, 5-9, 10-14, 15-17, and SES.
- Mortality data.

Mortality ovary cancer; UW-0, UW-2

- In Eurostat 65 causes; ICD10: C56; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in therespective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender. CHILD project: crude rate by ages 0, 1-4, 5-9, 10-14, 15-17, and SES.
- Mortality data.

Mortality pancreas cancer; UW-0, UW-2

- In Eurostat 65 causes; ICD10: C25; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender. CHILD project: crude rate by ages 0, 1-4, 5-9, 10-14, 15-17, and SES.
- Mortality data.

Mortality prostate cancer; UW-0, UW-2

- In Eurostat 65 causes; ICD10: C61; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender. CHILD project: crude rate by ages 0, 1-4, 5-9, 10-14, 15-17, and SES.
- Mortality data.

Mortality stomach cancer; UW-0, UW-2

- In Eurostat 65 causes; ICD10: C16; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in therespective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender. CHILD project: crude rate by ages 0, 1-4, 5-9, 10-14, 15-17, and SES.
- Mortality data.

Mortality testis cancer; UW-2

- In 23 cancer causes of Camon project; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender. CHILD project: crude rate by ages 0, 1-4, 5-9, 10-14, 15-17, and SES.
- Mortality data.
- Camon project.

Mortality thyroid cancer; UW-2

- In 23 cancer causes of Camon project; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender. CHILD project: crude rate by ages 0, 1-4, 5-9, 10-14, 15-17, and SES.
- Mortality data.
- Camon project.

2.2.3 Blood/immunology

Mortality all causes blood/immulology; UW-0

- In Eurostat 65 causes; ICD10: D50-D89; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy inthe respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender.
- Mortality data.

2.2.4 Endocrine

Mortality all causes endocrine, nutritional, metabolic diseases; UW-0

- In Eurostat 65 causes; ICD10: E00-E90; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender.
- Mortality data.

Mortality diabetes; UW-0, UW-3

- In Eurostat 65 causes; ICD10: E10-E14; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender. EUDIP project: include deaths with diabetes as primary or any cause of death (which is more than intended in the Eurostat 65 causes).
- Mortality data.
- EUDIP project.

2.2.5 Mental/behavioural

Mortality alcohol abuse; UW-0

- In Eurostat 65 causes; ICD10: F10; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender.
- Mortality data.

Mortality all causes mental & behavioral disorders; UW-0

- In Eurostat 65 causes; ICD10: F00-F99; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender.
- Mortality data.

Mortality drug dependence; UW-0

- In Eurostat 65 causes; ICD10: F11-F16, F18-F19; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender.
- Mortality data.

2.2.6 Nervous system/sense

Mortality all causes nervous system/sense diseases; UW-0

- In Eurostat 65 causes; ICD10: G00-H95; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (tobe decided!); PYLL as fraction of total PYLL. By gender.
- Mortality data.

Mortality meningitis other than under infectious diseases; UW-0

- In Eurostat 65 causes; ICD10: G00-G03; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender.
- Mortality data.

2.2.7 Circulatory system

Mortality acute coronary syndromes; UW-4

- ICD9: 410-411; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender.
- Mortality data.
- Eurociss project.

Mortality all causes circulatory system; UW-0, UW-4

- In Eurostat 65 causes; ICD10: I00-I99; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender.
- Mortality data.

Mortality AMI (acute myocardial infarction); UW-4

- ICD9: 410; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender.
- Mortality data.
- Eurociss project.

Mortality ischaemic heart disease; UW-0, UW-4

- In Eurostat 65 causes; ICD10: I20-I25; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender.
- Mortality data.

Mortality other heart disease; UW-0, UW-4

- In Eurostat 65 causes; ICD10: I-30-I33, I39-I52; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender.
- Mortality data.

Mortality stroke; UW-0, UW-4

- In Eurostat 65 causes; ICD10: I60-I69; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender.
- Mortality data.

2.2.8 Respiratory system

Mortality all causes respiratory system; UW-0

- In Eurostat 65 causes; ICD10: J00-J99; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender. Also Eurostat Sustainable Development Indicator.
- Mortality data.

Mortality asthma; UW-0, UW-5

- In Eurostat 65 causes; ICD10: J45-J46; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender. IMCA project: also of asthma as contributing cause of death. OECD health care quality: mortality age 5-39 as quality indicator.
- Mortality data.
- IMCA project. OECD health care quality project.

Mortality COPD; UW-0, UW-5

- In Eurostat 65 causes; ICD10: J40-J47; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender. IMCA project: exclude J45, J46; include COPD as a contributing cause of death.
- Mortality data.
- IMCA project.

Mortality influenza; UW-0

- In Eurostat 65 causes; ICD10: J10-J11; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender.
- Mortality data.

Mortality pneumonia; UW-0

- In Eurostat 65 causes; ICD10: J12-J18; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender.
- Mortality data.

2.2.9 Digestive system

Mortality all causes digestive system; UW-0

- In Eurostat 65 causes; ICD10: K00-K93; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender.
- Mortality data.

Mortality chronic liver disease; UW-0

- In Eurostat 65 causes; ICD10: K70, K73-K74; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender.
- Mortality data.

Mortality ulcer of stomach, duodenum; UW-0

- In Eurostat 65 causes; ICD10: K25-K28; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender.
- Mortality data.

2.2.10 Skin

Mortality all causes skin diseases; UW-0

- In Eurostat 65 causes; ICD10: L00-L99; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender.
- Mortality data.

2.2.11 Musculoskeletal system

Mortality all causes musculoskeletal system; UW-0

- In Eurostat 65 causes; ICD10: M00-M99; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender.
- Mortality data.

Mortality rheumatoid arthritis & osteoarthritis; UW-0, UW-6

- In Eurostat 65 causes; ICD10: M05-M06, M15-M19; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender.
- Mortality data.

2.2.12 Genito-urinary system

Mortality all causes genito-urinary system; UW-0

- In Eurostat 65 causes; ICD10: N00-N99; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender.
- Mortality data.

2.2.13 Pregnancy

Mortality all causes pregnancy, childbirth, puerperium; UW-0

- In Eurostat 65 causes; ICD10: O00-O99; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender.
- Mortality data.

Mortality maternal; UW-9

- Crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender of delivery. WHO: mortality of women per 100.000 live births, by any cause, during pregnancy or within 42 days after termination of pregnancy, by maternal age, delivery mode. Peristat project: extend to 1 year. Development: by 10 separate causes.
- Mortality data. Audits, confidential enquiries.
- Peristat project.

2.2.14 Perinatal conditions

Mortality all causes conditions from perinatal period; UW-0, UW-9, UW-10

- In Eurostat 65 causes; ICD10: P00-P96; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender. CHILD project: by ages 0, 1-4, 5-9, 10-14, 15-17, and by SES. Peristat: to be developed.
- Mortality data.
- CHILD, Peristat projects.

2.2.15 Congenital malformations

Mortality all causes congenital malformations; UW-0, UW-9, UW-10

- In Eurostat 65 causes; ICD10: Q00-Q99; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender. CHILD project: by ages 0, 1-4, 5-9, 10-14, 15-17, and by SES. Peristat: to be developed.
- Mortality data.
- CHILD, Peristat projects.

Mortality congenital malformations circulatory system; UW-0, UW-10

- In Eurostat 65 causes; ICD10: Q20-Q28; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender. CHILD project: by ages 0, 1-4, 5-9, 10-14, 15-17, and by SES.
- Mortality data.
- CHILD project.

Mortality congenital malformations nervous system; UW-0, UW-10

- In Eurostat 65 causes; ICD10: Q00-Q07; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender. CHILD project: by ages 0, 1-4, 5-9, 10-14, 15-17, and by SES.
- Mortality data.
- CHILD project.

2.2.16 Symptoms

Mortality sudden infant death syndrome; UW-0, UW-10

- In Eurostat 65 causes; ICD10: R95; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender. CHILD project: by ages 0, 1-4, 5-9, 10-14, 15-17, and by SES.
- Mortality data.
- CHILD project.

Mortality symptoms, ill-defined causes; UW-0

- In Eurostat 65 causes; ICD10: R00-R99; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender.
- Mortality data.

Mortality unknown causes; UW-0

- In Eurostat 65 causes; ICD10: R96-R99; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender.
- Mortality data.

2.2.17 External causes

Mortality accidental falls; UW-0

- In Eurostat 65 causes; ICD10: W00-W19; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender.
- Mortality data.

Mortality accidental poisoning; UW-0, UW-10

- In Eurostat 65 causes; ICD10: X40-X49; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender. CHILD project: by ages 0, 1-4, 5-9, 10-14, 15-17, and by SES.
- Mortality data.

Mortality all external causes; UW-0, UW-8, UW-10

- In Eurostat 65 causes; ICD10: V01-Y89; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender. CHILD project: by ages 0, 1-4, 5-9, 10-14, 15-17, and by SES; specify burns and drownings. WP Accidents/injuries: injuries as % of total deaths; age bands 0-14, 15-64, 65+.
- Mortality data.
- CHILD project. Working Party Accidents & Injuries.

Mortality fatal accidents at work; UW-16

- Incidence rates per 100,000. Workhealth project: By age, gender, cause of accident, branch, occupation.
- Registers.
- Eurostat-ESAW. Workhealth project.

Mortality homicide, assault; UW-0, UW-8, UW-10

- In Eurostat 65 causes; ICD10: X85-Y09; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender. CHILD project: by ages 0, 1-4, 5-9, 10-14, 15-17, and by SES.
- Mortality data.

Mortality suicide & intentional self-harm; UW-0, UW-1, UW-10

- In Eurostat 65 causes; ICD10: X60-X84; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender. CHILD project: by ages 0, 1-4, 5-9, 10-14, 15-17, and by SES. Also Eurostat Sustainable Development Indicator.
- Mortality data.

Mortality transport accidents; UW-0, UW-8, UW-10, UW-15

- In Eurostat 65 causes; ICD10: V01-99; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender. CHILD project: by ages 0, 1-4, 5-9, 10-14, 15-17, and by SES. WP accidents/injuries: age bands 0-14, 15-64, 65+. Environment/health project: include delayed deaths (<30 days)
- Mortality data.
- Environment/health, CHILD projects; WP accidents/injuries.

Mortality undetermined intent; UW-0, UW-1

- In Eurostat 65 causes; ICD10: Y10-Y34; crude death rates; standardized death rates 0-64 and 65+, by region; PYLL (potential years of life lost), to be calculated by remaining life expectancy in the respective Member State, or by difference with life expectancy in 'top EU Member State' (to be decided!); PYLL as fraction of total PYLL. By gender. CHILD project: by ages 0, 1-4, 5-9, 10-14, 15-17, and by SES.
- Mortality data.

2.2.18 Certain specific (avoidable) causes

Alcohol-related deaths; UW-0, UW-1, UW-21

- Eurostat 65 COD includes F10, 'alcohol psychosis/chronic alcohol abuse'. This is only a small part of alcohol-related mortality. ECHI prefers (preliminary) recommendation by Working Party Mental Health: ICD-10: F10, G31.2, G62.1, G72.1, I42.6, K29.2, K70, K86.0, O35.4, P04.3, X45. Eurostat, feasible? Does not include alcohol-related traffic deaths; see project Environment/health. WHO: all ICD-causes in which alcohol is implicated, i.e. not alcoholattributable deaths.
- Mortality data.
- Eurostat; WHO. Working Party mental health.

Drugs-related deaths; UW-0, UW-1, UW-21

- Eurostat 65 causes of death includes ICD-10 F11-F16 (drug dependence). EMCDDA definition: acute drug-related deaths preferable.
- EMCDDA; Eurostat. Working party mental health.

Smoking-related deaths; UW-0

- WHO: all ICD causes in which smoking is implicated, which is not 'smoking attributed deaths', and thus a severe overestimate. To be further developed.
- Mortality data.
- WHO.

Temperature-associated mortality; UW-15, UW-18
- Excess deaths during periods of extreme high or low temperatures. Calculated from mortality data and climate data.
- Mortality data, climate data.
- Environment/health project.

2.3 Morbidity Disease-specific

Diseases/disorders (including injuries) are selected as (i) associated with large population burden or (ii) representing specific avoidable causes. Included are suggestions by many HMP projects which may not always meet these criteria.

The indicator is either incidence or prevalence (or both) depending on the nature of the disease/disorder. Many sources are possible, e.g. specific registers, notification systems, hospital discharge data, primary care data, insurance data, health examination.

2.3.1 Infectious/parasitic

Creutzfeld-Jacob disease, incidence
- By gender, age, region, SES.
- Notification system.

Hepatitis B incidence
- By gender, age, region, SES.
- Notification system.

HIV seroprevalence in pregnant women; UW-11
- % tested women found positive. By age, region, SES.
- Specific surveys.
- Reprostat project.

HIV/AIDS; UW-0
- Incidence (prevalence)
- Registry; EuroHIV data
- Eurostat; WHO; OECD

Measles incidence; UW-10
- By gender, age, region, SES. CHILD project: use indicator as tracer for vaccination effectiveness.
- Notification system.
- CHILD project.

Meningitis incidence; UW-10
- By gender, age, region, SES. CHILD project: use indicator as tracer for vaccination effectiveness.
- Notification system.
- CHILD project.

Sexually transmitted diseases (esp. Chlamydia); UW-11
- % positive age 15-19, by gender, region, SES.
- Specific surveys.
- Reprostat project.

Tuberculosis incidence; UW-10
- By gender, age, region, SES.
- Notification systems.

Vaccination scheme diseases, incidence; UW-22
- By gender, age, region, SES.
- Notification system.
- OECD health care quality project. Also in Social Protection Committee indicators.

2.3.2 Neoplasms

Cancer colorectal, incidence; UW-2
- Basically incidence; where possible or useful also prevalence. By gender, age, region, SES. Eurochip project: also stage at diagnosis, % of cases confirmed microscopically. For survival rates, see under quality of care.
- Cancer registries.
- Camon, Eurochip pojects.

Cancer melanoma, incidence; UW-2, UW-15
- Basically incidence; where possible or useful also prevalence. By gender, age, region, SES. Eurochip project: also stage at diagnosis, % of cases confirmed microscopically. For survival rates, see under quality of care.
- Cancer registries.
- Camon, Eurochip projects.

Cancer of the mouth/pharynx/larynx, incidence; UW-2, UW-7
- Basically incidence; where possible or useful also prevalence. By gender, age, region, SES. Eurochip project: also stage at diagnosis, % of cases confirmed microscopically. For survival rates, see under quality of care. Oral health project: ages 35-64, lip, oral cavity, pharynx, ICD-10: C00-C14.
- Cancer registries.
- Camon, Eurochip, Oral health projects.

Cancer of the bladder, incidence; UW-2

- Basically incidence; where possible or useful also prevalence. By gender, age, region, SES. Eurochip project: also stage at diagnosis, % of cases confirmed microscopically. For survival rates, see under quality of care.
- Cancer registries.
- Camon, Eurochip projects.

Cancer of the brain/CNS, incidence; UW-2

- Basically incidence; where possible or useful also prevalence. By gender, age, region, SES. Eurochip project: also stage at diagnosis, % of cases confirmed microscopically. For survival rates, see under quality of care.
- Cancer registries.
- Camon, Eurochip projects.

Cancer of the breast, incidence; UW-0, UW-2

- Basically incidence; where possible or useful also prevalence. By gender, age, region, SES. Eurochip project: also stage at diagnosis, % of cases confirmed microscopically. For survival rates, see under quality of care.
- Cancer registries.
- Eurostat, WHO, OECD. Camon, Eurochip projects.

Cancer of the cervix uteri, incidence; UW-2

- Basically incidence; where possible or useful also prevalence. By gender, age, region, SES. Eurochip project: also stage at diagnosis, % of cases confirmed microscopically. For survival rates, see under quality of care.
- Cancer registries.
- WHO. Camon, Eurochip projects.

Cancer of the endometrium, incidence; UW-2

- Basically incidence; where possible or useful also prevalence. By gender, age, region, SES. Eurochip project: also stage at diagnosis, % of cases confirmed microscopically. For survival rates, see under quality of care.
- Cancer registries.
- Camon, Eurochip projects.

Cancer of the gall bladder, biliary tract, incidence; UW-2

- Basically incidence; where possible or useful also prevalence. By gender, age, region, SES. Eurochip project: also stage at diagnosis, % of cases confirmed microscopically. For survival rates, see under quality of care.
- Cancer registries.
- Camon, Eurochip projects.

Cancer of the kidney, incidence; UW-2

- Basically incidence; where possible or useful also prevalence. By gender, age, region, SES. Eurochip project: also stage at diagnosis, % of cases confirmed microscopically. For survival rates, see under quality of care.
- Cancer registries.
- Camon, Eurochip projects.

Cancer of the liver, incidence; UW-2

- Basically incidence; where possible or useful also prevalence. By gender, age, region, SES. Eurochip project: also stage at diagnosis, % of cases confirmed microscopically. For survival rates, see under quality of care.
- Cancer registries.
- Camon, Eurochip projects.

Cancer of the lung/larynx/trachea/bronchus, incidence; UW-0, UW-2

- Basically incidence; where possible or useful also prevalence. By gender, age, region, SES. Eurochip project: also stage at diagnosis, % of cases confirmed microscopically. For survival rates, see under quality of care.
- Cancer registries.
- Eurostat, WHO, OECD. Camon, Eurochip projects.

Cancer of the oesophagus, incidence; UW-2

- Basically incidence; where possible or useful also prevalence. By gender, age, region, SES. Eurochip project: also stage at diagnosis, % of cases confirmed microscopically. For survival rates, see under quality of care.
- Cancer registries.
- Camon, Eurochip projects.

Cancer of the ovary, incidence; UW-2

- Basically incidence; where possible or useful also prevalence. By gender, age, region, SES. Eurochip project: also stage at diagnosis, % of cases confirmed microscopically. For survival rates, see under quality of care.
- Cancer registries.
- Camon, Eurochip projects.

Cancer of the pancreas, UW-2

- Basically incidence; where possible or useful also prevalence. By gender, age, region, SES. Eurochip project: also stage at diagnosis, % of cases confirmed microscopically. For survival rates, see under quality of care.
- Cancer registries.
- Camon, Eurochip projects.

Cancer of the prostate, incidence; UW-2

- Basically incidence; where possible or useful also prevalence. By gender, age, region, SES. Eurochip project: also stage at diagnosis, % of cases confirmed microscopically. For survival rates, see under quality of care.
- Cancer registries.
- Camon, Eurochip projects.

Cancer of the stomach, incidence; UW-2

- Basically incidence; where possible or useful also prevalence. By gender, age, region, SES. Eurochip project: also stage at diagnosis, % of cases confirmed microscopically. For survival rates, see under quality of care.
- Cancer registries.
- Camon, Eurochip projects.

Cancer of the testis, incidence; UW-2

- Basically incidence; where possible or useful also prevalence. By gender, age, region, SES. Eurochip project: also stage at diagnosis, % of cases confirmed microscopically. For survival rates, see under quality of care.
- Cancer registries.
- Camon, Eurochip projects.

Cancer of the thyroid, incidence; UW-2

- Basically incidence; where possible or useful also prevalence. By gender, age, region, SES. Eurochip project: also stage at diagnosis, % of cases confirmed microscopically. For survival rates, see under quality of care.
- Cancer registries.
- Camon, Eurochip projects.

Cancer total, incidence; UW-2, UW-18

- Basically incidence; where possible or useful also prevalence. By gender, age, region, SES. Eurochip project: also stage at diagnosis, % of cases confirmed microscopically. For survival rates, see under quality of care.
- Cancer registries. EuroREVES: health interview survey.
- Camon, Eurochip, EuroREVES projects.

Cancer, Kaposi's sarcoma, incidence; UW-2

- Basically incidence; where possible or useful also prevalence. By gender, age, region, SES. Eurochip project: also stage at diagnosis, % of cases confirmed microscopically. For survival rates, see under quality of care.
- Cancer registries.
- Camon, Eurochip projects.

Cancer, leukemia, incidence; UW-2
- Basically incidence; where possible or useful also prevalence. By gender, age, region, SES. Eurochip project: also stage at diagnosis, % of cases confirmed microscopically. For survivalrates, see under quality of care.
- Cancer registries.
- Camon, Eurochip projects.

Cancer, lymphomas, incidence; UW-2
- Basically incidence; where possible or useful also prevalence. By gender, age, region, SES. Eurochip project: also stage at diagnosis, % of cases confirmed microscopically. For survival rates, see under quality of care.
- Cancer registries.
- Camon, Eurochip projects.

Cancer, mesothelioma, incidence; UW-2
- Basically incidence; where possible or useful also prevalence. By gender, age, region, SES. Eurochip project: also stage at diagnosis, % of cases confirmed microscopically. For survival rates, see under quality of care.
- Cancer registries.
- Camon, Eurochip projects.

