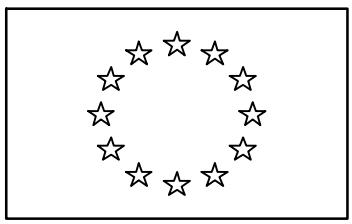
EUCOMP

Towards Comparable Health Care Data in the European Union

Parts 1-3



EUROPEAN COMMISSION

North Eastern Health Board
Bord Slainte An Oir Thuaiscirt

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I Abstract

The EUCOMP-project *Towards Comparable Health Care Data in the European Union* was financed by the Commission of European Communities, based on the Agreement No. SOC 98 201191 05F03 (98CVVF3-503-0) between the European Commission and the North Eastern Health Board, established in Kells, Ireland.

This project is an essential precursor to provide Member States with appropriate health information in order to make comparisons and to support national health policies. Therefore the project produced a functional breakdown of health care delivery systems in almost all Member States and in Iceland and Norway, by reference to international classifications, detailing health care functions performed. An in-depth analysis was performed regarding systems of rehabilitative care.

As metadata formed the core of the project glossaries in the national languages have been developed on activities in health care, actors (providers and funders) in health care and the functions and modes of production according to agreed international classifications of e.g. EUROSTAT and OECD. Together with country profiles of national health care systems this information has been brought together in a prototype of an Internet/web-based information retrieval system, in which also the results of the functional analysis of national health care systems can be found.

II Acknowledgements

The European Commission provided financial support for the EUCOMP project *Towards Comparable Health Care Data in the European Union*.

Statistics Netherlands hosted the project staff and provided all the facilities they needed for their work. The availability of the Blaise software for data collation and data processing was decisive for the progress within the narrow time limits of the project.

The European Observatory on Health Care Systems in London supplied the electronic version of the available country reports in the series *Health Care in Transition*.

These contributions, financially as well as in kind, are gratefully acknowledged, together with the contributions delivered by all participating countries in terms of time and effort of their representatives towards the realisation of this project, as well as of the OECD.

The project benefited greatly from the inputs made by the Task Force Health Care Statistics (TF/CARE, EUROSTAT), which is part of the Leadership Group for Health Statistics (LEG Health) established in the framework of the European Statistical System (ESS of EUROSTAT).

III Preface

The North Eastern Health Board (NEHB), Ireland was pleased to accept the management responsibility for the EUCOMP project which will establish a European System of Standardised Descriptions and Comparisons of Health Care. This will create the basis of common EU health care statistics as the fundamental foundation for routine data collection and comparative analysis. Without comparative functional descriptions and metadata at an appropriate level, effective analysis, comparison and policy making supported by EU-wide information will not be possible

The proposing consortia consisted of representatives of six member states: Ireland, The Netherlands, Germany, Denmark, Finland and Luxembourg supported by experts from OECD taking an active role in the project in order to avoid duplication.

The project built on the work of the CCP1 (Statistics Netherlands) and CCP2 (Inspection Générale de la Sécurité Sociale, Luxemburg) projects, and in particular utilised the System of Health Account, specified by OECD and linked with EUROSTAT programmes.

The objective of the project is to produce a result, which is capable of application in all member states, which will allow harmonisation and rationalisation in the flows of data and better-defined health care information across the EU. It will also assist in the production of economic indicators for health care.

This project would not have been possible without the commitment and hard work of the Project Group. I would like to acknowledge the excellent collaboration that took place between the European countries involved and also the extension to Iceland and Norway. This active network of representatives and its links with the TF/CARE proved to be indispensable for the achievement of the project goals. This is truly a European enterprise and an example of common European advancement.

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IV Summary

The European Union extended its area of political co-operation by way of the Maastricht Treaty (1992) and the Treaty of Amsterdam (1996). The responsibility for monitoring the health status of the population and some other aspects of health care were brought under the aegis of European collaboration. However, the organisation of the health care system remains the sole responsibility of the Member States. This means, that the organisational differences will continue to exist.

In line with this new direction the European Union is committed to making health care and health related information in general and statistics in particular more comparable. This is reflected in several public health programmes and the statistical programmes of the Commission.

It has been acknowledged in almost all spheres of health services research that comparability of health care data is critical to better interpretation and understanding of such data. The improvement of public health can only benefit from such comparability allowing countries to draw better judge the effectiveness of reform and draw on the experiences of others through analysis via a commonly understood context. In this context the EUCOMP project advances the process of producing truly comparable health care data forward on various levels in that it:

- Used well defined structure as a basis for comparison and provides the high level metadata crucial to an effective understanding of public health data in context;
- Creates clear links between a common well defined standardised set of functions and each set of local actors or providers in the health care sphere;
- Allows boundary issues to be explored in a way which clarifies what activities are carried out where allowing better understanding and interpretation of the data in a clear and informative context while acknowledging delivery systems differences which must be taken into account;
- Prompts areas for further research, which promises to improve existing standards and data definitions;
- Prepares the way for work on detailed data definitions and metadata, which is essential in the longer term to enable Member State's focus on the priority areas for health care.

The EUCOMP project provides a framework which encompasses data independent of the provider structures in Member States whilst still integrating with details of the organisation of health care in a way that clearly shows the impact of provider structures in each country. This will provide a context, which will allow differences apparent in indicators relating to many areas such as hospital activity, personnel numbers and indeed in a whole range of other registers to be better interpreted and more easily understood.

Information,

- presented in a way that is independent of specific health care delivery systems,
- using a framework based on international standards compatible with economic/accounting data presentation in other areas (such as education),
- when coupled with a clear understanding of the organisation of health care in member states and other participating countries,

will be more comparable, better interpreted and more easily used. The results of the EUCOMP project provide the means to present data in this manner. This provides a significant step forward to enable the public and policy makers across Europe to better understand the real meaning and significance of all elements of public health data.

The major reference point for the project was the OECD System of Health Accounts (SHA) also because it was chosen by the Working Group on Public Health Statistics (EUROSTAT) as a priority domain for revision of health care statistics. At the same time other relevant information on health care personnel and health care resources and on delivery of services was examined. Relevant international data shows variations, which cannot be explained because of differences in health service organisation and services with the same name not providing the same service package.

For these reasons the project developed the following products: functional breakdown of health care systems, standards country profiles and glossaries of services, activities and actors. A questionnaire in electronic format, called the Blaise application, for continuous updating these products complete the project deliverables. In the context of the EUCOMP project the term metadata is used to cover these products together.

- The EUCOMP-project "Towards comparable health care data" succeeded to provide such a *functional breakdown of health care systems* for most countries of the European Union and for Iceland and Norway.

The functional breakdown of health care systems makes it possible to show differences between health care systems in participating countries. A good knowledge of these differences is indispensable in order to be able to judge, whether comparison is possible and to which degree.

Starting point for the functional breakdown was the presumption: "The package of functions (activities) in health care is stable, while the providers are different." Therefore a questionnaire was applied, based on a list of functions/activities and grouped according to the categories of the OECD classification of health care functions. Respondents have been requested to indicate the functions of the actors known in their health care systems and to provide information on the modes of production in the terminology of the OECD, as far as applicable. By means of the questionnaire on the general breakdown of health care systems information has been collected on 15 Member States of the European Union (Belgium and Italy exempted) and on Iceland and Norway. The analysis carried out in the project dealt with many aspects of the variables used in the data collection as well as the validity of the chosen methodology. The data are considered to be a rich source of information, that has been analysed by means of advanced analytical tools.

The usability of the functional breakdown for statistical purposes was tested in the domain of rehabilitation. The response on the questionnaire on rehabilitation was more modest, namely 8 Member States and Iceland. The questionnaire provided information on the scope of the concept of rehabilitation and its implications in the distinct participating countries, and furthermore, explored the availability of statistical data in this field. In order to collect data on the functioning of the system of rehabilitative care a "scenario"-approach was recommended by the network of experts. The Finnish National Research Centre for Welfare and Health (STAKES) provided three "cases" concerning four headings: cerebrovascular disease, dementia, musculoskeletal disease and psychiatry. The analysis revealed that rehabilitation is no longer restricted to physical impairment. Rather it is developing as a multidisciplinary and integrated approach, aiming at enabling the patient to regain his original abilities.

In short, what we have at this point in time looks promising, but it is not yet the final picture. Further

research is required to enhance and develop this clearly productive approach which can definitely provide a much better structured and well integrated framework for health data than has ever been available before now.

- The development of glossaries in Member States' own language is a specific element in the description of the EUCOMP-project. *Three glossaries* haven been produced.

  § The first one is a glossary of activities in health care, based on the initial list of activities, derived from the project "International Comparison of Health Care Data" (see Literature: 5) and used in the questionnaire concerning the functional breakdown of health care systems.
  § The second one is a glossary of OECD-functions and modes of production.
  § The third one relates to the actors in health care in Member States and is produced as part of the results of the questionnaire on the functional breakdown of health care systems. Part 4 contains all these glossaries in a separate volume.

- *Standard country profiles* have been significant in providing general information that is important as a framework of interpretation of statistical data on health care systems. The work by the European Observatory on Health Care Systems was used for this aspect of the standardisation required. This institute made available the electronic version of a number their country reports in the series "Health Care in Transition" (HIT's). Other sources were used for the remaining countries, but the template, developed by the European Observatory was used in an adapted form, in order to split up these country profiles in standardised sections. Part 5 contains all country profiles in a separate volume.

It was recognised in the course of the project that although the main aim is to enhance statistics on health care resources, on cost and financing, and on outcomes, other objectives are also supported at the same time. Politicians, health managers, professionals, researchers, patients and the public in general will benefit substantially from the results of the project. The project results should provide all these audiences with a better understanding of member states health care systems and the contribution of the systems to the status of health. This means that the products of the EUCOMP project are multi-purpose and therefore enormously valuable.

An Internet/Web-based information retrieval system was also one of the major concrete products from the EUCOMP project. This Internet application, designed for use in an EU-setting like EUROSTAT, has been developed in the context of the EUCOMP-project. It contains the metadata (glossaries and country profiles) and can connect these metadata with statistical. Furthermore the text of this report including printfiles of the collected information can be made available by this medium. The accessibility of all this information is an important element of “added value” of the EUCOMP-project.

V Recommendations

The results of the EUCOMP project should be offered to other appropriate European projects to take best advantage of the benefits offered by the project. Further projects should be carried out in that integrating public health data using the framework developed in the EUCOMP project.

Regular updates of the EUCOMP database and its associated methodology should be carried out to improve data quality and to insure maximum usability.

The Internet application developed in the EUCOMP project should be made available as widely as possible. A feedback system should also be available in association with the application, so as to further improve data quality.

The system should be made available to other international organisations (e.g. OECD, WHO, ECE) to guarantee maximum use and encourage the updating of health care information by means of a single source.

The network used in the EUCOMP project should be maintained to insure that the knowledge gathered during the EUCOMP process is appropriately built and that the expertise incorporated in the participants is not lost.

An essential element of the usability of these products of the project is the regular update, which should be made effective very soon after the termination of the project. EUROSTAT is well equipped to play a role in the Internet application, regular updates and links with international organisations.

Part 1: Towards Comparable Health Care Data in the European Union

1.1 Introduction

There is an increasing interest in international comparison of health care data. For the European Union, the 1992 Maastricht Treaty was an important milestone, but many years before that the WHO and the OECD were already active in this field. The WHO focused on enhancing statistical data on the health status in Member States, while the OECD concentrated on the development of statistical data on health care financing and expenditures.

With the *Maastricht Treaty* (1992), and its endorsement in the *Treaty of Amsterdam* (1996), the European Union extended its area of political co-operation. The monitoring of health status and some other aspects of public health monitoring were brought under the aegis of European Union. However, the organisation of the health care system still remains the sole responsibility of the Member States. This means that the organisational differences will continue to exist.

In order to provide an adequate information policy for this new political orientation, the European Union has taken it upon itself to make the European health status more comparable within the framework of the Health Monitoring Programme.

The other cornerstone for information on health and health determinants including health care resources is the Commission's Programme on Statistics 1997-2002. In the framework of the European Statistical System (ESS) EUROSTAT together with the member states work on health statistics. For this reason a particular form of partnership was established called Leadership Group Health Statistics (LEG Health). In this framework one group is dealing in particular with health care resource statistics along basic principles agreed by the Working Group on Health Statistics and approved by the Statistical Programme Committee (SPC). It was agreed that investigation in depth of meta-information on health care delivery systems are a prerequisite for improvement of health care resource statistics in general and for financial data in particular.

The aim of the EUCOMP project certainly reflects a long-term perspective: to support the development of common EU

health care statistics based on routine data collection. A number of intermediate steps are required before such a situation can be achieved, and in this project, as a first step, the functional component-by-component description of health care systems is considered as a thorough exploration and categorisation of this field of interest.

The result will be an EU-wide comparative picture, contributing to the development of comparable EU health care indicators.

The information on the functional components of health care systems was collected in such a way that systematic country profiles of health care were produced, with - as an important by-product - a glossary of health care terms in the various languages. To this end the data collection instrument was designed to produce the necessary bricks to construct this glossary.

Naturally, suitable metadata are indispensable to point the way for this contextual type of information. In fact these parts of the project are necessary steps on the road *Towards comparable health care data in Europe*, the full title of the EUCOMP project.

Developments like those described in the present report seldom proceed in isolation. Work done in neighbouring areas can be of advantage to the EUCOMP-project, and vice versa acquired insights and other results from this project may benefit others. For this reason contacts were established with the OECD and the European Observatory on Health Care Systems (set up in London, 1999).

The OECD work on classifications and definitions in the framework of the development of a System of Health Accounts were particularly helpful in the early days of the EUCOMP project. Close collaboration resulted in the adoption of the System of Health Accounts (SHA) Manual, although in some respects own choices had to be made in order to keep the conceptual structure sufficiently streamlined for the purposes of the EUCOMP project.

The HIEMS project revealed the need for this work and it is fully recognised that HIEMS can be enriched by the results of the EUCOMP project.

The European Observatory on Health Care Systems provided the original template, used in the series *Health care in transition*, which -with some adaptations- facilitated the processing of information on national health care systems.

The supply of the electronic version of the available country reports by the European Observatory facilitated the storage of this information in the database prototype designed to present information on national health care systems, the glossary and statistical information, all in relation to each other.

This cross fertilisation is one of the most striking aspects of the EUCOMP project and without doubt acted in favour of the chosen approach and the operations performed.

1.2 Outline of the EUCOMP-project

1.2.1 Introduction

The EUCOMP-project *Towards Comparable Health Care Data in the European Union* is an essential precursor to provide Member States with appropriate health information in order to make comparisons and to support national health policies.

This project is critical to the aims of all three pillars (a. indicators, b. exchange, c. analysis) of the Health Monitoring Programme. It contributes to the analysis and evaluation of public health policies and programmes by the development of innovative approaches for the exchange of information and experience. In this process, in principle, all Member States need to be involved.

Without comparative functional descriptions and metadata at an appropriate level effective analysis comparison and policy making on the basis of EU wide information will be virtually impossible. Definitions and context are what turns data into information for decision making.

The EUCOMP-project builds on the work of the EUROSTAT Working Group on Health and the existing Taskforce on Health Care Statistics (TF CARE), as well as the methodological progress of the Dutch project on *International Comparison of Health Care Data* and EUROSTAT project on *Health Care Resources Statistics*, performed by the Inspection Général de la Sécurité Sociale in Luxembourg.

The project grounds its work on agreed and proposed international classifications for health care as reported, for example, in recent papers by OECD *(Principles of Health Accounting for International Data Collections)*. It establishes links to the work in the LEGS framework of EUROSTAT and part of possible requirements for the HIEMS project. In addition the project utilises the data collection guidelines of the WHO HFA data collection system, the existing OECD data collections guideline and the framework endorsed by the Working Group on Public Health Statistics (Doc OS/E3/97/HEA/2)

1.2.2 Project aims

One of the stated aims of the project is to set up a European system of standardised descriptions and comparisons of

health care systems to create the basis of common EU health care statistics as the fundamental foundation for routine data collection and comparative analysis.

The project is to produce a functional breakdown of health care delivery systems in Member States, by reference to international health care classifications, detailing health care functions performed. This will enable the production of an EU wide comparative picture at an appropriate level derived directly from Member States' country profiles. The feasibility of the system is tested by applying it to existing national data sets relating to health care delivery in selected areas in Member States.

The project also aims to contribute to the development of comparable EU health care indicators and to assist Member States in health care policy making by sharing the functional descriptions of their health care systems and enabling the sharing of well-defined comparable data by Member States starting in selected areas.

The intention is to produce a result, which can be, applied in all Member States, with the template for data collection and a comparisons toolkit for Member States and international organisations, including the EU commission itself. This should lead to harmonisation and rationalisation in the data flows and better-defined health care information across the EU. It will also assist in the production of more appropriate economic indicators for health care.

1.2.3 General approach of the project

Within the general approach of the project a number of tools have been described as follows:

- Structured instruments for collection and presentation of function breakdown descriptions of health care and metadata for selected areas.
- Structured workshops/seminars and selected structured interviews
- Data modelling techniques and software, including a review of existing structured templates for health care systems descriptions and synthesis for further development of appropriate methods into a EU framework.
- Review of recent European health care glossaries and relevant classifications
- Use of standard definitions where appropriate (ESA95, MISSOC, ESSPROS, CEN/TC251, GALEN, ICD, ICIDH)
- Literatures searches associated with the above.

1.2.4 Methods

Within the general approach of the EUCOMP-project the following methods and related activities were indicated:

1. Development of a draft instrument to collect the functional breakdown descriptions of Member States' health care systems based on work from previous projects (see above) and international healthcare classifications as proposed by EUROSTAT/OECD research for pilot data collections
2. Round 1: Send out collection instrument for functional descriptions to all Member States for completion.
3. Round 2: Develop data collection instrument to obtain data items from Member States for selected areas with definitions, commentary (assumptions/interpretations) and sources per item.
4. Collate analyse, refine and assure the quality of data collected via 2 and 3 above by reference to international health care classifications.
5. Draft a first version of the report containing the functional breakdowns of health care systems in Member States.
6. Define the metadata for the selected areas by reference to the draft functional descriptions with the use of data modelling techniques and software as appropriate.
7. Develop a basic template for a data collection system for input and basic analysis of the data (with regard to that proposed by HIEMS).
8. Develop common data definitions for the selected areas and test by use of real data, which is already used and collected in Member States (Glossary).
9. Collect further feedback from Member States and write the final report containing the proposed comparative functional breakdown of Member States health care systems.
10. Develop guidelines for the collection of data and metadata information for data collection and build these guidelines into the system.
11. Present final report with comparative Member States functional breakdown data dictionary for selected areas, with data collection prototype system and guidelines.

1.2.5 Network

For a large-scale project like EUCOMP, covering in principle 17 countries (the EU-countries and Iceland and Norway) a network of dedicated national representatives with a keen interest in the project is vital. The interactive approach was facilitated by the contributions of the members of the network. One might even state, that the development of such a network is one of the necessary steps to reach the goals of the project and, in fact, should be part of the general approach.

The core of this network consisted of the representatives of the six Member States that formed the proposing consortium: Denmark, Finland Ireland, Germany, Luxembourg and the Netherlands. The invitations to experts in other countries were accepted by most of them. For some countries various reasons prohibited total or partial participation (Austria, Belgium, France, Italy). Experts from the OECD also agreed to take an active role in the project and to assist in relation to statistical standards and data collection thus preventing duplication of work and enhancing comparability.

Participants of the network have been involved in the general set-up of the project and the elaboration of proposals. They provided functional descriptions of the national health care systems or fulfilled valuable intermediate functions for this purpose, exchanged information, explained terms used and provided additional data, if needed.

Bilateral consultations took place by phone and email in order to discuss problems and clarify aspects of data returns and seek the data requested. Further meetings took place to discuss the draft comparative functional breakdowns, data items and data collected for selected areas (See Annex 9 for the names of the participating representatives).

In the last phase of the project a website (with limited access) has been prepared (but not yet installed) for participants in order to facilitate the exchange of information. This website also contains the prototype and annexes for a data base system that can be made operational after the completion of the project and the acceptance of the results.

1.2.6 Results

The evaluation of the EUCOMP-project requires first a picture of what the project aimed to achieve. The aims and objectives are:

- A comparable functional breakdown description of the health care systems in as many Member States as possible at an appropriate level with detailed descriptions (essentially structured metadata) of selected health care areas as a prototype.
- The blueprint of a data collection system using the functional breakdown and metadata defined for the data items in selected health care areas tested by the use of actual data collected from data used in Member States.
- A manual and glossary (in Member States own language) as practical guidelines.

- A flexible framework for the functional breakdown descriptions of health care systems in the EU which can be supplemented and expanded so as to maintain a comparative picture of health care systems in the EU in the future.
- The report, functional breakdowns, data dictionary framework with detail for selected areas and the template for a data collection system to match will be available over the internet via a web page for download and use in MS. Only by piloting the use of the data can quality truly improve and good communication is established between participants. It is intended that the results of the project be used by international organisations the EU and health care planning and policy institutions in MS

1.2.7 Assessment and follow-up of the project

Preliminary results of the project have been presented to the biannual meeting of the programme committee of the Health Monitoring Programme.

One of the stated aims of the project was that following the appropriate approval by the Health Monitoring Programme Board, DGSanco and the EU Commission the report on the project will be made available to Member States, the EU Commission, other EU projects such as IDA and international organisations (OECD, WHO) to facilitate the development of health care policies across the EU. The intermediate results like the functional breakdowns, the glossary with detail for selected areas and the template for a data collection system to match are available via Internet, and can be downloaded and used in Member States. Only by piloting the use of the data can quality truly be improved and good communication be established between Member States. It is intended that the results of the project be used by international organisations the EU and health care planning and policy institutions in Member States.

1.3 The Project Process

1.3.1 Introduction

Following the approval of the project by the European Commission, a process for managing the project was put in place. The 1st February 1999 was established as the commencement date. Statistics Netherlands, in Voorburg made their premises available for the activities of the project and accommodated project personnel. The Institute also supported the project by the production of dedicated software for the electronic questionnaires and by other services.

Preparatory work was undertaken involving elaboration of the work and time schedules and this resulted in five meetings being held in Dublin (8-9 February 1999), in Voorschoten (31 May-1 June 1999), in Athens (4-6 November 1999), Noordwijk (25 March 2000) and Jaala (10-13 August 2000).

1.3.2. Meeting Dublin, 8-9 February 1999

The first project meeting, particularly attended by members of the Task Force Care and representatives of the consortia of the project, was held in Dublin (8-9 February 1999). It explored in a broad sense the direction the project should take with as a starting point the "Detailed description of the project" (see Annex 1). Reference was made to existing work in this area and the need to take this on board. Discussions centred on the meaning of metadata in different countries. Discussions also took place as to how the project would bring together the functional descriptions and country profiles. The country profiles are concise descriptions of the national health care systems, emphasising particular features, which help to explain differences between national health care data and help to interpret the data better.

These discussions paved the way for more concrete decisions to be made about how the project should be carried out.

For the co-ordination of the project a network of MS-representatives was created.

The consortia, which proposed the project, consist of representatives of six member states: Ireland, the Netherlands, Germany, Denmark, Finland and Luxembourg. As the intention was to produce a result, which is capable of application in all Member States, the immediate commitment of all Member States was felt as a necessary condition for

consensus. Much energy has been spent in order to reach this goal. The development of a network of experts-representatives of as many Member States as possible was started and has resulted in the concrete permanent collaboration of persons from 13 countries. With the remaining countries only incidental contacts were possible leading to partial contributions by two other countries.
On the side of Iceland and Norway the interest in the project has led to participation.

In addition relevant international bodies were to be involved in the work of the project. Regular consultation took place with EUROSTAT in order to ensure that activities were in line with the policy of the Commission. The OECD agreed to take an active role, in the context of statistical standards and the development of classifications in relation to their system of health accounts.

1.3.3. Meeting Voorschoten, 31 May–1 June 1999

The meeting in Voorschoten demonstrated the great interest by member states in the progress and results of the EUCOMP-project. The investment in the building of a network of experts worked well and was very productive. Representatives from 11 countries and 1 international organisation attended this meeting and worked on the items prepared by the project staff like metadata and the role of country profiles, the data collection method in Phase 1 of the project (the functional breakdown of health care systems) and the tentative selection of the subject of phase 2 (rehabilitation). Concrete meeting decisions related to the development of an electronic questionnaire on the functional breakdown of health care systems and the development of a data base containing information derived from the country profiles. In this context the use of the WHO-template was advocated as well as contact with the European Observatory on Health Care Systems in London for their possible support for the development of an electronic database containing information on the national health care systems in member states.

1.3.4. Meeting Athens, 4-6 November 1999

The meeting in Athens, attended by representatives from 15 countries and 1 international organisation, was used for the presentation of the state of affairs regarding the project, consisting of an evaluation of the work done so far and planning of future activities.

Operational problems, as well as tentative results, were discussed and clarification was given regarding the ongoing electronic inquiry on the functional breakdown of health care systems, which had been sent to participants in June 1999.
A spin-off product are definitions and descriptions for the development of a glossary of health care concepts, in English as well as in the national languages of the participating countries.

The decision of the EUCOMP meeting in Athens (4-6 November 1999) to also translate OECD-concepts, as used in the context of the EUCOMP-project, in the national languages resulted in a further enrichment of the glossary.

A more detailed plan was developed for the approach in Phase 2, for which, in an earlier stage, the field of rehabilitation had been selected. At the project meeting in Voorschoten, the Netherlands (31May-1 June 1999) agreement was reached on the choice of rehabilitative care as the area to cover as this sector ranges over the many aspects of health care delivery it is a suitable field to test tools and methods before wider application.

Preparatory activities are taking place in order to determine in more detail this field of interest and to develop concrete ideas on the system of relevant data and metadata.

The meeting in Athens (4-6 November 1999) decided to apply a scenario-approach (or case method) for the collation of information on rehabilitation as the second phase of the project.

An electronic questionnaire on this subject, designed according to the agreed method, has been distributed among participants

Consideration was given to the potential of the EUCOMP project to contribute to HIEMS. The relations with international organisations like EUROSTAT, OECD and the European Observatory on Health Care Systems were also considered.

A delay in the publication of "A System of Health Accounts for International Data Collection" (see Literature: 6) caused minor co-ordination problems, which had to be solved in order to maintain the desired harmonisation.

1.3.5. Meeting Noordwijk, 25 March 2000

A meeting took place in Noordwijk at 25 March 2000 in the Netherlands. Representatives from 14 countries and 2 international organisations gathered in order to discuss the results so far and the work to be done during the last phase of the project, including the outline of the project report. With regard to the functional breakdown of health care systems results were presented and particular problems brought to the attention of the participants. The production of the electronic questionnaire on rehabilitation had met specific software problems, which caused a delay in the distribution to the participants (February 2000). This meant, that no results on this part of the project could be presented at this meeting.

Special expertise was involved in the development of an application as a tool to be used on the Internet. In this way the results of the EUCOMP-project can be made accessible.

A prototype containing interlinked metadata (from country profiles and glossaries) was satisfactorily demonstrated. The design promised a fast and coherent performance by the use of hyperlinks.

The European Observatory on Health Care Systems approved the use of their "Health Care in Transition"-reports in the database on metadata and made available their published country reports in electronic form.

At the end of this meeting agreement was reached regarding the finalisation of ongoing activities, such as the electronic inquiries and the completion of the glossaries and country profiles. An editorial board was established for the production of the project report.

1.3.6. Meeting Jaala, 10-13 August 2000

The editorial board (consisting of the authors supplemented by Mr. Nenonen, Dr. Med. and Mr. Hardy) together with the project management group met in Jaala, Finland, for the finalisation of the project report. Following a number of editing meetings, involving the participants, the final report was agreed by the group.

Part 2: Functional Breakdown of Health Care Systems

2.1 Phase 1. The functional breakdown of health care systems

2.1.1 Development of the questionnaire on the functional breakdown of health care systems

2.1.1.1 Introduction

In the EUCOMP-project the functional breakdown description of the health care systems of Member States is the basic item. As long as harmonisation of definitions and methods of data collection in the field of health care is not completely realised, there is the need to cope with problems that prevent reliable comparison of data. One way to do that is to bring all kinds of differences to light, so that these differences can be taken into account in the process of interpreting data.

The greatest differences have to do with boundaries in health care systems. The boundaries of health care differ from country to country. Therefore the determination of the boundaries of health care systems is of paramount importance in international comparison.

Another problem is the "division of labour" within the boundaries of health care systems. Of course, at macro level these differences are not important, but, where there is a need to compare hospitals in two distinct countries, it is necessary to know, whether a hospital, defined as such in both countries, nevertheless fulfils different functions in one country and the other. The same holds true for other providers. If services are attributed to providers in the same way everywhere, there is no problem for international comparison. However, this is not usually the case and a good knowledge on the differences is indispensable in order to be able to judge if comparison is possible and to which degree. For example, in many countries obstetrics is provided almost exclusively in hospitals, while in other countries maternity clinics, general practitioners and midwives play an important role as well.

A functional breakdown description of health care systems makes it possible to show these differences. Starting point for such a functional breakdown is an overview of functions or activities in health care, sufficiently detailed, to reveal relevant distinctions.

There are also various well-defined clinically oriented classification systems like ICD- and operation classifications. Another system, Diagnosis Related Groups (DRG's), based on these classifications, has been developed for standardising case-mix and to create basis for productivity analyses. These classifications are in use in many countries. Unfortunately there exists at present several different versions of these classifications. They may also be too detailed and clinically oriented to be used for this kind of breakdown.