Cancer, multiple myeloma, incidence; UW-2
- Basically incidence; where possible or useful also prevalence. By gender, age, region, SES. Eurochip project: also stage at diagnosis, % of cases confirmed microscopically. For survival rates, see under quality of care.
- Cancer registries.
- Camon, Eurochip projects.

Cancers of the childhood, incidence; UW-2, UW-10
- Basically incidence; where possible or useful also prevalence. By gender, age, region, SES. Eurochip project: also stage at diagnosis, % of cases confirmed microscopically. For survivalrates, see under quality of care. CHILD project: ages 0-14 and 15-17.
- Cancer registries.
- Camon, Eurochip, CHILD projects.

2.3.3 Blood/immunology

2.3.4 Endocrine

Blindness in diabetics, UW-3
- Annual incidence of blindness from diabetes as share of total incidence of blindness. By gender, age, region, SES.
- Registries.
- EUDIP project.

Diabetes type 1 in children, UW-3, UW-10

- Incidence by age per 100,000 population, age 0-14. CHILD project: ages 0-4, 5-9, 10-14, 15-17.
- Registries, special surveys.
- EUDIP, CHILD projects.

Diabetes; UW-0, UW-3, UW-10, UW-18

- Prevalence of all types of diabetes. By gender, age, region, SES. CHILD project: ages 0-4, 5-9, 10-14, 15-17. EUDIP: ICD-10, E10-E14, use data on precise diagnosis, medication, diets, glucose measurement.
- Registries; primary care records; special surveys HIS/HES. Eurostat: International Diabetes institute.
- Eurostat; WHO. Eudip, CHILD, EuroREVES, Primary Care projects.

Nephropatry in diabetics, UW-3, UW-18

- % of diabetics with ESRF serum creatinine > 400 umol/liter last 12 months. By gender age, region, SES.
- Registries.
- EUDIP project.

Retinopathy in diabetics; UW-3, UW-18

- % of diabetics with proliferative retinopathy last 12 months. By gender, age, region, SES.
- Registries.
- EUDIP project.

2.3.5 Mental/behavioural

Alcohol-related disorders; UW-1

- 12 month prevalence. By gender, age, region, SES. Mental health WP: use CAGE questionnaire for 'alcohol dependence'. Also CIDI instrument.
- Survey.
- Mental health Working Party.

Anxiety disorder, generalized; UW-1, UW-17, UW-18

- 12 month prevalence, by CIDI instrument. By gender, age, region, SES.
- Population survey (CIDI instrument). EuroREVES: also as single question on depression/anxiety.
- Mental health & EuroREVES projects.

Dementia/Alzheimer; UW-0; UW-18

- 12 mnth prevalence. By gender, age, region, SES.
- Surveys; registries. Eurostat: data from Alzheimer Europe.
- Mental health project.

Depression; UW-0, UW-1, UW-17, UW-18
- 12-month prevalence, by CIDI instrument. By gender, age, region, SES.
- Population survey (CIDI instrument). EuroREVES: also by single question on depression/anxiety.
- Mental health project. EuroREVES, Primary Care projects.

Intellectual disability; UW-12
- Prevalence. See Pomona project for definition. Also co-morbidity with epilepsy, dental health, various psychiatric disorders, challenging behaviour, visual and hearing impairments, mobility impairments;
- Special surveys.
- Pomona project.

Post-partum depression, UW-9
- Peristat: for development.
- Specific surveys.
- Peristat project.

Suicide attempt; UW-0, UW-1, UW-10, UW-17
- Lifetime prevalence; by CIDI questionnaire. By gender, age, region, SES; specify for children.
- Survey.
- Mental health project and WP; WP Accidents/injuries. CHILD project.

2.3.6 Nervous system/sense

Cataract; UW-12
- 12 month prevalence, by gender, age, region, SES.
- Interview survey.
- EuroREVES project.

Migraine or frequent headache
- 12 month prevalence, by gender, age, region, SES.
- Interview survey.
- EuroREVES project.

2.3.7 Circulatory system

Acute coronary syndromes; UW-4
- Incidence/attack rate per 100.000. By gender, age, region, SES.
- Hospital discharge data
- Eurociss project.

Acute myocardial infarction (AMI); UW-0, UW-4, UW-18

- Incidence/attack rate per 100.000. By gender, age, region, SES. Eurociss project: also 1-hour, 24-hour, 28-day case-fatality rates; rates by AMI subtype; prevalence. EuroREVES: prevalence by interview survey.
- Hospital discharge data combined with mortality; if possible population-based registers. Interview survey for single question.
- Eurociss project; hospital data project. EuroREVES project.

Effort angina; UW-4

- Prevalence. By gender, age, region, SES.
- Hospital discharge data.
- Eurociss project.

Heart failure; UW-4, UW-18

- Incidence, prevalence. By gender, age, region, SES.
- Hospital discharge data.
- Eurociss project.

Other heart disease (rheumatic, atherosclerosis); UW-4

- Incidence, prevalence. By gender, age, regio, SES.
- Hospital discharge data.
- Eurociss project.

Stroke; UW-0, UW-4, UW-18

- Incidence/attack rate per 100,000. By gender, age, region, SES. Eurociss project: also 7-day, 28-day case-fatality rates; rates by stroke subtype hemorragic, ischemic); prevalence. EuroREVES: prevalence by interview survey.
- Hospital discharge data combined with mortality; preferably population-based registers. Interview survey for single question.
- Eurociss project, hospital data project. EuroREVES, Primary Care projects.

2.3.8 Respiratory system

Asthma; UW-0, UW-5, UW-10

- Prevalence by symptoms, attacks and diagnosis, as defined by IMCA project. EuroREVES project recommends single survey question on prevalence of asthma and allergic asthma. CHILD project: specify for children ages 0-4, 5-9, 10-14, 15-17. IMCA project: prevalence of asthma symptoms, attacks, physician-diagnosed asthma. Also asthma severity by various methods. Also Eurostat Sustainable Development Indicator.
- Special surveys preferred; general HIS/HES or GP networks second best proxies.
- IMCA, EuroREVES, CHILD, IMCA, Primary Care projects.

COPD; UW-0, UW-5, UW-18

- COPD = chronic obstructive pulmonary disease; prevalence by symptoms and diagnosis; by gender, age, region, SES. IMCA project: prevalence of chronic symptoms, chronic bronchitis, airway obstruction, physician-diagnosed COPD. Also COPD severity by various methods. Also Eurostat Sustainable Development Indicator.
- Special population surveys preferred. General HIS/HES or GP networks are second best proxies.
- WHO. IMCA project, EuroREVES project.

2.3.9 Digestive system

Dental health; UW-7, UW-10

- Mean DMFT index (WHO: No. of decayed, missing or filled teeth at age 12; CHILD project: at ages 5 and 12); alternative (WHO): % of caries-free children at age 5 or 6. Oral health project: % Early childhood caries age group 1-5 years. Mean number of decayed, missing, filled first permanent molars in children at 6 and 12 years of age. % Of 12-year old children according to fluorosis Dean's index score. % Children, adults (2-4, 6-8, 12, 15, 35-44 age) with untreated dentine decay teeth. % Population age 5-74 with no obvious decay experience. Mean number of decayed, missing, filled teeth per person, ages 5-74. % Population aged >=18 with >= 21 teeth in functional occlusion. % population >=18 with no natural teeth. % population >35 yeras who lost all natural teeth.
- School health services. Registers, surveys.
- CHILD, Oral health projects

Gastric or duodenal ulcer

- 12 month and lifetime prevalence, by gender, age, region, SES.
- Interview surveys (EuroREVES), registries.
- EuroREVES project.

Periodontal health; UW-7

- % population (ages 12, 15, 18, 35-44, 65-74) with 4 categories of gingivitis, pockets. % population age 35-74 with periodontal disease any grade.
- Sample registries, surveys.
- Oral health project.

Removable denture; UW-7

- % population with removable denture.
- Surveys.
- Oral health project.

Water- and foodborne infections; UW-18

- Incidence, by gender, age, region, SES. WHO: also number of outbreaks. Also Eurostat Sustainable Development Indicator.
- Registries.
- WHO.

2.3.10 Skin

2.3.11 Musculoskeletal system

Osteoarthritis, UW-6, UW-18

- Prevalence for OA of hip and knee, as most important for disability and care needs (MSC project). By gender, age, region, SES.
- Health interview + health examination survey. EuroREVES project recommends single interview question coveringboth RA and osteoarthitis.
- Musculoskeletal conditions project, EuroREVES project.

Rheumatoid arthritis, UW-6

- Incidence, prevalence, based on clinical diagnosis. By gender, age, region, SES.
- Health examination survey + laboratory test. EuroREVES project recommends single interview question covering both RA and osteoarthitis.
- Musculoskeletal Conditions project. EuoREVES project.

2.3.12 Genito-urinary system

Erectile dysfunction; UW-11

- % men reporting ED age 40-70. In additional set Reprostat project.
- Survey.
- Reprostat project.

Urinary incontinence, UW-11

- % women reporting UI at least one episode/month in three previous months, 40-49 of age. In additional set of Reprostat project.
- Survey.
- Reprostat project.

2.3.13 Pregnancy

Deliveries after ART (assisted reproductive technology); UW-11

- % women delivering live or stillborn after ART (range of techniques). By age. Rprostat project notin core set.
- Birth and ART registers linked.
- Reprostat project.

Fecal incontinence, chronic; UW-9

- For development.
- Peristat project.

Problems in getting pregnant
- % of women age 15-49 trying to get pregnant > 1 year. By age. In core set of Reprostat project.
- Survey.
- Reprostat project.

Severe maternal morbidity; UW-9
- For development.
- Peristat project.

Trauma to perineum; UW-9
- For development.
- Peristat project.

2.3.14 Perinatal conditions

APGAR score; UW-9
- Distribution at 5 minutes after birth.
- Birth registries, perinatal health surveys, hospital discharge data.
- Peristat project.

Birth weight (low); UW-0, UW-9
- HFA: % of live borns weighing 2500 g or more; Peristat: proportion of births within 500 g intervals, by vital status at birth, gestational age, plurality. Peristat: classify gestational age by (live and stillbirths) 22-36 weeks (preterm), 37-41 weeks (term), 41+ weeks (possterm).
- Birth registries, perinatal health surveys, hospital discharge data.
- HFA; OECD. Peristat project

Cerebral palsy; UW-9
- Prevalence. For development.
- Birth registries, perinatal health surveys, hospital discharge data.
- Peristat project.

Hypoxic-ischemic encephalopathy; UW-9
- Prevalence. For development.
- Birth registries, perinatal health surveys, hospital discharge data.
- Peristat project.

Multiple birth rate; UW-9
- % of maternities following multiple gestation, including stillbirths, by number of fetuses.
- Birth registries, perinatal health surveys, hospital discharge data.
- Peristat project.

Pre-term births; UW-9
- % of live and stillbirths divided by 22-27, 28-31, 32-36 weeks, by vital status and plurality. Singleton preterm rate is best suited for country comparisons.
- Birth registries, perinatal health surveys, hospital discharge data.
- Peristat project.

2.3.15 Congenital malformations

Downs syndrome; UW-9
- % of live birth, fetal deaths and induced abortions with Down's.
- Registries (Eurocat).
- Peristat project.

Neural tube defects; UW-9
- % of live births, fetal deaths and induced abortions with neural tube defects.
- Registries (Eurocat).
- Peristat project.

2.3.16 Symptoms

2.3.17 External causes

Alcohol-related traffic accidents: UW-8
- Number per 100,000 population.
- Combination of sources.
- WHO.

Burns in children; UW-10
- Overnight in-patient admissions per 100,000 population. by gender; age 0-4, 4-9, 10-14, 15-17; region; SES.
- Hospital data.
- CHILD project.

Hip fractures; UW-6, UW-18
- Incidence. By gender, age, region, SES.
- Medical registries.

Injuries: home/leisure; violence; UW-0, UW-8, UW-18
- Incidence. Working Party Accidents/Injuries: possibly based on hospital discharges. Further work needed.
- Working Party Accidents/injuries: primarily hospital discharges. Eurocost project: best comparability on hospital data and emergency department data.
- Eurostat; WHO; OECD. WP accidents and injuries. Eurocost project (costs of injuries).

Injuries: road traffic; UW-0, UW-8, UW-15

- Incidence.
- Eurocost project: best comparability on hospital data and emergency department data. Eurostat; OECD. Working Parties on Accidents/Injuries; on Environment and Health.
- Eurocost project (costs of injuries)

Injuries: workplace; UW-0, UW-8, UW-16

- Incidence. Workhealth project: for accidents at work follow Eurostat/ESAW; less than 4 days absence from work: Labour Force Survey; more than 3 days absence from work: national registers. By age, gender, branch/occupation, cause of accident. Supported by Working Party Accidents/Injuries.
- Registers, surveys. Eurocost project: best comparability on hospital data and emergency department data.
- Eurostat-ESAW. Workhealth project; Working Party Accidents/injuries. Eurocost project (costs of injuries).

Long-bone fractures in children; UW-10

- Number per 100,000 population. By gender; ages 10-14, 15-17; region, SES.
- Data from hospitals and emergency departments.
- CHILD project.

Poisoning in children; UW-10

- Overnight in-patient admissions per 100,000 population. By gender; ages 0-4, 5-9, 10-14, 15-17; region; SES.
- Hospital data.
- CHILD project.

2.3.18 Certain specific (avoidable) causes

Occupational disease; UW-16

- Eurostat: Incidence of 35 specific causes, per 100,000 population (EODS). WHO: '.. such as dermatosis, silicosis, asthma, cancer, infections, poisonings, consequences of noise, vibration, excessive loads, etc.'. Also: prevalence of work-related health problems, by gender, age, main diagnostic groups and work absence status (Labour Force Survey). To be further defined by Workhealth project.
- Eurostat: EODS (European Statistics on Occupational Disease), Surveys.
- Eurostat (EODS). Workhealth project.

2.4 Perceived and functional health

This section includes indicators not based on ICD-categories but rather on subjective notions of health and the functional consequences of health as e.g. defined by the ICF (International Classification of Functioning). Indicators are selected as covering the important domains of human functioning, as related to health. This includes the physical, mental and social aspects of health. It also includes the notion of health-related quality of life. The ECHI group notes that this section contains very little focus on the specific situation of children.

2.4.1 Perceived health

Perceived general health; UW-0, UW-17
- Prevalence by up to 5 response categories from WHO question (how is your health in general? very good/good/fair/bad/very bad); by gender, age, SES, region. Laeken indicator: by income.
- Survey. In Eurostat SILC, Minimal European Health Module. The question is standard but the interpretation subject to cultural bias.
- Eurostat; WHO; OECD. Euro-REVES project. Also Eurostat Sustainable Development Indicator. Also in Social Protection Committee indicators.

Perceived sexual health; UW-11, UW-17
- For development.
- Reprostat project.

2.4.2 Chronic disease general

Chronic illness or condition, general; UW-0, UW-17
- 12 month prevalence; open question.
- Survey. In Eurostat SILC, Minimal European Health Module.
- Eurostat. EuroREVES project. Also in Social Protection Committee indicators.

Chronic illness or condition, specified
- 12 month or lifetime prevalence. By gender, age, region, SES. Single question on the conditions (also mentioned under 'morbidity, disease-specific'): asthma, allergic asthma, allergy (excl. asthma), diabetes, cataract, hypertension, heart attack, stroke, chronic bronchitis, emphysema, arthrosis, (rheumatic) arthritis, osteoporosis, gastric & duodenal ulcer, malignant tumour, migraine/frequent headache, chronic anxiety or depression.
- Interview survey.
- EuroREVES project.

General musculoskeletal pain; UW-0, UW-6
- Prevalence; survey instrument proposed by project musculoskeletal disorders. HIS.
- Musculoskeletal disorder project.

2.4.3 Functional limitations

Functional limitations; preferably items should include all relevant domains of ICF (see WHO/HQ questionnaire) in the proposals in this section are missing: excretion (incontinence), fertility/sexual functions, sleep, pain, personal relations, social functioning; the latter 2 are covered under social determinants; see also general mental health.

Limitations in function by oral health problems; UW-7

- % population age 8-65 with difficulties in eating/chewing by problems with mouth, teeth, dentures, any grade, past 12 months. Same for: perceived pain or discomfort; psychological discomfort ('felt tense'); psychological disability ('felt embarrassed'); social disability (normal work, school for ages 8-17).
- Surveys.
- Oral health project.

Limitations of cognitive functions; UW-17, UW-18

- Prevalence of limitations in the areas: memory (3 items), new learning, language, literacy/numeracy, attention, visuo-spatial ability, executive function. By gender, age, region, SES. Interview instrument proposed by EuroREVES.
- Interview survey.
- EuroREVES project.

Limitations of physical functions; UW-0, UW-6, UW-17, UW-18

- Prevalence of limitations in seeing, hearing, mobility, speaking, biting/chewing, agility; instrument proposed by EuroREVES; various other instruments in use more or less covering the area. By gender, age, region, SES.
- Interview survey.
- Eurostat. WHO. Euro-REVES project.

2.4.4 Activity limitations

Limitations in household activities; UW-18

- Prevalence of limitations on items: telephoning, shopping, cooking, light/heavy housework, laundry, finances. By gender, age, region, SES. Instrument proposed by EuoREVES.
- Interview survey.
- EuroREVES project.

Limitations in school, work, leisure, social activities, UW-18

- Prevalence of limitations on items: usual school/work/home activities, usual leisure/social activities, going out. By gender, age, region, SES. Instrument proposed by EuroREVES.
- Interview survey.
- EuroREVES project.

Limitations of activities due to circulatory disease; UW-4

- Eurociss project.

Limitations of personal care; UW-6, UW-18

- Prevalence of limitations in items: feeding, getting in/out of bed, dressing, toilet, bathing; with/without help. By gender, age, region, SES. Interview instrument proposed by EuroREVES.
- Interview survey.
- EuroREVES.

Limitations of usual activities, past 6 months, health-related; UW-0, UW-6, UW-18, UW-21

- Prevalence; GALI instrument proposed by EuroREVES project. Instrument aimed at usual situation, to ignore temporary problems. By gender, age, SES, region.
- Survey; in Eurostat SILC, Minimal European Health Module.
- Eurostat. EuroREVES project. Also in Social Protection Committee indicators.

2.4.5 Short-term activity restrictions

Temporary limitation of usual activities; UW-17, UW-18, UW-21.

- Incidence of temporary activity limitations by health problem during past two weeks. WHO recommended instrument. By gender, age, region, SES.
- Interview survey.
- WHO.

2.4.6 General mental health

Happiness; UW-1, UW-17

- % population in upper 2 out of 5 response categories in 'Andrews single item happiness scale'.
- Interview survey.
- Mental health and EuroREVES projects.

Psychological distress; UW-0, UW-1, UW-17, UW-18

- % population below cut-point of MHI-5 score, from SF-36 questionnaire.
- Interview survey.
- Eurostat. Mental health and EuroReves projects, WP mental health. Also in Social Protection Committee indicators.

Psychological well-being: UW-1, UW-17, UW-21

- % population below cutpoint. Energy-vitality scale from SF-36 questionnaire.
- Interview survey.
- Mental health and EuroREVES projects. WHO.

Role limitations by emotional problems; UW-1, UW-17

- Item from SF-36 questionnaire.
- Interview survey.
- Mental health and EuroREVES projects. WHO.

2.4.7 General quality of life

Asthma/COPD health outcomes; UW-5

- Health outcomes in COPD patients: quality of life, no. of exacerbations, emergency visits, limitations of activities (work, home/leisure), work absence. In asthma patients: same, plus asthma symptoms, lung function (FEV).
- HIS, registries.
- IMCA project.

Euroqol score; UW-21

- Score from Euroqol 5D instrument. Eurociss project: also Euroqol for circulatory disease patients. Alternative: WHOQOL.
- Interview survey.
- WHO. Eurociss.

2.4.8 Absenteeism from work

Absenteeism from work (sickness absence); UW-1, UW-16

- Incidence, by main groups of causes: mental, musculoskeletal, infectious, other. WHO: days per employee per year. Comparability problematic when data are derived from nationally different social systems. Workhealth project: also by type of employment, duration of absence; also health-related early retirement.
- Preferred: interview surveys like Labour Force Surveys. Alternatives: registries, insurance data.
- Eurostat, WHO. Workhealth, mental health projects. Also in Social Protection Committee indicators.

Work disability; UW-6

- Permanent and temporary work disability, by diagnosis. WHO: incidence/prevalence persons granted social (disability) benefits per 100,000. Percent of disabled (working age) engaged in regular work.
- Labour Force Surveys, insurance data.
- WHO. Musculoskeletal conditions project.

2.4.9 Appropriate inequality measure

2.5 Composite measures of health status

This section includes indicators which are constructed by combination of mortality and morbidity data. The latter can be in disease-specific or functional terms. Basically there are two types: (1) Health expectancies (HE), which are life-table based, and (2) DALY-type measures, based on absolute numbers of years with disease or disabilty. Especially HE-s are useful for overall comparisons of health of countries or regions.

Health expectancy, based on limitations of usual activities; UW-0

- Calculated by Sullivan method based on life table and prevalence of activity limitations, past 6 months.
- Mortality data, surveys
- Eurostat structural indicator. EuroREVES project. Also in Social Protection Committee indicators.

Health expectancy based on various parameters; UW-0, UW-21

- Calculated on life expectancy and prevalences of: perceived general health, any chronic illness, physical functioning limitations, limitations in usual activities; calculation by the Sullivan method.
- Mortality data, HIS.
- Eurostat; WHO; OECD. EuroREVES project.

Health expectancies other

- Health expectancies can be calculated on any prevalence, using the Sullivan method. It is especially used with data on limitations of functions and activities. An alternative approach is explouted by WHO, using severity-weighted and/or disease-specific data. This is called HALE (Health-adjusted life expectancy), it is a more advanced method but has larger data requirements.
- Mortality data, interview surveys, etc.
- EuroREVES project.

3 DETERMINANTS OF HEALTH

This group includes everything which determines health and disease/disorder; issues are selected because they (i) are associated with sufficient certainty to a large health problem, on population basis, and (ii) can be influenced by intervention in a sufficiently cost-effective manner.

3.1 Personal and biological factors

This group includes hereditary or acquired characteristics known as 'risk factors' or 'protective factors' towards health.

3.1.1 Biological (risk) factors

Biological (risk) factors; this group includes physical characteristics, for which a strong association with substantial health problems have been established.

Asthma/COPD biological risk factors; UW-5

- Various indicators: bronchial hyperresponsiveness; Asthma/COPD family history; sensitization to allergens; birth weight; only asthma: total IgE; only COPD: BODE index(including BMI, airway obstruction, dyspnea, exercise capacity); childhood infections; having influenza or pneumococcus vaccinations.
- HIS, special investigations.
- IMCA project.

Blood pressure; UW-0, UW-13, UW-18, UW-21

- % population with blood pressure over 140/90, or taking hypertension drugs (EHRM project). Also: mean/sd of systolic and diastolic blood pressure; prevalence of actual and potential hypertensives: SBP > 140 mm or DBP > 90 mm Hg, or taking hypertension drugs. By gender, age, region, SES. EHRM projects recommends additional 'secondary' indicators.
- HIS/HES.
- WHO special programmes. EHRM project. EuroREVES project.

Body mass index; UW-0, UW-2, UW-3, UW-5, UW-6, UW-10, UW-12, UW-13, UW-14, UW-18

- % population with BMI >= 30 kg/m2; specify for children; also cut-off at BMI 25? By gender, age, region, SES. Pomona project: separately for intellectually disabled.
- HIS/HES. School health suerveys. Also Eurostat Sustainable Development indicator.
- Eurostat; OECD. EHRM, Child, Eudip, PHnut, Pomona projects.

Glucose tolerance; UW-3

- Prevalence of impaired glucose tolerance.
- HES, primary care.
- EUDIP project.

Health-related fitness; UW-14
- Maximal aerobic power, by 2 km walking test. Walk test.
- PHnut project.

Nutritional status indicators; UW-14, UW-18, UW-21
- Mean/sd of glycated Hb concentration; levels of serum ferritin, transferrin receptors, retinol, carotenoids, folate, selenium, 25-hydroxy vitamin D3, iodine, iron, sodium.
- HES.
- EHRM, PHnut, ECAHI projects; EUDIP project ('secondary' indicators).

Osteoporosis; UW-6, UW-18
- Prevalence of low bone density. EuroREVES: single interview question. By gender, age, region, SES.
- HIS/HES.
- Musculoskeletal conditions project, EuroREVES project.

Risk factors in diabetics; UW-3, UW-18, UW-22
- EUDIP: % with HbA1c > 7.5% last 12 months; % with total cholesterol > 5 mmol/l; % with LDL > 2.6 (3) mmol/l; % with HDL < 1.15 mmol (1) mmol/l; % with triglycerides > 2.3 (2) mmol/l; % with micralbuminuria last 12 months; % with blood pressure > 140/90 last 12 months; % with BMI > 25, > 30 kg/m2; age at diagnosis, 10-year age bands. OECD health care quality: patients with poor glucose control, i.e., % with HbA1c over 9.5% at most recent test in given year.
- Diabcare, sentinel practices, reimbursements, medical registries.
- EUDIP project. OECD health care quality project.

Sagittal abdominal diameter; UW-14
- Waist/hip ratio.
- HES.
- PHnut project.

Serum cholesterol fractions; UW-13, UW-21
- EHRM recommendations.
- HES.
- PHnut, EHRM projects.

Serum cholesterol total; UW-13, UW-14, UW-18
- Prevalence of total cholesterol > 5 mmol/l. Also: mean/sd of total cholesterol. By gender, age, SES. PHnut project. EHRM project proposes additional 'secondary' indicators.
- HES.
- WHO. PHnut, EHRM projects.

Waist/hip circumference; UW-14
- Mean and sd.
- Health examination survey.
- PHnut project.

3.1.2 Personal conditions

This group includes several mental or cognitive personal characteristics for which there is strong evidence that it influences mental or physical health. There is not much experience with these indicators in general monitoring. It is typically a development area.

Awareness of elevated blood pressure or serum cholesterol; UW-13
- By gender, ages 25-74 in 10y age groups, SES.
- Survey.
- EHRM project.

Knowledge/attitudes on health issues; UW-7, UW-16
- Awareness of lifestyle risks. Eurochip project: awareness of risk from UV radiation. Workhealth project: knowledge/awareness of workplace risks and regulations. By gender, age, region, SES. Oral health project: awareness in mothers of fluoride toothpaste usage.
- Interview survey.
- Eurochip project, Workhealth project, oral health project.

Optimism; UW-1, UW-17
- % of population exceeding cutpoint of scale, being 'optimist'. Life Orientation Test-revised (LOTR) 6-item instrument. By gender, age, region, SES.
- Interview survey.
- Mental health project.

Sense of mastery; UW-1
- % population exceeding cutpoint of scale, satisfactory. 7-point scale of Pearlin et al.
- Interview survey.
- Mental Health project.

3.2 Health behaviors

This section includes a set of behavioral factors for which a clear-cut association with substantial health problems (physical, mental) has been established. They are also assumed to be susceptible to appropriate health promotion interventions.

3.2.1 Substance use

Alcohol use in children; UW-10, UW-14, UW-21
- % age 15 who were drunk twice or more; by gender, SES, region.
- HIS.
- CHILD project.

Alcohol use with meals; UW-14
- % used as toxicant/with meals.
- HIS.
- PHnut project.

Alcohol use: non-drinkers; UW-14
- Prevalence. By gender, age, rgion, SES.
- HIS.
- WHO. PHnut project.

Amount smoked
- % adults smoking 20 cigarettes/day. Average no. cigarettes/person/year. By gender, age, region, SES.
- HIS.
- WHO.

Energy intake from alcohol; UW-14
- % energy intake from alcohol.
- HIS, sales statistics.
- PHnut project.

Former smokers, never smokers, UW-2, UW-5, UW-13
- Prevalence, by gender, age, SES. EHRM: cigarette and other forms of smoking.
- HIS.
- EHRM, IMCA projects.

Hazardous alcohol consumption; UW-0, UW-2, UW-5,UW-8, UW-14
- % adolescents, adults consuming > 20 (women), or > 40 g ethanol/day (men); alternatively: > 2 drinks/day (women) or 3-4 drinks/day (men); precise wording and numbers to be adapted to consensus recommendations; data from interview surveys.
- HIS.
- Eurostat. WHO special programmes. PHnut, IMCA projects.

Pregnant women smoking; UW-0, UW-5, UW-9, UW-21
- % women smoking during 3rd trimester of pregnancy.
- Perinatal surveys.
- Peristat, IMCA projects.

Regular smokers; UW-0, UW-2, UW-5, UW-7, UW-10, UW-13, UW-22

- % daily cigarette smokers. By gender, age, region, SES. CHILD: children smoking weekly ages 11-13-15. EHRM: also for other smoking than cigarettes. Also Eurostat Sustainable Development Indicator.
- HIS.
- WHO; Eurostat. EHRM, Eurochip, Child, IMCA projects. OECD health care quality project.

Smokers among diabetics; UW-3

- Prevalence.
- Diabcare, sentinel networks.
- EUDIP project.

Smoking exposure in asthma/COPD patients; UW-5

- % current, past smokers; % women smoking during pregnancy; past/non-smokers with or without ETS (Environmental Tobacco Smoke Exposure).
- HIS.
- IMCA project.

Total alcohol consumption; UW-0, UW-2

- Litre pure alcohol/person/year.
- Trade and production data (but: illegal production!).
- Eurostat; WHO; OECD. ECAS, Efcosum, PHnut projects.

Use of illicit drugs (including children); UW-0, UW-10, UW-21

- Lifetime prevalence for cannabis, cocaïne, amphetamine, ecstasy, other (month/year prevalence to be preferred?). CHILD project: % 15 year-old schoolchildren reporting cannabis last 30 days, heroin/ecstasy ever. By gender, age, region, SES.
- HIS. HBSC survey (schools).
- EMCDDA; Eurostat. CHILD project.

3.2.2 Nutrition

While under 'substance use' the focus is on negative effects on health, nutrition clearly can influence health both in negative and positive directions. Recommendations from EFCOSUM, DAFNE and Public Health Nutrition projects, Eurodiet are taken into account. Many indicators mention 'consumption/availability'. This refers to using either personal surveys (EFCOSUM: intake from for individual survey, 24h recall is first choice) or household budget surveys (DAFNE: conversion from household availability to individual intake; HBS are more widespread than individual surveys but cannot entirely replace these). Some issues still have to be sorted out between the nutrition projects.

Consumption/availability of additional items: eggs, milk (products), pulses, potatoe (products), nuts, juices, added lipids, sugar (products), alcoholic, non-alcoholic beverages; UW-14

- g/person/day. By gender, age, region, SES.
- Household budget surveys (Dafne databank).
- Dafne project.

Consumption/availability of bread/cereals; UW-14

- g/person/day. By gender, age, region, SES.
- FAO. Food consumption surveys, household budget surveys (Dafne databank).
- Efcosum, Dafne projects.

Consumption/availability of fish; UW-14, UW-18

- g/person/day; % diets containing < 200 g fatty fish per week. By gender, age, region, SES.
- Food consumption surveys, household budget surveys (Dafne databank).
- Nutrition projects.

Consumption/availability of fruit excuding juice; UW-0, UW-2, UW-5, UW-14, UW-18

- g/person/day; % population below 100g/day. By gender, age, region, SES.
- FAO. food consumption surveys or household budget surveys (Dafne databank).
- Eurostat; WHO/FAO; OECD. Nutrition, IMCA projects.

Consumption/availability of meat and meat products; UW-14

- g/person/day; % diets > 80g red meat/day. By gender, age, region, SES.
- Food consumption surveys, household budget surveys (Dafne databank).
- PHnut, Dafne projects.

Consumption/availability of non-starch polysaccharides; UW-14

- g/person/day; % diets with less than 25g/day of NSP. By gender, age, region, SES.
- Food consumption surveys, household budget surveys (Dafne databank).
- PHnut project.

Consumption/availability of vegetables excl. potatoes and juice; UW-0, UW-2, UW-5, UW-14, UW-18

- g/person/day; % population below 300g/day. By gender, age, region, SES.
- Food consumption survey or household budget survey (Dafne databank).
- Eurostat; WHO/FAO; OECD. Nutrition, IMCA projects.

Energy % from protein; UW-14

- WHO: calculated from total protein in food available for consumption.
- FAO.
- WHO.

Energy % from saturated fatty acids; UW-14
- PHnut project: % population with diet SFA content > 10% energy intake.
- Nutrition projects.

Energy % from total fat (lipids); UW-14
- WHO: calculated from total fat in food available for consumption.
- FAO.
- Nutrition projects.

Frequency of food and drink intake; UW-7
- Frequency of daily intake of food and drink, in people aged 5 to 60 and older.
- Survey.
- Oral health project.

Intake of contaminants in food; UW-14
- Presence of selected contaminants in selected food items, related to threshold.
- Food sample surveys.
- Environment/health project.

Intake of vitamin D, folate, iron, iodine, sodium; UW-14
- Measured as biomarkers (see also under biological factors). By gender, age, region, SES.
- HES.
- Efcosum project.

Meals taken out of home; UW-14
- % meals taken out of home.
- Dafne project.

Mineral content of typical diet; UW-14
- Diets with Fe, I, Ca, Se below recommended levels. By gender, age, region, SES.
- HES/biomarkers.
- PHnut project.

Poly- and mono-unsaturated fatty acid content of typical diet; UW-14
- PHnut project: % population with diet below 7-8% energy from PUFA; % diet with low MUFA.
- PHnut, Dafne projects.

Total energy intake; UW-14, UW-18
- Calories/person/day; other?
- Food production/trade data
- WHO. Nutrition projects.

Vitamin content of typical diet; UW-14

- Diets with vitamin C, D, E, folate, carotenoids below recommended levels. By gender, age, region, SES.
- Food consumption surveys or HES/biomarkers.
- PHnut project.

3.2.3 Other health-related behaviours

This group includes other behavioral factors, not related to substance use or nutrition, which have been shown to influence serious health problems.

Breastfeeding; UW-0, UW-9, UW-10, UW-14

- WHO: % newborns breastfed at 3 and 6 mnths; Peristat/Nutrition projects: % newborns (exclusively) breastfed first 48 hours and 6 mnths.
- HIS. Data from child health services.
- WHO. Peristat, PHnutrition, CHILD projects.

Contraceptive use; UW-11

- % of respondents having high-risk sex with condom. % reporting contraceptive use at 1st intercourse age 15-19. % of women 15-49 using any contraceptive at a point in time. By age, region, SES. Condom use is core indicator in UNAIDS.
- Surveys.
- Eurostat. Reprostat project.

Daily toothbrushing; UW-7

- % daily toothbrushing with fluoride toothpaste, ages 3-6, 7-12, 13-19.
- Surveys.
- Oral health project.

Exposure to UV

- Eurochip project.

Participation in community action/development; UW-17, UW-18

- EUHPID project.

Physical activity; UW-0, UW-2, UW-5, UW-6, UW-10, UW-12, UW-14, UW-18, UW-21

- HIS project: active leisure time activities; work up sweat > 3 days a week. Eupass, PHnut projects: IPAQ questionnaire, under development for use in ages 15-69. CHILD project: % children reporting vigorous activity outside school min. 2h/week, ages 11-13-15. Other instruments in wide use. Evaluation needed. By gender, age, region, SES. Eurostat 18 survey items: low comparability. IMCA project: specific for COPD patients. Pomona project: specific for intellectually disabled.
- HIS. CHILD: HBSC survey (schools).
- Eurostat. Eupass, PHnut, CHILD, IMCA, Pomona projects.

Sexual behaviour: median age at 1st intercourse; UW-11, UW-21
- % boys/girls with penetrative sex experience age 15-19.
- Surveys.
- Reprostat project.

Sexual behaviour: partners, frequency; UW-11, UW-21
- Average no. of partners; frequency/week.
- Reprostat project.

Traffic behaviour; UW-8
- Seatbelt use? helmet use?
- Working party Accidents/Injuries.

3.3 Living and working conditions

This group includes aspects from the outside environment, either physical or social, for which an association with health problems has been established. The size of the health problem may not be as large as in the previous section, but here we have, in general the case of unvoluntary exposition, which implies the reguirement of a high level of health protection by legal or regulatory measures.

3.3.1 Physical environment

For this group, large lists of environmental health indicators have been developed. Most indicators given are from the core set of environmental health indicators developed by WHO-ECEH (European Centre of Environment and Health), draft of 2000. Here we selected a limited number from this core set, for which the relation with health is relatively direct and substantial. This is not yet updated with the current HMP project on this issue.

Allergen exposure (with asthma); UW-5
- % individuals sensitized and still exposed to dust mites, grass, cats, dogs.
- HIS.
- IMCA project.

Drinking water quality; UW-15
- Proportion of drinking water samples analysed failing EU standards. Also Eurostat Sustainable Development Indicator.
- Survey.
- Environment/health project.

Drinking water supply; UW-15

- WHO: % population on piped wtare; total, urban, rural. Environment/health project: Environment/health project: % population with continuous access to adequate amount of safe drinking water in the home.
- WHO special programmes. Eurostat.
- WHO. Eurostat. Environ-health project.

Environmental tobacco smoke exposure; UW-2, UW-5, UW-10

- Prevalence of population exposed to environmental tobacco smoke. CHILD project: % of children aged 0-4 in smoking household, by SES.
- Household surveys.
- Eurochip, CHILD, IMCA projects.

Housing conditions; UW-15, UW-18, UW-21

- WHO: no. of persons/room; average living area/person. Environ/health: proportion of households living in crowded housing conditions: floor area or number of rooms per person, also subjective perception of sufficient space.
- UN/ECE. Eurostat.
- WHO. Environment/health project.

Housing hygiene; UW-15, UW-21

- % population living in houses missing: water supply, toilet, shower/bath. By SES (income). Partly overlaps with indicators drinking water supply and sewage system.
- Eurostat surveys.
- Eurostat. Environment/health project.

Indoor dampness and mold growth; UW-15

- % population living in damp houses (leaking roof,damp walls etc, rot in wood.
- Eurostat surveys.
- Eurostat. Environment/health project.

Indoor radon exposure; UW-2

- Eurochip project.

Noise exposure; UW-15

- Population exposed to various noise level ranges per source; i.e. living in dwellings exposed to noise ranges from different sources of environmental noise in urban areas and along major transport infrastructures. Also Eurostat Sustainable Development Indicator.
- Acoustical surveys, model calculations.
- Environment/health project. European directive 2002/49/EC.

Outside air pollutants; UW-5, UW-15

- WHO: SO_2 emissions, kg/person/year. Eviron-health: population distribution of exceedance hours of limits for NO_2, SO_2 in urban areas; population weighted annual mean of O_3, PM2,5. IMCA project: also % asthma/COPD patients living near high traffic density.
- Monitoring. Also Eurostat Sustainable Development Indicator.
- Environment/health, IMCA projects.

PM10 exposure; UW-0, UW-2, UW-5, UW-10, UW-15, UW-21

- Project Environment/health indicators: Population-weighted annual average ambient concentration of PM10. Eurostat structural indicator Environment: % urban population exposed to concentrations exceeding limit value (50 $\mu g/m^3$, 24 h average) on 35 or more days. CHILD project: % children living in localities with annual mean > 40 ppm of PM10.
- Emission registries plus calculations. Also Eurostat Sustainable Development Indicator.
- Eurostat. Eurochip, Environment/health, CHILD, IMCA projects.

Recreational water quality; UW-15

- Proportion of identified bathing waters meeting standards for coliform parameters.
- Survey.
- Environment/health project.

Sewage system; UW-15

- WHO: % population on adequate excreta disposal. % of wastewater adequately treated. Environment/health project: % population served by modern wastewater treatment.
- WHO special programmes.
- WHO. Environment/health project.

3.3.2 Working conditions

Items are derived from the European Foundation for the Improvement of Living and Working Conditions (Efilwc), and the Workhealth project.

Workplace exposure to inconvenient or damaging working positions; UW-6, UW-16

- Workhealth project inventory: include heavy work, lifting, repetitive work, computer work, use of special equipment.
- European Survey of Working Conditions (ESWC).
- Workhealth project.

Workplace exposure to mental stress factors; UW-6, UW-16, UW-21

- Workhealth project inventory: include tight working times, working rhythms, job control, responsability patterns, monotony, violence, support, intimidation, etc. As % of employees.
- European Survey of Working Conditions (ESWC).
- Workhealth project.

Workplace exposure to physical/chemical factors; UW-2, UW-16
- Workhealth project inventory: include air quality, exceedings of exposure limits, electronic/mechanical hazards, climate, radiations. As % of employees exposed.
- European Survey of Working Conditions (ESWC).
- Workhealth project.

Workplace exposure to tobacco smoke; UW-5, UW-16
- % of employees.
- European Survey of Working Conditions (ESWC).
- Workhealth, IMCA projects.

Workplace exposure to vibrations, noise; UW-6, UW-16
- % of employees.
- European Survey of Working Conditions (ESWC).
- Workhealth project.

Workplace-related asthma/COPD risk; UW-5
- % individuals exposed to high asthma/COPD risk occupations; % individuals changing occupation to avoid asthma/COPD risk; % individuals exposed to vapors/gases/fumes at work.
- HIS.
- IMCA project.

Work-related health risks/job quality; UW-0, UW-16, UW-17
- Workhealth project; this cluster includes (1) subjective risk assessments (data European Survey on Working Conditions), (2) physical/psychological working conditions (survey data) and (3) job transitions (survey data). To be further defined.
- Surveys.
- Workhealth project.

3.3.3 Social & cultural environment

This section includes social factors for which a clear-cut association with health (mental and physical) has been established. In terms of regular monitoring, this is a typical development area.