On the other hand there are functional classifications like the one developed by the OECD in the framework of structuring the system of health accounts (SHA). This type of classification is sufficient for the observation of financial flows in distinct parts of health care, but it shows insufficient discriminatory power for detailed observation of functions, especially in the category "personal health care". Therefore, additional detailed information is necessary. Attention has been paid to the "list of activities in health care services" as used in the project *International Comparison of Health Care Data* (See Literature: 5**).** This list has been composed in 1994 and is originally an enumeration of health care activities, found in literature. It has been developed in a practical and iterative fashion to reach its current stage of development.
It was not considered to be exhaustive and has been presented in a questionnaire with the opportunity to add suggestions. Some participants made use of this option and provided additional text. For the EUCOMP project the list of activities was linked to the list of functions as supplied by the OECD in the System of Health Accounts manual, in such a way, that these activities fit in the broader categories of this functional classification.

The application of this supplemented list in this way has led to meaningful results, which gave further insights in the functioning of the health care system of participating countries.

Because of this interest in the composition and functioning of the health care systems of participating countries, it is important not to impose a structure or pre-classify the providers of health care in the initial data collection. Countries needed to be given the opportunity to present the whole range of their providers.

2.1.1.2 The instrument for the collection of the functional breakdown description: the questionnaire

The objective of the project, the functional breakdown of health care systems, required a round of information collection by means of a questionnaire that was to be sent to the participating countries for completion. The design of the questionnaire needed to contain the data elements required to enable this objective to be met. First of all the concepts used needed to be described clearly.

The functional breakdown of health care systems aims at the attribution of functions to all actors who together form the health care system. In this context actors are the providers and financiers of care and others, active in fields like health policy development, research, training of personnel and so on.

With regard to the functional breakdown of health care systems starting point has been the classification of health care functions as developed by the OECD (See Literature: 6). As this classification of health care functions is rather wide a more detailed list of activities has been used that was developed in the project *International comparison of health care data* (See Literature: 5).

The OECD classification could be used as a more general framework in which this more detailed list of activities could be subdivided.

This list is a more or less exhaustive breakdown of functions performed in health care. It has been considered that this list represents a rather general vision on health care, though in some countries items may be part of e.g. social services or of other kinds of collective assistance or social protection.

It is important that, the package of functions is standardised, as opposed to the providers, who are different in each country depending on the way, health care has been organised in the course of history.

Based on this presumption: “the package of functions is stable, while the providers are different” a questionnaire was designed. The list of functions or activities is therefore the starting point. Member States were requested to indicate which functions are performed by their providers in the health care system. The positions of other actors like financiers have been indicated in the same way.

A questionnaire has been developed, in which the functions have been adopted, grouped according to the categories of the OECD-classification. These functions have been described and respondents have been requested to indicate the functions of the providers known in their health care system. To assist with the information processing and analysis, however, it was necessary for these national providers to be listed by their national names, together with an English translation of these names and a short definition or description. The names and the descriptions of these providers in the national language as well as in English form the basis for the development of the related part of the glossary.

The OECD manual also supplies information on the distinct modes of production that a provider of health care can perform. These modes are: in-patient care, day cases, out patient care and homecare production. For every actor a determination of the modes of production was requested as well.

The questionnaire aimed at the total description of the actors, their functions and modes of production, providing as such functional breakdown description of the health care system. The questionnaire also was expected to supply ingredients for the country profiles and the glossary in Member States languages.

2.1.1.3 Paper questionnaire or electronic questionnaire

In first instance work has been put in the development of a questionnaire in paper form. Later the decision was taken to develop an electronic questionnaire in order to assist with further developments in international statistics into the future. This decision meant a new and time-consuming change in the project plan, which seemed to be in conflict with the short term goal of this project. In the longer run it proved to be very helpful in maintaining the time-limits of the project.

Choices had to be made on the development of new software or to use existing software packages with some adaptations. As the project staff was accommodated at Statistics Netherlands it was possible to get assistance there with regard to the software developed and used in this statistical institute. In this context it was decided that Blaise software could be used.

2.1.1.4 Electronic Questionnaire: Blaise

Blaise is developed by Statistics Netherlands as a software system for survey processing on microcomputers, whether on a laptop or on a network. Blaise is used by official statistical

agencies and other research organisations throughout the world and is available under Microsoft Windows 95, 98 and NT 4.0.

The system supports various techniques for computer-assisted interviewing (CAPI, CATI, CASI: personal, telephone and self-interviewing), but it can also be used for data entry and data editing of paper questionnaire forms. Large and complex surveys are possible.

Blaise is not only a tool for data collection, but also for the subsequent data processing steps (like tabulation, adjustment weighting, and statistical analysis).

The system is equipped with the following tools:

Data Entry Program	*questionnaire*
Manipula	*manipulating and export data, reports*
Maniplus	*survey managing shell*
Cameleon	*exporting metadata to SPSS, SAS etc.*
Abacus	*tabulating*
Hospital	*restoring damaged data files*
Bascula	*weighting*
Structure Browser	
Database Browser	
CATI Call Management System	

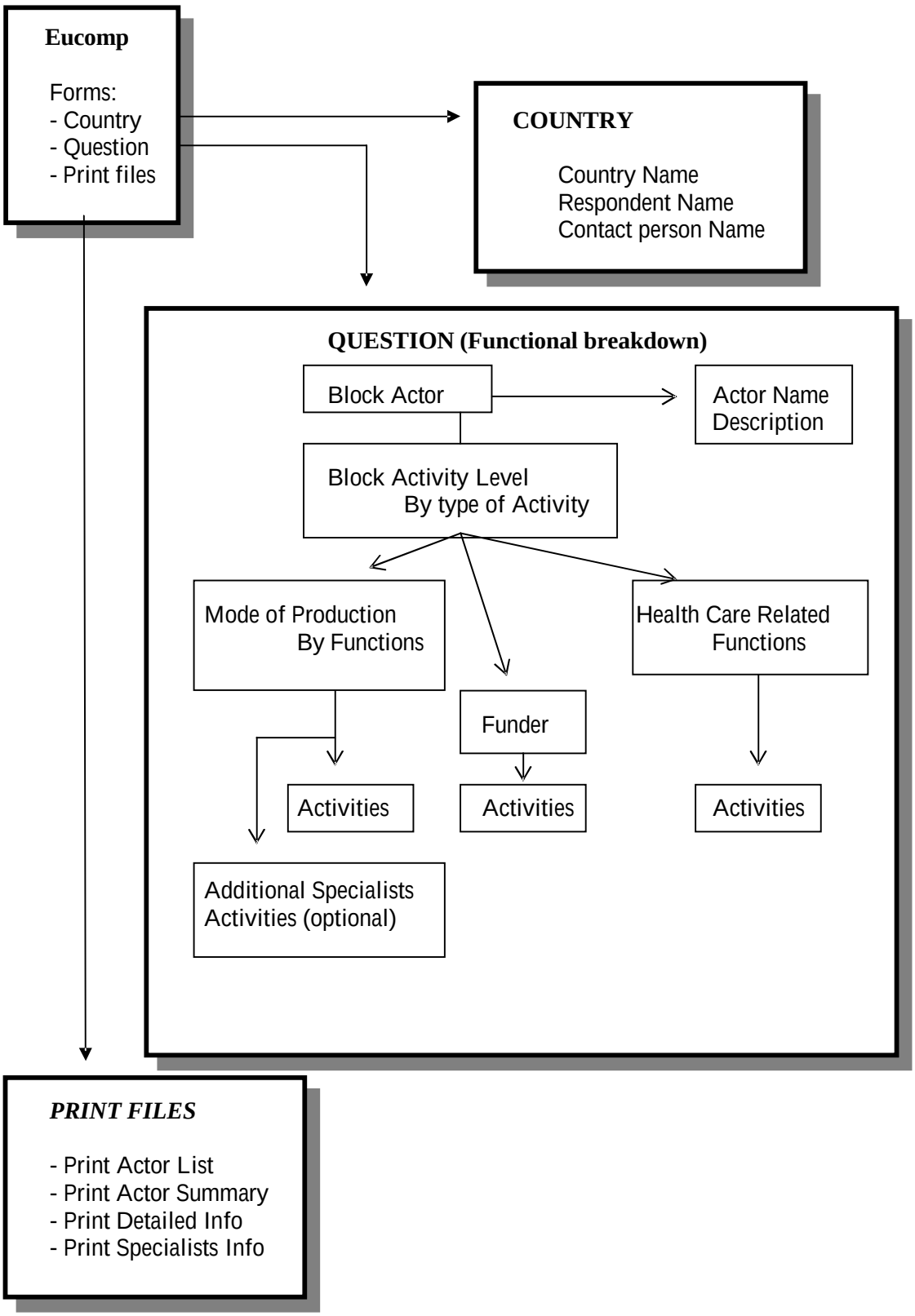
Because the intended type of questionnaire required a dedicated application Statistics Netherlands succeeded to develop the necessary programmes. After initial problems the result proved to be a satisfactory tool. Though the transition from a paper questionnaire to an electronic version meant a burden in the beginning of the project, it is certain, that without this support the project would have experienced great difficulties carrying out the required data collection and analysis.

One of the major elements in favour of the creation of the electronic questionnaire lies in its re-usability of the programme in the future.

2.1.1.5 The structure of the questionnaire

The following flow chart shows the important blocks from which the questionnaire has been built up. The questionnaire consists of three separate parts or programmes: Country, Question and Print files.

Figure 1: Questionnaire on the Functional Breakdown



The first programme included in the application is the Country programme. It contains information on the country and the respondent. The third part of this first program contains information on the persons that were contacted for filling in the questionnaire, so information to be used by the corespondents in case additional questions arises in the process.

The second program, in fact the hart of the application is the questionnaire itself, named Question. The blocks in this piece of software are the block Actor, the Block Activities and based on the outcomes of this Block the Blocks Mode of production by Function in Health care; Health care related activities and Funder.

After having provided the information on the actor; his name and description in local language and in English; the matrix on the activities by type of activities is the entrance to the details of the questionnaire. In the first column the types of activities are listed. The first row, the heading, contains the level of importance of the activity. Because the entrance of the questionnaire was the actor it had to be taken into account that although the actor could be present in the health care field, another kind of activity could be performed as well. Even the possibility his main activity would lay outside the health care field had to be considered. For this reason the last row 'other kind of activity' was included.

The next matrix and one of the most important parts of the questionnaire is the matrix on the mode of production by function. Four modes of production were distinguished, being In-patient and out patient care, with the day cases in between, and, at explicit request, home care.

One of the goals of the project was to create a firm link with the SHA, especially to the functions distinguished there. The functions distinguished are Cure, Rehabilitation, Care, Ancillary services, medical goods and Prevention. The last function mentioned in the OECD SHA, on the administration, is included in another block.

The largest part of the problems occurred in the separation between the functions, the multiplicity of possible interpretation. Rehabilitation mentioned as a separate function can, and in some countries, is included in the cure function. The function raises the question of the care associated with other functions e.g. cure. This leads to a debate as to whether that type of care be included separately or not at all? Another difficulty was identified with the description used in a draft manual of the OECD. The problem

centres on the separation of long term care and short-term care. Should only long-term care be included or the more short-term care (connected to cure or not) as well. The inclusion or exclusion of the activities in the questionnaire related to the fields of ancillary services and medical goods created some questions of interpretation as well. On the one hand we would like to have all the information possible (being it linked to other functions or not). On the other hand our primary goal is to get as clear separations as possible between the various functions.

The basic part of the questionnaire consists of the activities. The list of activities makes the completion of the questionnaire rather burdensome. On top of the huge amount of activities seen in a lot of screens, the option was included to include additional information on specialist's activities. It has been considered to use the term "optional" so that respondents could skip this part on the activities of specialists

The seventh function, referring to the OECD SHA-function of administration was combined with the funding function. Unfortunately this did not generate useful information on health care financiers/funders.

The last section in the main program contains the information on the health care related activities. Health care related activities are important in the health care field and in every system. So six health care related activities were included in the questionnaire, ranging from education and training of health care personnel, R&D in the health care sector to social services and cash benefits.

With regard to social services connected to health care and the provision of cash benefits the biggest problem in the questionnaires returned is the lack of information on this block.

The third part in the software application consists of a facility to produce print files, which allowed information to be printed from the system. Four different print options are included: creating an list of actors, a set of summary information for every actor, and of course a full set of detailed information, including every item in the questionnaire. Because data on specialists were optional this information can be separately printed.

In the initial Blaise version used (version 4.1) all printfiles are stored as ASCII files (extension .txt). These files can be read by any word processor and printed on screen or sent to a

printer. In a later version (4.3) the ANSI character set replaced the ASCII character set. ANSI characters are better suited to incorporate all different international characters.

2.1.1.6 Data processing

The next topic concerns the road after the filling of the questionnaire in Blaise. Blaise is a very efficient way of getting information by means of a questionnaire. Getting information however is one, being able to do something with this information is something different. An Access database was considered to be an excellent vehicle for this matter.

So the starting point was known: the Blaise databases, and the finish was known: an Access database. Unfortunately a direct way of transforming the Blaise results in an access database is still not available. It is something the Blaise Support Group of Statistics Netherlands is working on. A transformation into an intermediary that could be produced by Blaise and read by Access was necessary. This intermediary was a transformation into ASCII/ANSI.

For every Blaise database the data set was divided into a set on the actors and their definitions to be used for the glossary and a separate set on the data ready for analysis. In creating an ASCII/ANSI file Blaise itself separates all open-fields that contain the memo information into separate files. Going through this process produces text files for the glossary: definit.txt and definit.opn, and a same kind of set for the data on activities.

The next step is to import these files into an access database; two for every country and creating country specific definition files. Linking these two files would supply glossary information on actors and their descriptions, in local language and in English.

An Access database was used to create reports, directly out of the databases or by means of querying the database. For example the production of a glossary report, based on the received descriptions of providers and activities can be produced easily. In a next step it would be profitable to link all the basic tables. It would also prove very useful to link this information to that stored in the country profiles. To realise these benefits it would be necessary to write some software around the Access database to make it more user friendly and to make hyperlinking possible.

Therefore it should be considered to develop additional software to make full use of the databases in the glossary and

to make a better use of the information stored in the country profiles. Oracle was chosen as the software for this development because Oracle has good facilities for use over the Internet including hyperlinks and Access is compatible with Oracle.

2.1.2 Analysis

2.1.2.1 Introduction

The EUCOMP project collects information on the framework conditions and institutions of the business sector "health care" in the participating countries. The need for such information has been voiced repeatedly, be it by researchers, politicians or administrators. One may assume that the demand is most pressing among users interested in the comparison of health care across countries for whatever reasons. All these users more or less clearly state that there is a lack of truly comparable data on health care-related subjects, although at the same time such data are amply supplied by the countries themselves and by international organisations. They repeatedly asked for efforts to improve both the quality and comparability of these data.

Improving the quality and comparability of these data is not exactly an easy job on the other hand. Health care is – and will be in short and medium perspective – a "special" economic (business) sector under the tight control of the Social and Economic Politics in the Member States (MS) of the European Union (EU). Therefore, it was felt that comparability could be reached only by means of *ex post-harmonisation* of national data, which are and remain defined on the basis of national regulations. The key instrument for effectively performing such ex post-harmonisation was assumed to be the collection of a well-defined set of metadata. This target was achieved during the EUCOMP project.

TARGETS FOLLOWED DURING ANALYSIS

Because of the framework conditions described above, analysing EUCOMP data will have to deal with the following questions in principle:

- *On which topics does the analysis focus?* Which areas are given priority? Which topics are mentioned, but dealt with on a cursory basis only?
- *On which analytical topics does the report focus?* On which basis are those topics chosen? How can the topics not included in the report be made known to the public? If this information is made available by means other than

the final report, can the non-reported topics be described at least on a *minimum basis*, so that this information can be sufficiently retrieved by individuals who do not find their particular interests sufficiently taken care of in the report?

- *Which topics preceding the analysis have to be included in the report?* Which background information is needed referring to the variables included in the data collection? How can the data quality be described adequately? How can be made sure that only "legitimate" conclusions are drawn from the data?

CONTENTS OF THE ANALYSIS

The lack of comparable data on health care being one of the reasons for initiating the EUCOMP project, the analysis of the EUCOMP results will have to focus on how these results contribute to better understanding the processes used in the participating countries while "producing" health care. If EUCOMP data are supposed to contribute to harmonising the borderlines of health care, to agreeing on common working definitions in health care, and to breaking down national health care clusters of providers into homogeneous subcategories and rearranging these subcategories into international comparable totals, then the analysis must show at least:

- *Who* is active in a health care system? Which standardised category does this actor belong to? Does this actor produce health care only, predominantly or among others?
- *Which of the main categories of health care* does the actor focus on, participate?
- *Which detailed activities* does this focus or participation include?
- Which categories of health care and which detailed activities seem *underreported or non-existent* in a participating country? Does such underreporting require immediate action? Does it interfere with borderline definitions? Does it in any way limit the data comparability in general?

With valid and reliable answers to these questions, the EUCOMP project may take ahead substantially the existing efforts aiming at improving data comparability. The EUCOMP results may then provide means for breaking down national health care clusters of providers, for adding and subtracting new-built subcategories, for rearranging and summarising in new ways those subcategories and thus for reach internationally comparable concepts and definitions.

In short, a successful EUCOMP data set will provide a magnifying glass that allows monitoring the problems and shortcomings of transforming existing national health care data sets into internationally comparable ones. At the same time it opens the door for the steps necessary to overcome those problems: It lays ground for a "rule-based transformation system" with which national data can semi-automatically be transformed into international data.

EUCOMP data will e.g. allow a deeper insight into commonalties and differences of the role of hospitals in the various health care systems. Thus, these data may help to achieve what has been tried for so long with little success: to make hospital data "truly comparable".

CONTENTS OF THE REPORT

EUCOMP data are an extremely rich data source. Nobody can decide which individual questions may be answered and which may not, as these questions are not completely known yet. Because of that, the project participants agreed that it was most appropriate to make the EUCOMP data available to the general public, because only then will they create most value added. Properly done, such public use will also contribute to continuously improving the quality of the EUCOMP data itself.

Reporting EUCOMP results has to be limited, therefore. Not every individual interest relating to the topics covered by EUCOMP and not every individual question, which the EUCOMP data set is able to answer, can be included in the final project report. Therefore, the report should not aim at a "complete" description of the results, as this cannot be achieved anyway. It better supports making best use of the available information by showing prototypes of individual information retrieval, because it so stimulates individual use. Furthermore, the project report should focus on results of general use, which may create value added in on-going scientific or political discussed. Analysing the similarity among types of health care providers (e.g. hospitals) by making use of all the information provided for these providers may serve as an example for such type of results.

PRE-ANALYSIS TOPICS TO BE INCLUDED

The EUCOMP project provides a structured description of the entities and relations active in the process of "producing" health care in the participating countries. To the knowledge of the project participants, such information has not been collected before, as all known studies contain a description of the national health care system in form of country profiles and thus contain insufficiently the element of structured

information. More emphasis has to be put on describing the collected information itself and on describing which conclusions can validly be derived from the data and which can not.

The methodology and framework used allow for easier analysis and comparative validation of country profile information which will highlight boundary problems and gaps in data, thus allowing a significant increase in data quality to be realised.

Furthermore, using a highly innovative concept for the data collection makes the collected data somewhat difficult and risky on the other hand. Checking the data quality cannot make use of preceding comparable studies. It rather has to be built on reasoning about the internal consistency and plausibility of the data source only. The results of this reasoning have to be reported to allow the user to personally judge the risks embedded in the analysis. Only then can the conclusions drawn there be put into a proper perspective. This is especially important, if such conclusions are far-reaching. This means, that some of the following prototype questions have to be answered before any in-depth analysis can start:

- Are the EUCOMP data complete, valid, reliable and consistent? Do we run any risks of dealing with statistical artefacts when doing in-depth analysis?
- Did the underlying concept used for the EUCOMP data collection prove to be appropriate? Is it broad enough to cope with the national peculiarities detected during the project?
- Are the data comparable both within and in between Member States? Have all data been collected on the basis of a common concept and based on unique definitions? Which tools were used to guarantee the necessary data quality?
- How sensibly do the data react with respect to national differences in concepts or definitions used? Does the role of health care as an element of the national economy matter? How sensible does the data react with respect to different national health care borderlines? How do different national concepts for treatment, care, coverage, and entitlements influence the results? Does the degree of work sharing among providers of health care matter? Does a growing importance of co-operative structures matter?
- Do the data collected here confirm traditional knowledge? Do they contradict common belief?
- Do the results create spin-offs for other topical areas or for on-going theoretical work?

2.1.2.2 Roadmap for Reporting the EUCOMP Results

Because of all the arguments discussed above it seems appropriate to zoom in from the frontiers to the centre:

- The analysis report will start with the description of the concept used and of the variables included on a one-by-one basis. This description will respectively refer to the conclusions, which can potentially be derived thereof, and it will discuss the completeness and validity of the respective data as well as reason on the potential consequences of missing data for the analysis itself or for further improving the EUCOMP concept.
- The second step of the analysis deals with the individual information retrieval. This part 1 of section "2.1.3 Results" shows which information can be retrieved from the public EUCOMP data source and how this is achieved.
- Part 2 of section "2.1.3 Results" is the final step of the analysis and will focus on the more general offspring of the EUCOMP data: Where are the basic differences in the organisation of the national health care systems? Do the recent development efforts such as the OECD Manual on "Systems of Health Accounts" (SHA-Manual) (see Literature: 6) provide promising tools for properly dealing with these differences? Which detailed regulations and clarifications are still necessary to make health care data comparable across the participating countries? What does it mean and where does it lead to, if the national health care systems are seen from a truly common perspective using an identical magnifying tool?

2.1.2.3 The Variables Used in the EUCOMP Data Set

The EUCOMP data set on the provision of health care is created as an SPSS-file from the data collection organised with the Blaise programme developed by Statistics Netherlands. Blaise had exported the data as ASCII or ANSI structures leaving one record for each provider, which is subsequently called an "actor". SPSS reads in those data using a standard script. This script reuses the acronyms and labels, which the variables were already provided with in the Blaise application. Two variables are added which could not directly be based on elements of the original Blaise data collection:

- A variable was created which serves as identifier for both the country and the single actor (record) within the country.
- Any actor is classified by *provider categories*, which are taken from the OECD SHA-Manual. These provider categories are organised hierarchically; data values are

included for the 1-, the 2- and the 3-digit level. As the EUCOMP staff has used the OECD provider classification, and this work could only be based on the actors' names and descriptions in the data set, this part of the data set may not be completely error-free. In particular, no national expert must be blamed for any misclassification detected in this data set. The analysis will have to include reasoning on the meaning of actor categories not existing in a participating country (see section 2.1.2.4 below).

- For each actor up to three different types of data (subsets) may be available, depending on the respective actor.
- The *characteristic type of actor* may be described by up to three activities (primary, secondary and tertiary). Each activity can each be chosen from the list of (a) provider of health care, (b) financing/funding agent of health care, (c) provider of health care-related activities, and (d) provider of other, i.e. non-health care activities. For the secondary and tertiary activity the choice may be "none" also, if the activity spectrum is limited to one or two categories respectively. Combinations of (a) and (c) turned out to be more frequent than other combinations. The analysis of this characterisation will have to specifically deal with actors, which are only given the activity type (d) and regarded as relevant for health care nonetheless (see section 2.1.2.5 below).
- Selecting or deselecting *health care functions* is a means of indicating an actor being present in any one or more of those categories, which are, part of health care. These health care functions are derived from the SHA-Manual, but included in a more general form, based on a wider definition than used there. This was done in order not to limit participating countries in any way when describing, characterising or identifying actors. The analysis will have to include reasoning on the meaning of given functions not existing in a participating country (see section 2.1.2.6 below).
- Health care functions are broad categories, which are usually very general and not always easy to picture. These functions are therefore supplemented by *detailed activities*, which can be selected and deselected for each actor. One-way consistency with functions is guaranteed, as no activities can be selected if the respective function is not checked. This does not hold true *vice versa* (function checked, but no activities provided); the consequences of the latter case will have to be included in the analysis (see section 2.1.2.7 below).
- For specific activities in selected categories even more detailed information may be provided on a voluntary basis: Specialised physician care and treatment can be

classified by selecting from a list of *medical specialities*. For the 12 out of 15 countries for which this information is available, comparisons can be made on the existence and non-existence of specific specialities (see section 2.1.2.8 below).

- All medical specialities and selected health care functions and activities are broken down by a so-called *mode of production* (MOP). This MOP indicates whether the treatment is given as *inpatient* (i.e. stationary) *care*, as *day care*, as *outpatient* (i.e. ambulatory) *care* or – as a special subset of the latter – as *home care* to a patient in his/her residence. All combinations mentioned above have been made available for selection irrespective of whether or not this is an empirically likely case. The analysis will have to deal with the valid ones out of the theoretically possible combinations; this is included in the sections 2.1.2.6 to 2.1.2.8 respectively.

2.1.2.4 Number and Type of Health Care Providers in the EUCOMP Data Set

As described above, the EUCOMP project started a highly innovative data collection on a topic for which information was thus far only available on a rudimentary basis. This meant that the experts in the participating countries acting as contacts for the project could not build on previous work and had to more or less start the data provision from scratch. They all are specialists for their national health care system, but only few of them are experienced in "international comparison of health care systems". Therefore it was to be expected that these experts would not be able to use a common perspective from the very beginning. The consequences of those national views are most clearly visible in those elements of the data collection, which are not pre-structured: The number of actors in the EUCOMP data.

From the very beginning, the EUCOMP project intended to collect data for all 15 EU Member States and to additionally include the EFTA countries Norway and Iceland. It turned out, however, that it would not be possible to have phase 1 data for Italy and Belgium included, despite the repeated efforts, which the project staff had made. Table 1 lists the participating countries with the acronyms used as country IDs in all subsequent tables and graphs. Table 1 furthermore includes information on the number of updates received for phase 1 data during the project and it tells the local language used for names and descriptions in the respective national data set.

Table 1: Characteristics of Actors Analysed in the EUCOMP Project

Name of Country	Acronym used as ID	Local Laguange	Number of Actors Included	Revisions Available for the Data Set
European Union				
• Austria	AT	German	90	1
• Germany	DE	German	87	2
• Denmark	DK	Danish	39	2
• Spain	ES	Spanish	59	2
• Finland	FI	Finnish	57	2
• France	FR	French	31	1
• Great Britain	GB	English	22	2
• Greece	GR	Greek	29	1
• Ireland	IE	English	56	3
• Luxembourg	LU	French	43	2
• The Netherlands	NL	Dutch	85	3
• Portugal	PT	Portuguese	60	2
• Sweden	SE	Swedish	65	2
EFTA				
• Iceland	IS	Icelandic	35	3
• Norway	NO	Norwegian	45	2

In all tables and figures country names are abreviated and identiefied by Internet country identifiers.

The multitude of national languages included in the EUCOMP database makes perfectly clear, both how comfortably the results can be used and how cumbersome it was for the national contacts to provide the information. International definitions had to be understood, and a best "matching twin" in the national world of definitions had to be found, before the data provision itself could start.

Furthermore, Table 1 shows the number of updates, which the EUCOMP staff received from the participants. Variations in this number should be used as background information only. Good data quality may be reached in version 1 already, but having revised the data set more than once also indicates checks and re-checks of the contents having taken place.

The most interesting detail in Table 1 is the number of actors. The respective values cover a range spanning from a minimum of 22 to a maximum of 90. This does not indicate the use of a common "perspective" at first glance and nourishes doubts about some data sets being complete. Caution is advised, nonetheless, as the *correct number of actors* it not known *a priori*. It will be better to check consistency and completeness of the data by identifying non-

existing functions and activities rather. This will be done in subsequent sections.

A first double-check can be achieved by comparing the members of the various provider categories, as in general it can be assumed, that looking at provider categories will improve the insight into the structure of the health care systems in the participating countries. Annex 3 lists the three hierarchical levels used for provider classification INS the SHA-manual. The 1-digit level, presented in table 2, distinguishes eight different categories, the 2-digit level 29, and the 3-digit level altogether 36.

Table 2: Categories of Health Care Providers Used and Analysed in the EUCOMP Project

Code	Description
1	Hospitals
2	Nursing and residential care facilities
3	Providers of ambulatory health care
4	Retail sale and other providers of medical goods
5	Provision and administration of public health programmes
6	General health administration and insurance
7	Other industries (rest of the economy)
9	Rest of the world

In the subsequent analysis only the classification on the 1-digit level is used, mainly because of the following two reasons: First, it is quite risky to do a detailed analysis based on a classification, which is not authorised by a national expert. Second, the immediate problem, i.e. the decision as to whether or not the number of actors in the countries is "appropriate" or needs to be harmonised further, will get along much better with a less detailed classification.

Table 3 gives the results on the breakdown of actors by provider categories. The percentages used in the lower half of the table improve the direct comparability of the respective shares across countries, as the influence of the varying totals is eliminated. These percentages vary across provider categories: The variation is particular high with "Health programmes", "Hospitals" and "Nursing homes" and comparatively low with "Providers of ambulatory care", "Administration and Insurance" and "Providers of medical goods". The complete absence of health programmes and of nursing homes in one or two countries respectively – if not the result of a misclassification – indicates nationals health

care borderlines to be drawn too narrow and advises adjustment.