Children in (social) care; UW-10
- % children in care or formal supervision in social welfare agencies. CHILD project: indicator for social disruption and child vulnerability. By gender, 5y age bands up to 15-17.
- Survey (HBSC)
- CHILD project.

Crime and perception of crime; UW-15, UW-17, UW-18
- Incidence and perception of theft, robbery and vandalism in dwellings and public spaces. Population experiencing violence of specific kinds.
- Survey, police reports. ICVS (International Crime Victim Survey)
- Environment/health project.

Life events; UW-1, UW-18
- % population with at least one event during last 12 months. 12-item scale of Brugha et al. Mental health project: shortlist of threatening life events. By gender, age, region, SES.
- HIS.
- Mental health project and Working Party.

Parental support for children; UW-10
- % children easily talking about problems with parents. By gender, age 11, 13, 15, SES. CHILD project: strong association with problem behaviours.
- Survey (HBSC)
- CHILD project.

Physical punishment in children; UW-10, UW-17
- % children protected by law against physical punishment as % in school or regular families.
- CHILD project.

Sexual abuse and violence; UW-11, UW-17
- Experience of sexual abuse and violence.
- Not yet operational.
- Reprostat project.

Social isolation/participation; UW-1, UW-17, UW-18
- % population exceeding cutpoint. 4-item scale of Statistics Canada. ECHP: contact with neighbours/others, participation in activities, associations. By gender, age, region, SES.
- HIS.
- Mental health project.

Social support; UW-0, UW-1, UW-17
- % population with poor, moderate, strong social support in a year; Oslo 3-item social support scale. By gender, age, region, SES.
- HIS.
- Working Party mental health. Recommended by EuroHIS.

4 HEALTH SYSTEMS

This class should indicators covering activities in prevention and health promotion (4.1) as well as aspects of the health care system (4.2-4.5). It should also cover indicators of the quality of the health system and of 'health system performance'. In the sections on health care services, the categories currently listed by OECD and the System of Health Accounts are largely followed.

In an advanced stage of the development of this list, it was agreed to split this class into two:
- Class 4: Health interventions: health services, and
- Class 5: Health interventions: health promotion.

This new classification could not yet be implemented in the present long list.

4.1 Prevention, health protection and promotion

It was agreed (January 2004) to change this hierarchy, by taking out the 'health promotion' part as a separate block. The purpose is to discriminate between health interventions occurring within the health services, including health care and disease prevention (4.1.1, 4.2-4.5) and health interventions outside the health care system (4.1.2, 4.1.3). The latter would go as a separate chapter 5, Called: 'Health Promotion'. This has not yet been implemented in the present version.

4.1.1 Disease prevention

This group includes indicators on the implementation of prevention activities which are or are becoming widely applied, based on broad consensus of their positive effects on health.

Antihypertensive drug treatment; UW-13, UW-22
- Prevalence among actual and potential hypertensives; prevalence in the population; by gender, ages 25-74 by 10y age groups, SES. Also daily aspirin use.
- HIS.
- EHRM project.

Blood pressure screening; UW-12, UW-13, UW-18, UW-22
- % population with blood pressure measurement in past 5 years. By gender, ages 25-74, 10y age groups, SES. Pomona project: separate for intellectually disabled.
- HIS.
- EHRM, Pomona projects. Also in Social Protection Committee indicators.

Breast cancer screening; UW-0, UW-2, UW-12, UW-18, UW-21, UW-22

- OECD health care quality indicators project: % women 52-69 receiving bilateral mammography within past year. Pomona project: separate for intellectually disabled.
- HIS.
- Eurostat; OECD. Eurochip, Pomona projects. Also in Social Protection Committee indicators.

Cervical cancer screening; UW-0, UW-2, UW-12, UW-18, UW-21, UW-22

- OECD health care quality indicators project: % women 20-69 receiving cervical cancer screening within past 3 years. Also Eurostat data from HIS. Pomona project: separate for intellectually disabled.
- HIS.
- Eurostat; OECD. Eurochip, Pomona projects. Also in Social Protection Committee indicators.

Cholesterol screening; UW-12, UW-13, UW-18, UW-22

- % population with cholesterol measurement past 5 years. By gender, ages 25-74 in 10y age groups, SES. Pomona project: separate for intellectually disabled.
- HIS.
- EHRM, Pomona projects. Also in Social Protection Committee indicators.

Colorectal cancer screening; UW-2, UW-18, UW-22

- Coverage.
- Survey.
- Eurochip project. Also in Social Protection Committee indicators.

Dental health screening; UW-7

- Rate (per 1000) of aged 3-16 examined last year for non-symptomatic oral disease.
- Registers, surveys.
- Oral health project.

Dental services in schools; UW-7

- % of kindergartens and schools with preventive oral health program, including supervised toothbrushing with fluoride toothpaste.
- Surveys.
- Oral health project.

General preventive examination; UW-12

- Eurostat: 10 items, plus 6 in women. Pomona project: separate for intellectually disabled.
- Eurostat. Pomona project.

HIV testing among pregnant women. UW-11
- % pregnant women attending antenatal care who accept HIV screening.
- Laboratory records.
- Reprostat project.

Hormone replacement therapy (HRT). UW-2, UW-11, UW-13, UW-18
- % women using peri- and postmenopausal hormone medication. By 5y age groups.
- HIS.
- Reprostat project (not in core set).

Integrated children's health monitoring
- Not recommended in Peristat, Reprostat, CHILD projects.

Lipid lowering drug treatment; UW-13; UW-22
- Prevalence in the population. By gender. ages 25-74 by 10y age groups, SES.
- HIS.
- EHRM project.

Medical examinations in work environment; UW-16
- To be developed.
- Workhealth project.

Neonatal screening
- By age of mother. PKU, other.
- Not recommended by Peristat project.

Osteoporosis prevention drug treatment. UW-6, UW-18, UW-22
- Defined daily doses (ATC M 05 B).
- Sale statistics, prescriptions.
- Musculoskeletal conditions project.

Prenatal care attendance; UW-7, UW-9, UW-22
- Distribution of timing of first antenatal visit by trimester of pregnancy, for all women delivering live or stillbirth. Oral health project: % women with dental care visit during pregnancy.
- Peristat project, oral health project.

Prenatal screening
- By age of mother.
- Not recommended by Peristat.

Protective sealants; UW-7
- % children aged 6-8 and adolescents aged 12-14 with dental sealants.
- Surveys.
- Oral health project.

Smoking counseling; UW-5, UW-7, UW-22

- IMCA project: % smokers which have been offered a stop-smoking programme. Same for asthma/COPD patients, with % compliance and effect. Oral health project: % dentists advising on smoking cessation.
- HIS.
- EHRM, IMCA, Oral health projects.

Testing for prevention of diabetes complications. UW-3, UW-18, UW-22

- % diabetics tested for: HbA1c last 12 months; lipid profile last 12 months; micralbuminuria; blood pressure last 12 months; retina fundus inspection last 12 months; serum creatinine last 12 months. OECD health care quality: include retinal exams and HbA1c testing last year.
- Diabcare, sentinel networks, patient registries.
- EUDIP project. OECD health care quality project.

Vaccination coverage in children; UW-0, UW-10, UW-22

- WHO: % children immunized for diphtheria, pertussis, poliomyelitis, tetanus, HiB, hepatitis B, measles, mumps, rubella, meningococcus C. OECD health care quality: % children fully immunized at age 2 for MS basic vaccination program. By region, SES.
- Register.
- WHO; OECD. CHILD project.

Vaccination coverage influenza; UW-5, UW-18, UW-22

- % population covered, by age, region, SES. IMCA project: % COPD patients (stage 0) with influenza vaccination.
- HIS.
- OECD. IMCA project. OECD health care quality project. Also in Social Protection Committee indicators.

Vaccination in intellectually disabled; UW-12

- Pomona project: vaccination of adults for tetanus, influenza, hepatitis B.
- Pomona project.

4.1.2 Health promotion

This group includes indicators on the formulation and implementation of health promotion interventions, largely aimed at improving health behaviours. Selected indicators should be clearly related with the effectiveness of the interventions. This is clearly a development area. The EUHPID project will recommend indicators in this and related sections, based on a broad perspective of health promotion. See note under heading of 'Prevention, health protection and health promotion' for agreement on rearrangement of groups.

Anti-bullying policies in schools; UW-10
- % of children in schools with written anti-bullying policies.
- Mixed sources.
- CHILD project.

Health promotion funding; UW-17
- Funding sources at national, regional local levels; guidelines relating funding to actual needs; actual expenditures.
- EUHPID project.

Health promotion in schools; UW-17
- EUHPID project: existence of health promotion teams; teacher's attitudes; pupil's commitment to school; hygienic and food conditions; safe school environment.
- EUHPID project.

Health promotion in the workplace; UW-16, UW-17
- Workhealth project inventory: programmes, training, reintegration, participation, etc.
- To be developed.
- Workhealth project.

Health promotion policy evaluation; UW-17
- EUHPID project: existence of routine policy evaluation.
- EUHPID project.

Health promotion policy formulation; UW-17
- EUHPID project: involvement in policy formulation of: organisations/actors, social determinants, behaviours, broader socio-economic context.
- EUHPID project.

Health promotion policy implementation; UW-17
- EUHPID project: involvement of bodies/organisations at national, regional, local levels in funding and implementation.
- EUHPID project.

Health promotion work force and training; UW-17
- Availability of health promotion professional education at various levels.
- EUHPID project.

Integrated programmes in settings: e.g. schools, workplaces; UW-0, UW-17
- More specific indicators given in this section, and under 'working conditions' for the workplace setting. To be further developed.
- EUHPID health promotion project; Workhealth project.

Nutritional fortification. UW-14
- Monitoring of practices such as fortification of salt with iodine, cereals with iron.
- PHNut project.

Parenting skills support; UW-1
- Projects, programmes to support parenting skills.
- For development.
- Working party mental health.

Policies and practices on healthy lifestyles; UW-0, UW-1, UW-8, UW-17, UW-21
- Includes policies and practices on smoking, alcohol, safe sex, drug use, sunlight exposure, physical activity, injury and suicide prevention. EUHPID project: existence of policy documents at national, regional and local levels. More specific indicators are also listed in this section. To be further developed.
- EUHPID health promotion, mental health projects.

Policies on healthy nutrition; UW-0, UW-14, UW-17
- Nutritional policies and statutory legislation. EUHPID project: existence of policy documents at national, regional and local levels. More specific indicators are also listed in this section. To be further developed.
- WHO-Europe (special study, 2003). PHNut, EUHPID projects.

4.1.3 Health protection

This group includes indicators on the implementation of legislation and regulation, aimed at prevention at the population level. Much of this regulation is being developed at the EU level. From a vast array of possibilities, a few issues have been selected that are associated with substantial health effects and that have been documented as (cost-) effective. This is also the area of 'health in other policies' and 'health impact assessment' (HIA). On the environmental health side, the Environment/health project will give recommendations.

Policies on chemical emergencies; UW-15
- Regulatory requirements for land-use around chemical sites; presence of a national register of chemical incidents; government preparedness for chemical incidents.
- Information on regulations.
- Environment/health project.

Policies to reduce ETS (environmental tobacco smoke) exposures; UW-0, UW-2, UW-5, UW-10, UW-15, UW-17

- Project Environment/health indicators: Definition of composite index, on smoking restrictions in 9 public domains and on advertisement. Eurostat: information on smoking ban in public places. other sources? CHILD project: include pregnancy, schools, day-care, public places, transport, hospitals, theatres, museums, restaurants, specifically for children.
- Information on regulations/laws.
- Environment and health, CHILD, IMCA projects.

Policies to reduce leisure noise exposure; UW-15

- Composite index of noise abatement measures leisure activities involving high music levels. Six variables: maximum sound levels in bars etc, insulation regulations for bars etc, regulations for music appliances, legislation for open-air events, for music concerts, local dealing with noise complaints.
- Legislation information.
- Environment/health project.

Radiation monitoring; UW-15

- Existence of an effective monitoring of environmental radioactivity.
- Environment/health project

Regulations on air/water quality

- Environmen/health project.

Regulations on alcohol and driving

- Allowed limit of alcohol level in blood.

Regulations on food safety/quality

- Environment/health project.

Regulations on lead exposure; UW-10

- Existence of regulations limiting the use of lead in building etc. materials and establishing biomonitoring (composite index proposed).
- CHILD project.

Regulations on noise; UW-10

- Existence of policies/regulations for reducing noise exposure. CHILD project: composite index proposed for children: intensive care units, day-care centres, schools, kindergartens.
- Environmental agencies.
- Environment/health project. CHILD project.

Regulations on occupational safety and health; UW-16
- Workhealth project inventory: presence, compliance, etc. To be developed.
- Workhealth project.

Regulations on safe transport of children; UW-10
- CHILD project.

Regulations on seat belts, cycle helmets
- Existence and enforcement of regulation. CHILD project: also for safe transport of children (composite index proposed: safety seats in cars, belts, helmets, speed limits, safe walking/cycling plans).
- Various sources.
- CHILD project.

Smoking advertisment restrictions; UW-2
- Existence/enforcement of laws/regulations to inhibit tobacco advertisement.
- CHILD project; Environment/health project.

Tobacco prices

4.2 Health care resources

In this section, OECD and WHO-Euro listings have been largely followed.

4.2.1 Facilities

Hospital beds; UW-0, UW-1, UW-18
- Total/acute care/psychiatric care/nursing elderly home care; Eurostat, WHO: number per 100,000 population. OECD: number per 1000 population. By region.
- Registers.
- Eurostat; WHO; OECD. Mental Health project. Also in Social Protection Committee indicators.

Pneumology and allergy units
- No. per 100.000 population (adults, children).
- Registries.
- IMCA project.

Primary Health Care Centres; UW-5
- No of primary health care centres; % of these with facilities for asthmatic children, sprirometry, COPD education.
- Survey.
- IMCA project. Also in Social Protection Committee indicators.

Stroke units; UW-4, UW-18, UW-22.

- Eurociss project.

4.2.2 Manpower

Indicators in this group recommended by the manpower project, with aid of the Eucomp project. Main goal of manpower indicators in ECHI frame: cost element and quality of care. Other aims: role in production/income/economic growth. Bottom group of indicators indicated by Manpower project as of lower priority. ECHI suggestion: some measure of personnel shortage may be more appropriate than unemployment from the point of view of quality of care or health system performance.

Ambulatory care employment

- Total employment in offices of: physicians, dentists, paramedical practitioners, out-patient care centres, medical/diagnostic laboratories, home health care, other ambulatory care. Persons, fte per 1,000, by gender.
- National register, hospital statistics.
- Manpower project.

Clinical psychologists; UW-1

- Number per 100,000.
- Registers.
- Mental health project.

Dentists employed; UW-7

- Eurostat: practising and licensed dentists per 100,000. OECD: practising dentist per 1,000 and as % of total health employment. WHO: also fte. By region. Oral health project: number and rates per 100,000 population of active dentists, dental hygienists, oral health therapists, clinical dental technicians. % Of population with access to dentist within convenient distance.
- Registers.
- Eurostat, OECD, WHO. Manpower project: no priority. Oral health project.

Emergency services availability

- EED project: Unit hours = No. of professionally staffed hours for emergency services (Basic Life Support + Emergency Life Support + Advanced Life Support), in a year, per 100,000 population. Also per km^2.
- Data source: Deployment plan.
- Emergency Services project.

Employment in general health administration

- Government administration of health, social security funds, other (social/private) insurance, other prividers of health administration. Persons, fte per 1,000, by gender.
- National registers.
- Manpower project.

Employment in provision and administration of public health programmes
- Persons, fte per 1,000, by gender.
- National register.
- Manpower project.

Employment in retail sale and other providers of medical goods
- Total employment in dispensing chemists, retail sale and other suppliers of optical glasses, hearing aids, other medical appliances, other sale of pharmaceuticals and medical goods.
  Persons, fte per 1,000, by gender.
- National register, hospital statistics.
- Manpower project.

Health services employment
- No. of persons, fte, per 1,000 population, by gender. Also % of total employment. OECD: 'total health employment'.
- National register, hospital statistics.
- OECD. Manpower project.

Hospital staff ratio: acute care
- Hospital staff/number of beds. Hospital staff as indicated under 'hospital employment'.
- National registers, hospital statistics.
- OECD. Manpower project.

Hospitals employment
- Total employment in general hospitals, mental health and substance abuse hospitals, other specialty hospitals. Persons, fte per 1,000, by gender. Also as % of total and total health employment.
- National register, hospital statistics.
- OECD. Manpower project.

Midwives employed
- Eurostat, number per 100,000. WHO: also fte. By region.
- Registers.
- WHO. Manpower project: no priority.

Mobility of professionals; UW-0
- To be developed.
- Working party on health systems.

Nurses employed; UW-0, UW-22

- Eurostat: practising nurses/midwives, qualified nurses per 100,000 (recent study on improvement). WHO: practising nurses and fte per 100,000. OECD: practising nurses per 1000, also as % of total health employment). By region. WHO: also proportion of nurses working in hospitals.
- Registers, hospital statistics. Eurostat works on improvement of database.
- Eurostat; WHO; OECD. Manpower project: no priority. Also in Social Protection Committee indicators.

Nurses staff ratio: acute care

- Hospital nurses staff/number of beds. Hospital staff as indicated under 'hospital employment'.
- National registers, hospital statistics.
- OECD. Manpower project.

Nursing and residential care facilities employement; UW-18

- Total employment in facilities for nursing care, residential mental retardation, mental health & substance abuse, elderly community care, other residential care. Persons, fte per 1,000, by gender.
- National register, hospital statistics.
- Manpower project.

Paramedical professions

- Eurostat: No. of physiotherapists per 100,000. By region.
- Registers.
- Manpower project: no priority.

Personnel in occupational safety and health; UW-16

- Workhealth project inventory: doctors, safety specialists, inspectors, etc. To be developed.
- Workhealth project.

Pharmacists employed

- Eurostat, WHO: practising pharmacists per 100,000. OECD: per 1,000, also as % of total healthemployment. By region.
- Registers.
- Eurostat, OECD, WHO. Manpower project: no priority.

Physicians by specialty; UW-1, UW-5

- Eurostat: 23 specialties, numbers per 100,000. OECD: GP's, specialists per 1,000, also as % of total health employment. Mental health project: include psychiatrists, child psychiatrists. IMCA project: include GP's, pneumologists, pediatricians, allergy specialists, asthma/COPD-specialized nurses.
- Registers.
- Eurostat, OECD. Mental health, IMCA projects. Also in Social Protection Committee indicators.

Physicians employed; UW-0, UW-22
- Eurostat: practising and licensed physicians per 100,000. WHO: practising physicians and fte per 100,000. OECD: practising physicians and fte per 1000, also as fraction female physicians. By region. WHO: also proportion of physicians working in hospitals.
- Registers, hospital statistics.
- Eurostat, WHO, OECD. Manpower project: no priority.

Satisfaction of dentists; UW-7
- Satisfaction of dentists with the quality of care: preventive, curative, orthodontic, remuneration (i.e. not satisfaction of patients).
- Surveys.
- Oral health project.

Shortage of medical personnel
- For development.

Unemployment in medical personnel
- Labour market statistics.

4.2.3 Education

Dentists graduated; UW-7
- Number per 100,000 per year. By gender, region.
- Registers.
- Oral health project.

Nurses/midwives graduated
- Number per 100,000 per year. By gender, region.
- Registers.

Pharmacists graduated
- Number per 100,000 per year. By gender, region.
- Registers.

Physicians graduated; UW-22
- Number per 100,000 per year. By gender, region.
- Registers.

Physician's training for intellectual disabilities; UW-12
- Pomona project.

4.2.4 Technology

Diffusion of new technology is also a measure of health system perfromance; indicators to be selected.

CT scans; UW-0, UW-2, UW-22
- No. of units per million population.
- Hospital statistics.
- OECD.

Haemodialysis stations
- No. of units per 100,000 population.
- OECD.

Linear accelerators
- No. of units with at least 2 accelerators.
- Hospital statistics.

Lithotriptors
- No. of units per million population.
- OECD.

Mammographs
- No. of units per 100,000 population.
- OECD.

MRI units; UW-0, UW-2, UW-22
- Number of units per million population (OECD).
- Hospital statistics.
- Eurostat; OECD.

PET units; UW-2, UW-22
- No. of units per million population (Positron Emission Tomography).
- Eurostat; OECD.

Radiation equipment; UW-2
- No. of units.
- Eurostat, OECD. Eurochip project.

4.3 Health care utilisation

In this section, WHO-Europe has been followed (except admissions), with extensions from OECD: hospital discharges and medicine use. Discharges are taken as the best indicator for disease-specific hospital use, from the population health viewpoint. If discharges and medical procedures are further specified, we recommend to use ICD or –related codes, to comply with the health status indicators.

4.3.1 In-patient care utilisation

Average length of stay, limited diagnoses; UW-0, UW-4, UW-5, UW-22

- Days, per diagnosis; include diagnoses covered in Eurostat 65 causes of death and the selected causes of morbidity. Eurociss project: include AMI, acute coronary syndromes, other heart disease, stroke. IMCA project: include asthma, COPD.
- Hospital statistics.
- Eurostat; WHO; OECD. Hospital data, Eurociss, IMCA projects.

Beddays acute care

- Beddays per 100,000 population. Hospital data project: optionally by selected diagnoses. Eurociss project: for AMI, acute coronary syndromes, stroke. By region.
- Hospital data.
- OECD. Hospital data project, Eurociss project. Also in Social Protection Committee indicators.

Hospital admissions asthma/COPD; UW-5

- % individuals with COPD admitted to emergency room; to hospital, to intensive care unit, during last year. Hospital admissions (including emergency room) of asthma patients by appropriateness of diagnosis and of treatment compliance.
- Hospital data.
- IMCA project.

Hospital in-patient discharges, limited diagnoses; UW-0, UW-4, UW-8, UW-18, UW-22

- OECD: Number per 100,000 population, per diagnosis. Hospital Data project made shortlist of some 130 diagnoses/external causes and 18 procedures. These include almost all of the 65 Eurostat COD and most of the diseases under morbidity in the ECHI list. Eurociss project: include AMI, acute coronary syndromes, all ischaemic heart disease, heart failure, other heart disease, stroke. By region. By SES?
- Hospital statistics.
- Eurostat; WHO; OECD. Hospital data project. Eurociss project.

Hospitalisation of intellectually disabled; UW-12

- Pomona project: admission rates, length of stay.
- Pomona project.

Hospitalisations in psychiatric services; UW-1

- Full-time and part-time hospitalisations in psychiatric services; separate under age 18. By region.
- Hospital data.
- Mental health project.

Long-stay psychiatric patients; UW-1
- WHO: No. of in-patients staying > 1 year in psychiatric services. Mental health project: same, > 300 days.
- Hospital data.
- WHO. Mental health project.

Occupancy rate, acute care; UW-22
- % of acute care beds occupied.
- Hospital data.
- OECD.

Place of birth; UW-9
- Distribution of place of birth: at home, maternity units (by size, i.e. annual no. of births).
- Peristat project.

4.3.2 Out-patient care utilisation

Daycase-discharge ratio, limited diagnoses; UW-0, UW-22
- Ratio of daycases and in-patient discharges, per diagnosis. Hospital Data project made shortlist of some 130 diagnoses/external causes and 18 procedures. These include almost all of the 65 Eurostat COD and most of the diseases under morbidity in the ECHI list.
- Hospital statistics.
- Eurostat; WHO; OECD. Hospital data project.

Dentist contacts; UW-0, UW-7
- Number of contacts per capita per year. By gender, age, SES, region. Oral health project: also reason for contact.
- HIS.
- Eurostat, OECD. Oral health project. Also in Social Protection Committee indicators.

Emergency services by diagnosis; UW-4, UW-18
- EED project: No. of incidents of the 'first hour quintet', i.e. cardiac arest, severe truma, severe breathing difficulties, cardiac chest pain, stroke; also per 100,000 population, as % of all high priority EMS service responses. Same for trauma patients by GSC (Glasgow Coma Score).
- Database of the EMS dispatch center.
- Emergency Services project.

Emergency services high priority
- EED project: Annual number of EMS responses for perceived life-threatening situations, leading to patient contact per 100,000 population; separate for treatment and transport; separate with recognition of death; also per km^2.
- Deployment plan, database of the EMS dispatch center.

- Emergency Services project.

Emergency services utilisation

- EED project: EMS responses by unit hours, for various types of services. Also: no. of EMS calls per year per 100,000 population, per km^2.
- Deployment plan, database of the EMS dispatch center.
- Emergency Services project.

General practitioner utilisation; UW-0, UW-22

- Number of contacts per capita per year. Needed: context of primary care delivery. By gender, age, SES, region.
- HIS.
- Eurostat. Also in Social Protection Committee indicators.

Hospital daycases, limited diagnoses; UW-0

- SHA definition of daycase: formal admission and discharge on the same day. OECD: Number per 100,000 population, per diagnosis. Hospital Data project made shortlist of some 130 diagnoses/external causes and 18 procedures. These include almost all of the 65 Eurostat COD and most of the diseases under morbidity in the ECHI shortlist.
- Hospital statistics.
- Eurostat; WHO; OECD. Hospital data project.

Medical specialist contacts; UW-0

- Number of contacts per capita per year. Needed: context of primary/specialist care delivery. By gender, age, SES, region. OECD: Doctor's consultations total.
- HIS.
- Eurostat. Also in Social Protection Committee indicators.

Occupational safety and health services use; UW-16

- Workhealth project inventory: doctors, safety specialists, inspectors, etc. To be developed.
- Workhealth project.

Orthodontic treatment; UW-7

- % children, adolescents aged 5-18 with orthodontic appliance.
- Surveys.
- Oral health project.

Outpatient care to intellectually disabled; UW-12

- Pomona project: GP, specialists.
- Pomona project.

Outpatient visits COPD; UW-5

- % individuals with COPD having primary care visit, specialist visit, rehabilitation session during last year.
- Registries.

- IMCA project.

Outpatient visits other; UW-0, UW-1, UW-18

- Number of contacts per capita per year, for: physiotherapist, alternative practice, maternal/child care, mental health care. Eurostat and OECD survey questions include minimally GP's, dentists and medical specialists. It is useful to have more (para)medical branches included. The Mental Health project has run a pilot survey to comprehensively cover ambulatory mental health care (public and total psychiatric outpatient care, seeing health professional).
- HIS.
- Eurostat. Mental health Working Party.

Patient mobility; UW-0

- To be developed
- Working Party on health systems.

4.3.3 Surgical operations and procedures

The selection below is a limited subset from OECD. Indicators should be representative for technical progress, regional medical habits or performance of health care; make here new arrangement based on classification of procedures.

Births by mode of delivery; UW-9

- OECD, WHO: Caesarean sections per 1000 live births. Peristat project: distribution of births by mode of delivery: % spontaneous, assisted (ventouse, forceps), Caesarean before labour onset, Caesarean during labour. Specify by presentation of fetus, parity, previous Caesarean, plurality; indicator of medicalisation of childbirth (also quality indicator?)
- Birth registers, perinatal surveys.
- OECD, WHO. Peristat project.

Births without medical intervention; births attended by midwives; UW-9

- Percent.
- Peristat project.

CABG (Coronary Artery Bypass Grafting); UW-4, UW-18

- No. per 100,000. Also per acute AMI, acute coronary syndrome. Emergency CABG (within 24 hours from onset). 30-day case-fatality after CABG.
- Hospital data.
- OECD. Eurociss project.

Cancer palliative therapy; UW-2, UW-18

- Eurochip project.

Cancer treatments; UW-2

- Eurochip: Patients treated by surgery, chemotherapy, radiotherapy, endocrine therapy, bone marrow transplants (ref. to cancer type).
- Hospital data, cancer registries?
- Eurochip project.

Cardiovascular operations other, UW-4

- Eurociss project: pacemakers, CT, MRI scans for stroke, valvular operations, aortic and other aneurysms. Rate per event, by hospital discharges, acute versus elective.
- Hospital data.
- OECD. Eurociss project.

Cataract operation; UW-0, UW-18, UW-22

- Number of procedures per 100,000 per year.
- Hospital data.
- OECD. Hospital data project.

Deliveries after ART (assisted reproductive technology); UW-11

- % women delivering live or stillborn after ART (range of techniques). By age. Rprostat project notin core set.
- Birth and ART registers linked.
- Reprostat project.

Episiotomy; UW-9

- % vaginal births with episiotomy.
- Peristat project.

Fertility treatment; UW-9

- % pregnancies following fertility treatment.
- Peristat project.

Heart transplant

- No. per 100,000. Eurociss project: Indirect indicator for heart failure.
- Hospital data.
- OECD. Eurociss project.

Hip replacement; UW-0, UW-6, UW-18, UW-22

- Number of procedures per 100,000 per year.
- Hospital data.
- OECD. Hospital data project. Musculoskeletal disorder project.

Hysterectomy; UW-11, UW-18

- % women with hysterectomy at age 50.
- Hospital data, population survey.

- OECD. Reprostat project.

Knee replacement; UW-6, UW-18

- No. per 1,000.
- Hospital data.
- OECD. Musculoskeletal disorder project.

Laser treatment in diabetics retinopathy; UW-3; UW-18

- % patients receiving laser treatment < 3 months after diagnosis.
- Patients registries.
- EUDIP project.

Onset of labour; UW-9

- Distribution of births by onset of labour.
- Peristat project.

PTCA surgery (Percutaneous Transluminal Coronary Angioplasty); UW-0, UW-4, UW-18, UW-22

- Number of procedures per 100,000 per year. Also per acute AMI. Emergency PTCA (within 24 hours from onset).
- Hospital data.
- OECD. Hospital data project, Eurociss project.

Renal replacement in diabetics; UW-3, UW-18

- Annual incidence and prevalence of dialysis and transplantation per million population.
- Patient registries.
- EUDIP project.

Surgical daycases

- Number per 1,000. Invasive surgery public + private; excludes accident emergency surgery and endoscopies. Also as % of total surgical procedures.
- Hospital data.
- OECD.

Surgical in-patients

- Number per 1,000. Invasive surgery public + private; excludes accident emergency surgery and endoscopies.
- Hospital data.
- OECD.

4.3.4 Medicine use/medical aids

Medicine use, selected items; UW-0, UW-1, UW-4, UW-5, UW-6, UW-12, UW-18, UW-22

- Euro-med-stat project: Utilisation in DDD/1000 population/day; OECD/Eurostat: sales in mln USD; for the main ATC groups. OECD: Antacids, peptic ulcer drugs, diabetes drugs, cholesterol/triglyceride reducers, cardiac glycosides, anti-arrhythmics, antihypertensives, diuretics, beta blocking agents, renin-angiotensin agents, sex hormones, systemic antibacterials, anti-inflammatory & antorheumatics non-steroids, analgesics, anxiolytics, hypnotics/sedatives, antidepressants, drugs for obstructive airway diseases. WP mental health: also antipsychotics. Eurociss project: also thrombolityc drugs, ACE-inhibitors, nitrates, aspirin, calcium antagonists, digitalis, spironolattone, anticoagulants. Musculoskeletal disorder project: also RA drugs. IMCA project: include beta-agonists, steroids, oxigenotherapy in COPD patients; beta-agonists, glucocorticosteroids, theophylline, leukotriene modifier in asthma patients. If possible by gender, age, region, SES. Pomona project: psychotropic drugs in intellectually disabled.
- OECD. Eurostat: IMS drug monitor.
- OECD; Eurostat. Euro-med-stat, Eurociss, IMCA, musculoskeletal disorder, Pomona projects; Working Party mental health. Also in Social Protection Committee indicators.

Use of medical aids; UW-18

- To be defined.
- HIS.

4.4 Health expenditure and financing

In this section the core list of OECD is mostly used. Note: the mental health project proposes psychiatric share in disability pensions and sickness compensation; this raises the question where to accomodate this type of information.

4.4.1 Health care system

Distribution of household expenditures on health

- To be defined. Take definitions from SPC indicators?

Insurance coverage; UW-0, UW-18, UW-22

- OECD: % population covered for total health care, in-patient care, out-patient care, pharmaceuticals. Meant as proxy for equity of access; useful?
- Registers.
- OECD. Also in Social Protection Committee indicators.

Structure of national health system
- Key item(s) characterising the system. To be developed.

4.4.2 National expenditure on health

Expenditure on personal health care
- Total/public/private expenditures, as total sum, USD PPP per capita, % of GDP.
- Health accounts.
- OECD.

Expenditures on collective health care
- Total/public/private expenditures, as total sum, USD PPP per capita, % of GDP.
- Health accounts.
- OECD.

Total/public/ private expenditures on health; UW-0, UW-22
- Total/public/private expenditures, as total sum, USD PPP per capita, % of GDP.
- Health accounts/national accounts.
- OECD, under SHA. Also Eurostat Sustainable Development Indicator. Also in Social Protection Committee indicators.

4.4.3 Expenditure on medical services

Expenditure on home care; UW-18
- % of total health expenditures.
- Health accounts.
- OECD.

Expenditure on in-patient care
- % of total health expenditure.
- Health accounts.
- OECD.

Expenditure on out-patient care
- % of total health expenditure.
- Health accounts.
- OECD.

Expenditures on ancillary services
- % of total expenditures on health.
- Health accounts.
- OECD.

4.4.4 Medical goods dispensed to outpatients

Expenditure on pharmaceutical goods and other medical non-durables

- Total/public/private expenditures, as total sum, USD PPP per capita, % of total health expenditures.
- Health accounts.
- OECD.

Expenditures on medical appliances/other durables

- Total/public/private expenditures, as total sum, USD PPP per capita, % of total health expenditures.
- Health accounts.
- OECD.

4.4.5 Total health expenditure by age group

Expenditure by age group, UW-18, UW-22

- % expenditures ages 0-64, 65-74, 75+, by gender.
- Calculate from several sources.

Expenditure by disease group; UW-1, UW-2, UW-5, UW-7

- Mental health project: expenditures of in-patient + outpatient psychiatric services. Eurochip project: public/private expenditures for tobacco prevention, cancer registration, cancer screening, cancer research, cancer drugs. IMCA project: cost of asthma and COPD hospitalisations, outpatient care, emergency room visists, follow-up visits. Oral health project: total cost (public + private) oral health services per year, also as % of GNP (PPP).
- Mental health, Eurochip, IMCA, oral health projects.

Expenditures on occupational health and safety; UW-16

- To be developed.
- Workhealth project.

4.4.6 Health expenditure by fund source

Expenditures by fund source; UW-5

- % of total health expenditures, for: public expenditures on health, general government (excluding social security), social security schemes, private expenditures on health, out-of-pocket payments, private insurance, private insurance (other than social insurance), private social insurance, all other.
- Health accounts & other sources.
- OECD. IMCA project. Also in Social Protection Committee indicators.

Financial equity/access indicator

- Define, derive from MDS/SHA or SPC indicators?

4.5 Health care quality/performance

This is a special section. Whereas the sections on resources, utilisation and expenditures rather contain 'neutral' statistical indicators on capacities, uses and cost of the system, quality and performance deal with whether the system does what we want it do do. The yardstick is thus whether it is patient-oriented, safe, and last but not least effective in promoting health. In fact selected indicators from earlier sections like on medical manpower, on up-to-date technology, on specific medical procedures, or on financial equity of access could find a place in this section as well. Together with this section, many of the indicators under 'prevention etc.' would make up a range of indicators of the quality/performance of health systems, including health care, prevention and health promotion. Items are included from the OECD project on health care quality indicators.

4.5.1 Subjective indicators

This group includes indicators on patient-orientedness.

Responsiveness of the health system; UW-22
- WHO instrument contains items on defined experiences concerning access, timeliness, etc. Adopt or adapt?
- Survey.
- WHO. Also in Social Protection Committee indicators.

Satisfaction of mothers with perinatal care; UW-9, UW-22
- For development.
- Peristat project.

Satisfaction with the health care system; UW-22
- % population satisfied.
- Survey.
- Eurostat. Also in Social Protection Committee indicators.

4.5.2 Health care process indicators

This group includes indicators of medical safety as well as effectiveness, in terms of process measures. Selected items should be clearly associated with adverse or improved health outcomes from research information.

28-day emergency re-admission rate; UW-22
- To be developed.
- Hospital data.
- Examples from UK.

Access of care for children; UW-10, UW-22

- Does health policy give access to immunisation and other care for children who are asylum seekers, illegal, homeless, itinerant.
- Policy assessment.
- CHILD project.

Asthma/COPD maintenance; UW-5, UW-18

- COPD: % population participating in COPD education programme; having lung function measurement. Asthma: % population with wheeze or asthma diagnosis having asthma management plan; having peak flow meter at home; having lung function measurement; having allergy test. Yearly basis.
- Survey.
- IMCA project.

Compliance with good oncology practice; UW-2, UW-22

- Deviance from best oncology practice: % of treatments given with specified bad practice.
- Cancer registry.
- Eurochip project.

Delay of cancer treatment (UW-0?), UW-2, UW-22

- Time between diagnosis and first treatment. By site.
- Cancer registries.
- Eurochip project.

Diabetes monitoring (UW-0?); UW-3

- Proportion of diabetics with HbA1c < 6.5% (or other cut-point?).
- HES.
- OECD health care quality indicators. Eudip project.

Emergency services response time

- EED project: Time between ambulance departure and arrival on scene: percentage of response intervals under 8 minutes; 90% percentile of response intervals. Additional indicators: time interval EMS on scene; time from departure at scene to arrival in hospital; time to first defibrillatory shock.
- Database of the EMS dispatch center.
- Emergency Services project.

Emergency services: advanced interventions

- EED project: No. of ALS interventions (Advanced Life Support) by the EMS services, i.e. assisted ventilation, intubation, i.v. drug administration; also 100,000 population.
- Database of the EMS dispatch center.
- Emergency Services project.

Equity of access; UW-0, UW-22

- This item is kept separate from 'insurance coverage' (section (1)). Can an operationalisation be taken from OECD studies, or from work by the Social Protection Committee? Eurostat SILC: Unmet needs for medical examination or dental examination/treatment, and the reasons for that.
- EU-SILC survey.
- Also in Social Protection Committee indicators.

Femur fractures waiting time

- Percentage femur fractures operated within 48 hours.
- Hospital data.
- OECD health care quality project.

Health promotion in hospitals; UW-17

- EUHPID project: percent patients educated in health promotion; leisure opportunities in hospitals; awareness of staff towards health promotion; budget allocated for health promotion activities.
- EUHPID project.

Parental accompaniment in hospitals; UW-10, UW-22

- % of children inpatient beds (under 16) where parents can stay day and night
- Hospital data?
- CHILD project.

Quality of blood products

- Operationalisation?

Retinal exams in diabetics (UW-0??)

Stage at cancer diagnosis; (UW-0?), UW-2

- see Eurochip project.
- Hospital data.
- Eurochip project.

Support to women in the perinatal period; UW-9, UW-22

- For development.
- Peristat project.

Very preterm births outside NICU

- % Very preterm births in units without NICU.
- Birth registries.
- Peristat project.

Waiting times; UW-0, UW-18, UW-22

- Average waiting time, for elective surgeries: PTCA, hip replacement, cataract operation hospital data.
- OECD studies. Also in Social Protection Committee indicators.

4.5.3 Health outcomes

This group includes indicators of medical safety as well as effectiveness, in terms of measured health outcomes. Selected items should be clearly related to the use of up-to-date medical procedures.

30-day mortality rate following AMI; UW-22

- OECD health care quality project.

30-day mortality rate following CABG; UW-4, UW-22

- Eurociss project.

30-day mortality rate following stroke; UW-22

- OECD health care quality project.

Antibiotic resistance; UW-22

- % samples showing resistance. Focus on Staphylococcus aureus (MRSA) and Streptococcus pneumoniae.
- Laboratory tests. Also Eurostat Sustainable Development Indicator.
- EARSS project.

Avoidable deaths; UW-22

- OECD health care quality: asthma mortality rate age 5-40. Also according to list of Nolte &McKee.
- Mortality statistics.
- OECD. Nolte & McKee, BMJ vol. 327 (2003) 1129-1133.

Cancer survival rates: breast, cervix, colorectal; UW-0, UW-2, UW-22

- OECD: 5-year observed and relative survival rates for breast, cervical, colorectal cancer. CHILD project: 5y survival rate acute lymphatic leukemia in children, by age.
- Hospital data, cancer registers.
- OECD health care quality project. Eurochip project. CHILD project.

Coverage of cancer registration; UW-2

- Eurochip project.

Decubitus in nursing and elderly homes, UW-18, UW-22

- Prevalence.
- Registers.

Iatrogenic disease/death, UW-18, UW-22

- For development.

Major amputations in diabetics (UW-0??); UW-22

- Percent of diabetic patients aged 18-75 with major amputations (above or below knee) in a given year.
- OECD health care quality project.

Renal failure in diabetics; UW-3, UW-22

- Incidence of end-stage renal failure per 1,000 diabetics.
- EUDIP project. OECD health care quality project.

Surgical wound infection; UW-0, UW-22

- WHO: % of all operations.
- Hospital data.
- WHO; OECD health care quality indicators.

ANNEX 6
ECHI SHORT LIST, FINAL VERSION OF APRIL 30, 2005

This April 2005 version is identical to the January 2005 update of the ECHI shortlist, except for the addition of the rationale and history of the selection in the third column.

The January/April 2005 edition of the ECHI shortlist is made up following the indications of the last ECHI-2 meeting of October 28-29, 2004. This implies mainly two changes compared to the June 2004 version of the shortlist:

- Some of the late additions (after February 2004) included in the June 2004 version were taken out and placed on a 'waiting list' (see Annex to this list, Section 4) for future discussion. This does not apply to additions which are rather specifications of issues that were already in the list earlier.
- Where possible, better definitions and data source specifications were included, based on recent information. In cases where there are several options, these are mentioned in most instances without giving a preference.