Table 3: Health Care Providers in the EUCOMP project by Provider Type and Country

Provider Category	AT	DE	DK	ES	FI	FR	GB	GR	IE	IS	LU	NO	NL	PT	SE	Total
								Number of Actors								
Hospitals	10	10	7	10	8	8	2	3	14	5	10	8	23	30	7	155
Nursing homes	4	3	3	9	3	–	1	1	2	2	5	1	9	–	2	45
Providers of Ambulatory Care	38	33	17	17	18	14	8	12	15	16	16	14	25	13	21	277
Providers of Medical Goods	8	9	5	3	5	1	2	4	5	3	4	3	10	3	7	72
Health Programms	3	2	1	2	1	3	2	2	3	2	1	5	1	–	1	29
Administration and Insurance	13	14	5	9	13	4	6	4	10	4	5	9	8	8	17	129
Other Industries	14	16	1	9	9	1	1	3	7	3	2	5	9	6	10	96
All Actors	90	87	39	59	57	31	22	29	56	35	43	45	85	60	65	803
								In Percent of All Actors in the Country								
Hospitals	11,1	11,5	17,9	16,9	14,0	25,8	9,1	10,3	25,0	14,3	23,3	17,8	27,1	50,0	10,8	19,3
Nursing homes	4,4	3,4	7,7	15,3	5,3	0,0	4,5	3,4	3,6	5,7	11,6	2,2	10,6	0,0	3,1	5,6
Providers of Ambulatory Care	42,2	37,9	43,6	28,8	31,6	45,2	36,4	41,4	26,8	45,7	37,2	31,1	29,4	21,7	32,3	34,5
Providers of Medical Goods	8,9	10,3	12,8	5,1	8,8	3,2	9,1	13,8	8,9	8,6	9,3	6,7	11,8	5,0	10,8	9,0
Health Programms	3,3	2,3	2,6	3,4	1,8	9,7	9,1	6,9	5,4	5,7	2,3	11,1	1,2	0,0	1,5	3,6
Administration and Insurance	14,4	16,1	12,8	15,3	22,8	12,9	27,3	13,8	17,9	11,4	11,6	20,0	9,4	13,3	26,2	16,1
Other Industries	15,6	18,4	2,6	15,3	15,8	3,2	4,5	10,3	12,5	8,6	4,7	11,1	10,6	10,0	15,4	12,0
All Actors	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Another interesting result is that the pooled variation of hospitals and nursing homes is by far smaller than the detailed variations. From this observation one may conclude that participants may have agreed in different ways on a work sharing between those two providers – an interesting result from the point of view of making hospital data comparable.

In general one may validly conclude, that the data quality is good in principle. Some details should be given a second thought, nevertheless.

2.1.2.5 Activity Focus of Health Care Providers in the EUCOMP Data Set

The characteristic of an actor is defined by the fact of whether this actor plays primarily or exclusively the role of a care provider, a financing body or a provider of health care related activities. Table 4 provides a breakdown by the four major categories. It becomes obvious that the mono-dimensional type of actor is rare. 75.6% of all actors for instance are providers of care, 63.0% do so as a primary activity, but only 42.7% are care providers only.

Table 4: Activity Focus of Health Care Providers in the EUCOMP Project

Provider Category	AT	DE	DK	ES	FI	FR	GB	GR	IE	IS	LU	NO	NL	PT	SE	Total
								In Percent of All Actors in the Country								
Provider of Care	84,4	86,2	87,2	69,5	68,4	64,5	50,0	86,2	66,1	80,0	88,4	75,6	78,8	76,7	55,4	75,6
• As Primary Activity	70,0	64,4	79,5	40,7	64,9	54,8	31,8	69,0	55,4	65,7	72,1	66,7	70,6	70,0	52,3	63,0
• As Exclusive Activity	24,4	26,4	71,8	40,7	40,4	32,3	31,8	62,1	10,7	22,9	69,8	53,3	62,4	58,3	49,2	42,7
Financing Agent of Health Care	12,2	18,4	12,8	10,2	14,0	19,4	18,2	17,2	12,5	8,6	7,0	6,7	5,9	11,7	6,2	11,6
• As Primary Activity	8,9	17,2	10,3	6,8	14,0	16,1	18,2	10,3	8,9	2,9	7,0	6,7	3,5	–	3,1	8,5
• As Exclusive Activity	–	–	10,3	5,1	10,5	16,1	4,5	6,9	3,6	–	4,7	6,7	1,2	–	1,5	3,7
Provider of Health-Related Activites	71,1	62,1	12,8	42,4	36,8	51,6	27,3	27,6	73,2	71,4	4,7	40,0	22,4	25,0	23,1	41,6
• As Primary Activity	11,1	8,0	5,1	39,0	8,8	29,0	4,5	20,7	21,4	17,1	2,3	26,7	7,1	13,3	16,9	14,8
• As Exclusive Activity	7,8	8,0	–	18,6	8,8	19,4	–	6,9	7,1	8,6	–	17,8	5,9	11,7	12,3	9,1
Provider of Other Activites	10,0	10,3	5,1	13,6	12,3	0,0	59,1	0,0	53,6	31,4	20,9	0,0	20,0	16,7	29,2	17,9
• As Primary Activity	10,0	10,3	5,1	13,6	12,3	–	45,5	–	12,5	14,3	18,6	–	17,6	16,7	27,7	13,4
• As Exclusive Activity	–	–	–	1,7	10,5	–	22,7	–	5,4	–	4,7	–	4,7	–	23,1	4,5
								Average Number of Activity Focuses Per Actor								
All Actors	1,78	1,77	1,18	1,36	1,32	1,35	1,55	1,31	2,05	1,91	1,21	1,22	1,27	1,30	1,14	1,47
								Number of Actors Providing only non EUCOMP-Functions								
All Actors			1	1	6		5		8	1	9		4		18	53
								Number of Actors								
Provider of Care	76	75	34	41	39	20	11	25	37	28	38	34	67	46	36	607
• As Primary Activity	63	56	31	24	37	17	7	20	31	23	31	30	60	42	34	506
• As Secondary Activity	8	9	3	16	1	3	4	4	5	5	7	4	7	4	2	82
• As Tertiary Activity	5	10		1	1			1	1							19
• As Exclusive Activity	22	23	28	24	23	10	7	18	6	8	30	24	53	35	32	343
Financing Agent of Health Care	11	16	5	6	8	6	4	5	7	3	3	3	5	7	4	93
• As Primary Activity	8	15	4	4	8	5	4	3	5	1	3	3	3		2	68
• As Secondary Activity	1	1	1	2				1	2	1			1	7	2	19
• As Tertiary Activity	2					1		1		1			1			6
• As Exclusive Activity			4	3	6	5	1	2	2		2	3	1		1	30
Provider of Health-Related Activites	64	54	5	25	21	16	6	8	41	25	2	18	19	15	15	334
• As Primary Activity	10	7	2	23	5	9	1	6	12	6	1	12	6	8	11	119
• As Secondary Activity	52	47	3	2	16	7	5	2	28	17	1	6	11	7	4	208
• As Tertiary Activity	2								1	2			2			7
• As Exclusive Activity	7	7		11	5	6		2	4	3		8	5	7	8	73
Provider of Other Activites	9	9	2	8	7	0	13	0	30	11	9	0	17	10	19	144
• As Primary Activity	9	9	2	8	7		10		7	5	8		15	10	18	108
• As Secondary Activity									5	1	1		2		1	10
• As Tertiary Activity							3		18	5						26
• As Exclusive Activity				1	6		5		3		2		4		15	36
All Actors	90	87	39	59	57	31	22	29	56	35	43	45	85	60	65	803
Valid Actors	90	87	38	58	51	31	17	29	48	34	34	45	81	60	47	750

The contents of Table 4 mirror perfectly the differences of the various health care systems. Institutions active in financing seem to be less homogeneous than care providers, as in one country financing seems to be an exclusive job whereas in another it exists as secondary or tertiary activity only.

The institutions providing "other activities" as "exclusive activity" indicate actors, which are traditionally seen as

related to health care but difficult or not at all possible to place in the existing EUCOMP categories. Common knowledge so far refers to the existence of such actors and to the fact that they are contributing to the provision of health care – like e.g. the Danish Organisation for Patient Rights. Deciding on the treatment of such actors requires checking thoroughly, how such providers are to be handled in the EUCOMP context, in order to achieve common standards. This is best taken care of on a bilateral basis: It may be possible to subsume those actors under existing categories, or it may require to define new categories or enlarge the definitional context of existing ones.

Actors listed under "Providing only non-EUCOMP activities" are disregarded in the subsequent analysis; the denominator for "all actors" is corrected to reflect this.

2.1.2.6 The Role of Health Care Functions in the EUCOMP Data Set

As already mentioned, the EUCOMP project has been developed as an initiative to overcome well-documented shortcomings in the existing data on health care. From the very beginning, it was felt that the "output" of the health care system (primarily the goods and services provided for the patients) was described in an inappropriate way. Traditionally, those output factors were described by making reference of the "producing institution". Hospital care on one side and ambulatory physician and dental care on the other may serve as typical examples. With the on-going organisational changes and the shifts in work-sharing influencing the role of virtually all participants, it was felt necessary to have an output classification of its own, i.e. a classification that does not make use of providers or comparable institutions as reference points.

The SHA manual contains such a classification. It is understood that it was not exactly easy to agree on such a proposal, and that the contents were changed more than once in the time being. It is fair to say; that the agreement reached has the character of the smallest common denominator, thus providing a very rough structure only. This SHA proposal is used in the EUCOMP project as a "skeleton"; the single categories are called "functions". It was found necessary, however, to put "flesh to the bones" of that skeleton, because the functions are so general and formulated so vaguely. It is also interesting to learn from the analysis, whether or not the primary target has been reached, i.e. having developed a nomenclature system independent of provider categories.

Table 5 describes the functions used in the SHA-Manual and applied in the EUCOMP project. Those functions belong to two main groups: "Core" health care relates directly to patient treatment, whereas "health-related" functions focus on supporting activities like education/training of personnel, research or providing economic and social support for patients with diseases. All core health care functions are systematically cross classified with the so-called "mode of production", which basically describes to framework conditions applied for the treatment process: Inpatient and outpatient care, day care and home care are distinguished thereby.

Table 5: Functional Categories of Health Care Analysed in the EUCOMP Project

Core Health Care Functions / Health-Related Functions	Mode of Production (MoP)				MoPs Together
	Inpatients	Day Cases	Outpatients	Home Care	
	Acronyms Used				
Cure	HC1I	HC1D	HC1O	HC1H	HC1_
Rehabilitation	HC2I	HC2D	HC2O	HC2H	HC2_
Care	HC3I	HC3D	HC3O	HC3H	HC3_
Ancillary Services	HC4I	HC4D	HC4O	HC4H	HC4_
Medical Goods	HC5I	HC5D	HC5O	HC5H	HC5_
Prevention	HC6I	HC6D	HC6O	HC6H	HC6_
Core Health Care Together	HC_I	HC_D	HC_O	HC_H	HC__
Financing Together					HCFIN
Education and Training					HCR1
Research and Development					HCR2
Food Control					HCR3
Environmental Health Control					HCR4
Supply of social services					HCR5
Provision of health-related cash Benefits					HCR6
Health-Related Together					HCR_
All Functions Above Together					HC00

This concept leaves 24 functions by breaking down each of the six core functions (HC1 through HC6) by four modes of production" (I – inpatients, D – day-cases, O – outpatients and H – home care). Amalgamating with health care financing (HCFIN) and six health-related functions" (HCR1 through HCR6) leads to a total of 31 functions. The subtotals printed in bold in Table 5 have been created during the analysis only and were derived from the collected data.

Table 5 shows the combinations of health care and health care-related functions supported by the project. The

acronyms provided identify the respective categories. Please note health care financing (HCFIN) and the six different health care -related functions (HCR1-HCR6) are not broken down by mode of production. Furthermore, please note also, that the categories printed in bold are derived totals and subtotals, which were not part of the original data collection.

It is quite interesting to detect and analyse "unused" functions in the data sets of the participating countries in order to add to the topic of consistency and completeness of data discussed already in previous sections. Table 6 contains a summary of functions, which were supported in selected participating countries. Totalled across all participating countries, altogether 41 functions are not supported; this represents 8.8% of all defined functions.

Table 6: Health Care Functions Not Being Available at All in Participating Countries

Core Health Care Functions / Health-Related Functions	Mode of Production (MoP)				MoPs Together
	Inpatients	Day Cases	Outpatients	Home Care	
	Number of Countries with the Function Explicitely Missing				
Cure				1	1
Rehabilitation			1	3	4
Care		2	3		5
Ancillary Services				4	4
Medical Goods	2	2		6	10
Prevention	3	5		3	11
Core Health Care Together	5	9	4	17	35
Financing Togther					
Education and Training					
Research and Development					1
Food Control					1
Environmental Health Control					1
Supply of social services					1
Provision of health-related cash Benefits					2
Health-Related Together					6
All Functions Above					41

Looking at the results in Table 6 in detail may add to the understanding as to whether or not the EUCOMP data sets are complete already. Some non-existing functions may well be explained by organisational particularities of the respective national health care system. This in itself provides a deeper understanding of health care systems and associated data from the participating countries. For example rehabilitation may just not be carried out in every mode of

production (like home or day care). Some other non-existent functions may be traced back to traditional perspectives non-compliant to the EUCOMP view: Distribution of medical goods to inpatients and day care cases will exist everywhere. They may be not being seen as a well-defined service of its own, but seen as an integral part of cure or care, however. The non-existence of prevention indicates that a too narrow concept of prevention is underlying the data provision of some participating countries.

From the non-existent health-related functions one may conclude that the borderline of health care in some countries is defined differently from the one defined for the EUCOMP project. The latter cases will most likely lead to the number of actors in the respective countries to increase. Missing core health care functions, on the other side, seem primarily to relate to "unrecorded" existing functions of actors, which are correctly included.

Before a meaningful analysis can be made of the way, in which the health care functions are serviced in the various countries, the number of actors needs to be corrected first for those providing only non EUCOMP functions (see section 2.1.2.5 above). This leaves the remaining number of actors ranging from a minimum of 17 to a maximum of 90, each representing the countries 100% value for the functional analysis by actors.

Table 7 contains the number of actors providing the various types of health care functions as well as the respective percentage share of all actors. The results make clear, that the average number of functions serviced per actor does not correlate with the overall number of actors provided in the data set of participating countries.

This result indicates that the underlying number of "generic actor types" does not differ substantially across the participating countries. What seems to differ rather is the number of "sub-groups per actor type" included to make the respective activity scenario of every actor more homogeneous.

The breakdown of "all functions per actor" into three main categories shows a satisfactory consistency. Core health care functions make up close to 82%, financing 3%, and health-related activities some 15% of it, each with comparatively little variation around the mean.

The lower three sub-tables of Table 7 relate core health care, financing and health-related functions to those actors only,

which do provide the respective function. These tables show the relevant actors as percentage all actors as well as the average number of specific functions performed per actor. The percentage share of actors providing *core health care* differs across countries with values ranging from 71% to 94%. This span is not exactly narrow, but on the other hand it is not big enough to raise principle doubt with respect to the data quality either. The percentage of actors engaged in the provision of *health-related functions* varies more, between 9% and 73%. This variation will primarily stem from the existence and non-existence of vocational training for assistants and helpers in the respective participating countries, however.

Table 7:Health Care Functions Provided

Topic	AT	DE	DK	ES	FI	FR	GB	GR	IE	IS	LU	NO	NL	PT	SE	Total
All Providers of Health Care (Actors) Mentioned in the Country Data Sets																
Number of actors	90	87	39	59	57	31	22	29	56	35	43	45	85	60	65	803
Actors Participating in Non-EUCOMP Functions Only																
Number of actors			1	1	6		5		8	1	9		4		18	53
Participation in the Provision of Any EUCOMP-Defined Function of Health Care																
Number of actors	90	87	38	58	51	31	17	29	48	34	34	45	81	60	47	750
in % of all actors	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Average Number of																
• All Functions	5,3	4,6	3,1	2,8	6,5	6,3	4,5	5,4	4,6	5,4	3,0	2,6	3,3	3,9	3,8	4,3
• Core Functions	4,2	3,6	2,7	2,0	5,5	5,2	3,4	4,6	3,8	3,8	2,8	1,9	2,9	3,4	3,1	3,5
• Financing	0,1	0,2	0,1	0,1	0,2	0,2	0,2	0,2	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1
• Related Functions	0,9	0,7	0,2	0,7	0,8	1,0	0,8	0,7	0,8	1,5	0,1	0,6	0,4	0,4	0,5	0,7
Participation in the Provision of Core Health Care (HC1 through HC6)																
Number of actors	76	74	33	41	39	23	12	26	37	27	32	34	68	45	35	602
in % of all actors	84,4	85,1	86,8	70,7	76,5	74,2	70,6	89,7	77,1	79,4	94,1	75,6	84,0	75,0	74,5	80,3
Functions per actor	5,0	4,3	3,1	2,8	7,3	7,0	4,8	5,1	4,9	4,7	3,0	2,6	3,5	4,5	4,2	4,4
Participation in the Financing of Health Care (HCFin)																
Number of actors	11	16	5	6	8	6	4	5	4	3	2	3	5	7	4	89
in % of all actors	12,2	18,4	13,2	10,3	15,7	19,4	23,5	17,2	8,3	8,8	5,9	6,7	6,2	11,7	8,5	11,9
Functions per actor	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0
Participation in the Provision of Health-Related Activities (HCR1 through HCR6)																
Number of actors	64	54	5	26	21	16	6	8	21	24	2	18	17	15	13	310
in % of all actors	71,1	62,1	13,2	44,8	41,2	51,6	35,3	27,6	43,8	70,6	5,9	40,0	21,0	25,0	27,7	41,3
Functions per actor	1,3	1,2	1,8	1,5	2,0	1,9	2,3	2,4	1,7	2,2	2,5	1,5	1,7	1,5	1,9	1,6

The data for the category “core health care” makes explicitly clear, that a complete offer of functions may be guaranteed, although both the number of actors and the value for functions per actor are low. Such a situation is reached, if the Health Care System in the participating countries follows a

dedicated system of work sharing, where the various actors complement each other rather than providing overlapping activity ranges. Thus, both the average numbers of core and health-related functions performed per actor – 4.4 and 1.6 out of potential maximum of 24 and 7 respectively – are plausible. A predominance of providers of integrated services will cause above-average values, as is the case in Finland for example.

Summarising the EUCOMP results with respect to health care functions, one may conclude that completeness and comparability suggests urgently improving some data sets at some spots. Such minor deficiencies do not prevent a valid and reliable analysis, however. The basic results outlined here will not change completely, although the numerical values for percentage shares and averages may undergo some modification.

It must be stated again, that in a prototype study, which was conducted within an extremely narrow time frame, minor inconsistencies in a data collection like the ones observed here are unavoidable. Fixing all problems (observed and still unknown ones) will take much more than one further revision of the data set – it will primarily require the data to be used by a wide audience. Only if all user comments are used to continuously improve the data quality, the long-term goal of utmost data comparability may finally be reached.

2.1.2.7 The Role of Detailed Health Care Activities in the EUCOMP Data Set

It has been mentioned already, that the EUCOMP project uses activities to make the functions of health care more rich and meaningful, and to contribute to making the contents intuitively intelligible. Introducing activities has also been advocated because actors were assumed to differ substantially different despite their respective function pattern being equal. This assumption can hardly be denied *a priori*, as the functional categories are not defined at a level most appropriate for this project (see section 2.1.2.6 above).

The EUCOMP staff and the experts included in the introductory discussion agreed that these activities should reflect a well-defined classification of health care outputs as goods and services, a second-level hierarchy of the functions. They also concluded, that agreeing on such a classification was a time-consuming effort, which could hardly be reached during the introductory phase of the project already. This holds particularly true, because comparable efforts aiming at

such a classification have had very limited success during the past decades.

The short-term solution agreed in this dilemma was to start from an existing list of activities, which had been compiled for CCP1 (see Literature: 5), a predecessor project dealing with increasing the comparability of health care data by use of information (metadata) on on-going processes. It was argued that this list was one of the most appropriate available and that an improved – or in the ideal case the final – list could be an offspring of the EUCOMP project. Table 8 lists the number of activities provided in EUCOMP for the various functions described in the previous section. The detailed list of these activities is included in annex 2.

Table 8: Types of Health Care Activities Analysed in the EUCOMP Project

Health Care Functions		Mode of Production				Activities
Code	Description	Inpatients	Day Cases	Outpatients	Home Care	Togther
HC1	Cure	20	20	20	20	80
HC2	Rehabilitation	20	20	20	20	80
HC3	Care	3	3	3	3	12
HC4	Ancillary Services	3	3	3	3	12
HC5	Medical Goods	9	9	9	9	36
HC6	Prevention	7	7	7	7	28
HC_	Core Health Care Together	62	62	62	62	248
HCFIN	Financing Together					2
HCR1	Education and Training					1
HCR2	Research and Development					1
HCR3	Food Control					1
HCR4	Environmental Health Control					2
HCR5	Supply of social services					2
HCR6	Provision of health-related cash Benefits					2
HCR_	Health-Related Together					9
HCOO	All Functions Togther	62	62	62	62	259

The data in Table 8 – especially in direct comparison with the ones in Table 5 – outline the increase in richness of information achieved by introducing such activities. 31 Functions are detailed into 259 activities, resulting in 8.4 activities per function on average.

Activities may also be used as a litmus test for the completeness and consistency of the data provided. Those

cases, where a function is selected, but none of the corresponding activities is ticked are particularly interesting. How did such cases arise? If the function is correctly selected, the respective activities could possibly have been forgotten, or the national expert wanted to activate an activity not offered by the list? If the complete lack of associated activities is correct, on the other hand, then the function should have not have been selected to make the data consistent. Table 9 lists the number of functions missing "implicitly" in all participating countries together, where implicit missing stands for no corresponding activities available despite the respective function being selected. These data may be directly compared with the ones in Table 6, which count the functions "explicitly" missing, i.e. not being selected from the beginning. Implicit missing raises the number of unavailable functions across all participating countries from 41 to 61. Bilateral contacts should be used to settle the problems incorporated by these cases. The general validity of the data sets is unlikely to be endangered, though.

Table 9: Health Care Functions not Supported by Activities in Participating Countries

Core Health Care Functions / Health-Related Functions	Mode of Production (MoP)				MoPs Together
	Inpatients	Day Cases	Outpatients	Home Care	
	Number of Countries with the Function Implicitely Missing				
Cure				2	2
Rehabilitation	3	4	2	5	14
Care		2	3		5
Ancillary Services				4	4
Medical Goods	2	2		7	11
Prevention	4	9		4	17
Core Health Care Together	9	17	5	22	53
Financing Togther					
Education and Training					
Research and Development					1
Food Control					2
Environmental Health Control					1
Supply of social services					2
Provision of health-related cash Benefits					2
Health-Related Together					8
All Functions Above					61

It must not be forgotten, however, that the overall list of activities was developed empirically. The existing historical list has been cross-classified by four modes of production; furthermore, identical versions of this list are made available

for the functions cure and rehabilitation, respectively – to allow the integration of any possible (and virtually impossible) national peculiarity.

Table 10: Unused Health Care Activities in Participating Countries

Function	AT	DE	DK	ES	FI	FR	GB	GR	IE	IS	LU	NO	NL	PT	SE	Total
Number of Unused Activities in Core Health Care for Inpatients																
HC1 Cure	5	1	5	6	2	4	8	1	3	7	8	7	3	4	5	
HC2 Rehabilitation	8	4	20	8	14	16	8	20	20	15	14	11	11	11	9	2
HC3 Care	1	1	1	2			2	2			1	2	2	2		
HC4 Ancillary Services										1			1		1	
HC5 Medical Goods	2	2		9				1		7	2	9	3	6	1	
HC6 Prevention	1	1	4	7	3	6	5	1		7	1	6	7	7	6	
Number of Unused Activities in Core Health Care for Day Cases																
HC1 Cure	8	12	9	6	2	9	18	1	3	12	14	9	5	17	5	
HC2 Rehabilitation	9	15	20	8	14	16	20	20	20	16	11	12	12	14	16	5
HC3 Care	1	1	1	1			3	2		1	1	2	2	3	2	
HC4 Ancillary Services			1							1			1		1	
HC5 Medical Goods	4	4		9			2	1		7	5	9	3	6	6	
HC6 Prevention	1	1	2	7	7	7	7			7		7	7	7	7	
Number of Unused Activities in Core Health Care for Outpatients																
HC1 Cure	4	3	6	3	2	4	5	2	1	4	12	9	3	4	3	
HC2 Rehabilitation	8	5	20	5	14	16	9	20	10	16	11	19	13	11	15	1
HC3 Care	1		3				1	2		1	1	3		3	2	
HC4 Ancillary Services															1	
HC5 Medical Goods										2	3		1		1	
HC6 Prevention			2			3	1					1			1	
Number of Unused Activities in Core Health Care for Home Care																
HC1 Cure	10	16	13	11	8	9	11	13	1	16	20	20	6	15	11	
HC2 Rehabilitation	15	17	20	13	13	16	11	20	13	20	20	20	17	17	17	5
HC3 Care			1					2			1	1		2	1	
HC4 Ancillary Services				1			2	2		3	3	3	3		1	
HC5 Medical Goods	6	4		9		4	5	9		9	9	9	9	9		
HC6 Prevention	1		3	5	6	7	4	1		6		7	7	7	6	
Number of Unused Activities in Health Care Financing																
HCFIN Financing							1									
Number of Unused Activities in Health Care-Related Functions																
HCR1 Education, Training																
HCR2 R & D											1					
HCR3 Food Control			1							1						
HCR4 Environmental Health			2							1						
HCR5 Social Services											2	2				
HCR6 Cash Benefits							2					2				

Regarding the function rehabilitation, it was generally expected, therefore, that a substantial number of the activities provided might not exist in any of the participating countries. The contents of Table 10 tell how many of these activities turned out to be unused in the end.

The column "Total" of Table 10 contains the unexpected fact; this column lists completely unused activities, i.e. those activities not available in any participating country. Only 5% or 13 out of 259 activities turned out to be "complete failures", which as a rate is both astonishing. This offers significant evidence of the usability and robustness of the standards employed. This result proved right those experts who advocating to start with a comprehensive list of items to chose from. Experts will not be particularly surprised, on the other hand, if they learn, that all these unused 13 activities belong to the function rehabilitation in the various modes of production.

Table 11: Health Care Activities Provided by Category and Provider

Topic	AT	DE	DK	ES	FI	FR	GB	GR	IE	IS	LU	NO	NL	PT	SE	Total
Participation in the Provision of Any EUCOMP-Defined Function of Health Care																
Number of actors	90	87	35	57	49	29	16	27	47	33	35	45	81	58	47	736
in % of all actors	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Activities per actor																
• All Functions	14,1	9,9	6,5	8,9	24,2	20,9	12,9	19,3	15,3	9,4	6,9	4,6	8,3	10,1	7,9	11,5
• Core Functions	12,9	8,7	6,1	8,0	23,0	19,4	11,9	18,0	14,4	7,8	6,6	4,0	7,8	9,5	7,2	10,6
• Financing	0,1	0,2	0,1	0,1	0,2	0,2	0,1	0,2	0,1	0,2	0,1	0,1	0,1	0,1	0,1	0,1
• Related Functions	1,1	1,0	0,3	0,8	1,0	1,3	0,8	1,1	0,8	1,4	0,2	0,6	0,4	0,4	0,6	0,8
Participation in the Provision of Core Health Care (HC1 through HC6)																
Number of actors	76	74	32	41	39	23	12	24	36	26	32	33	68	45	35	596
in % of all actors	84,4	85,1	91,4	71,9	79,6	79,3	75,0	88,9	76,6	78,8	91,4	73,3	84,0	77,6	74,5	81,0
Activities per actor	15,2	10,3	6,7	11,1	28,9	24,4	15,9	20,3	18,9	10,0	7,2	5,4	9,3	12,3	9,6	13,1
Activities per function	2,5	1,7	1,1	1,8	4,8	4,1	2,7	3,4	3,1	1,7	1,2	0,9	1,5	2,0	1,6	2,2
• HC1: Cure	4,1	2,2	2,6	4,4	12,1	9,1	5,3	10,7	10,3	5,0	1,8	2,5	4,1	6,3	5,3	5,2
• HC2: Rehabilitation	3,4	1,6	–	2,9	4,4	1,3	3,4	–	0,8	1,3	1,2	0,8	1,1	2,4	1,3	1,8
• HC3: Care	0,4	0,5	0,4	0,6	1,8	2,0	0,7	0,8	1,6	1,1	0,9	0,3	0,3	0,1	0,5	0,7
• HC4: Ancillary Serv.	1,5	1,3	0,7	1,8	3,2	3,5	1,4	2,7	1,3	0,8	1,0	0,6	1,4	2,3	0,6	1,6
• HC5: Medical Good	2,7	2,6	2,4	0,4	6,4	8,1	3,5	3,0	2,8	0,7	1,3	0,5	2,0	1,0	1,7	2,4
• HC6: Prevention	3,1	2,1	0,6	1,0	1,0	0,4	1,6	3,1	2,2	1,0	1,0	0,7	0,4	0,2	0,3	1,3
Participation in the Financing of Health Care (HCFin)																
Number of actors	11	16	3	5	5	4	2	3	5	3	3	3	5	5	3	76
in % of all actors	12,2	18,4	8,6	8,8	10,2	13,8	12,5	11,1	10,6	9,1	8,6	6,7	6,2	8,6	6,4	10,3
Activities per actor	1,2	1,1	1,3	1,4	2,0	1,8	1,0	2,0	1,0	2,0	1,3	1,7	1,2	1,2	1,7	1,4
Participation in the Provision of Health-Related Activities (HCR1 through HCR6)																
Number of actors	64	54	5	26	21	13	4	8	19	24	2	17	17	15	13	302
in % of all actors	71,1	62,1	14,3	45,6	42,9	44,8	25,0	29,6	40,4	72,7	5,7	37,8	21,0	25,9	27,7	41,0
Activities per actor	1,5	1,5	2,2	1,8	2,3	2,8	3,3	3,8	1,9	1,9	3,0	1,5	2,1	1,7	2,3	1,9

Table 11 shows for the various participating countries, how functional categories are broken down into activities. It is especially interesting to note, that the number of actors included in the analysis decreased from 750 to 736 thereby:

We had to exclude all actors providing only functions, for which no activities were mentioned.