The first change was made since the ECHI team felt that some of the more recent additions to the list were too much influenced by those Working Parties and projects which had taken the opportunity to come up with suggestions. This was felt to jeopardize the consistency of the procedures and criteria conceived by the ECHI team from the beginning of the work, and to reduce the balance present in the earlier versions of the shortlist. It was agreed that future additions to the list would require a renewed approach, including agreed criteria and procedures, for which the forthcoming Working Party 7 on indicators would be the logical forum. At the same time this emphasizes the continuity of the process of indicator development.

The second change reflects the problem of varying or conflicting (technical) recommendations. In such cases, the final decision is a matter for discussion between content experts and data collectors, rather than for decision within the 'generalist' ECHI team.

It should be emphasized that many of the detailed recommendations come from expert sources such as the numerous projects under the Health Monitoring Programme and the Public Health Programme. Quite a few indicators are also included in the HFA database of WHO-Europe or in the OECD Health Data, although precise definitions may vary. In these cases the reference 'WHO' or 'OECD' is given in the tables.

In earlier versions of the shortlist, a distinction was already made between three different degrees of data availability. In this concise version the list is explicitly divided into three sections, according to availability. A fourth section is added for the 'waiting list':

- *Section 1:* For these indicators, data are readily available and reasonably comparable (mostly based on assessment by Eurostat).

- *Section 2:* For these indicators or topics, data are partly available and/or sizeable comparability problems exist (mostly based on assessment by Eurostat).
- *Section 3:* For these indicators or topics, data are not available. There is need for development.
- *Section 4:* Indicators or topics proposed for addition to the shortlist after February 2004 by Working Parties or projects. These have not been included in this final ECHI shortlist version. Instead, they are placed on a 'waiting list' to be discussed in subsequent discussion rounds, logically in the context of Working Party 7 on indicators.

Section 1: Data are readily available and reasonably comparable; on close inspection, some of these indicators may be moved down to section 2.

Indicator/topic	Definition, sources, comments	Origin and rationale of selection
For all indicators where this is considered useful or appropriate (not specifically indicated in this list) stratification by gender, age, socio-economic status (SES) and/or region should be applied. The standards to be used for this (if there are no reasons to do it otherwise) are given below: • *For age groups: see under 'population by age'.* • *For SES, see under 'population by education/occupation'.* • *For region, the ISARE project has given preferential subnational levels, which for most Member States coincide with the NUTS system.*		
Demographic and socio-economic factors (9)		
Population by gender/age	Numbers, minimally presented by age bands 0-14, 15-44, 45-64, 65-84, 85+ (ICD-10 minimal recommendation, without the 1-year limit and with the 85+ limit added); optionally by age bands 0, 1-4, 5-14, 15-24, 25-34, 35-44, 45-54, 55-64, 65-74, 75-84, 85+ (ICD-10 optional recommendation with 85+ added, being the Eurostat grouping for mortality data in Key Data on Health 2002). Also age dependency ratio: 0-14 plus 65+ divided by 15-64. Total/male/female. WHO. OECD.	Originally selected; basic demographic data.
Birth rate, crude	Eurostat: no. births per 1000 population. WHO. OECD.	Originally selected; basic demographic data.
Mother's age distribution (teenage pregnancies, aged mothers)	No. births per 1000 women 15-19; per 1000 women 20-34; per 1000 women 35-49 (probably available Eurostat?). Option: specify under 16 and under 18.	Esp. teenage pregnancies suggested by NCA, Reprostat project. Important indicator of sexual behaviour, access to contraception and abortion practice; older women's pregancies is a determinant of enhanced perinatal complications.
Fertility rate	Mean number of children per woman during childbearing age; definition Eurostat. WHO. OECD.	Originally selected; basic demographic data.
Population projections	Projections up to 2050, Eurostat calculations.	Originally selected; basic demographic data.
Population by educational class	No, % in 4 classes (ISCED): elementary, lower secondary, upper secondary, tertiary; also to be used for stratifying other data to SES; Eurostat. WHO. OECD.	Originally selected. Important indicator for socio-economic differences in health.
Population by occupational class	No, % in current or last occupation group. SES project mentions 6 groups: upper non-manual, lower non-manual, skilled manual, unskilled manual, self employed, farmer. A new 'European Socio-Economic Classification (ESEC)' scheme is in preparation (Eurostat project). Also to be used for stratifying other data by SES.	Suggested by NCA. Important indicator for socio-economic differences in health.

Indicator/topic	Definition, sources, comments	Origin and rationale of selection
Total unemployment	Proportion unemployed in active population; Eurostat definition. WHO. OECD.	Originally selected. Important indicator for socio-economic differences in health.
Population below poverty line	% population with income below 60% of the national median (Eurostat); or: income quintile share ratio (choose the latter for link with structural indicators?).	Originally selected. Important indicator for socio-economic differences in health.
Health status (15)		
Life expectancy	Minimally at birth and age 65; Eurostat. WHO. OECD.	Originally selected. Basic indicator for population health.
Infant mortality	Eurostat definition: deaths under 1 year per 1000 live births. Peristat project definition: deaths under 1 year after live births at or after 22 completed weeks of gestation, per 1000 live births. Also in SHA/MDS project. WHO. OECD.	Originally selected. Basic indicator for population health.
Perinatal mortality (fetal deaths plus early neonatal mortality)	Minimally Eurostat definition: fetal deaths (over 1000g) plus early neonatal deaths (0-6 days) per 1000 live- and stillbirths; improved definition proposed by Peristat project. Present fetal deaths and early neonatal mortality separately. WHO. OECD.	Suggested by Peristat project. Important indicator for perinatal health care and preventive care
Standardised death rates Eurostat 65 causes	Eurostat. The 65 causes list contains the most frequent causes of death (COD), including each of the ICD chapters as a whole. Presented for age groups 0-64 and 65+ separately. Standardised according to European standard population. Some COD also in WHO, OECD.	Originally selected. The 65 causes list contains the most frequent causes of death, including all ICD chapters.
Drug-related deaths	Eurostat 65 COD includes F11-F16; EMCDDA definition 'acute drug-related deaths' preferable.	Suggested by EMCDDA. Important group of preventable deaths.
HIV/AIDS	Incidence. Eurostat, from EuroHIV data. WHO. OECD.	Originally selected. Novel disease with expansion potential and link to prevention.
Lung cancer	Incidence. Eurostat, data from EUCAN/IARC. WHO. OECD.	Originally selected. High-burden disease.
Breast cancer	Incidence. Eurostat, data from EUCAN/IARC. WHO. OECD.	Originally selected. High-burden disease.
(Low) birth weight	WHO: % of liveborns weighing 2500 g or more. Peristat project: proportion of births within 500 g intervals, by vital status at birth, gestational age, plurality. The latter is more discriminative.	Originally selected. Important indicator for pregnancy conditions; important cause for problems later in life.
Injuries: road traffic	Incidence. Eurostat. OECD. Working Parties on Accidents/Injuries, Environment/Health.	Originally selected. High-burden health problem.

Indicator/topic	Definition, sources, comments	Origin and rationale of selection
Injuries: workplace	Incidence. Workhealth project: for accidents at work follow Eurostat/ESAW: less than 4 days absence from work: Labour Force Survey; more than 3 days absence from work: national registers. Supported by Working Party Accidents/Injuries.	Suggested by Working Party Accidents/injuries and Workhealth project.
Perceived general health, prevalence	Prevalence by up to 5 response categories from WHO question (how is your health in general? Very good/good/ fair/bad/very bad). In Eurostat SILC, Minimal European Health Module. WHO. OECD. The question is standard but the interpretation subject to cultural bias.	Originally selected. Widely used measure of general health.
Prevalence of any chronic illness	12 month prevalence. HIS instrument proposed by EuroReves project. In Eurostat SILC, Minimal European Health Module.	Originally selected. Widely used measure of general health.
Limitations of usual activities, health related, past 6 months	HIS instrument proposed by EuroReves project. In Eurostat SILC, Minimal European Health Module.	Added by ECHI team. Widespread health problem.
Health expectancy, based on limitation of usual activities	Structural indicator. Calculated by Sullivan method based on life table data and prevalence of activity limitations, past 6 months. Also in SHA/MDS project. Health expectancies can also be based on perceived general health or prevalence of chronic illness.	Added by ECHI team, EuroREVES project. Health expectancies are important as composite measures, including both mortality and morbidity. Structural indicator.
Determinants of health (5)		
Regular smokers	% daily cigarette smokers. Regularly available Eurostat from HIS. WHO.	Originally selected. Important determinant of health; amenable to intervention.
Total alcohol consumption	Liter pure alcohol/person/year, based on trade and production data. WHO.	Originally selected. Important determinant of health and welfare; amenable to intervention.
Consumption/ availability of fruit, excluding juice	Food consumption or household budget surveys; for the latter: Dafne databank. WHO/FAO. OECD.	Added by ECHI team. Important health-promoting food item, use declining in many countries; amenable to intervention.
Consumption/ availability of vegetables, excluding potatoes and juice	Food consumption or household budget surveys; for the latter: Dafne databank. WHO/FAO. OECD.	Added by ECHI team. Important health-promoting food item, use declining in many countries; amenable to intervention.
PM10 exposure	Project Environment/health indicators: Population-weighted annual average ambient concentration of PM10. Eurostat structural indicator Environment: % urban population exposed to concentrations exceeding limit value (50 μg /m^3 , 24 h average) on 35 or more days.	Suggested by NCA, Environmental health Working Party. Urban air pollution is responsible for substantial burden of disease and death. Structural indicator.

Indicator/topic	Definition, sources, comments	Origin and rationale of selection
Health interventions: health services (16)		
Vaccination coverage in children	WHO: % children immunized for diphtheria, pertussis, poliomyelitis, tetanus, HiB, measles, mumps, rubella, meningococcus C. OECD health care quality: % children fully immunized at age 2 for MS basic vaccination program. Also in SHA/MDS project.	Originally selected. Classical prevention strategy which should be maintained to continue effective protection.
Breast cancer screening coverage	OECD health care quality indicators project: % women 52-69 receiving bilateral mammography within past year. Also Eurostat data from HIS.	Originally selected. Effective preventive strategy on major disease.
Cervical cancer screening coverage	OECD health care quality indicators project: % women 20-69 receiving cervical cancer screening within past 3 years. Also Eurostat data from HIS. Also in SHA/MDS project (System of Health Accounts/Minimal Data Set).	Originally selected. Effective preventive strategy on major disease.
Hospital beds	Total, acute care, psychiatric care, long-term care. Eurostat: number per 100.000 population. OECD: number per 1000 population. See also Eurostat Hospital Statistics MDS (Minimal Data Set). WHO.	Suggested by NCA, Working Party on Health Systems. Basic statistics for resources availability.
Physicians employed	Eurostat (practising physicians per 100,000). OECD (fte per 1000, also as fraction female physicians). WHO.	Originally selected. Indicator used in assessments of accessibility or efficiency.
Nurses employed	Definition Eurostat (practising nurses/midwives per 100,000; recent study on improvement); OECD (practising nurses per 1000). WHO.	Originally selected. Indicator used in assessments of accessibility or efficiency.
MRI units, CT scans	OECD: number of units per million population, also in Eurostat Hospital Statistics MDS.	Suggested by NCA. Indicates up-to-date quality of care.
Hospital in-patient discharges, limited diagnoses	OECD: Number per 100,000 population, per diagnosis. Hospital Data project made shortlist of some 130 diagnoses/ external causes and 18 procedures. These include almost all of the 65 Eurostat COD and of the diseases under morbidity in this ECHI shortlist. See also Eurostat Hospital Statistics MDS. WHO. Further development needed	Added by ECHI team based on NCA suggestions. Indicator used in assessments of costs, efficiency; also as best measure for occurrence of some diseases (see under Health Status).
Hospital daycases, limited diagnoses	See info above on Hospital Data project, Eurostat Hospital Statistics MDS. SHA definition of day-case: formal admission and discharge on the same day. Further development needed.	Added by ECHI team based on NCA suggestions. Indicator used in assessments of quality of care, costs, efficiency.
Daycase/in-patient discharge ratio, limited diagnoses	Ratio of the two above. See info above on Hospital Data project.	Added by ECHI team based on NCA suggestions. Indicator used in assessments of quality of care, costs, efficiency.

Indicator/topic	Definition, sources, comments	Origin and rationale of selection
Average length of stay (ALOS), limited diagnoses	OECD: days, per diagnosis. Otherwise, see info above on Hospital Data project, Eurostat Hospital Statistics MDS. Further development needed.	Added by ECHI team based on NCA suggestions. Indicator used in assessments of quality of care, costs, efficiency.
GP utilisation	Eurostat: mean number of visits per year, per 1,000 population. Needed: context of primary care delivery.	Originally selected. Indicator used in assessment of cos and (equity of) access.
Surgeries: PTCA, hip, cataract	Number of procedures per 100,000 per year. OECD. Also in procedures list of Hospital Data project.	Suggested by NCA. Indicates aspects of accessibility, up-to-date quality of care, and costs.
Insurance coverage	OECD: % population covered for total health care, in-patient care, outpatient care, pharmaceuticals. Was taken as proxy for equity of access, but questioned for its relevance to this point. Solution?	Suggested by NCA, Working Party Health Systems. Indicator of equal access to services.
Expenditures on health	Total/public/private expenditures, as total sum, USD PPP per capita, % of GDP. OECD definition. Also in SHA/MDS project.	Originally selected. Important for a view on total costing and partitioning of it.
Survival rates breast, cervical cancer	OECD health care quality: 5-years observed and relative survival rates. IARC, cancer registries. Note: includes effects of both screening and treatment.	Originally selected. Indicator for effectiveness of screening and treatment of a high-burden disease.
Health interventions: health promotion (1)		
Policies on ETS exposure (Environmental Tobacco Smoke)	Project Environment/health indicators: Definition of composite index, on smoking restrictions in 9 public domains and on advertisement. Eurostat: information on smoking ban in public places. other sources?	Suggested by Working Party Environmental health. Such policies contribute to lowering ETS exposures and thus lowering health risks.

Section 2: Data partly available and/or sizeable comparability problems; on close inspection, some of these indicators may be moved up to section 1.

Indicator/topic	Definition, sources, comments	Origin and rationale of selection
For all indicators where this is considered useful or appropriate (not specifically indicated in this list) stratification by gender, age, socio-economic status (SES) and/or region should be applied. The standards to be used for this (if there are no reasons to do it otherwise) are given below: • *For age groups: see under 'population by age'.* • *For SES, see under 'population by education/occupation'.* • *For region, the ISARE project has given preferential subnational levels, which for most Member States coincide with the NUTS system.*		
Demographic and socio-economic factors (0)		
Health status (15)		
Smoking-related deaths	WHO: all ICD-causes in which smoking is implicated, i.e. not smoking-attributed deaths. Better operationalisations?	Originally selected. Important group of preventable deaths.
Alcohol-related deaths	Eurostat 65 COD includes F10, 'alcohol psychosis/chronic alcohol abuse'. This is only a small part of alcohol-related mortality. ECHI prefers (preliminary) recommendation by Working Party Mental Health: ICD-10: F10, G31.2, G62.1, G72.1, I42.6, K29.2, K70, K86.0, O35.4, P04.3, X45. Eurostat, feasible? Does not include alcohol-related traffic deaths; see project Environment/health. WHO: all ICD-causes in which alcohol is implicated, i.e. not alcohol-attributable deaths.	Originally selected. Important group of preventable deaths.
Diabetes	Prevalence. EUDIP project: all types of diabetes; data from HES or primary care sentinel network; choose age groups to account for children. Eurostat: data from the International Diabetes Institute. WHO.	Originally selected. High-burden disease.
Dementia/Alzheimer	Prevalence. Eurostat: data from Alzheimer Europe; comparable?	Originally selected. High-burden disease.
Depression	Prevalence. Mental Health project: use surveys with CIDI instrument. Eurostat: data from special surveys.	Added by ECHI team. High-burden disease. Highlights mental health priority.
AMI	Eurociss project: incidence/attack rate from hospital discharge figures combined with mortality, preferably from population-based registers; see also Hospital Data project.	Originally selected. High-burden disease.
Stroke	Eurociss project: incidence/attack rate from hospital discharge figures combined with mortality, preferably from population-based registers; see also Hospital Data project.	Originally selected. High-burden disease.

Indicator/topic	Definition, sources, comments	Origin and rationale of selection
Asthma	IMCA project gives precise definitions of prevalence of asthma symptoms, attacks and diagnosis, preferably by special survey. General HIS/HES or GP networks are second best proxies.	Originally selected. High-burden disease.
COPD	IMCA project gives precise definitions of prevalence of COPD symptoms and diagnosis, preferably by special survey. General HIS/HES or GP networks are second best proxies. WHO.	Originally selected. High-burden disease.
Injuries: home/leisure, violence	Incidence. Working Party Accidents/ Injuries: possibly based on hospital discharges. Further work needed. For road traffic, workplace injuries, see Section (1); for suicide attempt, see below.	Suggested by Working Party Accidents/injuries. High-burden health problem.
Suicide attempt	Lifetime prevalence. Working Party Mental Health: use CIDI survey instrument. Also addressed by Working Party Accidents/Injuries.	Added by ECHI team. Highlights mental health priority.
General musculoskeletal pain	Prevalence. Project on Musculoskeletal Conditions proposed survey instrument; other sources?	Added by ECHI team : musculoskeletal indicator wanted. High-burden health problem.
Limitations in physical functions	Prevalence. Instrument including seeing, hearing, mobility, speaking, biting/chewing, agility, developed by EuroReves project and proposed by Eurostat.	Added by ECHI team. High-burden health problem.
Psychological distress	Prevalence. Score from MHI-5 questions from SF-36. Proposed by Mental Health and EuroReves projects. Pilot data available.	Suggested by Working Partry Mental Health. Highlights mental health priority in general sense.
Health expectancies	Health expectancies can be calculated by Sullivan method based on life table data and the above measures on physical limitations and psychological distress. Other approaches use weighing of health states (WHO headquarters). OECD.	Added by ECHI team, EuroREVES project. Health expectancies are important as composite measures, including both mortality and morbidity. Structural indicator.
Determinants of health (9)		
Body mass index	% of population with BMI >= 30 kg/m^2. Choose age groups to account for children. Also cut-off at BMI 25? Eurostat 18 items. OECD.	Originally selected. Important determinant of health and growing problem; amenable to intervention.
Blood pressure	% population with blood pressure over 140/90, or taking hypertension drugs. EHRM project: HES. WHO special programmes.	Originally selected. Important determinant of health; amenable to intervention.
Pregnant women smoking	% women smoking during third trimester of pregnancy. Peristat project: perinatal surveys.	Added by ECHI team. Important determinant of health; amenable to intervention.

Indicator/topic	Definition, sources, comments	Origin and rationale of selection
Hazardous alcohol consumption	% adolescents, adults consuming > 20 (women), or > 40 g ethanol/day (men); alternatively: > 2 drinks/day (women) or 3-4 drinks/day (men); precise wording and numbers to be adapted to consensus recommendations; data from interview surveys. WHO special programmes.	Originally selected. Important determinant of health and welfare; amenable to intervention.
Use of illicit drugs	Lifetime prevalence for cannabis, cocaine, amphetamine, ecstasy, other (better: month/year prevalence?). EMCDDA. Eurostat 18 items, but low availability/comparability.	Added by ECHI team. Important societal problem, especially for children; amenable to intervention.
Physical activity	Eupass project: IPAQ questionnaire, under development for age 15-69. Other instruments in wide use. Evaluation needed. Eurostat 18 survey items, low comparability.	Originally selected. Important determinant of health; amenable to intervention.
Breastfeeding	Peristat, Nutrition projects: % newborns (exclusively) breastfed first 48 hours, at 6 mnths. WHO: % newborns breastfed at 3 and 6 mnths. Interview survey data.	Added by ECHI team. Important determinant of mother's and child health. Public health issue of rising importance.
Social support	Working Party Mental Health: Questionnaire: Oslo 3-item social support scale. Also recommended by EuroHIS. Pilots done. Link with indicators Social Protection Committee.	Sugested by NCA and Working Party Mental Health. Important condition for (mental) health.
Work-related health risks/job quality	Workhealth project; this cluster includes (1) subjective risk assessments (data European Survey on Working Conditions), (2) physical/psychological working conditions (survey data) and (3) job transitions (survey data). To be further defined.	Suggested by NCA, Working Party Mental Health, Workhealth project. Workplace conditions are important for health.
Health interventions: health services (7)		
Other outpatient visits	Eurostat survey questions include minimally 'doctors' and 'dentists/ orthodontists'. It is useful to have more (para)medical branches included. The Mental Health project has run a pilot survey to comprehensively cover ambulatory mental health care. For outpatients in hospitals: Eurostat Hospital Statistics MDS?	Suggested by NCA. Indicator used in assessment of cos and (equity of) access.
Equity of access	This item is kept separate from 'insurance coverage' (section (1). Can an operational isation be taken from OECD studies, or from work by the Social Protection Committee?	Equity of access is an important issue and cannot only be addressed by insirance coverage.
Medicine use, selected groups	Euro-Med-Stat project: Utilisation in Daily Defined Doses (DDDs), per 1000 population/day. Major ATC groups to be selected. OECD.	Suggested by NCA. Indicates aspects of accessibility, up-to-date quality of care, and costs.

Indicator/topic	Definition, sources, comments	Origin and rationale of selection
Waiting times for elective surgeries	Include PTCA, hip replacement, cataract operation. Data from OECD studies.	Originally selected. Indicator for the accessibility of health care, with focus on elective interventions.
Surgical wound infections	WHO: % of all in-patient operations. Development work in OECD panel on patient safety.	Suggested by NCA. Indicator for safety of operative interventions.
Cancer treatment quality	Eurochip project suggests: 'stage at cancer diagnosis' and 'time between diagnosis and first treatment'. Available from some registries and specific studies. To be decided.	Suggested by NCA. Indicator for the quality of cancer care.
Diabetes control	Work by OECD Health Care Quality Indicators project on four indicators: diabetics tested for HbA1c, diabetics with poor glucose control, retinal exams in diabetics, major amputations in diabetics. Evaluation is under way.	Suggested by NCA, Working Party Health Systems. Indicator for the quality of diabetes care.
Health interventions: health promotion (0)		

Section 3: Not available, need for development

Indicator/topic	Definition, sources, comments	Origin and rationale of selection
Demographic and socio-economic factors (0)		
Health status (0)		
Determinants of health (0)		
Health interventions: health services (2)		
Mobility of professionals	Area under development, a.o. in the Health Systems Working Party.	Suggested by Sanco. Important EU health policy issue.
Patient mobility	Area under development, a.o. in the Health Systems Working Party.	Suggested by Sanco. Important EU health policy issue.
Health interventions: health promotion (3)		
Policies on healthy nutrition	Area to be developed. WHO-Europe report on analysis of food and nutrition policies.	Added by ECHI team. This is an important area of activities in health promotion, indicators for monitoring these should be developed.
Policies and practices on healthy lifestyles	Area to be developed.	Added by ECHI team, supported by Working Parties Accidents/injuries and Mental Health. This is an important area of activities in health promotion, indicators for monitoring these should be developed.
Integrated programmes in settings, including workplace, schools, hospital	Area to be developed. important area of activities in health	Added by ECHI team. This is an promotion, indicators for monitoring these should be developed.

Section 4: Indicators proposed for the shortlist after June 2004, mainly by Working Parties or projects, to be considered in following discussion rounds.

Indicator/topic	Definition, sources, comments
Demographic and socio-economic factors (1)	
Crude death rate	Suggested by ECHI team member as consistent with having birth rates. Eurostat. WHO. OECD.
Health status (10)	
Deaths associated with extreme temperature	Suggested by Environment/health indicators project.
Mortality from specific injury categories, in specific age groups	Suggested by Working Party Accidents/Injuries.
Incidence of some communicable diseases (TB, STD)	Suggested by ECHI team member.
Incidence of all cancers	Suggested by Eurochip project. IARC.
Incidence of malignant melanoma	Suggested by Environment/health indicators project. IARC.
Alcohol dependence	Suggested by Working party Mental health: based on 4-item CAGE questionnaire; this is better than questionnaire on drinking quantities. Discussion: what about alcohol questions in the CIDI questionnaire which is recommended for depression prevalence and suicide attempt (section 2)?
Specific injuries home/leisure, for children and elderly.	Suggested by Working Party Accidents/Injuries, Environment/Health.
Disease occurrence by occupation and economic sector	Suggested by Workhealth project. Data source general HIS?
Occupational disease	Suggested by Workhealth and Eurochip projects: Eurostat/EODS. WHO.
Sickness absence	Suggested by Workhealth project: base on LFS; major diagnoses can be based on insurance data. WHO.
Determinants of health (11)	
Total energy intake	Suggested by Nutrition projects. WHO/FAO.
Population exposure to ozone	Suggested by Environment/health indicators project.
Exceedance of limits NO_2, SO_2	Suggested by Environment/health indicators project.
Noise exposure by source	Suggested by Environment/health indicators project.
Housing: crowding, hygiene, dampness, mould growth	Suggested by Environment/health indicators project.

Indicator/topic	Definition, sources, comments
Population supplied with safe drinking waters	Suggested by Environment/health indicators project.
(Perception of) crime in neighbourhood	Suggested by Environment/health indicators project.
Threatening life events	Suggested by Working Party Mental Health (questionnaire, 12-item scale of Brugha et al.).
Sense of mastery	Suggested by Working Party Mental Health (questionnaire, 7-item scale of Pearlin et al.).
Exposure to carcinogens at work	Suggested by Eurochip project; data source CAREX?
Reintegration/ rehabilitation	Suggested by Workhealth project.
Health interventions: health services (3)	
Vaccination coverage influenza	Suggested by Working Party Health Systems. WHO. OECD Health Care Quality Indicators project.
Radiation equipment	Suggested by Eurochip project to add to MRI units and CT scans; available in OECD health data.
Expenditures by sector of care	Suggestion of ECHI team member.
Health interventions: health promotion (6)	
Regulations on noise levels	Suggested by Environment/health indicators project.
Regulations for land-use planning	Suggested by Environment/health indicators project.
Existence of registry for chemical incidents	Suggested by Environment/health indicators project.
Government preparedness for chemical incidents	Suggested by Environment/health indicators project.
Existence of radiation monitoring	Suggested by Environment/health indicators project.
Compliance with OSH regulations	Suggested by Workhealth project.
Expenditures on occupational health and safety measures	Suggested by Workhealth project.

ANNEX 7
THE ECHI SHORTLIST, SELECTION PROCEDURES, AS AGREED IN MAY, 2003

1. Background and history

Both Sanco and ECHI aim at a core set of indicators. At the 18-20 March 2003 meeting in Luxemburg, the ECHI team decided to launch a Delphi-like procedure to accomplish this. A draft procedure was circulated for comments on March 31.

At the meeting of HMP project co-ordinators in Luxemburg, on March 18-20, 2003, the Sanco G3 representatives put great emphasis on the need to show the beginning of an implementation of data in the indicator framework developed until now. For that purpose, they proposed to select a 'core set' of indicators that would enable a quick start. During the meeting, an attempt was made to make such a selection in group sessions, starting from the draft ECHI list. It was felt, however, that the rationale and the criteria were not sufficiently clear, and that the ECHI draft list was not yet well-fit for this purpose. Also, not all of the groups could finish their job. It was then decided that the ECHI-team would propose a procedure to carry out the selection in a more structured way, to deliver some result by 10 July, for the meeting of the Network of Competent Authorities.

On March 31, The ECHI co-ordinator circulated a proposal for a procedure to all past and present HMP project co-ordinators, to the ECHI team, to the Sanco G3 staff and to the Eurostat core group leaders. He also discussed the proposal with Sanco staff on April 16.

2. Reactions to draft protocol and draft ECHI indicator list

By April 18, quite some comments were received. Based on these, substantial changes were made to the proposed protocol. Also, they led to additions and improvements in the indicator list, as well as prioritisation within the work field of projects. Discussions with Sanco clarified the rationale for the core set, to some extent.

By April 18, many addressees had sent reactions. Many of these contained useful suggestions for changes to the protocol. These concerned, e.g.: the use or not of availability as a primary selection criterion, the separate use of disease burden and preventability criteria (or the separate selection by ECHI-chapter), the lack of balance between generic and specific indicators (columns 1 and 2) in the March draft of the ECHI list, on what precisely a *user window* is (short answer: this is an indicator subset selected from a particular user's point of view; see below for further explanation), or the insufficient scientific basis of the indicator work until now. As a result, the present draft contains quite some changes, and is circulated as an intermediate draft on April 28 to Sanco and the ECHI-team.

Many addressees have sent suggestions and additions to the March draft indicator list from the viewpoint of their own projects. They sometimes sent a favourite set from their own project recommendations, not looking very closely at the boundaries between ECHI chapters, in line with comments that this should not be done. This will be taken on board for the next steps.

The fourth point of action in step 2 was the clarification by Sanco of the rationale for having the core list. As clarified during my visit, this was based much on the need felt to accomplish a beginning of a working information system on the short term, which is underpinned by the legal texts underlying the public health programme itself, but not on a policy action in a specified area.

In the present document, the ECHI co-ordinator has made an effort to take account of all these comments. This was not always fully possible. In these cases he has added some explanations, or responded to the commenters directly.

3. Rationale for a core indicator set and its status

The rationale for creating a core indicator set now is to set priorities for data implementation, and thus make a start with realising an information base on the short term. This will not hamper further development of other indicators outside the core set, to be realised in a long-term plan.

The first question is: Why do we want a 'core' set of indicators? One rationale was formulated in the ECHI-2 workplan, namely that the comprehensive indicator list would grow steadily by the input of all the HMP projects, and some restriction would be needed to effectively work on harmonisation of data collection but not on too many topics at the same time.

From the policy side (Sanco G3) the reason for wanting a 'core' set seems very much te derive from the need to accomplish a beginning of a working information system on the short term. This is underpinned by the legal texts underlying the public health programme itself, like: 'To improve health information and knowledge for the development of public health by .. developing and operating a sustainable health monitoring system to establish comparable quantitative and qualitative indicators at Community level on the basis of existing work and accomplished results, and to collect, analyse and disseminate comparable and compatible age and gender specific information on public health at Community level concerning health status, health policies and health determinants, ... paying special attention to inequalities in health.'. These issues are further specified in the workplan for 2003 under items 2.2.2 and 2.2.3.

The main rationale for selecting a restricted set of topics thus seems to be to allow for a quick implementation of data with the indicators. There is no special direction on criteria except to be basically comprehensive and to include health inequalities. This means that

the restricted list is intended for use in a short-term pilot implying the addition of data, from whatever source, to the indicator base. It also means that the *status of this core set is for the short term,* and is part of a longer term strategy for the gradual implementation of all the indicators that have been recommended in the various areas by the various projects, and the associated data collection. Therefore, the core set is named *'first phase set of core indicators'*. The longer term strategy still has to be specified.

4. Criteria for selecting core sets of indicators

For the first round of selection of the core set, the criteria will be (1) importance for overall health status and large health problems at population level, (2) strength of evidence for inequalities in health, and (3) importance for effective interventions and health policies. In short: the big problems and the big chances for improvement.

The second question is on the *criteria*. As the main rationale seems to be one of restricting the number of indicators in order to get something quickly done practically, there is no clear direction for criteria of content. This means that we should start from a *general public health policy perspective*. From such a perspective, one could say that health policy seeks (1) to address the big health problems, as well as (2) the unwanted health inequalities, and (3) the best opportunities to improve the health and inequalities situation by appropriate intervention.

On this basis, indicators/issues should be selected (1) which represent overall (negative or positive) health measures, or the largest health problems (largest 'disease burden'), in terms of diseases or functional health at the population level, (2) where the most important health inequalities appear (possibly to be implemented by SES stratification of many indicators), and (3) which focus on determinants of health which can be influenced by health and other policies and on associated interventions in health promotion, health protection, prevention and/or health care.

Availability of data has been suggested as a criterion for selection. This looks logical in relation to the wish of producing quick results (in terms of quick implementation of the list with data). However, public health relevance and practical data availability are basically different dimensions, which we think are not wise to mix in the same selection procedure. In practice, when we select on the basis of the policy relevance, data will be available in most cases since most of these issues will have been policy-relevant for some time. Therefore, I expect that we will not end up with more than approximately 10% of 'core indicators' for which data are not available. At the same time, the selection process will point at a limited number of issues/indicators for which we think data development has high priority, and we avoid the trap of data-driven-ness. In short, the protocol implies a first selection round on the basis of policy-relevant criteria, after which in a second round, the data availability and the precise indicator definition will be established. The latter will be done by data specialists (Eurostat) and by the 'vertical'projects.

5. The ECHI list as the starting point for selecting user windows

The ECHI-2 draft list will be used us the starting point for the selection of the core set. On this basis, with new additions from HMP projects, a simplified list is presented, with maximum consistency in being 'medium-generic'. It will include recommendations for priorities in areas covered by specific HMP projects. Respondents may indicate missing issues.

The ECHI-1 list has been devised to comprehensively cover all issues of health status, health determinants, health promotion, health care, and background factors, that are of interest to actors in the public health field. It is not yet in balance since some issues have been specified better than others, due to work done in the past or in several HMP projects. Recent additions have enriched the list, but the lack of balance has not yet been solved, due to the fact that the presence or absence of a project on a specific subject is somewhat arbitrary. Further work in ECHI-2 will aim at improving the uptake of HMP project recommendations, and of indicator/database definitions. We think that at this stage, the list can be used as the starting point for a procedure for selecting the two user-windows mentioned, under the following conditions:

- The list should be as updated as possible, concerning the status of HMP projects; the ECHI project co-ordinator will attempt to take care of this by including recent results and current comments to the extent possible.
- The list should be consistent in the sense that all indicators mentioned have a somewhat similar status of being not too general and not too specific. To this end a modified list has is prepared for the selection procedure. This list is made up on the basis of the March draft and subsequent additions/changes. It contains the full list of indicators, at an 'average generic' level. This means that the wording will be specific enough to enable qualified choices, but not so specific that we end up with e.g. lots of very precisely defined indicators. E.g., 'smoking behaviour' may be too generic since the problem is different e.g. for the young and for pregnant women, but something like 'smoking prevalence in 18-20 year olds' is too specific. This implies that the operationalisation of the selected indicators comes in the next step, on the basis of the involved project recommendations, and in connection with the assessment of data availability.
- The priority sets generated by the 'vertical' projects (i.e. those recommending indicators in a specific area) *within* their area, will be indicated in the list as such.
- The participants can raise issues that they find lacking in the current ECHI list and which they find important enough to include in the selection.

For details on some of these issues, further procedures and the time frame, see below.

6. Intended size of the core set and selection procedure

The aim is a core set size of some 20-25% of the ECHI draft list. Participants select 50 first choice and 50 second choice. Playing with cutoff points in the resulting rankings can provide various sizes of core sets. Participants amend the results. Sanco and the ECHI co-ordinator have a final say. For a next phase, more precise indicator definitions and data availability will be assessed with the projects and with Eurostat.

Given the rationale of the present exercise, i.e. having a somewhat limited set for quick implementation (and priority development), as a first step in a larger strategy of indicator development, it seems reasonable (arbitrary!) to aim at a list containing some 20-25% of the total number of indicators in the present ECHI selection draft list, which is approximately 400.

This can be accomplished according to the following procedure (see also under (9) and time schedule)

- Each participant selects 50 indicators (about 20% of the total list) as his/her first choice, and another 50 as his/her second choice, from the overall ECHI draft list [*note: different from the 25 March draft we do not propose fixed numbers from each ECHI chapter*].
- From this, a ranking can be tabulated of indicators having e.g. 12, 11, 10 etc. votes. First choices are given twice the weight of second choices. This can be done for the whole list, but also for indicators within an ECHI chapter.
- From the overall ranking, larger or smaller core sets will be constructed, by choosing different cut-offs in the ranking.
- From the chapter rankings, combinations of cut-offs result in core sets which have emphasis on one or another chapter, e.g. on the health status chapter or the health determinants chapter.
- Along this line, several proposals for core lists will be presented, for discussion.
- All participants can suggest amendments to the results. Sanco and the ECHI co-ordinator have a final say in discussed items.
- For one or more of these variant proposals, indicator definitions and data availability will be assessed in the follow-up phase, with the HMP projects and Eurostat.

7. Indicator 'Core sets' and 'User windows'

User windows (as developed in ECHI-1) are core sets of indicators selected according to a specific user's perspective. The presently derived core set and its variants are examples of this concept.

In ECHI-1, the discussion on how to define a core set of indicators led to the conclusion that there may be many perspectives from which a 'core' set of indicators can be constructed. Each perspective has its own set of criteria and yields its own subset of indicators. Therefore we formulated the concept of 'user-windows' for subsets of

indicators selected from a specified users perspective (for examples, see the ECHI-1 report, annex 7).

The present core set can be seen as a user window from the point of view of the *'general public health policy maker'*. We might, in addition, want to focus a core set on either health status or health determinants. These two would represent user windows from the point of view of either *'inspection of the health status landscape'* or of *'progress in effective health promotion'*.

8. Who takes part in the procedure?

The selection of core indicators is done by the more 'generalist' participants. The other participants comment on the procedures and results, and assess indicator definitions and data availability in the follow-up phase.

The procedure includes 4 groups of participants: (1) the ECHI team, (2) the past and present HMP co-ordinators, (3) the Sanco G3 staff and (4) Eurostat and the core group leaders. Their different roles are given in the time schedule table (see below). The selection of the core indicators will be done by set of generalists, being most representative of the *users* of the indicators. These include the ECHI team and the more 'horizontal' HMP projects (we propose: Isare (regional indicators), EVA (evaluation of health reports), Health promotion indicators, Health information systems, Health impact assessment, Socio-economic status and health). We would as a starting point not include co-ordinators of 'vertical projects' (e.g. cancer, nutrition) since they tend to be specialists, besides that they may be biased towards their own topic. But if they can and want to act as generalists, they may join. All participants are involved in commenting on the procedures and on the results, and in the follow-up assessment of more precise indicator definitions and data availability.

9. Steps of the proposed protocol

Step 1:

- The ECHI project co-ordinator (Pieter Kramers, PK) sends the proposed protocol to all participants, with the March 12 version of the discussion draft indicator list. The participants include (1) the ECHI team, (2) the past and present HMP co-ordinators, (3) the Sanco G3 staff and (4) Eurostat and the core group leaders.

Step 2:

- All send comments on protocol to PK.
- All send comments on the indicator list to PK.

- Each project co-ordinator, notably of the 'vertical' projects dealing with a specific aspect of health, health determinant, and/or health system issue, selects the indicators which they find the most crucial ones from a general public health point of view (criteria see above). [*Note: In the 25 March version of this document it was not clear that this referred specifically to the indicators within the work area of the respective projects; most respondents however have taken it as such*]. The resulting favourite set will be marked in the overall list and will be a guidance in the overall selection in the next step.
- Sanco G3 staff clarifies the rationale for creating a core indicator set and indicates what the results will be used for.

Step 3:

- PK adapts the protocol and the indicator list according to the incoming comments, undertakes bilateral contact where needed, and circulates the protocol and the list for actual selection to the participants. Participants in this selection round will be a set of generalists, i.e. the ECHI team, the Sanco G3 staff, and the more 'horizontal' HMP projects.

Step 4:

- On the basis of the revised ECHI draft list, the participants select a fixed number of 50 indicators as first choice and 50 as second choice, from the overall ECHI draft list. Participants take account of the criteria and the conditions as set under (4)-(6). They may add the reasons for their selection. Participants return their selections to PK.

Step 5:

- The results are tabulated by PK (see section 6 above). On this basis, he proposes a few variants for core sets or user windows. This analysis is presented in a transparent way and circulated to all participants.

Step 6:

- The participants study the results. They check for face-validity of the lists. They give comments to the variants. If they definitely disagree with the presence or absence of an indicator, they indicate this and qualify why. They can propose variant ways to deal with the obtained results. They send their comments to PK.
- The project co-ordinators (for their own field) and the Eurostat core groups comment on the data availability of the resulting indicator set, and where applicable on the preferred indicator definition. Thus the resulting user windows will show a gradient from easily available to developmental issues. They send their comments to PK.

Step 7:

- PK includes the comments, where possible, and after consultation if needed. Sanco and the ECHI co-ordinator may exert a last say in discussed items. The results so far are be presented to the meeting of the network of competent authorities (July 10) and will be circulated back to the participants. There will be a clear statement on the status of the result obtained until now, and on the need of putting this action into a longer term strategic plan on indicator and data development. The content of this will become clear during the process.

ANNEX 8
LIST OF USER WINDOWS PROPOSED

Two groups of user-windows are proposed. The first group includes sets of indicators as they are recommended by specific HMP projects, or recently by Working Parties. The second group consists of sets that are proposed by the ECHI team. These two are listed below under sections (1) and (2).

1. User windows from HMP projects or from Working Parties

The user-windows in this section were arranged according to a general type of perspective: by focus on a specific disease (A), on a specific age group or target group within the population (B), on a certain (group of) determinant(s) of health (C), or on a specific intervention setting (D). In all cases it is clear that the starting point may be an item in one particlar ECHI class (e.g. lung disease in the health status class), but that the indicators selected within the user-window will usually be derived from the other three classes as well.

Group A: User windows focusing on a specific disease

- UW-1, Mental health: recommendations of the Mental Health project, recently the Working Party on Mental Health.
- UW-2, Cancer: Eurochip and CAMON projects.
- UW-3: Diabetes: EUDIP project.
- UW-4: Cardiovascular disease: Eurociss project.
- UW-5: Lung disease: IMCA project.
- UW-6: Musculoskeletal disorders: MSD project.
- UW-7: Oral health: Oral health indicators project.
- UW-8: Injuries: Working party on accidents/injuries.