The layout of Table 11 has been chosen deliberately to parallel the one of Table 7 in order to ease the direct comparison of the respective data. Table 12 offers further details of the activity structures in the core health care area, thereby supplementing the results of Table 11 which primarily support the high level overview or the "eagle's perspective".

The first result of Table 11 was to be expected. The average number of activities per actor is highest in the core health care functions. The range spans from 4.0 to 23.0 with an average of 10.6 across all participants. Health care financing and health-related functions average .1 and .8 activities with relatively little variation.

A meaningful analysis will relate the core health care activities to actors providing such activities only (provider adjustment). The second sub-table provides such information, broken down by the six core functions. As can be expected from a smaller denominator, the average number of *activities per actors* is slightly higher; values range from 5.4 to 24.4 with a mean of 13.1. When it comes to *activities per function*, the results are substantially lower; the mean is 2.2 here, the minimum 1.1 and the maximum 4.8.

Quite a variation of these values may be observed, however, if the results are broken down by single functions. It could be expected, however, that cure will allocate most activities and care the fewest.

Provider-adjusted data for financing exceed their unadjusted counterparts by the factor 10; this may be explained by financing being provided by specialised actors not engaged in the supply of other activities. The opposite holds true for health-related activities; provider-adjusted data are only twice as high as raw ones. This stands for many actors providing core health care simultaneously.

Further insight may be achieved by analysing in greater detail the activities provided in the framework of core health care functions. The contents of Table 12 present the result gained during this effort. The top line of the table represents the commonality with the previous Table 11; subsequently a breakdown by mode of production provides results not presented before.

Table 12: Core Health Care Activities Provided by Function and Mode of Production

Topic	AT	DE	DK	ES	FI	FR	GB	GR	IE	IS	LU	NO	NL	PT	SE	Total
	Average Number of Core Health Care Activites by Actor Providing Such Activities															
All Functions	15,2	10,3	6,7	11,1	28,9	24,4	15,9	20,3	18,9	10,0	7,2	5,4	9,3	12,3	9,6	13,1
Inpatient Care	9,9	7,1	3,7	6,6	12,8	19,1	10,6	16,0	6,7	6,8	5,5	4,2	10,7	8,7	9,2	8,8
• HC1: Cure	7,3	7,7	4,4	7,7	9,6	7,4	6,7	9,1	8,4	5,4	4,3	5,0	5,0	5,4	6,3	6,6
• HC2: Rehabilitation	6,7	6,6	–	6,6	3,3	2,2	6,0	–	–	2,8	3,7	3,7	4,4	2,9	5,5	4,4
• HC3: Care	1,0	1,0	1,2	1,0	1,4	1,7	1,0	1,0	2,1	1,2	1,4	1,0	1,0	1,0	2,0	1,3
• HC4: Ancillary Serv.	2,3	1,8	1,2	2,6	2,2	3,0	1,7	2,8	1,8	1,7	1,7	1,6	1,9	2,1	1,7	2,1
• HC5: Medical Good	5,3	5,5	3,2	–	5,5	7,0	6,0	5,8	4,0	2,0	3,3	–	3,3	2,1	6,0	4,6
• HC6: Prevention	2,2	1,4	3,0	–	4,0	1,0	2,0	5,0	3,0	–	6,0	1,0	–	–	1,0	2,1
Day Care	8,1	4,1	3,2	6,6	12,5	19,9	5,0	16,0	6,8	6,1	4,2	6,7	7,1	3,5	5,1	7,3
• HC1: Cure	5,9	4,3	3,5	7,5	9,2	7,4	1,5	8,2	8,2	4,4	1,8	5,8	3,4	1,3	3,9	5,5
• HC2: Rehabilitation	7,1	3,3	–	8,0	3,3	1,3	–	–	–	2,3	4,7	3,3	4,8	2,4	2,0	3,9
• HC3: Care	1,0	1,0	2,0	1,2	1,8	1,8	–	1,0	2,0	1,2	1,5	1,0	1,0	–	1,0	1,4
• HC4: Ancillary Serv.	2,3	1,8	1,0	2,6	2,2	3,0	1,7	2,6	1,8	1,7	1,6	2,5	1,9	1,7	2,0	2,1
• HC5: Medical Good	4,2	4,2	3,2	–	5,5	6,9	7,0	5,4	4,0	2,0	2,0	–	2,7	2,5	1,5	4,2
• HC6: Prevention	2,2	1,3	2,0	–	–	–	–	5,7	3,3	–	7,0	–	–	–	–	2,2
Outpatient Care	7,4	4,0	2,3	6,1	12,4	9,4	11,1	9,7	7,7	6,1	2,9	3,4	4,1	5,7	4,6	6,0
• HC1: Cure	4,7	2,5	1,7	5,1	7,8	4,9	6,0	7,6	6,4	3,6	1,8	2,4	2,2	3,3	3,4	4,1
• HC2: Rehabilitation	4,1	3,3	–	8,0	3,0	4,0	6,3	–	4,5	2,3	2,8	1,0	3,4	2,8	2,2	3,5
• HC3: Care	1,0	1,0	–	1,5	1,9	2,0	2,0	1,0	1,9	1,0	1,2	–	3,0	–	1,0	1,5
• HC4: Ancillary Serv.	1,5	1,6	1,1	2,5	2,1	1,8	1,5	2,3	1,9	1,7	1,4	1,6	1,7	1,8	1,8	1,8
• HC5: Medical Good	3,0	2,5	3,2	4,5	4,4	5,2	3,8	2,8	4,8	2,8	2,3	4,0	2,0	3,0	2,5	3,2
• HC6: Prevention	1,9	1,8	2,5	3,8	3,2	2,7	3,3	5,7	3,6	3,1	4,3	2,2	2,8	3,5	1,8	2,6
Home Care	2,4	2,7	2,6	2,7	7,8	7,0	6,8	2,3	7,2	2,6	4,5	2,0	1,9	3,2	3,6	3,7
• HC1: Cure	2,4	2,0	1,7	2,2	3,8	4,3	3,7	1,7	5,3	2,3	–	–	1,7	2,0	2,0	2,6
• HC2: Rehabilitation	5,0	3,0	–	3,5	2,4	4,0	3,3	–	5,5	–	–	–	1,5	2,0	1,5	3,0
• HC3: Care	1,2	1,7	2,0	2,3	1,9	2,7	1,3	1,0	1,9	1,3	2,0	2,0	1,7	1,0	1,8	1,7
• HC4: Ancillary Serv.	1,3	1,1	1,3	1,0	2,4	1,7	1,0	1,0	2,2	–	–	–	–	1,3	1,0	1,5
• HC5: Medical Good	2,7	4,0	3,2	–	5,0	4,0	4,0	–	4,1	–	–	–	–	–	3,1	3,9
• HC6: Prevention	1,3	1,4	2,0	1,3	1,0	–	2,0	4,0	4,0	1,0	7,0	–	–	–	1,0	1,8

It is quite interesting in this context, how the mode of production influences the average number of activities performed per actor. It is particularly surprising though, that home care concentrates – on average – by far less activities per provider than any other mode of production. It could have been expected rather, given the fact, that only few services are continuously to patients in their home surrounding.

It seems to be more interesting, that in quite some participating countries the "range of activity" of an ambulatory care provider – again on average – does not differ from the one of a provider of stationary care. The Bismarckian systems, on the other hand, report the expected differences – fewer activities per actor in ambulatory care

because of the intensive work sharing and specialisation. In some participating countries integrated services seem to play a more important role in the overall supply, whereas in others work sharing and parallel tracks seem to predominate rather.

Some detailed results require bilateral checks, for instance the lack of the function "cure" in home care (what else does a general practitioner do in home care?). Others advise to clarify definitions to reach a more homogeneous set of answers. Offering ancillary services (such as physical or lab tests) and the distribution of medical goods will most likely exist everywhere in a comparable way. Differences included in the data sets will primarily root in different understandings. The following may serve as an example: A patient receives a prescription from a doctor seeing him in his home. The nearby pharmacy hands out the drugs, based on that prescription. In some countries the drugs may be labelled "medical goods for home care", because the prescription was given during home care, whereas in others it may be called "medical goods for outpatients", because the drugs were collected in the pharmacy.

In general, one may conclude from the analysis, that the list of activities used in the project proved to be a good starting point. As mentioned above already, the data sets of some countries need minor improvements in selected areas. Most "shortcomings" should be due to different understandings or perspectives and can be fixed easily, thus. The overall concept used in the EUCOMP project has proven adequate and good. It does not need to undergo severe revisions.

2.1.2.8 The Role of Medical Specialities in the EUCOMP Data Set

The last conceptual element used in EUCOMP and analysed here differs substantially from its predecessors. Basically, medical specialities are no elements of health care output, they are rather a substitute for describing in greater detail the (still uncategorised, probably even unknown) activities of "medical specialists", i.e. of physicians providing specialised rather than general medical care.

Again, this list was agreed despite serious concerns of participants, because within the limited time frame a better alternative was extremely unlikely to be found. It has to be mentioned for reasons of completeness, that this list does not aim to be complete in any way or to represent adequately the efforts undertaken by the European Commission to homogenise medical specialities across Europe.

Table 13: Types of Medical Specialities Analysed in the EUCOMP Project

Health Care Functions		Mode of Production				Total
Code	Description	Inpatients	Day Cases	Outpatients	Home Care	Activities
		Acronyms Used for Medical Specialities				
HC1	Cure	SP1I	SP1D	SP1O	SP1H	SP1_
HC2	Rehabilitation	SP2I	SP2D	SP2O	SP2H	SP2_
HC_	Core Health Care	SP_I	SP_D	SP_O	SP_H	SP__
		Number of Available Medical Specialities				
HC1	Cure	46	46	46	46	184
HC2	Rehabilitation	46	46	46	46	184
HC_	Core Health Care	92	92	92	92	368

Explanation:
SP: Specialist's activities
I, D, O, H: Modes of Production: In-patient, Day cases, Out patient, Home care

From Table 13 one can derive, that medical specialities exist only within the function "cure" and "rehabilitation". To be more precise, such specialities exist only, if the activity "specialised medical treatment" is included. Consistency would demand in principle, that selecting such medical specialities requires the activity "specialised medical treatment" to be checked.

As the provision of these data was optional, and as therefore the connection with the rest of the electronic questionnaire had to be weakened, this condition was seldom met. Therefore, the consistency check was disregarded in the analysis. Quality control requires data sets to be checked with respect to this topic later.

A much better check of the data sets with respect to consistency and completeness refers – like in the previous sections – to the number of functions not supported by the data under analysis. Table 14 contains the results to this question for medical specialities.

Altogether 51 functions out of a potential total of 120 are not supplied by such data, leaving an overall non-response rate of 42.5%, a higher percentage of which refers to rehabilitation than to cure and to home care than to all other modes of production. It has to be taken into consideration however, that this information was optional, and that three countries didn't provide such information at all. This leaves 27 out of the 96 possible functions unsupported for the remaining participating countries, yielding a non-response rate of 28.1%

and suggesting some questions. Leaving home care non-supported is understandable and may make sense in most cases. Having no data on rehabilitation is intelligible also; more serious concerns are caused by inpatient cure being left out. At least these cases should be re-examined.

Table 14: Health Care Functions not Supported by Medical Specialities in Participating Countries

Core Health Care Functions / Health-Related Functions	Mode of Production (MoP)				MoPs Together
	Inpatients	Day Cases	Outpatients	Home Care	
	Number of Countries with No Medical Specialities Provided For the Function Altogether				
Cure	4	5	4	9	22
Rehabilitation	6	7	6	10	29
Altogether	10	12	10	19	51
Notably: Countries not having included Medical Specialities at all	3	3	3	3	

Unused medical specialities are a means of cross-checking the quality of the initial list, with which the project started. Table 15 provides this information and shows that relatively few specialities remain unused for cure in most countries, whereas for rehabilitation between 20% and 25% are of these specialities are empty. At least in the case of inpatient care two countries should be disregarded in the analysis. The data for these countries are obviously incomplete.

Table 15: Medical Specialities Not Being Used at All in Participating Countries

Topic	AT	DE	DK*	ES	FI	FR	GB	GR	IE	IS	LU	NO*	NL	PT	SE*	Total
Number of Unused Medical Specialities in Health Care for Inpatients																
HC1 Cure	1	1	–	1	2	46	3		26	3	5	–	2	11	–	
HC2 Rehabilitation	15	28	–	30	44	44	8	46	46	46	45	–	44	40	–	5
Number of Unused Medical Specialities in Health Care for Day Cases																
HC1 Cure	15	12	–	1	2	46	5		36	46	32	–	10	39	–	
HC2 Rehabilitation	21	42	–	30	44	44	46	46	46	46	45	–	44	43	–	14
Number of Unused Activities in Core Health Care for Outpatients																
HC1 Cure		7	–		1	41	2	5	46	5	27	–	10	6	–	
HC2 Rehabilitation	14	29	–	29	44	44	11	46	46	46	45	–	42	41	–	5
Number of Unused Activities in Core Health Care for Home Care																
HC1 Cure	34	43	–	45	46	46	46	45	46	46	46	–	42	45	–	32
HC2 Rehabilitation	37	43	–	46	45	45	46	46	46	46	46	–	46	45	–	35

* Country did not include at all optional data for medical specialities

Apart from that, the data seem plausible and consistent. They even reflect the different relative importance of the ambulatory sector in Bismarckian and NHS-type systems. It

was surprising to learn, however, how many specialities are used in inpatient rehabilitation. In the whole of Europe only 5 specialities drop out completely here.

Table 16: Medical Specialities Provided by Function Category and Mode of Production

Topic	AT	DE	DK*	ES	FI	FR	GB	GR	IE	IS	LU	NO*	NL	PT	SE*	Total
All Providers of Any Functions of Core Health Care																
Number of actors	76	74	32	41	39	23	12	24	36	26	32	33	68	45	35	596
Percent of Actors Providing Medical Specialities																
All Forms of Treatment	42,1	32,4	–	43,9	69,2	43,5	8,3	54,2	5,6	7,7	21,9	–	42,6	80,0	–	33,7
HC1: Cure	40,8	31,1	–	31,7	23,1	4,3	8,3	54,2	5,6	7,7	18,8	–	41,2	80,0	–	27,7
• Inpatient Care	10,5	12,2	–	14,6	12,8	–	8,3	29,2	5,6	3,8	18,8	–	29,4	64,4	–	15,8
• Day Care	11,8	10,8	–	14,6	10,3	–	8,3	25,0	2,8	–	12,5	–	25,0	17,8	–	10,7
• Outpatient Care	35,5	24,3	–	31,7	20,5	4,3	8,3	37,5	–	7,7	6,3	–	23,5	64,4	–	21,1
• Home Care	3,9	1,4	–	2,4	–	–	–	8,3	–	–	–	–	1,5	2,2	–	1,5
HC2: Rehabilitation	34,2	20,3	–	19,5	53,8	39,1	8,3	–	–	–	3,1	–	10,3	51,1	–	18,6
• Inpatient Care	9,2	9,5	–	9,8	35,9	34,8	8,3	–	–	–	3,1	–	2,9	44,4	–	10,7
• Day Care	10,5	4,1	–	9,8	28,2	26,1	–	–	–	–	3,1	–	2,9	11,1	–	6,7
• Outpatient Care	10,5	4,1	–	9,8	28,2	26,1	–	–	–	–	3,1	–	2,9	11,1	–	6,7
• Home Care	2,6	1,4	–	–	2,6	4,3	–	–	–	–	–	–	–	6,7	–	1,3
Average Number of Medical Specialities Supplied Per Actor																
HC1: Cure	40,0	19,4	–	31,9	9,7	3,8	–	22,0	17,0	59,0	22,7	–	13,2	15,8	–	21,7
• Inpatient Care	25,5	16,4	–	36,7	21,2	5,0	–	22,0	17,0	59,0	26,0	–	13,0	13,8	–	20,7
• Day Care	28,6	16,3	–	23,2	12,6	–	43,0	13,7	12,0	43,0	18,3	–	7,1	6,3	–	13,0
• Outpatient Care	18,1	13,8	–	23,0	15,3	–	41,0	14,7	10,0	–	5,8	–	5,8	2,6	–	11,8
• Home Care	13,9	6,6	–	15,3	8,4	5,0	44,0	11,1	–	37,5	11,5	–	7,4	10,1	–	11,3
HC2: Rehabilitation	7,7	3,0	–	1,0	–	–	–	1,0	–	–	–	–	4,0	1,0	–	3,8
• Inpatient Care	18,8	5,8	–	12,1	3,3	3,7	73,0	–	–	–	3,0	–	2,7	3,0	–	8,5
• Day Care	21,1	5,9	–	6,5	1,8	1,8	38,0	–	–	–	1,0	–	2,0	1,6	–	5,1
• Outpatient Care	14,9	2,3	–	7,3	1,6	2,0	–	–	–	–	1,0	–	1,5	1,4	–	4,9
• Home Care	9,3	3,6	–	7,0	1,6	2,0	35,0	–	–	–	1,0	–	2,4	1,8	–	4,9

* Country did not include at all optional data for medical specialities

The final results with respect to medical specialities are provided in Table 16. One may be tempted to speculate on the meaning of the percentage of actors, for which this specialised information is provided. High values either indicate, that one "typical" care provider dominates the market, or they reflect an underreporting of supporting or boundary providers or – as is the case in Finland – they tell that providers of comprehensive services are predominant.

Without national insider knowledge it is not possible to reason further on the plausibility of the data sets. They appear reasonably consistent and complete and do not contain obvious errors. Referring to the statements in previous chapters one can expect, however, that minor efforts are

necessary to further improve the data quality. This will lead to some changes and adaptations.

Summarising the results so far one is tempted to conclude that the EUCOMP data set is an extremely valuable source, and that this source contains information at least partially new and surprising even for experts.

There is no doubt, that all these data are useful. It is not difficult to anticipate that there is also sufficient demand for the information. Remaining local problems with the completeness or internal consistency of the data can easily be fixed now, as the shortcomings are known and documented. The data quality can be expected to rise substantially in virtually no time. Ironing out the last inconsistencies and errors will require more efforts though. This target may be best achieved by making available the information to an as wide audience as possible and to integrate all incoming suggestions for improving the contents.

2.1.3 Results

2.1.3.1 Individual Information Retrieval

It has been mentioned already in previous sections, that the EUCOMP project provides an extremely rich data, which can be analysed in many different ways. Anticipating all "answerable" individual questions is virtually impossible, and any officially agreed analysis concept for the printed final project report will represent a small sample of the available options only and must leave off valid and justified interests.

Therefore, the EUCOMP Project Board, the staff and the representatives of the participating countries jointly opted for a better solution of making available to the general public the information embedded in the EUCOMP data sets. It was agreed that the best solution – also the one with the highest value added – would be represented by an internet-based application providing flexible and easy-to-use query and retrieval means. Reporting EUCOMP results could be limited in such a case to – among other things – presenting prototype use of this application, simultaneously explaining the over-all concept and the individual features applied and giving support for reading and interpreting the results obtained.

CONCEPT SKELETON OF THE EUCOMP APPLICATION FOR INFORMATION RETRIEVAL

The EUCOMP application has also been presented as a relational database with pre-defined queries, which can be individually fitted and tailored. The logical and technical data model is determined by the data structure, which was described in the previous sections. The categorical dimensions or "axes" of the data set have been characterised as

- functions of health care,
- mode of production,
- activities (including medical specialities) detailing the functions of health care, and
- actors, i.e. providers of health care functions, activities, and medical specialities.
- These axes span the dimensions of a virtual array thus allowing to display, sort, select, condense and relate to each other all included elements in any meaningful way. The purpose of the database analyses can be described as providing the following tools or instruments:
- *Apply the Eagle's perspective:* Provide a complete listing of functions, activities or actors in English;
- *Apply the narrow binocular perspective:* Provide a selective listing of functions, activities or modes of production for individually chosen categories;
- *Provide translation services:* Support a complete or selective listing of functions, activities or actors in English and in one or more additional languages supported by the EUCOMP project;
- *Support a "zooming-in" of individual interests:* Provide means for complex, often two-stage procedures in order to select providers of individually chosen combinations of activities and to display complete or selective information for these providers;
- *Answer the "Whodunit" question:* Let the user specify free combinations of functions, activities and modes of production and retrieve all matching providers, sorted by countries.
- *Offer all services in one shop window:* Provide a menu for selecting the desired retrieval functions and for supporting the user during his/her choice.

This present "toolbox", which will subsequently be described in greater detail, was developed upon the joint requirements of the project staff and the participating national experts. The existing instruments completely fulfil all these requirements. This does not mean, however, that there are no further perspectives from which one may look at the data – it rather

means, that the participants couldn't think of any. It does not mean either, that enlargements and improvements are difficult to make or expensive to programme. The system, like any modern database, is flexible and will easily allow the integration of further views.

HOW TO RETRIEVE INFORMATION IN THE SYSTEM

Access to all means of information retrieval is given via a menu. This menu describes the individual options by the tasks they perform. The individual option is displayed as an "hyperlink", which can be activated by clicking on it. The following synopsis is structured into systematic categories rather, which differ from the sorting in the menu. The menu titles, which are also used as headlines in the respective reports, are included as text *in italics* in the following list. Selected parts of both the dialog input and the query results obtained are reproduced in the Figures 2 through 13 following the next section. They are excerpted in such a way, that input, description and output fit on one page each. A complete listing of each individual prototype analysis described subsequently is included into the annex as a Microsoft Word file. Each file can be identified by its name, which coincides, with the italicised headline.

TOOLS FOR A COMPLETE OR SELECTIVE LISTING OF ITEMS IN THE EUCOMP DATA SET

A first set of tools will best be sub-categorised under the headline of "Complete or selective listing of characteristic EUCOMP items". It consists of the following six retrieval functions:

- *Description of Functions:* Lists names and definitions of all functions in English (no dialog options available). Figure 2 presents part of query result.
- *Functions in different Languages:* Describes all functions in English and the chosen language (dialog option: Choose a language from the list). Figure 3 gives part of the dialog query and the results with Norwegian as example.
- *Activities in different Languages:* Describes all functions, activities and medical specialities in English and the chosen language (dialog option: Choose a language from the list). Figure 3 gives part of the dialog query and the results with Swedish as example.
- *Activities of different Functions:* Names and describes in English all activities, which belong to a selected function (dialog option: Choose a function from the list). Figure 5 gives the dialog query and the results with "HC4 Ancillary" as example function.

- *Actors in different Countries:* Describes all actors in the Health Care System of a selected country (dialog option: Choose a country from the list). Figure 6 gives part of the dialog query and the results with Iceland as example.
- *Actors Mode:* Describes for all providers (actors) in the Health Care System of a selected country, which modes of production are serviced (Y) and which are not (N) (dialog option: Choose a country from the list). Figure 7 gives part of the dialog query and the results with Spain as example.

TOOLS FOR TRANSLATING COMPLETE OR SELECTIVE EUCOMP VARIABLE ITEMS

A second set of tools has as a common element the term "translations" in their names. It consists of the following two retrieval functions:

- *Translation of Functions:* Provides names and descriptions of selected functions in selected languages together with their English counterparts (dialog options: Choose one or more functions from the list, choose one or more languages from the list, discontinuous selections can be made in both cases). Figure 8 gives part of the dialog query and the results with German and Portuguese as selected languages and HC1 and HC2 as selected functions.
- *Translation of Activities:* Provides names and descriptions of selected activities in selected languages together with the English activity name (dialog options: Choose one or more activities from the list, choose one or more languages from the list, discontinuous selections can be made in both cases). Figure 9 gives part of the dialog query and the results with Finnish, German and Norwegian as selected languages and four selected activities.

TOOLS FOR SELECTING ACTORS MATCHING QUERY CONDITIONS

The third and final set of tools may best be described has retrieval functions for the selection of actors matching complex pattern, which can be constructed from all existing EUCOMP elements, i.e. from activities, functions and modes of production. This tool set consists of the following three retrieval functions:

- *Actor Activity:* Provides in English and in local language the names of all actors in a selected country (dialog options: Choose one country from the list). In a first step, the result is displayed as a table of hyperlinks. In a second step, each activated hyperlink gives access to a list of all functions and activities performed by this actor, broken

down by mode of production. Figure 10 gives part of the dialog query and the results with The Netherlands as selected country (step 1) and *"Algemeen psychiatrisch ziekenhuis"* as selected actor (step 2).

- *Mode of Production:* Provides – for selected countries – in English and in local language the names of all actors, which match four modes of production either activated or not activated (dialog options: Choose one or more countries from the list, define pattern for modes of production). Figure 11 gives part of the dialog query and the results with Denmark, Finland, and Germany as selected countries and both inpatients and day cases activated and both outpatients and home care deactivated, respectively.
- *Actors of different Activities:* Provides free access to any valid combination of countries, functions, activities and modes of production. Consistency checks for activities by functions are not performed; contradictory combinations are not detected automatically and have to be avoided, as they will just yield no results. Dialog options: Choose one or more countries from the list, choose which modes of production are to be activated and which are not, choose one or more functions and one or more activities from the two lists respectively. Figure 12 gives part of the dialog query and the results with France, Germany, Iceland and Luxembourg as selected countries, with day care and inpatients checked, and with emergency care/first aid as activity in function HC1.

DISPLAY RETRIEVAL DIALOG AND QUERY RESULTS FOR ALL PROTOTYPE RETRIEVALS

Figure 2: Description of Functions

Choosing Description of Functions from the main menu enumerates the functions names and descriptions in English. The query result is displayed below:

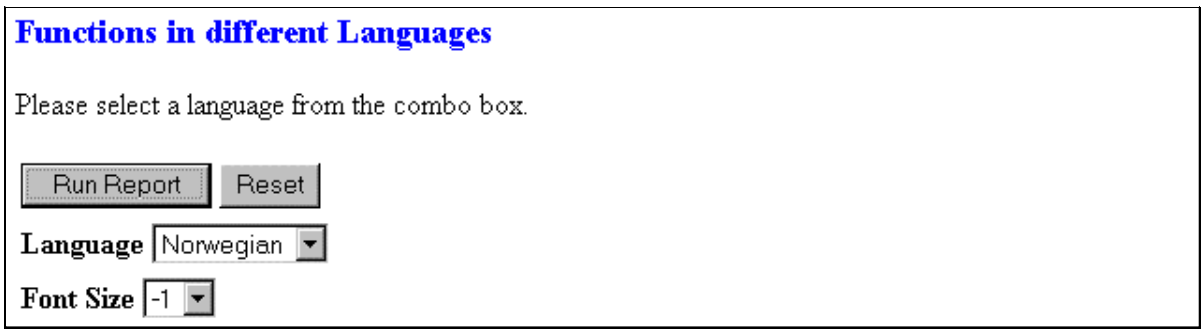
Description of Functions

Code	Title	Description
HC 1	Cure	Services of curative care comprise medical and paramedical services delivered during an episode of treatment in which emphasis is set on combating diseases. Examples: managing labour (obstetric), curing illness or providing definitive treatment of injury, performing surgery, relieving symptoms of illness or injury (excluding palliative care), reducing severity of an illness or injury, protecting against exacerbation and/or complication of an illness and/or injury which could threaten life or normal function and performing diagnostic or therapeutic procedures. (OECD, adapted by CvM)
HC 2	Rehabilitation	Services of rehabilitative care comprise medical and paramedical services delivered to patients, where the emphasis lies on improving the functional levels of the person served and where the functional limitations are either due to a recent event of illness or injury or of a recurrent nature (regression or progression).
HC 3	Care	Services of long term nursing care comprise medical nursing and paramedical care, given to patients who need assistance on a continuing basis due to chronic impairments and a reduced degree of independence and activities of daily living.
HC 4	Ancillary services	Ancillary services comprise a variety of services, mainly performed by paramedical or medical technical personnel with or without the direct supervision of a medical doctor, such as laboratory, diagnosis imaging and patient transport.
HC 5	Medical goods	Dispensing medical goods to out-patients comprises medical goods dispensed to out-patients and the services connected with the delivery of the products. Medical goods comprise pharmaceuticals (prescribed or OTC), wound dressings (covering and protecting wounds), as well as therapeutic appliances. Therapeutic appliances are devices or instruments performing or facilitating the performance of a particular physical function in a desired way often for disguising the absence or bad operation of that function. (OECD, Dorland, Statistics Netherlands)
HC 6	Prevention	Prevention and public health services comprise services designed to preventing and early detection of diseases and developmental disorders and the enhancement of the health status of (groups of) persons as well as health promoting activities concerning the whole population. Only those activities that can be separately defined (programmes) should be mentioned and not the activities which are performed as an integral part of the regular treatment. (CvM)
.....		
HCR 6	Social benefits	Administration and provision of health related benefits. This item comprises the administration ... benefits to homeless people.

Row(s) 1 - 13

Ordering	Code Ascending
User	EUCOMP11_PUBLIC

Figure 3: Functions in different languages



Choosing Functions in different Languages from the main menu and specifying "Norwegian" as language in the above retrieval dialog enumerates the functions names and descriptions in English and Norwegian. A major part of the query result is displayed below:

Actors in the different Countries

Code	Title	Description	Local Title	Local Description
HC.1	Cure	Services of curative care comprise medical and paramedical services delivered during an episode of treatment in which emphasis is set on combating diseases. Examples: managing labour (obstetric), curing illness or providing definitive treatment of injury, performing surgery, relieving symptoms of illness or injury (excluding palliative care), reducing severity of an illness or injury, protecting against exacerbation and/ or complication of an illness and/or injury which could threaten life or normal function and performing diagnostic or therapeutic procedures. (OECD, adapted by CvM)	Leging	Tjenester av kurativ art omfatter medisinske og paramedisinske tjenester gitt i behandllingsøyemed der hovedfokus er lagt på bekjempelse av sykdommer. Eksempler er fødselshjelp (obstetrikk), leging av sykdommer eller faktisk behandling av skader, operasjoner, smertelindring i forbindelse med sykdom eller skade (smertebehandling ikke medregnet), skadereduksjon i forbindelse med sykdom eller skade, forhindre forverring eller komplikasjoner på grunn av sykdom eller skade som kan true normal livsfunksjon, diagnostisering eller terapeutiske undersøkelser (OECD, tilpasset av CvM)

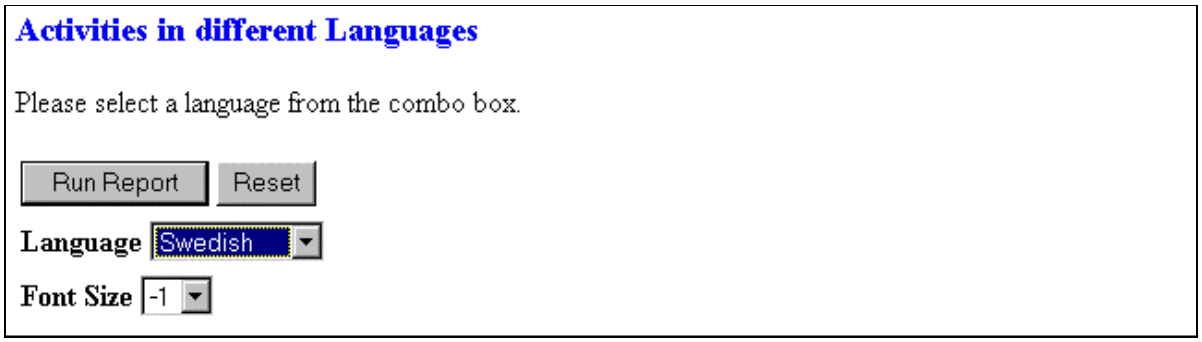
.....

HCR 6	Social benefits	Administration and provision of health related benefits. This item comprises the administration and provision of health-related cash benefits by social protection schemes ... to homeless people.	Sosiale kontantytelser	Administrering og tilveiebringelse av helserelaterte kontantytelser. Emnet omfatter administrering og tilveiebringelse av helserelaterte kontantytelser ... medisinsk hjelp til hjemløse.

Row(s) 1 - 13

Language	Norwegian
Ordering	Code Ascending
User	EUCOMP11_PUBLIC

Figure 4: Activities in different languages



Choosing Activities in different Languages from the main menu and specifying "Swedish" as language in the above retrieval dialog enumerates activity names and descriptions in English and Swedish together with the respective function acronym. A major part of the query result is displayed below:

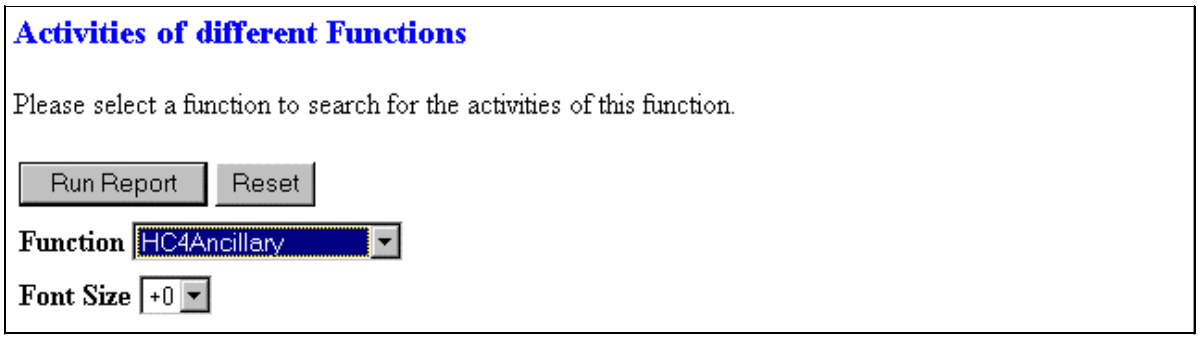
Actors in the different Countries

Func-tion	Activity Title	Description	Local Title	Local Description
HC1 Cure	alternative medicine	A group of healing techniques and approaches not scientifical ly tested and/or not considered as part of regular medical prac tice. (PvS/Nenonen)	Alternativ medicin	Tekniker och angreppsmetoder som inte vetenskapligt prövats och/eller inte betraktas som tillhörande vanlig/reglement senlig medicinsk praxis.
HC1 Cure	anthroposofic medical treatment	Medical treatment, based on principles as laid down by Ru dolf Steiner and his successors. (PvS)	Antroposofisk medicinsk behandling	Medicinsk behandling baserad på principer fastställda av Ru Steiner och hans efterföljare.
HC1 Cure	dental hygiene	dental hygiene implies the exa of the status of the teeth and the surrounding tissues, the cleans ing of teeth and the application of ... decay and tissue diseases	Tandhygien	Tandhygien omfattar under sökning av status hos tänder och omgivande vävnad samt tilläm-pning av externa hjälp medel mot tandförfall och vävnads sjukdomar.
HC1 Cure	dietetic advice	advice on diets and the compo-sition of diets ... purposes.	Dietrådgivning	Rådgivning rörande kosthåll och sammansättningen av ... syften.
.....				
HCR6 Cash Bene-fits	provision of cash benefits	The provision of health-related cash benefits by social protection schemes in the form of transfers provided to individual persons and households.	Tillhandahållande av kontanta bidrag	Tillhandahållande i form av transfereringar till enskilda individer och hushåll av hälsorelaterade kontanta bidrag i enlighet med socialförsäkringen.

Row(s) 1 - 165

Language	Swedish
Ordering	Function Ascending, Activity Title Ascending
User	EUCOMP11_PUBLIC

Figure 5: Activities of different Functions



Choosing Activities of different Functions from the main menu and specifying "HC4 Ancillary" as function to be detailed in the above retrieval dialog enumerates activity names and descriptions in English for the function selected. The query result is displayed below:

Activities of different Functions

Title	Description
function tests [imaging included]	physical, motoric etc. tests, imaging tests
laboratory tests	chemical, bacteriological etc. tests
patient transport	Transport of patients by ambulance services or other means of transport. (CBS)

Row(s) 1 - 3

Ordering	Function Ascending, Activity Title Ascending
User	EUCOMP11_PUBLIC

Figure 6: Actors in different Countries

Choosing Actors in different Countries from the main menu and specifying "Iceland" as country in the above retrieval dialog chooses "Icelandic" as second language besides English and enumerates the actors in the Icelandic Health Care System. A major part of the query result is displayed below:

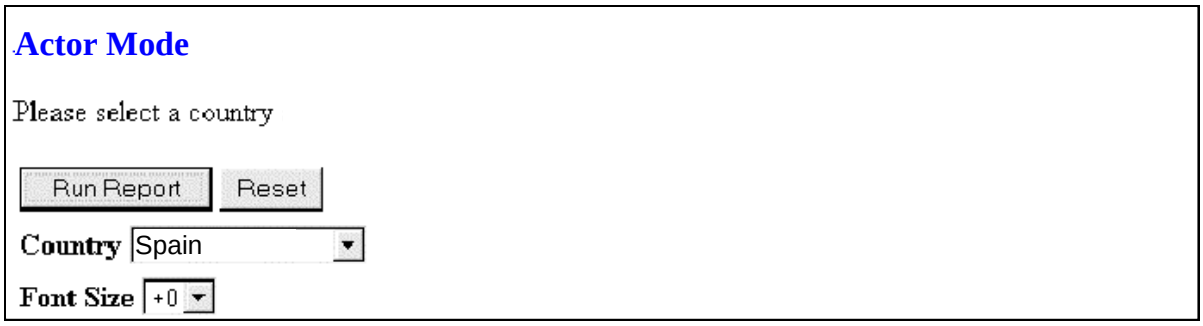
Actors in the different Countries

Local Actor	English Actor
Almennt sjúkrahús	General hospital
Apótek	Pharmacy
Deildasjúkrahús	District hospital
Dvalarheimli aldraðra	Residential homes for the elderly
Endurhæfingarstofnun	Rehabilitation centre (institution)
Félagsráðgjafi	Social worker
Fótaaðgerðarfræðingur	Chiropodist
Greiningar-og ráðgjafarstöðvar	Diagnostic and evaluation centres
Heilbrigðis- og tryggingamálaráðuneytið	The Ministry of health and Social Securi
Heilsugæslustöð	Health centre
Heimilislæknir utan heilsug.stöðva	General practitioner in private practice
Hjúkrunarfræðingur	Nurse (registered, qualified)
Hjúkrunarheimili	Nursing home
Hnykkir	Chiropractor
Háskóli (deildir á heilbrigðissviði)	University (med. pharm. nurs. etc. fac)
Iðjuþjálfi	Occupational therapist
.....	
Áfengismeðf.stofn. vinnu- og dvalarh.	Alcohol treatment inst.- longterm
Áfengismeðferðarstofnun (virk)	Alcohol-treatment institution (active)

Row(s) 1 - 35

Language	Iceland
Ordering	Local Actor Ascending
User	EUCOMP11_PUBLIC

Figure 7: Actor Mode



Choosing Actor Mode from the main menu and specifying "Spain" as country in the above retrieval dialog displays for all Spanish providers (actors), which modes of production are serviced (Y) and which are not (N). A major part of the query result is displayed below:

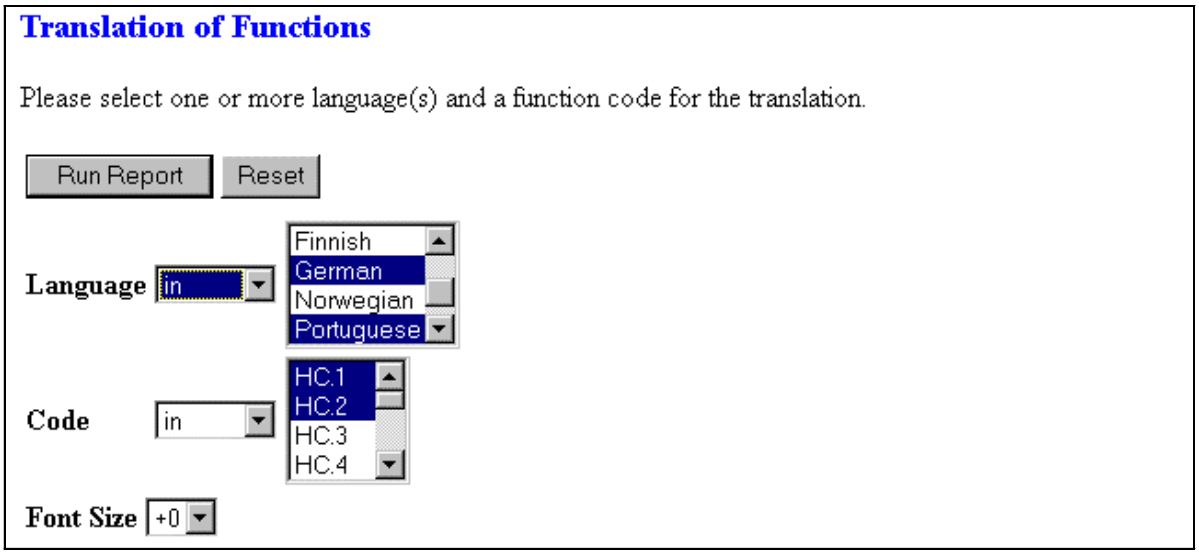
Actor Mode

Actor	English Actor	In-pat.	Day Care	Out-pat.	Home Care
Administración Central	Central State	N	N	N	N
Administración Local	Local Government	N	N	N	N
Administración Regional	Regional Government	N	N	Y	Y
Agencia EvaluaciónTecnologias Sanitarias	Health Technologies Assessment Agency.	N	N	N	N
Ambulatoriosconsultorios.AtencPrimaria	Surgeries, Ambulatory centres	N	N	Y	Y
Aportación Privada	Private household's out-of-pocket payment	N	N	N	N
Asoci profesion medicina familia y comu	Prof. Society family-community health	N	N	Y	Y
Ayuda a domicilio para ancianos	Home help[elderly, disabled, others]	N	N	N	Y
Centr.ambul.asistencia drogodependientes	Ambulatory centres for drug addicts	N	N	Y	N
Centros de PlanificaciónFamiliar.AtenPr	Family planning centres.	N	N	Y	N
Centros de Salud Mental.Aten.Primaria	Mental Health Centres. Primary Care.	N	N	Y	N
Centros de Salud.Atencion primaria.	Health centres. Primary health care	N	N	Y	Y
.....					
Transporte sanitario publico	Ambulance services [Public sector]	Y	Y	Y	Y
Unidadesdedesintoxicacionhospitalaria	Hospital units for drug addicts	Y	Y	Y	N

Row(s) 1 - 59

Language	Spain
Ordering	Actor Ascending
User	EUCOMP11_PUBLIC

Figure 8: Translation of Functions



Choosing Translation of Functions from the main menu and specifying "German" and "Portuguese" as selected languages as well as "HC1" and HC2" as functions to include in the above retrieval dialog displays function names and descriptions in English, German and Portuguese together with the respective function acronym. A major part of the query result is displayed below:

Translation of Functions

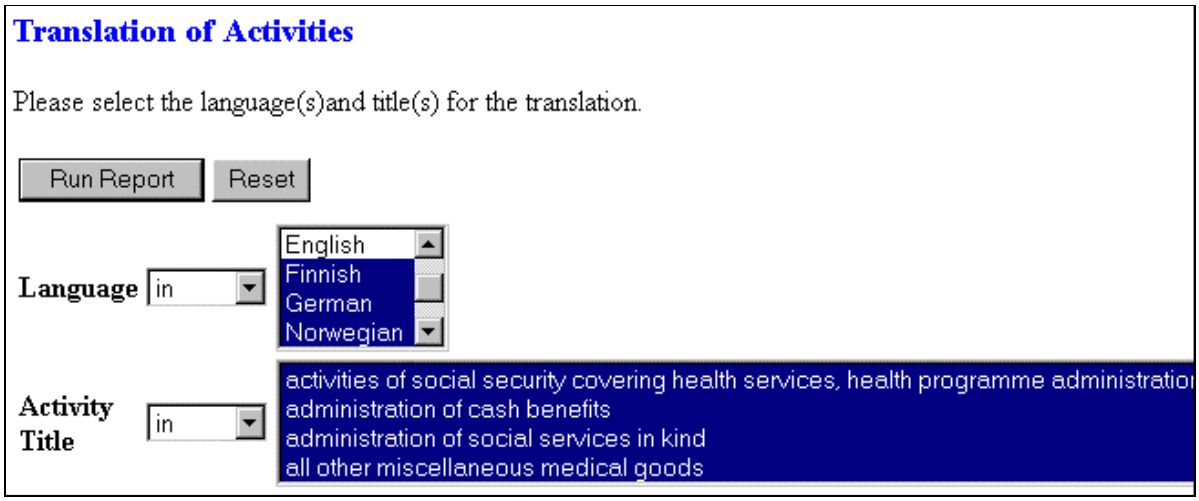
Function Code	Title	Local Title	Local Description	Language
HC.1	Cure	Cure	Services of curative care comprise medical and paramedical services delivered during an episode of treatment in which emphasis is set on combating diseases. ...)	English
HC.1	Cure	Behandlung	Medizinische Behandlung umfaßt Leistungen von Ärzten und Heilhilfspersonen, die während einer Behandlungsepisode erbracht werden, wobei der Schwerpunkt auf der Bekämpfung von Krankheiten liegt. Ausnahmen: Wochenbett (Geburtshilfe), Heilen von Krankheiten oder endgültige Behandlung von Verletzungen, chirurgische Eingriffe, Befreiung von Krankheits- oder Verletzungssymptomen ...	German
HC.1	Cure	Cura	Os serviços de cuidados curativos incluem os serviços médicos e paramédicos prestados durante um episódio de tratamento no qual é dada ênfase ao combate à doença. Exemplos: acompanhamento de um parto (obstetrícia); cura da doença ou providência do tratamento definitivo de um ferimento, fazendo-se cirurgia, aliviando os sintomas da doença ou ferimento ...	Portuguese

.....

Row(s) 1 - 39

Language	In English, German, Portuguese
Code	in HC1,HC2,HC3,HC4,HC5,HC6,HC7,HCR1,HCR2,HCR3,HCR4,HCR5...
Ordering	Function Code Ascending, Language Ascending
User	EUCOMP11_PUBLIC

Figure 9: Translation of Activities



Choosing Translation of Activities from the main menu, specifying both languages and selected activites in the above retrieval dialog displays activity names and descriptions in Finnsih, German and Norwegian. A major part of the query result is displayed below:

Translation of Activities

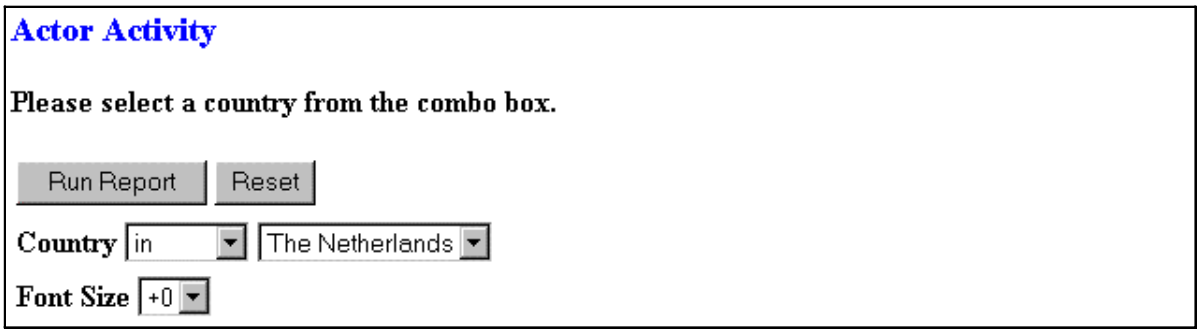
Activity Title	Local Title	Local Description	Language
activities of social security covering health services ...	Sairauteen liittyvä sosiaaliturva	Tähän kuuluu sairauteen liittyvien sosiaalitur vajärjestelmien hallinta, toiminta ja tukeminen.	Finnish
activities of social security covering health services ...	Gesundheitsverwaltung in der Sozialversicherung	umfaßt Verwaltung, Betrieb und Unterstützung von Gesundheitsleistungen, die von Sozialversicherungssystemen bereitgestellt werden	German
administration of cash benefits	Rahamuotoisiin sosiaalietuuksiin liittyvä hallinto	Rahamuotoisiin terveydenhuoltoon liittyvien sosiaalietuuksien tuottamiseen sosiaaliturvajärjestelmän piirissä liittyvä hallinto ja sääntely.	Finnish
administration of cash benefits	Verwaltung von Geldleistungen	Gesetzgebung und Verwaltung mit Bezug auf gesun d Geldleistungen durch soziale Sich erungssysteme	German
administration of cash benefits	Administrasjon av kontantytelser	Administrasjon og regulering av tilveiebringelse av helserelaterte kontantytelser gjenno m sosialhjelp	Norwegian

.....

Row(s) 1 - 11

Language	in Finnish, German, Norwegian
Activity title	In activities of social security covering health...,administration of cash benefits, administration of social services in kind, all other miscellaneous medical goods
Ordering	Activity Title Ascending, Language Ascending
User	EUCOMP11_PUBLIC

Figure 10: Actor Activities



Choosing Actor Activities from the main menu and specifying "The Netherlands" as country in the above retrieval dialog displays all providers (actors) of health care in the Netherlands. Part of the query result is displayed below:

Actor Activities

Local Actor	English Actor
Abortuskliniek	Abortion clinic
Academisch ziekenhuis	University hospital
Adviesorganen	Advisory bodies
Algemeen psychiatrisch ziekenhuis	General psychiatric hospital
Algemeen ziekenhuis	General hospital

.....

Selecting Algemeen psychiatrisch ziekenhuis as actor by activating the hyperlink will display all functions and activites performed by this actor, broken down by mode of production. Part of the result is displayed below:

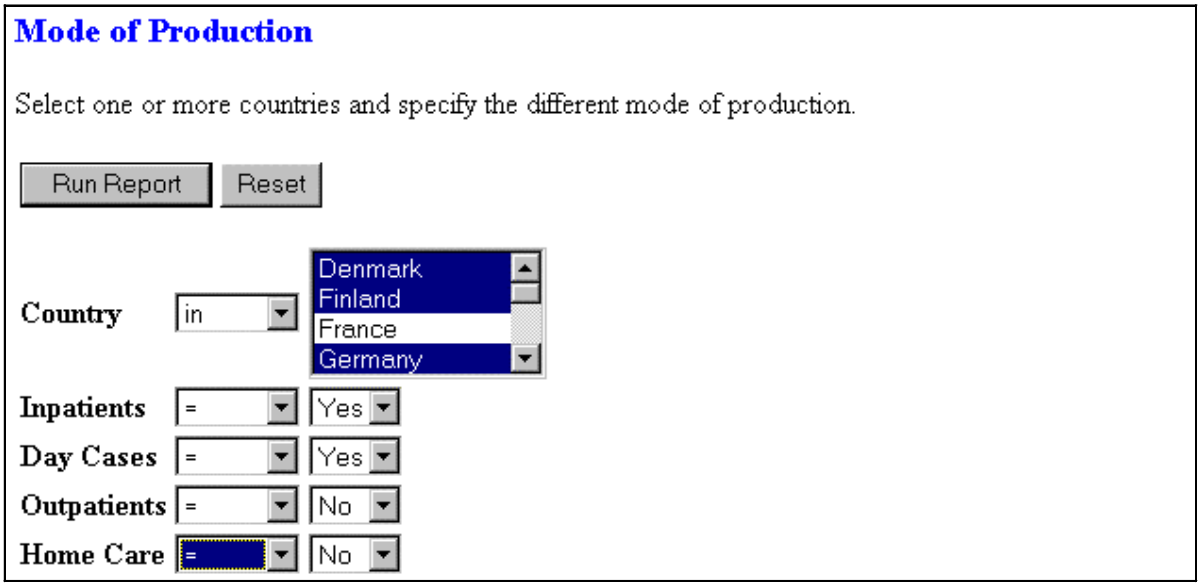
.....

Country	Actor	English Actor	Function	Activity	Mode
The Netherlands	Algemeen psychiatrisch ziekenhuis	General psychiatric hospital	HC1Cure	emergency care / first aid	Inpatient
The Netherlands	Algemeen psychiatrisch ziekenhuis	General psychiatric hospital	HC1Cure	general medical treatment	Inpatient
The Netherlands	Algemeen psychiatrisch ziekenhuis	General psychiatric hospital	HC1Cure	medical welfare	Inpatient
The Netherlands	Algemeen psychiatrisch ziekenhuis	General psychiatric hospital	HC1Cure	pastoral care for the ill	Inpatient

Row(s) 1 - 25

Lactor	Algemeen psychiatrisch ziekenhuis
Ordering	Country Ascending, Actor Ascending, English Actor Ascending, Function Ascending, Activity Ascending, Mode Ascending
User	EUCOMP11_PUBLIC

Figure 11: Mode of Production



Choosing Mode of Production from the main menu and specifying countries and combinations of modes of productions in the above retrieval dialog displays all actors providing activities in matching modes of production. Part of the query result is displayed below:

Mode of Production

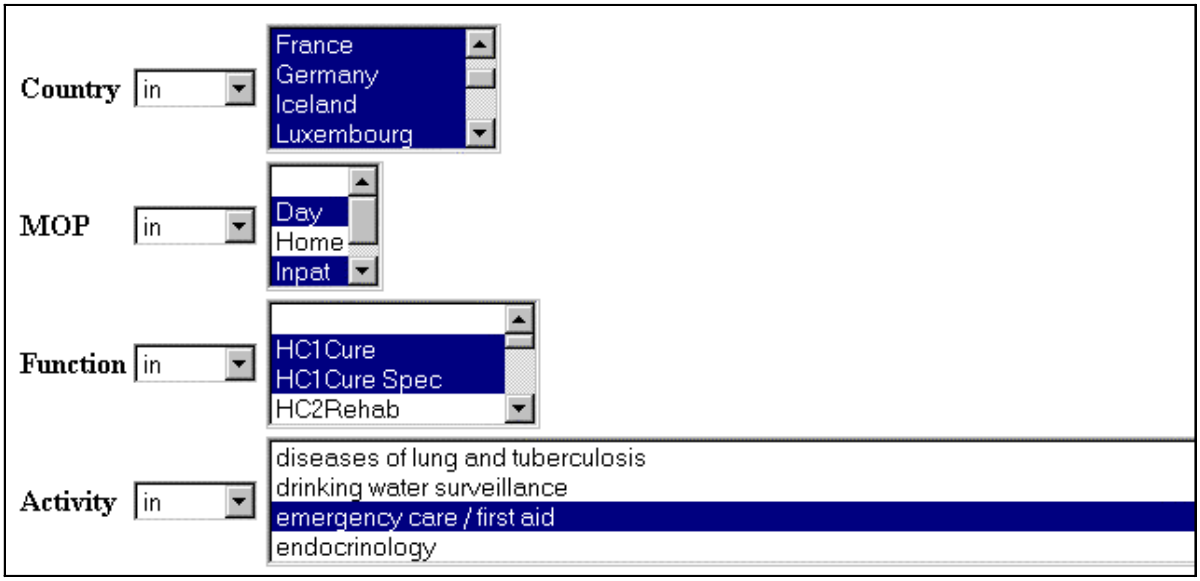
Country	English Actor	Local Actor	Inpatient	Day cases	Outpatient	Home care
Denmark	Rehabilitation center	Genoptræningscenter	Y	Y	N	N
Denmark	Rehabilitation clinic	Revalideringsklinik	Y	Y	N	N
Finland	Old peoples homes	Vanhusten laitoshoito [va nhainkodit]	Y	Y	N	N
Finland	Private nursing home	Yksityinen hoivalaitos	Y	Y	N	N
Germany	Hospitals for 'family doctor' care	Belegkrankenhäuser	Y	Y	N	N
Germany	Institutions for short-term nur sing	Kurzzeitpflegeeinrichtungen	Y	Y	N	N
Germany	Nursing homes	Pflegeheime	Y	Y	N	N

Row(s) 1 - 11

Language	in Denmark, Finland, Germany
Inpatients	= Y
Day Cases	= Y
Outpatients	= N
Home Care	= N
Ordering	Country Ascending, Local Actor Ascending
User	EUCOMP11_PUBLIC

Selecting any actor by activating the hyperlink will display all functions and activities performed by this actor by mode of production as shown in Figure #10 “Actor A ctivities”.

Figure 12: Actors of different Activities



Choosing Actors of different Activities from the main menu and specifying any combination of countries, modes of productions, functions and activities in the partially shown retrieval dialog displays all matching actors. Part of the query result is displayed b elow:

Actors of different Activities

Country	Local Actor	English Actor	Activity	Mode
Denmark	Psykiatrisk hospital	Psychiatric hospitals	emergency care/first aid	Inpat
Denmark	Somatisk hospital	Somatic hospital	emergency care/first aid	Inpat
Finland	Aluesairaala	Regional hospital	emergency care/first aid	Inpat
Finland	Aluesairaala	Regional hospital	emergency care/first aid	Day
Finland	Kehitysvammahuolto	Service for mentally handic.	emergency care/first aid	Day
Finland	Keskussairaala	Central hospital	emergency care/first aid	Inpat
Finland	Keskussairaala	Central hospital	emergency care/first aid	Day
Finland	Puolustusvoimien ja rajavartiola itoks..	Military and frontier hospital ...	emergency care/first aid	Day
Finland	Puolustusvoimien ja rajavartiola itoks..	Military and frontier hospital ...	emergency care/first aid	Inpat

.....

Row(s) 1 - 49

Language	in Denmark, Finland, France, Germany, Iceland, Luxembourg
MoP	in Inpatient, Day cases
Function	in HC1Cure, HC1Cure Spec
Activity	in emergency care/first aid
Ordering	Country Ascending, Local Actor Ascending
User	EUCOMP11_PUBLIC

2.1.3.2 EUCOMP Quick Comparison Pattern: A Means For Easing and Improving International Comparison of Health Care Data?

EUCOMP as a research project has been started, among others, to develop means for solving the well-known and well-documented problems of making health care data comparable across countries. With the results of the project it should become less likely that users are confronted with statistical artefacts rather than empirical facts, whenever they analyse e.g. hospital statistics data tabular form.

EUCOMP metadata promised to *contribute to* solving the problem, it didn't promise to actually solve it. Metadata can tell stories on the facts behind the numbers, but it is cumbersome to listen to endless stories, which don't convey a message. The small tool described below may be used for deciding on whether or not "there is a story" at all. The tool allows a quick comparison of countries with respect to similarities and dissimilarities among actors, functions and activities. Metadata is transformed into "black and white space" within two-dimensional tables. Cells of equal colour indicate identical or comparable statuses and thus "no comparison problem"; cells of different colours tell the opposite.

The following prototype applications of the small tool were deliberately chosen to deal with comparability problems mentioned over and over again. One should not expect breath-taking news, therefore, but one may be pleased to learn that the EUCOMP project provides some new answers to old riddles.

COMPARISON OF HOSPITALS WITH RESPECT TO INPATIENT AND OUTPATIENT CARE FEATURES

The first two figures deal with commonalities among and differences between hospitals as far as providing inpatient and outpatient care is concerned. All activities defined under HC1 through HC6 are used, so that a comprehensive picture can be presented. Table 17 contains the descriptions for the acronyms used in these figures to identify the single activities.