Group B: User windows focusing on specific age groups or target groups in the population

- UW-9: Perinatal health: Peristat project.
- UW-10: Child health: CHILD project.
- UW-11: Reproductive health: Reprostat project.
- UW-12: Health in intellectually disabled: POMONA project.

Group C: User windows focusing on certain determinants of health

- UW-13: Lifestyle indicators connected to cardiovascular disease, diabetes and others: EHRM project.
- UW-14: Nutrition: 3 projects: EFCOSUM, Dafne and Public Health Nutrition; the latter includes the former two (also physical activity).
- UW-15: Environment and health: ECOEHIS project.

Group D: User windows focusing on certain settings for health and associated interventions

- UW-16: Working environment: Workhealth project.
- UW-17: Health promotion in various settings: EUHPID project.

2. User windows proposed by ECHI

The following topics were added by the ECHI team, to be implemented as user-windows:

Groups A and C:
none.

Group B. User windows focusing on specific age groups or target groups in the population

- UW-18: Health of the elderly; this would include issues in health status, health determinants, health care, health promotion.
- UW-19: Working age population; this might become a rather large user window; it would include most issues of the full list; if done, it should include the age cut-offs of most indicators, as far as available.
- As an alternative for the former two, a user-window on life-staging could be conceived: take a limited number of issues typically relevant for each of a set of age bands from young to old age, as one user window.
- UW-20: Issues of gender difference; this should not be a split-up by gender of the full list, but a selection of issues which are relatively important by way of gender difference.
- UW-21: Socio-economic health inequalities; this would include issues in health status, health determinants, health care use and access. The Health Inequalities project may be a starting point.

Group D: Aspects of settings and interventions:

- UW-22: Health system performance; this is a complicated one. It will include health care as well as prevention and health promotion. It should be devised along the various elements of the goals of health systems, as defined by many reports, such as: effectiveness, safety, appropriateness, responsiveness, accessibility, equity, efficiency. Where appropriate, outcome as well as process can be measured.

3. Proposals for the filling of user windows listed under (2)

As for the user windows conceived by the ECHI team, a few proposals are given below. These proposals are *explicitly meant as tentative examples,* and could be subject to further discussion, e.g. in the Working Parties.

UW-18: Health of the elderly

A proposal was not yet formulated. Examples should be sought of others who have attempted this. Until now, there were no projects focusing on health of elderly. Elements could be (include especially elements of the shortlist):

- Gender/age structure and socio-economic variables of the elderly population
- Life expectancies from 60+ and higher
- Causes of death and morbidities of specific relevance to elderly
- Functional limitations and activity limitations
- Health determinants like BMI, hypertension/cholesterol, nutrition, physical activity, housing, some living conditions, social islotion, violence
- Influenza vaccination
- Risk factor and cancer screening
- Nursing/elderly home care
- Hospital data and other medical system use for elderly age groups
- Surgeries of high relevance for elderly (cataract, hip replacements, etc.)
- Medicine uses
- Age specific expenditures
- Waiting times elective surgeries
- Insurance coverage
- Iatrogenic disease/deaths
- Other health care quality indicators

UW-21: Socio-economic health inequalities

Examples should be sought of others who have attempted this. The project on socio-economic differences in health (although ended early in the HMP era) still is a good source. Partly based on this, elements could be (include especially elements of the shortlist):

- All indicators, especially those included in the shortlist, for which the data allow stratification by education, occupation or income. In many cases, such stratification is possible from mortality statistics, from health interview surveys and from health examination surveys, and to a lesser extent from medical registries.
- Indicators specifically relevant to inequalities such as: socio-economic variables, access to health services.

Based on this, an example was formulated as follows, again implying stratification by sosio-economic factors:

- Early school leaving
- Pre-primary education age 3-5
- Children below poverty line
- Population below poverty line
- Children with single-parent
- Population by ethnic origin and/or citizenship
- Inequality in deaths
- Alcohol-related deaths
- Drugs-related deaths
- Limitations of usual activities, past 6 months, health-related

- Temporary limitation of usual activities by a health problem during past two weeks
- Psychological well-being
- Euroqol score
- Health expectancy based on various parameters
- Blood pressure
- Nutritional status
- Serum cholesterol fractions
- Alcohol drinking in children
- Pregnant women smoking
- Use of illicit drugs (including children)
- Physical activity
- Sexual behaviour
- Housing
- Urban PM10 exposure
- Mental stress factors at work
- Breast cancer screening
- Cervical cancer screening
- Policies and campaigns on health behaviours

UW-22: Health System Performance

For this UW-22, a tentative example is given below. Intended is a set of indicators which show whether the health services system, including prevention, does what it is supposed to do: improve health according to current standards.

Components of performance

This user window has been based on various schemes as recently published (e.g. CIHI/Statistics Canada, see *Annex 2;* OECD, 2000: performance measurement and performance management in OECD health systems; ISO, 2003: Health informatics – health indicators definitions, relationships and attributes; Rodella et al., 2003: Measuring and comparing performance of health services: a conceptual model to support selection and validation of indicators). These schemes recognize categories such as 'effectiveness', 'safety', 'appropriateness', 'continuity', 'responsiveness', 'accessibility', 'equity', 'efficiency' and 'costing' (nine items). Recently, a smaller set of categories was coined by a.o. the Social Protection Committee as the four dimensions: 'sustainability', 'effectiveness', 'efficiency' and 'equity', later reduced to three as: 'access', 'quality' and 'financial sustainability'. The nine ones above are in fact grouped in the four, and the three arise when 'efficiency' is combined with 'sustainability', 'equity' is replaced by 'access', and 'effectiveness' is replaced by 'quality'. The latter is in fact a broader concept, which would more clearly include most of the nine items listed above. For the purpose of the example given below, the three categories are retained.

The example evidently contains the indicators from the ECHI group 'health care quality', but also quite a few from other sections in the class 'health systems'. In the list, reference is given to the indicators selected by the OECD Health Care Quality project in their first round (abbreviated as OECD), and by the Project on the 'Minimum Data Set for Assessing

Sustainability, Effectiveness, Efficiency and Equity, using data from the System of Health Accounts, carried out for Eurostat (abbreviated as MDS).

This makes for the only case up to now in which a user window is given a hierarchic structure which is different from the one in the ECHI list. This reflects the fact that the groups in the ECHI class 4 (prevention, resources, utilisation, expenditures, quality) are mostly (except for quality) the traditional 'statistical' indicators. They rather deal with the economics of the system than with the production of health, and thus are not fit to serve the 'performance' purpose in terms of health production.

Some schemes tend to take indicators from the ECHI classes 2 and 3 (health status, health determinants) as indicators for health system performance. We prefer to restrict the UW-22 to the indicators which have a more clear-cut relation to what the health services system really does to health. An indicator like 'life expectancy' does not fulfill that requirement.

Access

- Waiting times for elective surgeries
- Accessibility for children
- Insurance coverage for health services
- Measure of financial (in)equity
- Hospital discharges by educational group
- General practioner contacts by educational group
- Physicians employed
- Nurses employed
- No of physicians graduating

Quality

- Vaccination coverage in children (OECD, MDS)
- Vaccination coverage influenza (OECD, MDS)
- Breast cancer screening (OECD, MDS)
- Cervical cancer screening (OECD, MDS)
- Colorectal cancer screening (OECD)
- Screening for blood pressure
- Screening for serum cholesterol
- Prenatal care attendance
- 28-day emergency readmission rate
- Selected avoidable deaths (OECD, MDS)
- 30-day mortality rate after AMI (OECD)
- 30-day mortality rate after stroke (OECD)
- 30-day mortality rate after CABG
- Incidence of end-stage renal failure in diabetics
- Cancer survival rates (breast, cervix, colorectal, childrens leukemia)
- Iatrogenic disease/deaths
- Decubitus prevalence

- Surgical wound infections
- Antibiotic resistance
- Compliance with oncology practice
- Delay of cancer treatment
- Support to women in perinatal period
- Availability of CT scans, MRI units, PET units
- Availability of stroke units
- PTCA operations
- Hip replacements
- Cataract operations
- Medication for hypertension, hypercholesterolaemia, osteoporosis
- Medicine use selected groups
- Testing for prevention of compications in diabetes (OECD)
- Risk factor presence in diabetics (OECD)
- Major amputation in diabetics (OECD)
- Counseling on smoking
- Smoking rate (OECD)
- Occurrence of vaccine-preventable diseases (OECD)

Quality, subsection responsiveness

- Satisfaction with the health system
- Responsiveness according to WHO instrument (MDS)
- Satisfaction of mothers with perinatal care
- Parental accompaniment of children in hospitals

Financial sustainability

- In-patient care occupancy rate
- ALOS for selected diagnoses
- In-patient/day-case ratio
- Total/public/private expenditure on health
- Expenditures by age group

4. References

CIHI/Statistics Canada. Roadmap Initiative ... Launching the process. Ottawa: Canadian Institute for Health Information, Statistics canada, 1999.

ISO. Health informatics – Health indicator definitions, relationships and attributes. Toronto, ISO report ISO TC TC 215/SC/WG1, August 2003.

OECD. Performance measurement and performance management in OECD health systems. Paris: OECD Working party on Social Policy. Report DEELSA/ELSA/WP1 (2000) 4, September 2000.

Rodella S, Bellini P, Braga M, Rebba V. Measuring and comparing performance of health services: a conceptual model to support selection and validation of indicators. Roma/Firenze (Agenzia Regionale dei Sanità): June 2003.

ANNEX 9
TECHNICAL DETAILS OF ICHI-2

The ICHI-2 web application has two parts namely the front-end and the back-end. The front-end contains all the .NET interfaces. The back-end is formed by an MS SQL database (version 8.0), named ICHI2 (currently on the VGZTEST1 database server), containing all the necessary tables, views and stored procedures, and a diagram containing the connections between the tables.

The front-end (the part that is visible to the users of the application) of the ICHI-2 application has been developed with MS Visual Studio.NET 2003. The user interfaces were programmed using Visual Basic.NET.

There is a fast native connection between the ASP.NET interfaces and the MS SQL database.

Basic editorial interfaces have been created in order to enter and edit health indicators. These facilities are protected with username and password security. Facilities to enter and change editorial users are also in the application.

Furthermore there are facilities to create and change user windows. These facilities are also password protected and need a different password then the editorial facilities.

ANNEX 10
LIST OF ABBREVIATIONS

List of abbreviations

ALOS	Average length of stay
AMI	Acute myocardial infarction
COPD	Chronic obstructive pulmonary disease
CT	Computed tomography
ECHI	European Community Health Indicators
FAO	WHO's Food and Agricultural Organization
GP	General practitioner
HES	Health examination survey
HFA	WHO's Health-For-All (programme, database)
HIS	Health Interview Survey
HMP	Health Monitoring Programme
IARC	WHO's International Agency for Research on Cancer
ICD	International Classification of Diseases
ICHI	International Compendium of Health Indicators
ISCO	International Standard Classification of Occupation
ISCED	International Standard Calassification of Education
MRI	Magnetic resonance imaging
NCA	Network of Competent Authorities
NUTS	Nomenclature of Territorial Units for Statistics
OECD	Organization of Economic Cooperation and Development
OSH	Occupational Safety and Health
PM10	Airborne particles smaller than 10 micrometer
PPP	Purchasing power parity
PTCA	Percutaneous transluminal coronary angioplasty
SANCO	EU Directorate General of Health and Consumer Affairs
SDR	Standardized death rate
SES	Socio-economic status
SHA	System of Health Accounts
SILC	Statistics on Income and Living Conditions
STD	Sexually transmitted diseases
WHO	World Health Organization

ANNEX 11
LIST OF PROJECTS AND OTHER SOURCES MENTIONED IN ANNEX 5, THE LONG LIST, AND ANNEX 6, THE SHORTLIST

Projects run in the Health Monitoring Programme, mentioned with the year of funding; further information on these projects can be found in the Europa site.

- CAMON – 2001: Comprehensive cancer monitoring in Europe.
- CHILD – 2000: Child health indicators of life and development.
- DAFNE – 1999, 2002: European food availability databank based on houshold budget surveys.
- ECAHI – 1999: European collaboration for assessment of health interventions.
- ECAS – 1998: A comparative analysis of alcohol consumption and its public health effects in the EU states.
- EFCOSUM – 1999: European food consumption survey method.
- EHRM – 1999: European health risk monitoring.
- EMERGENCY DATA – 2002: European emergency data project – EMS-data-based health surveillance system.
- ENVIRONMENT/HEALTH – 2002: Environment and health indicators for European Union countries.
- EUDIP – Establishment of indicators monitoring diabetes mellitus and its morbidity.
- EUHPID – 2001: European health promotion indicators development.
- EUMIP – 1999, 2001: Methodologies for producing European Union-wide comparable disease-specific morbidity data.
- EUPASS – 1999: European physical activity surveillance system.
- EUROCHIP – 2001: Health indicators for monitoring cancer in Europe.
- EUROCISS – 2000: Cardiovascular indicators surveillance set in Europe.
- EURO-MED-STAT – 2001: Monitoring expenditure and utilisation of pharmaceutical products in the European Union: a public health approach.
- EURO-MED-DATA – 1999: Situation in Europe regarding the routine collection of medical data and their use in health monitoring.
- EURO-REVES – 1998, 2000: Setting up a coherent set of health indicators for the European Union.
- HOSPITAL DATA project: 2000.
- IMCA – 2001: Indicators for monitoring COPD and asthma in the European Union.
- ISARE – 1999, 2001: Health indicators in Europe's regions.
- MANPOWER – 2000: Human resources of European health systems.
- MENTAL HEALTH – 1998: Establishment of the indicators for mental health monitoring in Europe.
- MUSCULOSKELETAL DISORDER – 2000: Indicators for monitoring musculoskeletal conditions.
- ORAL HEALTH – 2002: European global oral health indicators.
- PERISTAT – 2000: Indicators for monitoring and evaluating perinatal health in Europe.

- PHNUT – 2000: Monitoring public health nutrition in Europe – nutritional indicators and determinants of health status.
- POMONA – 2002: Status of health monitoring for adults with intellectual disability in the member states.
- PRIMARY CARE – 1998, 2001: Health information from primary care.
- REPROSTAT – 2001: Reproductive health indicaytors in the European Union.
- SES – 1998: Monitoring socio-economic differences in health indicators in the European Union.
- WORKHEALTH – 2002: Indicators for work-related health monitoring in Europe.

Other projects and sources mentioned

- EARSS – (not in the health monitoring programme): European antibiotic resistance surveillance system.
- EMCDDA – European Monitoring Centre for Drugs and Drug Addiction.
- Eurostat – New Cronos database, and other sources.
- OECD – Organization of Economic Cooperation and Development, OECD health data. Special project: OECD health care quality project.
- Social Protection Committee of DG Employment of the European Commission.
- WHO – WHO-Europe's HFA database.

ANNEX 12
MEMBERS OF THE ECHI-2 TEAM, WITH AFFILIATIONS

Austria
Richard GISSER
Statistics Austria - Population Statistics Directorate
Hintere Zollamtstrasse 2B; A - 1035 VIENNA
Tel. : +43 1711287209
Fax : +43 17156830
E-mail : Richard.Gisser@statistik.gv.at

Belgium
Herman VAN OYEN
Ministère des Affaires Sociales, de la Santé Publique et de l'Environnement Institut Scientifique de la Santé Publique, Department of Epidemiology
Rue J. Wytsmanstraat, 14; B - 1050 BRUXELLES
Tel. : +32 (2) 642 5037
Fax : +32 (2) 642 5410
E-mail : herman.vanoyen@iph.fgov.be

Denmark
Eva HAMMERBY
National Board of Health
Island Brygge 67; DK - 2300 COPENHAGEN
Tel. : +45 (.72) .22.78.44
Fax :
E-mail : eha@sst.dk

Finland
Arpo AROMAA
National Public Health Institute, Department of Health and Functional Capacity
166, Mannerheimintie; FI - 00300 HELSINKI
Tel. : +358 (9) 4744 8770
Fax : +358 (9) 4744 8760
E-mail : arpo.aromaa@ktl.fi

France

Gérard BADÉYAN
Haut Comité de Santé Publique
8, avenue de Ségur; F - 75350 PARIS 07 SP
Tel. : +33 (1) 40567234
Fax : +33 (1) 40567949
E-mail : gerard.badeyan@sante.gouv.fr

Germany

Thomas ZIESE
Robert Koch Institut, Division 24 – Health Reporting
Seestrasse 10; D - 13353 BERLIN
Tel. : +49 0 1888 7 54-33 06
Fax : +49 0 1888 7 54-35 13
E-mail : t.ziese@rki.de

Greece

Aris SISSOURAS
University of Patras, Health Policy and Planning Unit.
RION-PATRAS, GREECE
Tel. : +30 2610-997231
Fax : +30 2610-997260
E-mail : asisour@mech.upatras.gr

Hungary

Zoltán VOKÓ
School of Public Health, Medical and Health Sciences Centre, University of Debrecen
Kassai út 26/b, H - 4028 Debrecen
Tel:+ 36 52 460190
Fax: +36 52 460195
E-mail: z.voko@sph.dote.hu

Ireland

Hugh MAGEE
Head of Information Management Unit, Department of Health and Children
Hawkins House; IRL-DUBLIN 2
Tel. : +353 (1) 635 43 00
Fax : +353 (1) 635 43 78
E-mail : hugh_magee@health.irlgov.ie

Italy

Emanuele SCAFATO
Istituto Superiore di Sanità,
National Centre for Epidemiology, Surveillance and Health Promotion - CNESPS
Population's Health Status and Health Determinants Unit
National Observatory on Alcohol – OssFAD , WHO CC for Research on Alcohol
Via Giano della Bella, 34 - 00161 ROMA
Tel : (+39) 06 4990 4194 - 4009
Fax : (+39) 06 4990 4193
eMail: scafato@iss.it

Luxembourg

Raymond WAGENER
Inspection Générale de la Sécurité Sociale
BP 1308
L- 1013 LUXEMBOURG
Tel. : +352 (.478) .63.66
Fax : +352 (.478) .63.25
E-mail : raymond.wagener@igss.etat.lu

Netherlands

Peter ACHTERBERG
National Institute for Public Health and Environment (RIVM),
. of Public Health Forecasting
P.O. box 1; NL - 3720 BA BILTHOVEN
Tel. : +31 302743837
Fax : +31 302744450
E-mail : peter.achterberg@rivm.nl

Pieter KRAMERS
National Institute for Public Health and Environment (RIVM),
. of Public Health Forecasting
P.O. box 1; NL - 3720 BA BILTHOVEN
Tel. : +31 (.30) .27.42.163
Fax : +31 (.30) .27.44.450
E-mail : pgn.kramers@rivm.nl

Rutger NUGTEREN
National Institute for Public Health and Environment (RIVM),
. of Public Health Forecasting
P.O. box 1; NL - 3720 BA BILTHOVEN
Tel. : +31 302744383
Fax : +31 302744450
E-mail : rutger.nugteren@rivm.nl

Eveline van der WILK
National Institute for Public Health and Environment (RIVM),
. of Public Health Forecasting
P.O. box 1; NL - 3720 BA BILTHOVEN
Tel. : +31 302744051
Fax : +31 302744450
E-mail : eveline.van.der.wilk@rivm.nl

Norway

Else-Karin GRØHOLT
Norwegian Institute of Public Health
Pb. 4404 Nydalen; N - 0403 OSLO
Tel. : +47 23408182
Fax : +47 23408251
E-mail : else-karin.groholt@fhi.no

Portugal

Rui Calado
Direccao Geral da Saude
Alameda D. Afonso Henriques, 45; P - 1049-005 LISBOA
Tel. : +351 21 8430 526
Fax : +35121 8430 687
E-mail : rcalado@dgsaude.min-saude.pt

Spain

Enric DURAN
Institut Municipal d'Investigació Médica IMIM, Respiratory and Environmental Health Reseach Unit REHRU
c/ Dr. Aiguader, 80; E - 08003 BARCELONA
Tel. : +34 (.93) .221.10.09
Fax : +34 (.93) .221.64.48
E-mail : eduran@imim.es

Sweden

Susanne HOLLAND
The National Board of Health and Welfare, Centre for Epidemiology
S - 10630 STOCKHOLM
Tel. : +46 8 5555 3530
Fax : +46 8 5555 3327
E-mail : susanne.holland@socialstyrelsen.se

United Kingdom

Hugh MARKOWE
Department of Health
Skipton House, 80 London Road; UK - SE1 6LH LONDON
Tel. : +44 2079723760
Fax :
E-mail : Hugh.Markowe@dh.gsi.gov.uk

International organisations

Remis PROCHORSKAS
WHO Regional Office for Europe
8, Scherfigsvej; DK - 2100 COPENHAGEN
Tel. : +45 39171482
Fax : +45 39171895
E-mail : RPR@euro.who.int

Gaetan LAFORTUNE (observer)
OECD - Health Policy Unit
2, rue André Pascal; F - 75775 PARIS
Tel. : +33 (1) 45249267
Fax : +33 (1) 45249098
E-mail : gaetan.lafortune@oecd.org