Table 17: Acronyms used to define EUCOMP Activities of Core Health Care Functions

Function	Acronym[1]	Description
HC1	Genmedc&	General medical treatment as part of medical care
	Gendenc&	General dentistry as part of medical care
	Firaidc&	Emergency care/first aid as part of medical care
	Spemedc&	Specialised medical treatment as part of medical care
	Midwifc&	Midwifery as part of medical care
	Speechc&	Speech therapy as part of medical care
	Dieticc&	Dietetic advice as part of medical care
	Denthyc&	Dental hygiene as part of medical care
	Podothc&	Podotherapy as part of medical care
	Physioc&	Physiotherapy as part of medical care
	Ergothc&	Ergonomic therapy as part of medical care
	Movethc&	Movement therapy as part of medical care
	Psychoc&	Psychotherapy as part of medical care
	Psdiagc&	Psychosocial diagnostics/treatment as part of medical care
	Pddiagc&	Pedagogic diagnostics/training as part of medical care
	Medwelc&	Medical welfare as part of medical care
	Pastorc&	Pastoral care for the ill as part of medical care
	Hydrotc&	Hydro- and balneotherapy as part of medical care
	Altmedc&	Alternative medicine as part of medical care
	Anthroc&	Anthroposofic medical treatment as part of medical care
HC2	Genmedr&	General medical treatment as part of rehabilitation
	Gendenr&	General dentistry as part of rehabilitation
	Firaidr&	Emergency care/first aid as part of rehabilitation
	Spemedr&	Specialised medical treatment as part of rehabilitation
	Midwifr&	Midwifery as part of rehabilitation
	Speechr&	Speech therapy as part of rehabilitation
	Dieticr&	Dietetic advice as part of rehabilitation
	Denthyr&	Dental hygiene as part of rehabilitation
	Podothr&	Podotherapy as part of rehabilitation
	Physior&	Physiotherapy as part of rehabilitation
	Ergothr&	Ergonomic therapy as part of rehabilitation
	Movethr&	Movement therapy as part of rehabilitation
	Psychor&	Psychotherapy as part of rehabilitation
	Psdiagr&	Psychosocial diagnostics/treatment as part of rehabilitation
	Pddiagr&	Pedagogic diagnostics/training as part of rehabilitation
	Medwelr&	Medical welfare as part of rehabilitation
	Pastorr&	Pastoral care for the ill as part of rehabilitation
	Hydrotr&	Hydro- and balneotherapy as part of rehabilitation
	Altmedr&	Alternative medicine as part of rehabilitation
	Anthror&	Anthroposofic medical treatment as part of rehabilitation
HC3	Qualnur&	Qualified nursing care
	Homecar&	Home care/Home help
	Mathome&	Maternity home care

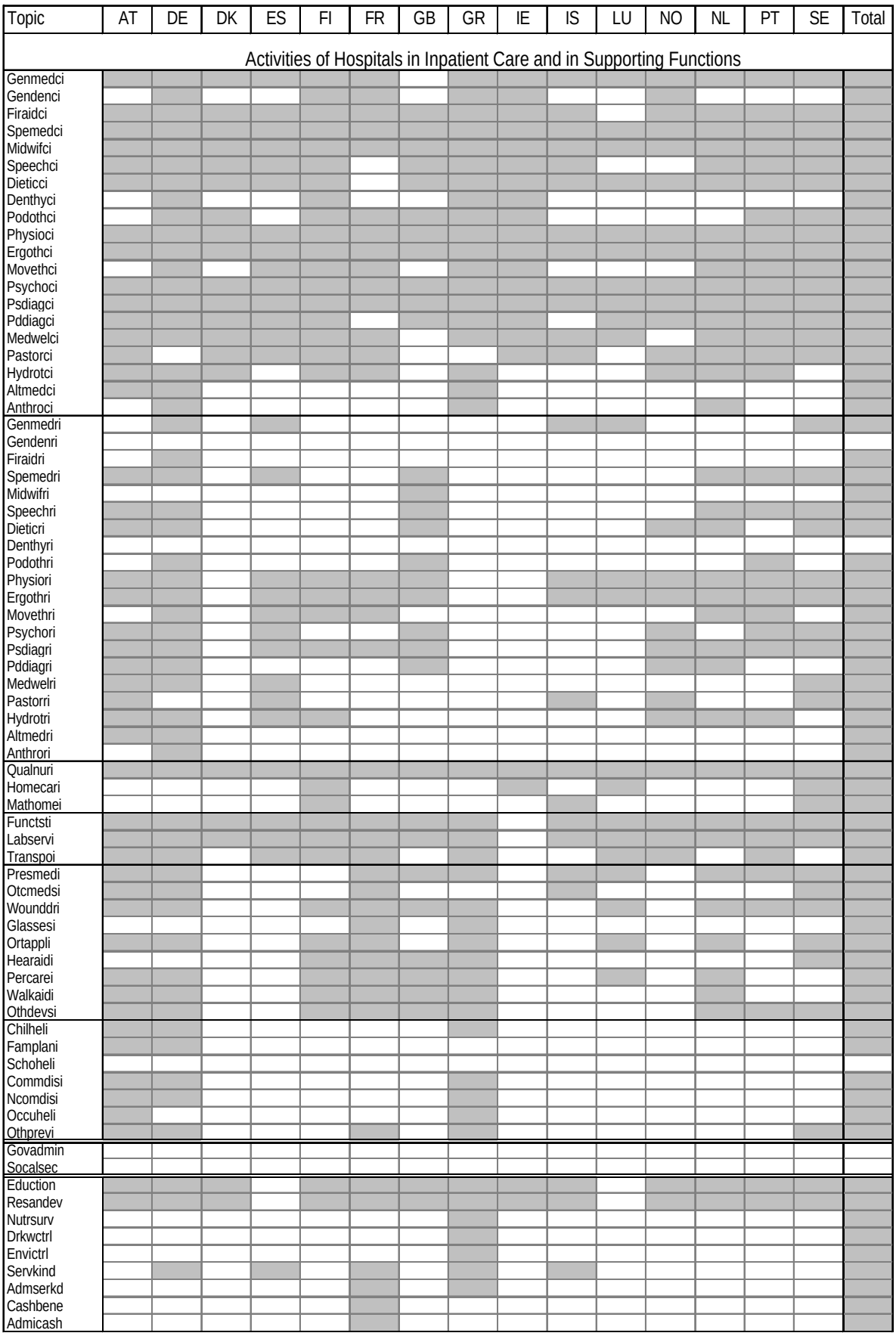
Table 17 (continued): Acronyms used to define EUCOMP Activities of Core Health Care Functions

Function	Acronym[1]	Description
HC4	Functst& Labserv& Transpo&	Function tests (imaging included) Laboratory tests Patient transport
HC5	Presmed& Otcmeds& Wounddr& Glasses& Ortappl& Hearaid& Percare& Walka&d& Othdevs&	Prescribed medicines Over the counter medicines (OTC medicines) Wound dressings etc Glasses and other vision products Orthopaedic appliances and other prosthetics Hearing aids Personal care materials (e.g. incontinence) Walking aids, including wheel chairs Other miscellaneous medical devices and goods
HC6	Chilhel& Famplan& Schohel& Commdis& Ncomdis& Occuhel& Othprev&	Maternal and child health Family planning and counselling School health services Prevention of communicable diseases Prevention of non-communicable diseases Occupational health care Other miscellaneous public health services
HCFin	Govadmin Socalsec	Government administration of health programmes Activities of social security covering health services
HCR1	Eduction	Education and training of health personnel
HCR2	Resandev	Research and development in health
HCR3	Nutrsurv	Nutritional surveillance
HCR4	Drkwctrl Envictrl	Drinking water surveillance Environmental hygiene and surveillance
HCR5	Servkind Admserkd	Provision of social services in kind Administration of social services in kind
HCR6	Cashbene Admicash	Provision of cash benefits Administration of cash benefits

Please replace & by I for In-patient, D for Day cases, O for Out patient and H for Home care

Figure 13 provides an overview of characteristic activities provided by hospitals. This overview encompasses activities subsumed under core health care (HC1 through 6) and mode of production "inpatient care", but it also refers to the supporting functions (HCFIN and HCR1 through HCR6). To limit the size of output, differences between the various forms of hospitals within a country have been disregarded. Figure 13 combines the activities of all providers classified as hospitals using the logical "or". This means that an activity is present, if performed by at least one type of hospital in this country, and absent, if missing in any type of hospital

Figure 13: Comparison Pattern for Hospitals' Activity Spectrum Applied to Inpatient Care



It has to be mentioned again here, that the quality of the results in Figure 13 may be hampered by misclassifications of actors. These are the sole responsibility of the EUCOMP staff, because not national expert did participate in these classifications.

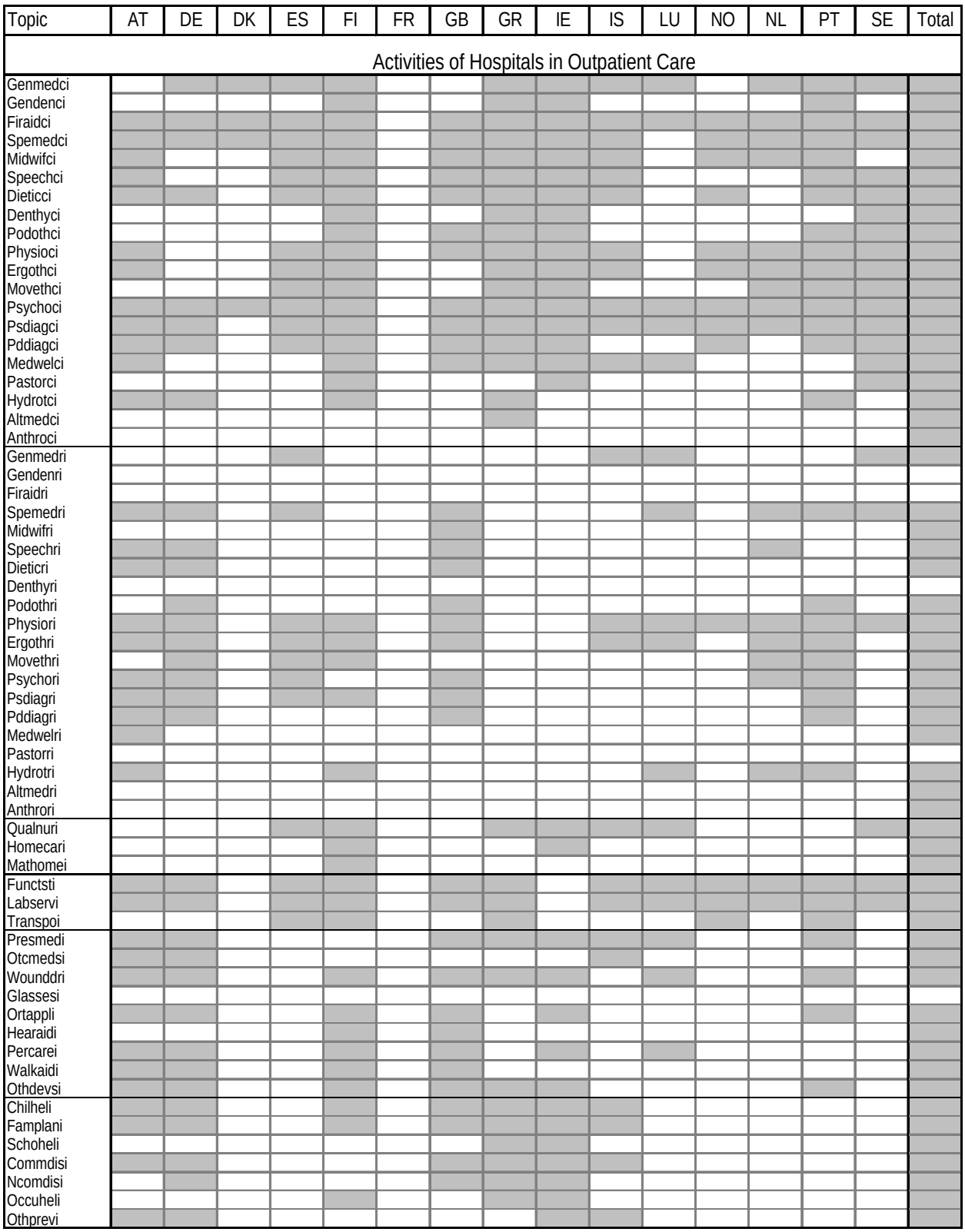
The column "total" has also been compiled using "or"-combinations of participating countries, like it was done for hospitals in a country. The result reads as "Activity exists in EUCOMP-Europe".

Cure is a widely covered area. White spots are limited to dental care and some sorts of alternative treatment and specialised forms of physiotherapy. In rehabilitation, on the other hand, the role of hospitals seems to differ substantially across Europe: In some countries they are active, in others they are not. If confirmed, this information constitutes substantial demand for "adding and subtracting activities". It is not exactly meaningful to compare expenditures on hospital care or personnel employed by hospitals, if these hospitals provide an output which is as heterogeneous, as the data in Figure 13 make us believe is the case for rehabilitation. The same holds true for the absence of "education of personnel" and "research and development" because of the amount of costs involved.

Differences with respect to provision of medical goods and to prevention, on the other hand, are disregarded here, as one may fairly expect, that these differences are solely caused by a different understanding of the concept used (see above).

Hospital outpatient care is generally believed to be responsible for an even greater amount of difference in European hospital statistics data. Some participating countries have a long tradition for a well-defined ambulatory sector with self-employed physicians and paramedics, nurses, and midwifes. Here hospitals and hospital doctors are allowed to participate in the provision of ambulatory care in cases of officially recorded under-supply. In other countries, hospital ambulances are a constituent element of outpatient care supplementing health centres and general practitioner's practices. Again, hospital-staffing ratios (personnel per bed) can hardly be compared in any meaningful way, if hospital personnel have to dedicate a substantial amount of its working to providing ambulatory care in one country and if it can concentrate on bedside treatment only in another.

Figure 14: Comparison Pattern for Hospitals' Activity Spectrum Applied to Outpatient Care



In Figure 14 a first attempt is made to quantify the different roles of hospitals in outpatient care. The results outline prominent differences to concentrate in cure (HC 1) on

paramedical care and midwifery, in rehabilitation (HC 2) on paramedical care, and in care (HC 3) on nursing care. If confirmed, these data indicate rehabilitation treatment to be offered by hospitals in some countries on a walk-in basis. The data on provision of medical goods (HC 5) should be treated with care, because different definitions seem to have been applied (see above). If confirmed, the results indicate, that hospital ambulances hand out such goods to outpatients in some countries and don't in others. With respect to prevention, the above advice for caution will be repeated. Most likely, the role of prevention in health care isn't understood in a comparable way yet.

COMPARISON OF THE PROVISION OF SELECTED ACTIVITIES BY TYPE OF PROVIDER

Furthermore, the quick comparison pattern tool may be used to find out which actor categories are engaged in the provision of a given activity. Figures 13 and 14 indicated already, that at least in some participating countries midwives as hospital employees could possibly be engaged in providing ambulatory care. The opposite may also be true, i.e. typical providers of ambulatory care continue to see after their patients, even after these have be admitted to a hospital.

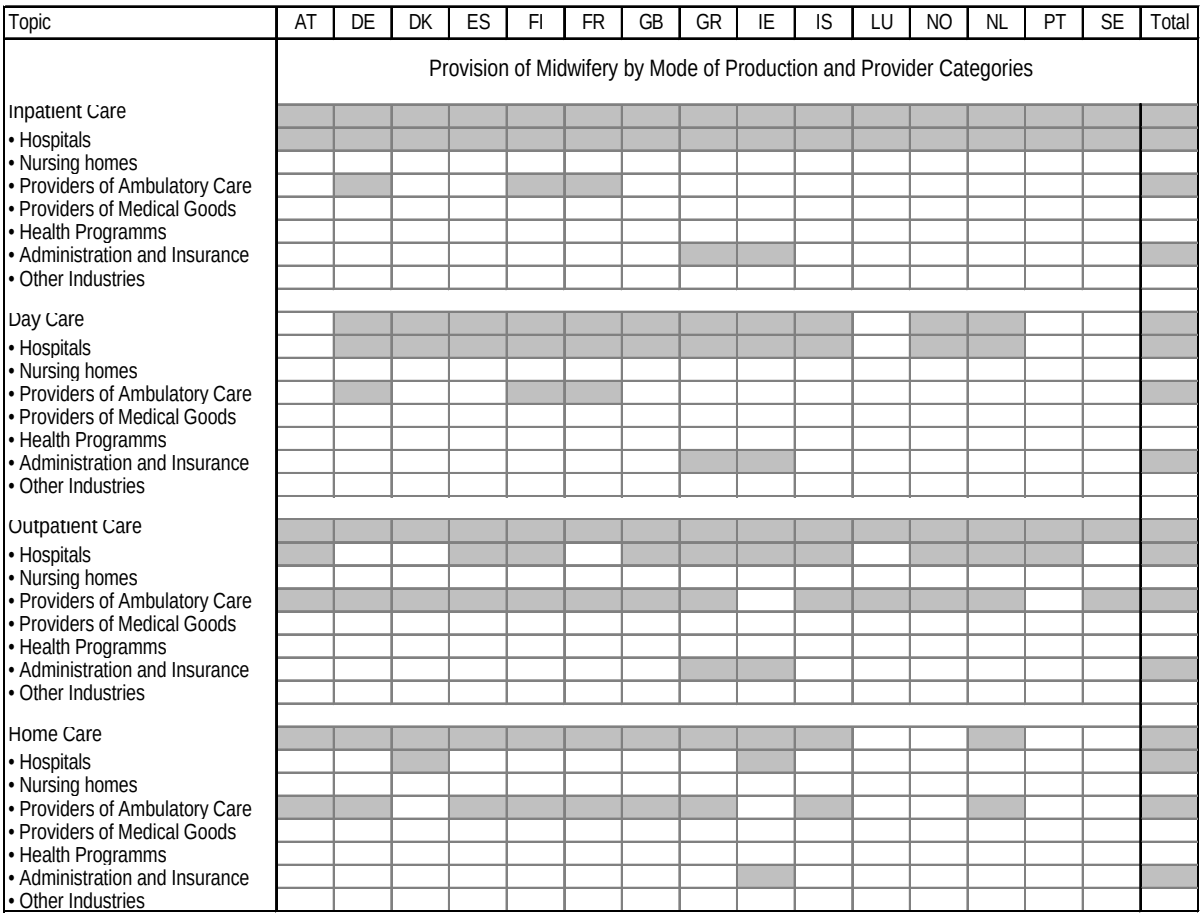
Figures 15 through 17 pick three situations, where heterogeneous situations were to be expected in the various countries. Midwifery (see Figure 15) already emerged as possible candidate from the results of hospital activity Figure 13 and 14. Function tests (see Figure 16) have been chosen, because the number of providers of diagnostic image processing is extremely limited and regulated in some countries, whereas a substantial oversupply of such services is reported to exist in other countries. Patient transport (see Figure 17) may be called an interesting item, because of the multitude of potential providers of such services; fire departments, hospitals, welfare organisations, taxis and not to forget private households can be expected as candidates.
The first interesting fact refers to midwifery existing in all four modes of production in the majority of countries. Midwifery does not exist as home care in four countries; this may be a misunderstanding, however, because the popularity of home birth is reported to increase everywhere. Ambulatory midwifery services seem to exist everywhere, although not always under identical organisational structures.

It turns out as a surprise thus, that the type of provider (ambulatory service or hospital) not always coincides with the mode of production (inpatient, outpatient or home care). Mixed forms or weakened boundaries are rather prominent instead. One may fairly say, however, that hospitals seem to

participate slightly more in outpatient midwifery than ambulatory midwives do in hospital birth.

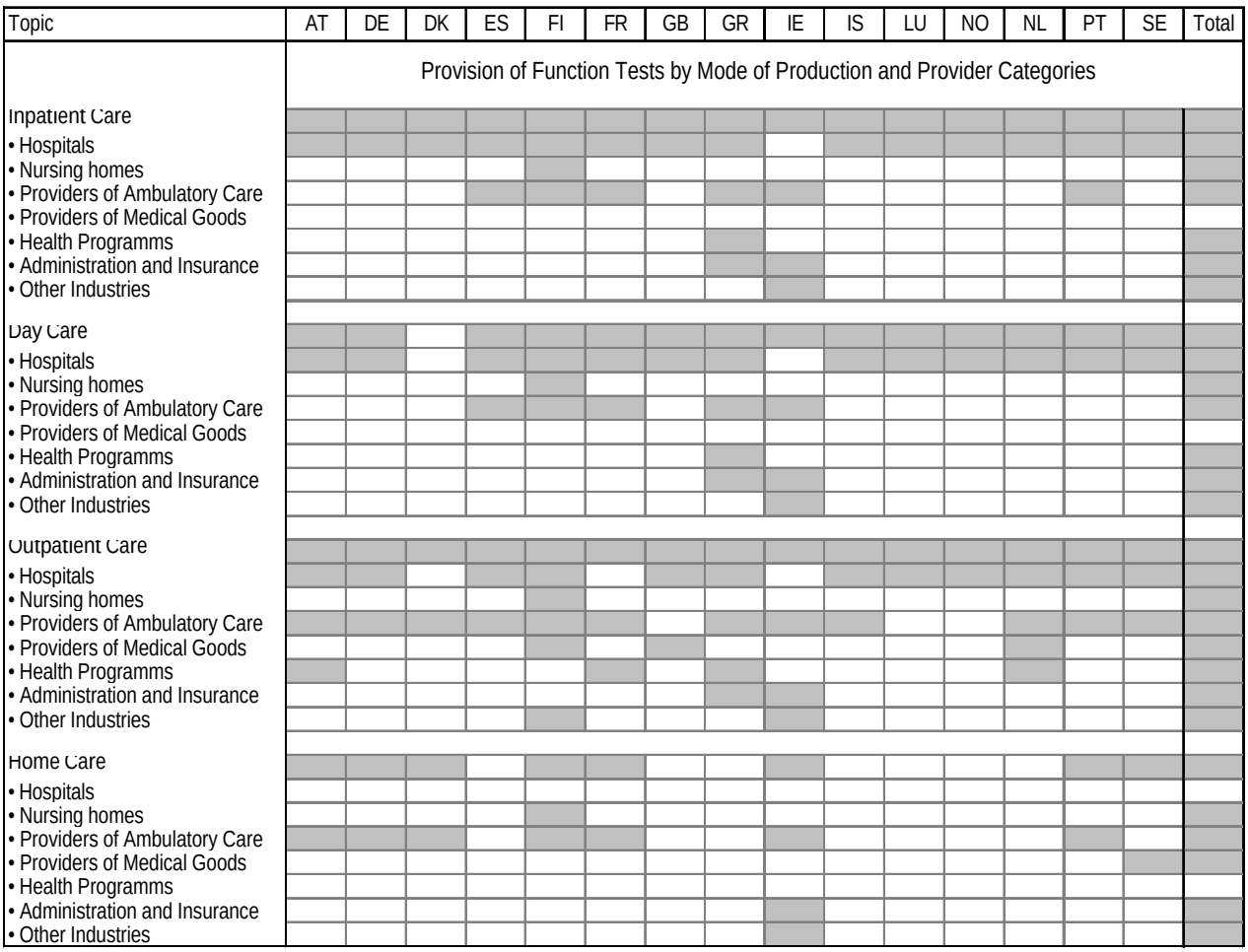
The results may well be called surprising and will have quite far-reaching effects, as far as the continuous monitoring of the relative shares of self-employed versus employed midwives is concerned. EUCOMP results advise caution and discourage the interpretation of types of services from categories of providers. Rather one can conclude that the organisation of childbirth is handled flexibly, maybe to better comply with the needs and wishes of the mothers to be.

Figure 15: Comparison Pattern for the Provision of Midwifery Services by Type of Actor



The provision of function tests does not completely differ from the situation in midwifery described above. Work sharing is the predominant element; i.e. hospitals take care of the majority of inpatients function tests, whereas providers of ambulatory care do so with respect to outpatient care. Interactions exist also here, however.

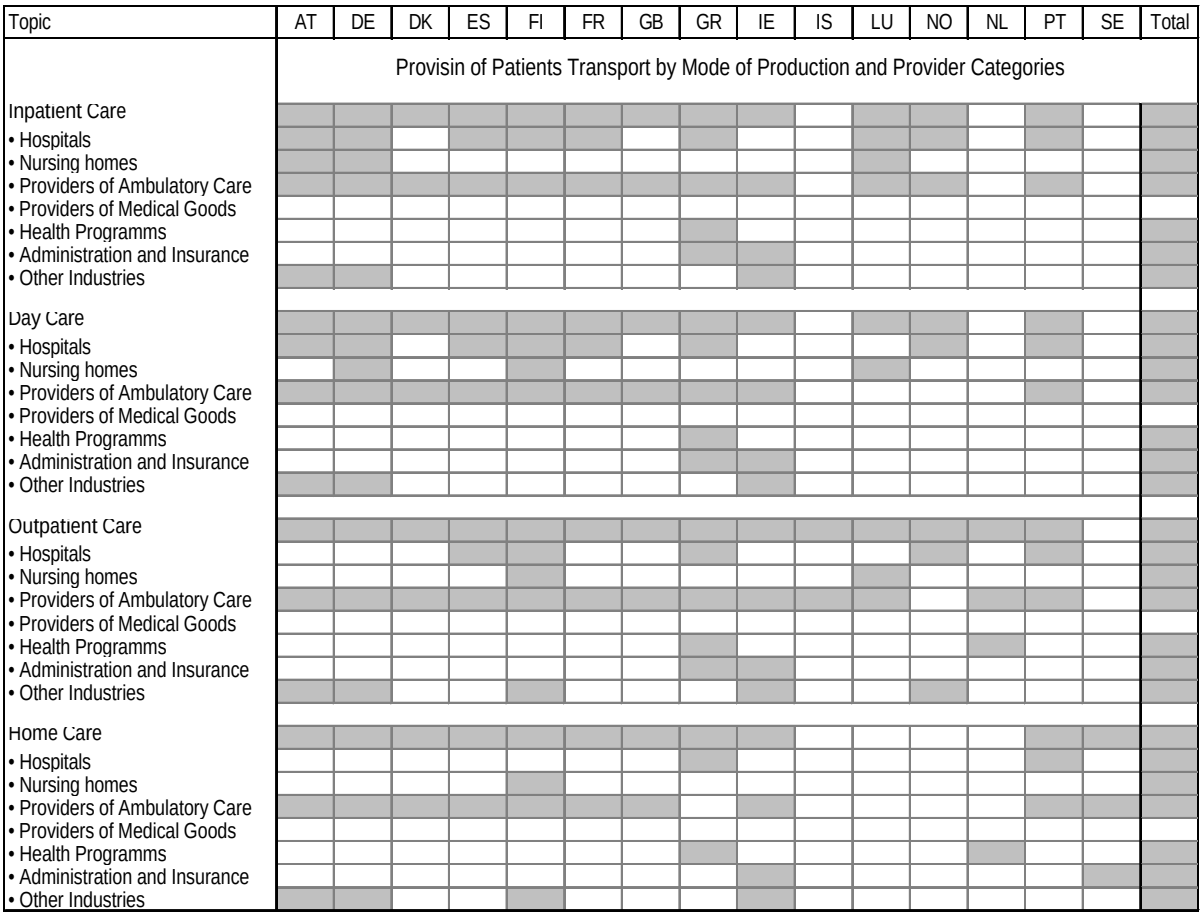
Figure 16: Comparison Pattern for the Provision of Function Tests by Type of Actor



The typical case of interaction in the majority of countries is characterised by hospitals seeing after outpatients; however, less by hospitals outsourcing such services to ambulatory care providers. A quite interesting follow-up of that question will deal with the topics which EUCOMP cannot provide answers to: the relative percentage shares of hospitals and ambulatory care providers in the overall "market" for function tests.

Provision of patient transport is the last prototype application of the quick comparison tool. "Other industries" as the category, which taxis are to be attributed to, plays a relatively unimportant role. This was not expected from the very beginning; it may well be, however, that this is caused by incomplete data sets. Principle doubts may also be justified, if there is no provider of patient transport for inpatients at all. It can hardly be excluded categorically, that inpatients are to me moved from one hospital to another.

Figure 17: Comparison Pattern for the Provision of Patient Transport by Type of Actor



Nonetheless one will note a predominance of ambulatory care providers in the provision of this activity. Most likely this will refer to emergency squads as part of public services or (non-profit) welfare organisations such as the Red Cross. The actual importance of having these services outsourced to private suppliers seems smaller than could have been expected from the actual discussions. Hospitals, which provide patient transport with own means, do exist. This causes a comparability problem again, because such services are expensive and labour-intensive and implicitly influence staffing ratios and hospital expenditures.

2.1.3.3 Similarities and Dissimilarities Among Hospitals in Europe: Results of a Multivariate Statistical Analysis of the EUCOMP Data Sets

Is there a convincing means for showing the immediate usefulness of metadata for the analysis of numerical health care data? Is it possible to document the direct value added by the EUCOMP data in an intuitive and intelligible way? From the problems described in previous sections, hospitals

develop a convincing attraction to act as a prime candidate for such a prototype test. Furthermore, hospital data are directly compared to each other constantly on various platforms, while simultaneously many, if not all experts continuously warn that the respective roles of hospitals in the national health care systems are too different to make any comparison meaningful.

Classifying hospitals can be performed in different ways. The method used here is called hierarchical cluster analysis. All records with the value "hospitals" in the provider classification have been included, if the data set contains EUCOMP activities for these records. All 259 defined activities – defined also via the mode of production (see Table 8) – are used as "independent" variables in the cluster analysis. Functions, medical specialities, or other elements like the activity focus are disregarded on the other side.
To check the consistency of the results obtained, the analysis has been repeated with different subsets: General hospitals have been used instead of hospitals altogether; furthermore both analyses were repeated with the data of 11 selected countries only. All these alternatives tested led to more or less identical results. It is not necessary, therefore, to include into Table 18 other data than the results for 155 hospitals in all 15 participating countries.

The results show the amount of records sorted into the various clusters under consideration. The output is presented for two to 15 clusters, the maximum was chosen because of the number of participating countries.

The most important result of Table 18 is the fact, that the absolute majority of hospitals are very similar. 134 out of 155 hospitals do longer change their membership in cluster 1, after the total number of clusters analysed exceeded the value 11. All 14 remaining clusters are no match as far as their size is concerned. This indicates that the vast majority of the overall variation among hospitals occurs among a small share of these hospitals only. Most of the variation is due to the differences between these minority groups (i.e. among the clusters 2 through 15) and to the difference of all these clusters from the (homogeneous) majority of hospitals, i.e. from cluster 1.

Table 18: Cluster Analysis of Hospitals by Health Care Activities

Membership of hospitals	Number of Clusters													
	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	Number of Hospitals in the Respective Cluster													
Cluster #1	154	153	152	151	149	146	141	139	136	134	134	134	134	134
Cluster #2	1	1	1	1	1	1	1	1	3	3	3	3	3	3
Cluster #3		1	1	1	2	2	2	2	1	1	1	1	1	1
Cluster #4			1	1	1	1	5	5	2	2	2	2	2	1
Cluster #5				1	1	1	1	1	5	5	4	3	2	2
Cluster #6					1	1	1	2	1	1	1	1	1	1
Cluster #7						3	1	1	2	2	2	2	2	2
Cluster #8							3	1	1	2	2	2	2	2
Cluster #9								3	1	1	1	1	1	1
Cluster #10									3	1	1	1	1	1
Cluster #11										3	1	1	1	1
Cluster #12											3	1	1	1
Cluster #13												3	1	1
Cluster #14													3	1
Cluster #15														3
	Percent of Hospitals in the Respective Cluster													
Cluster #1	99,4	98,7	98,1	97,4	96,1	94,2	91,0	89,7	87,7	86,5	86,5	86,5	86,5	86,5
Cluster #2	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	1,9	1,9	1,9	1,9	1,9	1,9
Cluster #3		0,6	0,6	0,6	1,3	1,3	1,3	1,3	0,6	0,6	0,6	0,6	0,6	0,6
Cluster #4			0,6	0,6	0,6	0,6	3,2	3,2	1,3	1,3	1,3	1,3	1,3	0,6
Cluster #5				0,6	0,6	0,6	0,6	0,6	3,2	3,2	2,6	1,9	1,3	1,3
Cluster #6					0,6	0,6	0,6	1,3	0,6	0,6	0,6	0,6	0,6	0,6
Cluster #7						1,9	0,6	0,6	1,3	1,3	1,3	1,3	1,3	1,3
Cluster #8							1,9	0,6	0,6	1,3	1,3	1,3	1,3	1,3
Cluster #9								1,9	0,6	0,6	0,6	0,6	0,6	0,6
Cluster #10									1,9	0,6	0,6	0,6	0,6	0,6
Cluster #11										1,9	0,6	0,6	0,6	0,6
Cluster #12											1,9	0,6	0,6	0,6
Cluster #13												1,9	0,6	0,6
Cluster #14													1,9	0,6
Cluster #15														1,9

These results indicate, that the comparability of hospital data can be improved rather easily and with little efforts. It only requires excluding those hospitals from in-depth analysis, which – based on EUCOMP metadata – presents themselves as true outliers.

2.1.3.4 Evaluating the Quality of the Functional Classification of Health Care Output: EUCOMP Metadata as a Means for Kicking-Off a New debate and For Providing a New Answer to an Old Question?

It has been mentioned in previous sections that the development of the function classification of health care output was a crucial process. In the end, some of the experts were still dissatisfied with the results obtained. This dissatisfaction – and the vague hope that a better solution could still be achieved – was one of the reasons of making use of activities and medical specialities for the EUCOMP data collection.

Furthermore, it had always been claimed that the functional and the provider classifications had to be independent of each other at any price. Some doubt has been raised as to whether or not this was achieved with the suggestions made in the SHA manual.

It would be quite interesting to learn, if the EUCOMP data set can contribute to a rationalisation of this debate either by proving the critics wrong or by supporting an unemotional debate on adjusting this functional classification.

Under the specific circumstances of this EUCOMP project such an analysis is not trivial, however, because the type of data is so special. Common forms of regression analysis cannot be used for detecting a correlation between *individual categories* of two different *classifications*. If a dependency exists in the way described, then a category of the provider classification like hospitals correlates with a combination of selected and deselected functions.

Therefore, an indirect method had to be used to prove the existence or non-existence of an assumed mutual dependency between the two classifications: *discriminant analysis*. This statistical method uses a set of variables to predict the answer category of the dependent variable. Independent variables (here functions of health care or activities) are described as having "discriminatory power", if they correctly predict the categorical value of the dependent variable (here the value of the provider classification). High discriminatory power indications mutual dependencies whereas low discriminatory power results in a higher percentage of cases being misclassified and stand for a weak or non-existent mutual dependency. As neither the dependent nor the independent variables fulfil the requirements of standard normal distribution, the analysis was repeated with a special version

of the discriminant analysis, which is particularly adapted to the requirements of dichotomous data: *polychotomous stepwise logistic regression.*

The *multinomial logistic regression*, which could have been used alternatively with binary or dichotomous independent and a categorical dependent variable, can prove a mutual dependency to exist, but it does not provide easy-to-understand results thereby.

All tools tested basically yield the same result. There is a non-zero dependency between the variable "functions of health care", i.e. HC1 through HC6 and HCR1 through HCR6. After optimisations performed via stepwise procedures, the percentage of correct jack-knifed classification exceeds 70%. The respective rate of correct classification does not reach 63%, if activities are used as explanatory variables rather than functions, despite the fact that much more variables are used in the latter case. This result is even more convincing, as the activities used are well-defined *sub-categories* of the functions and do not stretch across function boundaries. As a summary on may conclude, that the list of activities used in the EUCOMP project may be characterised by a higher degree of independence from the provider classification used there, than can be obtained with the functional classification. This holds true although this list has always been called sub-optimal and a temporary solution only.

The intuitive next step following this result focuses on the question as to whether or not the EUCOMP data may be used to obtain an improved functional classification with which the existing one can be amalgamated. Quite some experts have been reasoning that a satisfactory improvement was reached already, if the existing functional categories could be detailed on a second hierarchical level. The ideal number of additional categories obtained thereby would be by far lower than the number of activities (or even medical specialities) used in the EUCOMP project.

If the EUCOMP activity data were to be used for trying to find such "improved functional categories", then the dimensions incorporated in these activities would have to be drastically reduced. Some multivariate statistical procedures are widely used for dimension reduction like *principal component analysis* (PCA) or *factor analysis* (FA). The specific characteristics of the EUCOMP data (dichotomous data) do not allow using the standard version of these procedures though. Therefore *Boolean Factor Analysis* had to

be used to correctly deal with the special qualities of these data.

A positive result was found thereby. Unfortunately this result is difficult to describe. It requires additional efforts to transfer these results into messages, which can be understood and interpreted from the health care point of view. So far, the result obtained can only be described as follows: *Boolean Factor Analysis* detected 29 distinct factors embedded in the 259 activities. This number was found to be a stable solution; it did not change while various framework conditions were changed. It remained unaltered, if the starting point of the detection process was shifted or if stepwise procedures were used. From a statistical point of view this results can validly be called a *reliable solution*.

It will take the interpretative expertise of specialists, however, to translate this technical solution into an assumption or a hypothesis, which conveys a message in the language spoken by health care experts. This translation process will look at the *factor scores* or *factor loadings*. These terms refer to the constants in the equations systems, by which the *factors* are derived from the activities. It will also be necessary to find a catching name for this factor, a name that correctly reflects the interdependencies between this factor and all activities, which it is derived from.

In short, what we have at this point in time looks promising, but it is not yet final yet. Further research is required to enhance and develop this clearly productive approach which can definitely provide a much better structured and well integrated framework for health data than has ever been available before now.

2.2 Phase 2: Rehabilitation

2.2.1 Development of the questionnaire on rehabilitation

2.2.1.1 Introduction

The EUCOMP-project has been designed to learn about processes and activities performed in participating countries within a health care context. The first round provided data in broad categories covering the full scale of their health care system within the borderlines defined in the SHA context.

As indicated in the project description, the capabilities of the EUCOMP metadata "tool box" were required to be tested with more detailed data within a more limited thematic area.

Rehabilitation was chosen as a prototype of such limited thematic area, because rehabilitation can be characterised as a limited area, which is, however, virtually as complicated and comprehensive and covers nearly the same span of health care activities as health care as a total. Furthermore the item is considered as challenging from a theoretical point of view. (essentially structured metadata) and there is a considerable need to clarification of this area.

For a better focus the test should be addressed under four main headings:

- Musculoskeletal diseases
- Cerebrovascular diseases
- Dementia
- Psychiatry

Rehabilitation can be seen as a microcosm within which the wider procedures of the health care system are replicated. For each data subject used to describe health care in general a counterpart will be found dealing with rehabilitation. If we look at this as a metadata issue instead of the full country profile rehabilitation patterns existing in the participating countries are outlined and detailed, (whether or not an integrated approach exists, which links medical to social rehabilitation) and. instead of functional categories alternative treatment patterns are described like standard treatments and other patterns applied depending on special conditions.

The goal of this exercise is to acquire a first impression of the rehabilitation function. Because of this it must be understood that the intention was not to produce (in this project) a full-fledged, complete description of the organisation of the field

of rehabilitation in the participating countries. In limiting the areas tested to four main headings and with the emphasis in this selection on lasting functional diseases an overall description could clearly not be the target in this phase of the project.

The question to be answered here is whether the examination of detailed data on the four chosen areas would provide useful insights into a complex system area.

If the answer is yes, this will lead to a requirement to deal with the whole set of health care categories in the same detailed way we did here for rehabilitation; if no, we will be able to prove, that the a higher level perspective provides an equally good or even better understanding while requiring less effort.

2.2.1.2 Definition of rehabilitation

With regard to the definition of rehabilitation some general definitions can be referred to:

> *Rehabilitation: the restoration of normal form and function after injury or illness. (Dorland, see Literature: 12)*

> *Rehabilitative care: comprises services where the emphasis lies in improving the functional levels of the persons served and where the functional limitations are either due to an event of illness or injury or of a recurrent nature (regression or progression) (OECD, see Literature: 6).*

It is obvious, that Dorland's definition has a more limited scope than that the OECD. The "functional levels" might contain the implicit suggestion, that also other functions than merely physical functions are indicated e.g. psychic and social functions.

For comparison it is important to know which range of content the concept of rehabilitation is given by participants and to explore additional dimensions of the concept.

Legal descriptions of the concept as used by authorities and financiers might help to clarify this problem, together with descriptions as used by medical and other professionals, which also can reflect special views on the content of the concept of rehabilitation.

A prestructuring of possible contents led to the conclusion that the term **"rehabilitation"** refers to:

a. **the working population**: the return of the patient to his working place
b. **in general: the restoration of physical functions**, whether or not with application of therapeutic appliances
c. **stimulating techniques, physical as well as (socio-) psychological**, are applied to slow down the negative effects of an irreversible disease process in palliative care.
d. **rehabilitation in a social context**, referring to the successful return or selfmaintenance of a patient in a social surrounding

Whether or not all participants see rehabilitation from a common perspective it appears that:

- The concept may have a specific meaning defined by responsibilities, remuneration or mode of production and/or
- It may be defined pragmatically by well-defined activities such as physiotherapy.

In the first case, data relating to rehabilitation are not to be directly comparable; in the second case, the respective data can be generated by the original activity data collected. If comparability within each area is our goal the first case does not fulfil that requirement however it may be necessary to contribute to an overall framework describing the global health care system in a country which is comparable at a higher level above that of the specific thematic area, rehabilitation.

2.2.1.3 Method

In the EUCOMP-meeting in Athens (4-6 November 1999) discussions took place on the most desirable method, by which this area should be studied. The meeting decided to use the "scenario or case"-approach in order to clarify the field of rehabilitation by means of the normal or expected course of treatments provided in cases that are considered to be typical for the headings to cover.

Based on these views a questionnaire has been prepared consisting of three parts:
-Introductory part
-Part 1: “Statistics rehabilitation: an exploration”
-Part 2: Three cases:

1. Cerebrovascular Case
2. Dementia Case
3. Mixed Musculoskeletal and Psychiatric Case

The Introductory Part describes the basic ideas underlying the questionnaire on rehabilitation.
Part 1 emphasises the exploratory nature of the questionnaire. The aim of this part is to shed light on the concept of rehabilitation, used in the participating countries and on the linkages between physical and social rehabilitation. Furthermore the availability of statistical information is explored. It was recommended to have this part of the questionnaire completed by participants of the EUCOMP-project or by statisticians they selected for this purpose.

Part 2 consists of three cases and aims at a first impression of rehabilitation functions in distinct settings with different social aspects. These cases have been made available by the National Research Centre for Welfare and Health in Helsinki. These cases cover the four main headings as follows:

Case 1: Cerebrovascular disease
The patient previously has been on medication because of moderate hypertension; otherwise the health has been good. One morning he awaked with right hemiparesis, the arm more severely affected than the leg, and he had difficulties in finding the right words. He was admitted within two hours at the local University Hospital where CT examination revealed a cerebral infarction (edema) in the region of left middle cerebral artery territory. The status of the patient deteriorated during the first few days but after that some improvement occurred. Two weeks after onset he was able to sit in a chair, he could lift both arm and leg against gravity. The difficulty in word finding persisted but he could understand spoken words.

Case 2: Dementia Case
Patient with moderate Alzheimer’s disease and extrapyramidal symptoms. The patient needs personal help in all basic ADL and more complex activities, but is able to walk with aids. Occasionally patient is incontinent. During the last six months a rapid decline of both cognitive functions and behaviour has occurred with outbreak of hallucinations and delusions. The medication is appropriate. Increasing rigidity, aberrant behaviour and decreased selfcare capacity.

Case 3: Mixed Musculoskeletal Case and Psychiatric Case
The patient injured the left knee at work with patellar luxation six years ago. Few months later after this injury patellar luxation reoccurred. The lateral-release operation of the knee was performed one year after the primary injury, but patient didn't recover completely. Patient could not walk properly and did not return back to work. Two years ago patient developed panic disorder and could not go out alone. At the moment, patient has obvious deconditioning syndrome with moderate osteoarthritis in the injured knee with continuous pain, mild osteoarthritis in the other knee and in both hips with occasional discomfort and continuous pain in the neck and shoulder region with minimal clinical findings. Patient uses mild analgesics and antidepressive medication. Patient can do the rooms, wash dishes at home and walk short distances if assisted by spouse, but patient is not able to go for shopping alone due to the psychiatric disorder.

These cases have been placed in distinct contexts as it is presumed that differences of context can cause differences in treatment and other care. Especially the following aspects deserve attention:

- With regard to the situation of the patients and the availability of professional/non-professional care and support
- Living in a rural or urban setting with the distance to the nearest medical treatment centre varying respectively
- Living alone or in a family or other social setting, capable of (non-professional) support regarding activities of daily living: (spouse, children, neighbours etc.)
- With regard to the legal constraints referring to specific treatment forms depending of patient characteristics such as:
    - age
    - employment status (employed or not employed)
    - forms of health insurance (private, social security scheme, and social assistance)

In this way the cases have been described in these different situations with connected questions prestructured as far as possible, but with enough space reserved for additional descriptive comments. It has been recommended to have this part of the questionnaire preferably completed by physicians active in the field of rehabilitation, treating this type of patients.

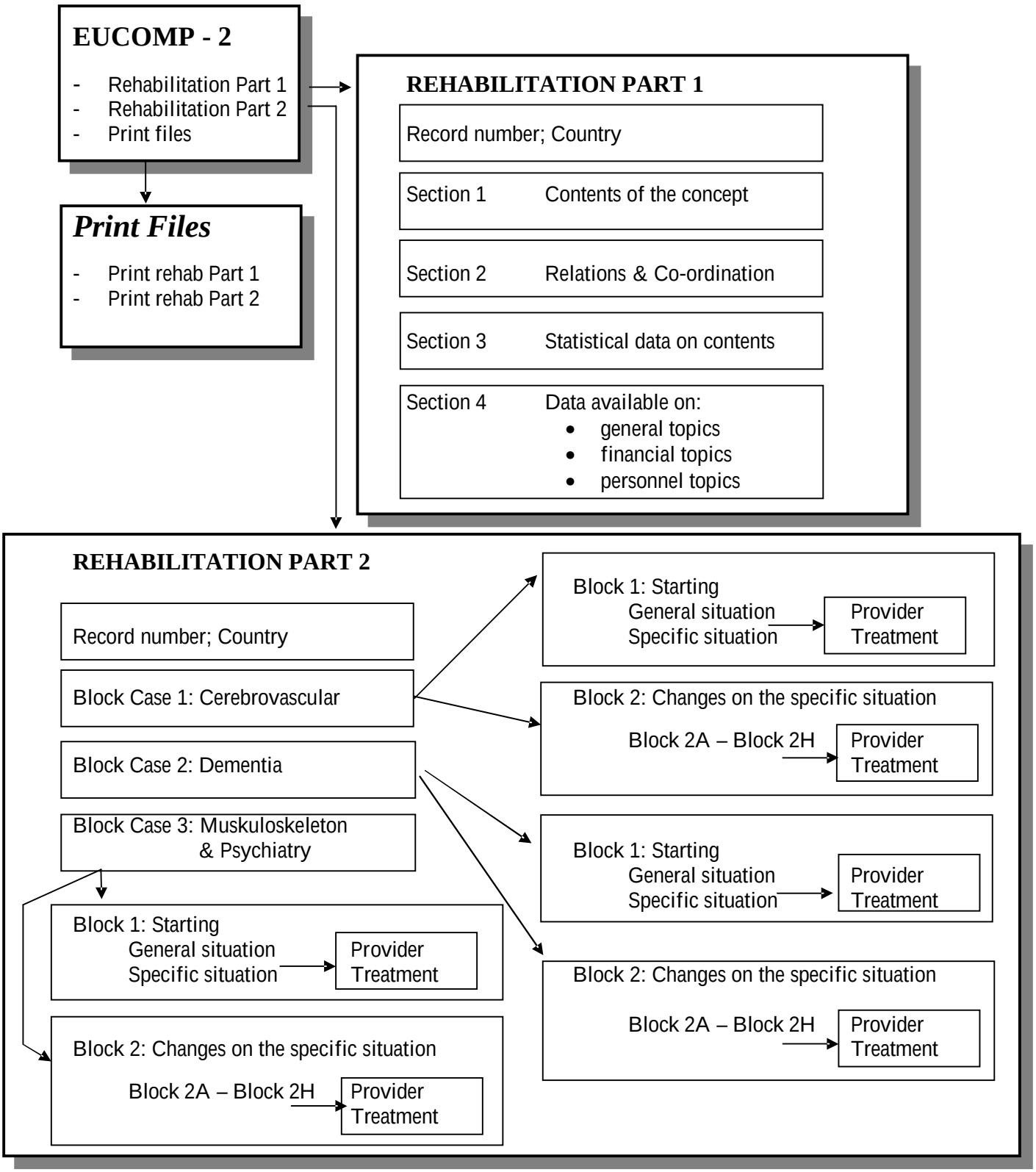
2.2.1.4 The electronic questionnaire on Rehabilitation

As in the case of the functional breakdown of health care systems an electronic questionnaire was designed for data collection regarding the rehabilitation item. An application, built in a next generation of the Blaise software (4.3), was sent out to all participants.

The application consists of four blocks; two on the contents of the topic and two for printing purposes. In the topic itself a distinction is made in the more general information on rehabilitation and the information requested for the specific cases.

The following flow chart shows the distinct blocks from which the questionnaire has been built up:

Figure 18: Rehabilitation



In Rehabilitation part 1 the more general information concerning rehabilitation in the participating countries was collected. The general information is divided in four sections. The first section refers to the concept of rehabilitation used in the various countries. Questions are posed like whether the concept of rehabilitation is limited to the working population and whether or not the treatment is limited to the restoring of physical functions. Furthermore, there are questions on the use of stimulating techniques and on the social context.

In section 2 questions are posed on the subject of the co-ordination. Information was sought on the official linkages and co-ordination between social and other forms of rehabilitation, and e.g. the responsibility for the co-ordination.

Section 3 concerns the availability of statistical data on the contents for which information was asked for in section 1. So questions are posed referring to the return into the labour force, the restoring of the physical function, the use of stimulating techniques and referring the social context.

The last section in this general part on rehabilitation concerns the data-availability on the rehabilitation process. Information is requested on three topics. The first topic concerns some general data: data on the number of patients, ICD codes, admissions and inpatient days. The second topic concerns some financial data: like financing and expenditures. The third topic deals with data on personnel: employed, self-employed and various types of professionals employed.

Part 2 in the application deals with the three specific cases made for the project. For every case a general description is supplied as the initial basis for eliciting information. Next a more specific situation is described, adding certain circumstances to the general starting point. Finally for every case 7 additional situations are distinguished, concerning the age of the patients, his living conditions, his physical surroundings, etc.

For the general and the specific starting situation information is requested on the course of treatment and the form as well as the providers involved in the treatment. For all of the seven specific situations it is asked to supply the changes in the treatment course, treatment form and providers of care involved, compared to the specific situation described in the previous part.

2.2.2 Analysis

The analysis of rehabilitation-related information – EUCOMP's second part of data collection – is based on nine countries, eight EU participating countries and Iceland. Participation rates differ substantially across Europe, which may influence as to whether or not the results presented are representative for the situation in Europe. Northern Europe is represented best with Great Britain, Ireland, Iceland, Sweden and Finland included (Norway not participating), whereas Central Europe is covered by Germany and the Netherlands only (France, Belgium, Luxembourg and Austria missing) and Southern Europe by Spain only (Portugal, Italy and Greece missing).

Thus, the results obtained may not be completely representative for Europe. The following analysis presents a snapshot, based on the available information. If conclusions are drawn from these data, they encounter the risk of being part of the truth only – correct, but incomplete, based on the available information.

Rehabilitation had deliberately been chosen as "lab test topic" for the tools developed in the EUCOMP project. All experts indicated rehabilitation to be an extremely dynamic field of medical care, primarily because it may provide best solutions for the challenges which medical science faces because of the prominent fact of ageing populations in all European countries. Furthermore, it was assumed that rehabilitation attracted new forms of medical treatment or initiated new forms of co-operation among providers of health care.

Therefore, the Blaise questionnaire on rehabilitation provided means to describe alternative treatment forms, which are used for dealing with a specific disease pattern in a given country. None of the participating countries made use of this feature. For both the general topics and the case studies there exists only one description per country. Whether or not one must conclude from this fact, that there is only one standard treatment form in each country remains unclear, however. Some comments provided in the questionnaire raise minor doubts rather, whether the treatment indicated would be performed in all circumstances. Two countries indicated that the treatment given depends on decisions taken by local authorities, one country announced rather openly, that the ideal treatment type – the one described as standard situation – may often not be applied due to insufficient resources or priorities set differently.

From the comments provided, it can be concluded, that alternative treatment exists. We have little information, however, as to what such treatment consists of or in which way it differs from the treatment types described as standards. There may be good reasons for the local experts to remain unspecific, e.g. if the immediate action taken in a given case depends on individual decisions and may not be described in general terms. Bilateral contacts should be used to clarify this point.

The data sampling technique, on the other hand, seemed to perfectly match the topics concerned. Both from the answers to pre-defined questions and from the comments one cannot but conclude that the questions were understood in an identical way. The results indicate that there is little reason to assume that misunderstandings may have occurred during data provision or that errors may be encountered in the data. The topic “stimulation techniques” may serve as an example for this argument, because it was commonly associated with palliative care, and because two countries identically raised the point as whether such treatment should be subsumed under rehabilitation.

The results on the other hand indicate more rehabilitation-related commonalities across Europe that experts had assumed beforehand. Choosing the scenario-type questionnaire for digging deeper into the subject turned out to be a good decision also, as it provided sufficient means for exploring the differences embedded in a topic, which presents itself identical on the surface.

One may be tempted to over-estimate the differences based on the results presented on the three scenarios. This should be avoided, however, because all scenarios were deliberately chosen to reveal in which way new developments in one participating country have been started or are already accomplished even, whereas in others such developments are still being planned or “on the way” only.

Rehabilitation of cerebra-vascular diseases do not have a long tradition as standard subject of rehabilitation efforts; dementia (case 2) has only very recently been added to the list of diseases, for which rehabilitation is taken into consideration. One would have assumed thus, that at least in some Member States “rehabilitation of dementia” may be seen critically, especially as no patient can fairly be expected to fully regain his/her mental abilities. Applying techniques aiming at slowing down the deterioration process, on the other hand, may not always be subsumed under rehabilitation. Also the third scenario becomes a “special

case" for rehabilitative care, as physical and psychological efforts aiming at rehabilitation may not always be provided in an integrative setting.

Summarising from the detailed results, which will subsequently be presented and interpreted in detail, one may conclude that an appropriate approach was chosen for phase 2 of the EUCOMP project. The topic "rehabilitation" turned out to be ideal for further evaluating the tool box developed during phase 1 and for cross-checking both the methodology and the data collection tools chosen. Even the participating experts did not necessarily expect all the following results:

- Rehabilitation is understood in a comprehensive framework in an increasing number of participating countries. Limiting efforts to re-qualifying patients for their original situation looses importance and is more and more replaced by efforts aiming at enabling the patient to regain his/her original abilities by using a multidisciplinary and integrated approach.
- Rehabilitation is not limited to activities provided in an inpatient setting. Treating the patient in his/her familiar surrounding and integrating the family support into the treatment efforts become increasingly important, while supporting activities of home nursing care or family helpers are made available.
- Rehabilitation is no longer restricted to physical impairment; the treatment no longer focuses on physiotherapy primarily. For an increasing number of diseases, rehabilitation becomes an integral part of the medical care process, often starting already in the very beginning of the disease-specific treatment episode, i.e. whenever the patient gets into contact with the health care system.
- Virtually all participating countries indicated that rehabilitation treatment underwent serious reorganisation, the majority of which stated, that this process is still on going.

It has to be admitted though, that the quality and usefulness of the results presented below can still be increased, if more countries are willing to participate in the data provision of this phase 2 of the EUCOMP project.

2.2.3 Results

Chapter 2.2.1.3 above (Methods) outlines, that the data collection was organised into three major categories:

- *Part 1, sections 1 and 2* deal with the "Introductory Part", which try to define concisely the concept of rehabilitation used in the participating countries, checking for definitional reference points and, furthermore, examining potential synergies resulting from linkage and co-ordination.
- *Part 1, sections 3 and 4* inquire the availability of statistical data on a variety of rehabilitation-related topics, covering target population, outcomes, expenditures for and financing of rehabilitation as well as input and throughput data on rehabilitative care such as inpatient days and specific personnel by qualification.
- *Part 2* details the results of the general description of rehabilitation applied in the participating countries using three case studies as scenario references.

2.2.3.1 Definitional Concept of Rehabilitation Used

Table 19 contains the data of the 9 countries with respect to *Part 1*, *sections 1 and 2*. Column 1 of this table uses an abbreviated formulation of the topic in the questionnaire, which in full was the following:

- *Rehabilitation refers to working population?* The term rehabilitation refers in your country to the working population: The return of a patient to his working place? (Yes/No)
- *Rehabilitation refers to restoration of physical functions?* The term rehabilitation refers in your country to in general the restoration of physical functions, whether or not with application of therapeutic appliances? (Yes/No)
- *Rehabilitation refers to stimulation techniques?* The term rehabilitation refers in your country to stimulation techniques, physical as well as (socio-)psychological that are applied to slow down the negative effects of an irreversible disease process in palliative care? (Yes/No)
- *Rehabilitation refers to social context (successful return or self-maintenance)?* The term rehabilitation refers in your country to rehabilitation in a social context, referring to the successful return or self-maintenance of a patient in a social surrounding? (Yes/No)

One could have assumed that questions 1 and 4 will mutually exclude each other in the following way: rehabilitation either means re-qualifying the patient to participate in the work process the way he did before he became ill. In this context, explicitly no referral is made to the unemployed and to

people not yet or no longer member of the working population. Alternatively rehabilitation may refer to comprehensively re-qualifying all patients to regain abilities which were lost due to illness or injuries. In this context, everybody is eligible for rehabilitative care.

The data in Table 19 shows that seven participating countries did not see such mutual exclusion. Comments from Spain, Finland and Ireland indicate, however, that rehabilitation refers to the working population "among others", but not exclusively, whereas the Netherlands mention that both efforts exist, but under the two different names of "rehabilitation" and "re-socialisation".

Table 19: Aspects of the Definition of Rehabilitation in participating countries

Rehabilitation Characteristics	DE	DK	ES	FI	GB	IE	IS	NL	SE
Rehabilitation refers to:									
• Working population?	no	yes	yes	yes	yes	yes	no	yes	yes
• Restoration of physical functions?	yes	yes	yes	yes	yes	yes	yes	yes	yes
• Stimulation techniques?	yes	yes	yes	yes	no	yes	yes	yes	yes
• Social context (successful return or self-maintenance)	yes	yes	yes	yes	yes	yes	yes	yes	yes
Linkeage between social and other rehabilitation?	no	yes	yes	yes	no	yes	yes	yes	yes
Physical rehabiliation preceeds social rehabilitation?	yes	yes	yes	no	no	yes	yes	yes	no
Co-ordination between social and other rehabilitation?	yes	yes	yes	yes	yes	no	yes	yes	yes

It is not especially astonishing, that all participating countries subsume "restoration of physical functions" under rehabilitation, but it is, that all but Great Britain do the same for "stimulation techniques". Germany, Finland, and the Netherlands point out explicitly, however, that rehabilitation is not limited to restoration of physical functions, but also covers mental and psychic functions or aspects. On the other hand, Finland and Iceland label stimulation techniques as existing, but a minority field of rehabilitation only. In the Netherlands such stimulation techniques are subsumed under the category "re-activation" rather than rehabilitation.

One may summarise the results of the *Section 1* information provided by the 9 participating countries as follows: All activities tentatively subsumed under "rehabilitation" in the EUCOMP questionnaire exist in all participating countries. The respective share may vary, because some countries may have proceeded faster than others may with integrating into their rehabilitation concept new treatment forms or disease categories. Furthermore, at least the Netherlands seems to apply a more rigid terminology, which results in the Dutch definition of rehabilitation being narrower than the ones applied elsewhere.

The data of table 19, *section 2*, indicate furthermore, that linkage and co-ordination between social and other rehabilitation play a prominent role in the majority of participating countries. Again, comments from these countries weaken these findings by stressing that such linkage or co-ordination is restricted to "necessary" cases or may be of an informal nature rather. Two countries mention an "official" linkage or one "required by law" without telling whether or not such formal requirements are fulfilled in day-to-day practice.

Finally the data in table 19 make clear that in six out of nine countries physical rehabilitation precedes social rehabilitation. In Finland, Great Britain, and Sweden this is not the case, because both efforts exist independent of each other. In Germany, Ireland, Iceland and the Netherlands comments indicate that the results have to be understood as a rule of thumb applied in the majority of cases, and that one can deviate from the rule if necessary.

2.2.3.2 Availability of Data on Rehabilitation-Related Topics

The availability of statistical data on rehabilitation refers to
(i) the definitional context described in the previous sector,
(ii) output-related data such as number of patients, hospital admissions, in-patient days,
(iii) data on expenditures for and financing of rehabilitation and
(iv) personnel active in rehabilitation altogether and by qualification.

In Figure 19, dark-grey shading indicates the direct availability of data in question and light grey stands for data, which can easily be derived. White space indicates that such data are either known not to be available or not heard of yet. The rightmost column lists the percentage of country, for which the data in question are available (average availability in EUCOMP-Europe), the last row indicates the percentage of topics, for which a country is able to provide data.

Figure 19: Availability of Statistical Data Referring to Rehabilitation-Related Topics

Country	DE	DK	ES	FI	GB	IE	IS	NL	SE	Percent of countries with data
Data availability										
• Working population?										66,7
• Restoration of physical functions?										22,2
• Stimulation techniques?										22,2
• Social context (successful return or selfmaintenance)										44,4
• Number of patients?										66,7
• ICD-Code?										44,4
• Financing?										66,7
• Financing by sources?										66,7
• Expenditures?										44,4
• Expenditures by sources?										44,4
• Admissions of patients?										77,8
• Inpatient days?										77,8
• Provider category?										88,9
• Personnel by employment category?										88,9
• Rehabilitation specialists?										77,8
• Physiotherapists?										100,0
• Speech therapists?										88,9
• Movement therapists?										77,8
• Social workers?										88,9
• Other categories?										33,3
Percent of categories for which data are available	85,0	15,0	80,0	60,0	40,0	70,0	75,0	65,0	90,0	64,4

In the nine participating countries, data for altogether 64.4% of the topics are or can be made available. Substantial variation occurs both among countries and topics. Total data availability is highest in Sweden and lowest in Denmark (90% and 15% of all topics covered respectively), above-average availability prevails in seven out of nine countries. It would be interesting to learn whether the countries not yet included will raise or lower the overall availability rate.

When it comes to topics, then the average availability is highest in the traditional areas of rehabilitation (working population, physiotherapists), but also data referring to inpatient treatment such as admission of patients and inpatient days seem to be readily available. This was to be expected.

New functional categories as well as new forms of treatment receive less coverage; the same holds true for data on expenditures and financing. Nonetheless even experts admit, that they had not expected the overall data availability to be as high. To avoid any unjustified euphoric, serious checks are necessary with respect to the comparability of such data.

These checks will have to include also those countries, for which the EUCOMP project cannot provide data yet.

2.2.3.3 Case Studies: The Cerebrovascular Case

The following scenario describes the cerebrovascular case in general medical terms without referring specifically to the socio-economic background of the patients or to the availability of specific health care facilities. The participants were first asked to outline the expected course of treatment and other care delivery in general terms.

The patient previously has been on medication because of moderate hypertension; otherwise the health has been good. One morning he awoke with right hemi-paresis, the arm more severely affected than the leg, and he had difficulties in finding the right words. He was admitted within two hours at the local University Hospital where CT examination revealed a cerebral infarction (oedema) in the region of left middle cerebral artery territory. The status of the patient deteriorated during the first few days but after that some improvement occurred. Two weeks after onset he was able to sit in a chair, he could lift both arm and leg against gravity. The difficulty in word finding persisted but he could understand spoken words.

All participating countries indicate that the patient in this case will receive a prolonged inpatient treatment, the duration of which remains rather unclear, however. All countries indicate that the patient is unlikely to remain admitted in hospital, but will be released to either specific rehabilitation units providing inpatient or outpatient treatment or to his home. The kind of long-term rehabilitation treatment depends of the progress reached among other.

Secondly, the participants were asked to enumerate the providers involved in the treatment given in the case. In addition to the hospital providing initial treatment, the vast majority of institutions mentioned provide outpatient or ambulatory rehabilitation services: Health centres, self-employed physiotherapists and speech therapists may serve as examples for providers of core activities, district nurses, residential care units and social workers as suppliers of supplementary services. Most participating countries indicate that it may become necessary to admit the patient to a nursing home or some other form of long-term hospital in order to provide the required treatment. From the comments one may conclude, however, that ambulatory treatment rehabilitative in a home setting is favoured wherever possible and as soon as possible. Inpatient care on the other side is mostly seen as

a substitute provided in cases, in which the primary choice is not applicable.

The general scenario above was later detailed by giving the following additional information referring to the patient and to available health care facilities.

The patient is male, 49 years old and works for more than 20 years in a printing company situated in walking distance (1.5 km) from his home. The patient lives with his wife in a terraced house on the outskirts of a medium-sized town (local geographical centre by national standards). This town provides the usual health-related amenities such as a local hospital with 250 beds and 4 departments, various physicians of all qualifications as well as nursing care, physiotherapy, home help, patient transport and emergency rescue facilities etc. The patient is eligible for treatment under a health insurance plan, which is described as favourable with respect to national references.

The majority of countries outlined, that in the specific situation described the general treatment plan would be applied unaltered. Finland indicated that the patient's wife would be included in the retraining process. Home treatment is the general line followed after initial hospital care. Nursing homes are seen as *ultima ratio* only. Interestingly, it was repeatedly pointed out that the rehabilitation treatment was factually independent of the kind if health insurance coverage.

The specialists in the EUCOMP team had initially assumed that the kind of treatment given in a country might not only depend on the diagnosis of the disease and the other prevailing medical circumstances. They had reasoned, that the local availability of health care services, personal characteristics of the patient like age of family situation as well as the availability of financial means (health care insurance coverage) may also influence the kind of care given. Therefore they changed the specific scenario in altogether six different ways. These six alternatives to the specific scenario are also applied in the other two cases.

- *Alternative 1 (Patient living in rural area with limited availability of health care services):* Together with his wife the patient lives in a small village with 5 farms specialised on dairy products. All villagers know each other and help each other in case of need. Because of his profession, the patient is used to commute to a near-by town with his car both for work and for shopping. This town provides hospital services as well as all forms of

outpatient medical care. In addition to that, there is a family doctor's practice in a village 9 km away. The distance to the town, however, is around 35 km with the roads being not always in good condition; public transportation to and from this town is available on workdays only. There are two busses running in the morning (at 6:30 and 7:45 respectively) and two in the afternoon (at 13:30 and 17:00 respectively). The patient's wife does not hold a driver's license. Despite repeated efforts by the local/regional Authorities both patient transport and emergency rescue are not 100% reliable.

- *Alternative 2 (Patient lacking family support):* The patient – never married – has always been living on his own after he had moved out at his parents' at the age of 25. He is looked to be a loner not even holding contact to his two cousins living in nearby villages. Working for more than 20 years in a printing company he had found himself a flat in walking distance (1.5 km) from his working place. The flat, situated on the outskirts of a medium-sized town (local geographical centre by national standards), is part of an object providing medium quality housing for 6 families. The contact among the residents is limited, mostly because of the fluctuation. The town provides the usual health-related amenities such as a local hospital with 250 beds and 4 departments, various physicians of all qualifications as well as nursing care, physiotherapy, home help, patient transport and emergency rescue facilities etc. The patient is eligible for treatment under a health insurance plan, which is described as favourable with respect to national references.
- *Alternative 3 (Patient is 63 years old, just pensioned with a private health insurance plan).* The patient – a recently retired specialist in the printing business – now 63 years old, still lives with his wife in a flat situated on the outskirts of a medium-sized town (local geographical centre by national standards). The patient is eligible for the treatment under the national health insurance plan for pensioners, which is supported by a small private health insurance coverage accumulated during his occupation.
- *Alternative 4 (Patient is 79 years old, pensioned with a private health insurance plan):* The patient – a retired specialist in the printing business – now 79 years old, still lives with his wife in a flat situated on the outskirts of a medium-sized town (local geographical centre by national standards). The patient is eligible for the treatment under the national health insurance plan for pensioners, which is supported by a small private health insurance coverage accumulated during his occupation.

- *Alternative 5 (Patient is 49 and qualified for basic health care only due to discontinuous jobs in the past):* The patient is male, 49 years old and had various jobs in discontinuous order. Substantial times of unemployment have accumulated in the mean time. So far, no employment period lasted long enough to qualify the patient for additional health care benefits related to a work-contract. Thus, the patient is eligible for treatment under the basic (standard) health insurance coverage existing in the country, be it on the basis of a tax-based or a social security type system.
- *Alternative 6 (Patient is 49, was persistently unemployed and lived from social aid most of the time):* The patient is male, 49 years old and has hardly worked during his entire life. For the last 18 years, he was unemployed and lived from the social support which governments provides for people with substandard income.

Table 20: Change of Rehabilitative Treatment Given in Cerebrovascular Case Due to Socio-economic Conditions

Potential factors influencing rehabilitation treatment	DE	DK	ES	FI	GB	IE	IS	NL	SE
Changes occuring because of patient									
1. living in rural area with limited health care facilities	no	yes	yes	no	yes	yes	yes	no	yes
2. lacking family support	no	no	yes	no	yes	no	no	yes	yes
3. being 63 and pensioned with private health insurance	no	no	yes	no	yes	no	no	yes	no
4. being 79 and pensioned with private health insurance	no	yes	no	yes	no	yes	yes	yes	no
5. being qualified for basic health care only due to discontinuous jobs	no	no	no	no	no	no	no	no	no
6. having been persistently unemployed and living from social aid	no	no	no	no	no	no	no	no	no

Quite interestingly, living in a rural area (alternative 1) and belonging to the uppermost age brackets (alternative 4) were most likely to initiate changes in the initial treatment plan, followed by lack of family support (alternative 2) and just having left the working population (alternative 3). Financial aspects resulting from discontinuous jobs or continuing unemployment (alternatives 5 and 6) do not influence the treatment plan at all, on the other hand.

In *alternative 1*, changes are recorded for six out of nine countries, in *alternative 4* for five, in *alternatives 2 and 3* for four and three, respectively. It can be derived from the comments, that living in a rural area with less health care providers available and a lack of or insufficient family support will most likely lead to a longer hospital stay and a higher risk of being admitted to a nursing/residential home. Being pensioned reduces the efforts aiming at retraining

skills needed specifically for the working place in some countries. In general, the influence of jobs and employment of rehabilitation is surprisingly small. Rehabilitation obviously emancipated from its historic roots and became a general effort of health care in Europe. At least this is the case for efforts necessary to deal with cerebrovascular diseases.

2.2.3.4 Case Studies: The Dementia Case

Subsequently, the dementia case is described in general medical terms, and participants were asked to sketch the expected course of treatment and other care delivery in principle.

Patient lives with moderate Alzheimer's disease and extrapyramidal symptoms. The patient needs personal help in all basic ADL and more complex activities, but is able to walk with aids. Occasionally patient is incontinent. During the last six months a rapid decline of both cognitive functions and behaviour has occurred with outbreak of hallucinations and delusions. The medication is appropriate. Increasing rigidity, aberrant behaviour and decreased self-care capacity.

The general results from the participating countries indicate that the treatment of the patient in the dementia case will differ substantially across Europe – opposite to the situation in the cerebrovascular case. In some participating countries the specific situation (Alzheimer's disease) initiated already standard procedures (Finland and Iceland existing, Spain in planning), in others treatment is reduced to basic nursing care, either at home or in a nursing home; or to inpatient care. In the remaining countries the treatment lies in between, i.e. it tries to qualify the family for successfully allowing the patient to stay at home as long as possible, primarily by providing qualified nursing care and professional support with ADL. Admitting the patient to a nursing home may be required if living in a family surrounding is not or no longer possible.

The specific circumstances of the scenario were set in the same way as in the cerebrovascular case. The only exemption was the patient's age (now 59) and sex (now female). The latter was chosen intentionally to sharpen the focus on provision of family care and support.

The patient is male, 59 years old and works for more than 30 years in a printing company situated in walking distance (1.5 km) from his home. The patient lives with his wife in a

terraced house on the outskirts of a medium-sized town (local geographical centre by national standards). This town provides the usual health-related amenities such as a local hospital with 250 beds and 4 departments, various physicians of all qualifications as well as nursing care, physiotherapy, home help, patient transport and emergency rescue facilities etc. The patient is eligible for treatment under a health insurance plan, which is described as favourable with respect to national references.

The majority of countries outlined, that in the specific situation described the general treatment plan would be applied unaltered. After an initial inpatient treatment episode (diagnosis and "fine-tuned" medical interventions) the patient will be discharged to her home, where family supported by ambulatory nursing care will take over, accompanied by other members of so-called "Alzheimer teams" where available. The Netherlands indicated that admission to a nursing home from the very beginning was in general "obvious, at least on a day care basis", whereas in the specific situation home care would be first choice. The comments of the other countries indicated a nursing home stay to be the second-best alternative only under all circumstances.

Table 21 contains the information as to whether or not changes in the general treatment plans will result from the differences in the scenario frameworks defined in alternatives 1 through 6. These alternatives are identical to the ones used in the cerebrovascular case.

Table 21: Change of Rehabilitative Treatment Given in Dementia Case Due to Socio-economic Conditions

Potential factors influencing rehabilitation treatment	DE	DK	ES	FI	GB	IE	IS	NL	SE
Changes occuring because of patient									
1. living in rural area with limited health care facilities	no	no	no	no	yes	no	yes	yes	yes
2. lacking family support	yes	yes	yes	no	yes	no	yes	yes	yes
3. being 63 and pensioned with private health insurance	no	no	yes	no	yes	no	no	no	no
4. being 79 and pensioned with private health insurance	yes	yes	yes	no	yes	yes	no	yes	yes
5. being qualified for basic health care only due to discontinuous jobs	no	no	yes	no	no	no	no	no	no
6. having been persistently unemployed and living from social aid	no	no	yes	no	no	no	no	no	no

It could have been expected, that direct lack of family support (alternative 2) or assumed lack of family help because of belonging to the uppermost age brackets (alternative 4) were most likely to initiate changes in the initial treatment plan. Living in a rural area (alternative 1) and just having left the working population (alternative 3) exert less influence.

Financial aspects resulting from discontinuous jobs or continuing unemployment does not influence the treatment plan anywhere, but initiate changes in the financial support of the patient in Spain.

In *alternative 2 and 4*, changes are recorded for seven out of nine countries, in *alternative 1* for four, in *alternatives 3* for two, and in *alternatives 5 and six* in one country only, as already mentioned. It can be derived from the comments, that lack of family support will most likely lead to an earlier admittance to stationary nursing care, in most cases starting immediately after inpatient care in hospital. Although not explicitly outspoken, one may assume that high age will in general limit efforts of dementia rehabilitation. Living in a rural area may also initiate nursing home stay because of the lack of specialised ambulatory care units. Spain and Germany indicated that being pensioned changes the responsibility of social benefits for pensioners, in Spain this is also the case for labour force participation being discontinuous or completely lacking.

Nonetheless treatment given in a dementia case is unexpectedly comparable, at least for the countries participating in EUCOMP phase 2 and analysed for well-defined scenarios. The general descriptions of treatment forms at the beginning of this section had indicated otherwise. Being pensioned or unemployed does not reduce the chances of being given treatment, in some countries the financial responsibility may change, however. An additional surprising fact was that inpatient treatment plays a supportive role only, limited to cases, where home treatment is not possible.

2.2.3.5 Case Studies: The Mixed Musculoskeletal and Psychiatric Case

Subsequently, the last case is described in general medical terms, and participants were asked to sketch the expected course of treatment and other care delivery in principle. This case is special as it combines two diseases, which both are subject of rehabilitation efforts – independent of each other. Among other things the analysis will have to inquire to which degree comprehensive rehabilitative treatment efforts are undertaken.

The patient injured the left knee at work with patellar luxation six years ago. Few months later after this injury patellar luxation reoccurred. The lateral-release operation of the knee was performed one year after the primary injury, but patient didn't recover completely. Patient could not walk

properly and did not return back to work. Two years ago patient developed panic disorder and could not go out alone. At the moment, patient has obvious de-conditioning syndrome with moderate osteo-arthritis in the injured knee with continuous pain, mild osteo-arthritis in the other knee and in both hips with occasional discomfort and continuous pain in the neck and shoulder region with minimal clinical findings. Patient uses mild analgesics and anti-depressive medication. Patient can do the rooms, wash dishes at home and walk short distances if assisted by spouse, but patient is not able to go for shopping alone due to the psychiatric disorder.

The results from the participating countries indicate that the treatment of the patient in the mixed musculoskeletal and psychiatric case differs somewhat across Europe – like in the dementia case. In some countries treatment starts with inpatient care provided by a combined team of physiotherapists and psychotherapists – in Sweden after eventually a knee joint replacement had been performed – and continues with rehabilitation provided in an ambulatory or day care setting. Both treatments aim at allowing the patient to return to work. In the remaining countries the rehabilitation efforts seem reduced to reducing the patient's pain and to qualify him for living with the physiological impairments. Continuous inpatient treatment or admitting the patient to a nursing home at an early stage has not been advocated by any of the participating countries, however.

The specific circumstances of the scenario were set in the same way as in the cerebrovascular and dementia cases. The only exemption was the patient's age (now 49 again) and sex (female again). Like in the dementia case, the latter was chosen intentionally to sharpen the focus on provision of family care and support.

The patient is female, 49 years old and works for more than 20 years as a home nursing aid. The patient lives with her husband in a terraced house on the outskirts of a medium-sized town (local geographical centre by national standards). This town provides the usual health-related amenities such as a local hospital with 250 beds and 4 departments, various physicians of all qualifications as well as nursing care, physiotherapy, home help, patient transport and emergency rescue facilities etc. The patient is eligible for treatment under a health insurance plan, which is described as favourable with respect to national references.

The majority of countries outlined, that in the specific situation described the general treatment plan would be applied unaltered. After an initial inpatient treatment episode

dealing with both the physiological and psychological problems, the patient will be discharged to his home. Rehabilitative care will continue on an ambulatory or day care basis, depending on the specific situation. At least some countries cannot rule out, that these efforts may be reduced to mere pain reduction after repeated efforts did not result in any progress.

Table 22 contains the information as to whether or not changes in the general treatment plans will result from the differences in the scenario frameworks defined in alternatives 1 through 6. These alternatives are identical to the ones used in the cerebrovascular and the dementia cases.

Table 22: Change of Rehabilitative Treatment Given in the Mixed Musculoskeletal and Psychiatric Case Due to Socio-economic Conditions

Potential factors influencing rehabilitation treatment	DE	DK	ES	FI	GB	IE	IS	NL	SE
Changes occuring because of patient									
1. living in rural area with limited health care facilities	no	yes	no	no	yes	no	no	no	no
2. lacking family support	yes	no	yes	no	yes	no	no	no	no
3. being 63 and pensioned with private health insurance	no	yes	yes	no	yes	no	yes	no	yes
4. being 79 and pensioned with private health insurance	no	yes	yes	no	yes	yes	yes	yes	no
5. being qualified for basic health care only due to discontinuous jobs	no	no	yes	no	no	no	no	no	no
6. having been persistently unemployed and living from social aid	no	no	yes	no	no	no	yes	no	no

It was to be expected that old age (alternative 3, but even more alternative 4) was most likely to initiate changes in the initial treatment plan. Lacking family support (alternative 2) and living in a rural area (alternative 1) exert less influence. Financial aspects resulting from discontinuous jobs or continuing unemployment does not influence the treatment plan in the majority of countries; in Iceland, however, scarce resources may limit the efforts as far as cases of "unlikely improvement" are concerned.

In *alternative 3 and 4*, changes are recorded for five and six out of nine countries, respectively, in *alternative 2* for three, in *alternatives 1 and 6* for two each, and in *alternatives 5 for* one. It can be derived from the comments, that increasing age will in general limits the efforts undertaken, as the aim of retraining for a job no longer holds true. Early retirement schemes are mentioned as substitutes for treatment. In the case of lack of family support or living in a rural area home help services may be applied to allow the patient leading a self-organised life. Nursing homes or continuing inpatient treatment are not mentioned as standards in this case.

Complex disease situations seem to make rehabilitation treatment difficult to predict virtually everywhere in Europe. One may be tempted to assume that the need for simultaneous treatment of two diseases imposes more difficulties than dealing with both diseases one after the other. Quite some participating countries seem to be more and more prepared for situations like the one described in the third case, however. One may want to add that this development is heavily needed, as ageing populations may lead to the "mixed musculoskeletal and psychiatric case" becoming less and less exotic.

2.2.4 Summary

The EUCOMP Board and staff decided to use new forms of data collection in the phase 2 of the project. Rehabilitation turned out to be an ideal subject for further investigating the usability of the tools developed for metadata collection, because like a microcosm in a miniature world it contains all aspects and facets of comprehensive health care, and it actually undergoes paradigmatic changes of the overall concepts applied.

The scenario technique turned out to be an equally valuable tool for the project as a whole. On the general level, concepts or treatment plans used in the various participating countries may easily appear similar or even identical, whereas underlying differences become only obvious if exactly defined situations are scrutinised, based on scenario definitions. It can be stated freely that the results provided in this section could not have been accumulated using standard questionnaire formulation not referring to scenarios.

It has to be admitted, however, that scenario-based questionnaires are an extremely labour-intensive way of information collection, both in the phases of preparing and of filling in the questionnaires. To make results meaningful requires the expertise of scarce specialists on either side. Modesty should be advised with respect to the use of this instrument, thus. Applying these elaborated techniques to standard situations means wasting resources. Applying them wisely on the other hand may help to accumulate information in difficult and complex situations, in situations where other information collection tools usually fail.

2.3 Metadata: Glossaries and Country profiles

2.3.1 Introduction

Metadata are considered to be a core item in the EUCOMP-project. In the course of the project special activities took place with regard to this item. The project description indicates, that metadata are to be defined for selected areas of the health care system by reference to the draft functional descriptions using data modelling techniques and software as appropriate.

Metadata are data on data. As such metadata are not the carriers of "material" information. They are of a "formal" nature, only containing references to aspects of information: characteristics or typologies. With these formal characteristics metadata should provide efficient retrieval modes as well as conceptual clarity (clear definitions, well-determined units, references to broadly recognised classifications), concise insight in data collection and processing (the more complicated, the more extended), measuring instruments, availability of data, etc.

A particular example of such a metadata system is provided by the Australian Institute of Health and Welfare. A great variety of metadata, serving the needs of several categories of users, is described in the National Health Data Dictionary (version 7.0) (See Literature: 1). Metadata are defined here as "data describing the identifying, definitional, relational and representational attributes of data definitions". These metadata are presented according to ISO/IEC International Standard 11179 "Specification and Standardization of data Elements", resulting in the following list of items:

Data element attributes
-Admin. Status
-NHIK ID (National Health Information Knowledgebase-Identifier)

Identifying and definitional attributes
-Name
-Version number
-Data element type
-Definition
-Context

Relational and representational attributes
-Datatype
-Representational form

-Field size
-Representational layout
-Data domain
-Guide for use
-Verification rules
-Collection methods
-Related data

Administrative attributes
-Source document
-Source organisation
-National minimum data sets
-Comments

The Australian metadata system is of admirable completeness. However, metadata contain more than classifying or typifying characteristics. Metadata can refer also to the environment, from which statistical data are extracted and this element is missing in the Australian metadata system.

In his note on "Developing a New System of Health Care Statistics" (See Literature: 2) Brückner distinghuises three kinds of metadata:

- Metadata in an IT-context
- Metadata in a statistical or data collection context
- Metadata as a means to understand information in a predefined framework.

The first two meanings refer to the classic and strict formal connotation of metadata, as shown in the Australian example. The latter meaning, in his view, plays the most prominent role in the EUCOMP-project. It may become a data or information source in its own.

Brückner explains that metadata of this type "provide the necessary background information for understanding the numerical data included. A "health care dictionary" and "standard country descriptions" are suggested as basic elements of this category within a metadata system. The first takes care of proper defining all data elements included, the latter is intended to describe the Member States' health care system in a standardised way."

The same distinction made by Brückner can be found in the work by Prof. Bo Sundgren (Statistics Sweden) (See Literature: 3). In his view metadata can be based on specific and global knowledge.

"Specific knowledge denotes meta-information and meta-information-related functions associated with individual systems, productions systems and retrieval systems, that is, meta-information of a relatively local nature, if regarded, for example, in relation to the statistical information system of a certain national statistical office, or even the statistical information system of a world community of some kind.

General knowledge denotes meta-information and meta-information-related functions of a more global character, for example knowledge about how statistical surveys and information systems are to be designed, operated and evaluated, which we may call handbook knowledge, since it is often documented in the form of handbooks, manuals and guidelines. Another type of general knowledge is encyclopaedial knowledge, that is, knowledge of the type documented in dictionaries, encyclopaedias, and thesauri. Yet another type of general knowledge concerns standards, contents-oriented as well as dealing with representation formats. Finally there is a subcategory of general knowledge that is concerned with and contained in software products".

From the distinction specific and general knowledge Sundgren develops the concepts "local metadata" and "global metadata". Production and retrieval systems are brought under "local metadata" and references regarding the encyclopaedial information, the standards and the software under "global metadata".

Returning to Brückner's division of metadata, the metadata in an IT-context and in a statistical or data collection context might be brought under the local metadata in the division of Sundgren. The metadata as means to understand information in a predefined framework are covered by Sundgren's "global metadata".

This means that the EUCOMP activities regarding glossary development and the standard country profiles can be placed in the field of "global metadata" in the conceptual scheme, developed by Sundgren.

2.3.2 Glossary

2.3.2.1 Introduction

In the description of the EUCOMP-project within the general goals of the project specific concrete results have been targeted and the steps to be made towards a basis for common health care statistics in the European Union were set down. One of these concrete results was to be a glossary in Member

States own language. Of course, this glossary is connected with the functional breakdown of health care systems, which has to do with the main activity of the EUCOMP-project. The goal of the glossary is to contribute to the transparency and understanding of EU health care systems and, in this regard has the same function as the country profiles.

A glossary can be a list of words relating to current terms in a language as a whole or to a list of words limited to a certain domain of attention like a glossary of viniculture. In this sense, with regard to health care a glossary of terms has been adopted in the publication "Hospital services in the European Community" by the Hospital Committee of the European Community (See Literature: 4). Below the example regarding "Doctor's fee" is presented:

Doctor's fee	
France	honoraires médicaux
Germany	Arzthonorar
Spain	honorarios médicos
Italy	onorario medico
Netherlands	artsenhonorarium
Denmark	laegehonorar
Portugal	honorarios médicos
Greece	αμοιβη ιατρου

This glossary is a list of terms without any explanatory description: only a list of terms with the English term as a starting point and translation of this term in the main languages of the European Community in that time.

The aim of the EUCOMP- project reaches further: not only a list of terms used in languages of the Member States of the European Union, but also explanatory descriptions of the terms which are included in the glossary.

2.3.2.2 The development of the glossary

In the electronic questionnaire regarding the functional breakdown of health care systems two instruments played an important role. The first one is a list of activities in health care as used in the Dutch project "International Comparison of Health Care Data" (See Literature: 5). The other is the classification of functions and the modes of production, supplied by the OECD (See Literature: 6).

The former list contains about 90 items and the latter 16. As these lists and connected definitions were available in English, participating countries have been requested to

provide a translation in their national languages. The result was two language-based glossaries.

The participating countries provided descriptions/definitions in English and in their national languages of the actors (providers and funders) in their national health care systems. To ensure that this was done in a comparable way the approach to formulating descriptions/definitions was considered. The following general rules have been recommended:

- Get the essentials immediately in an accurate formulation
- Formulate from a more general category to the particular manifestation of that category
- Don't use in the definition the terms that should be defined and don't replace these terms by a word with the same meaning in own language or a foreign language. This sometimes is very difficult to be maintained in medical vocabulary: "a boil is a furuncle" or "a hospital is a clinic" and "a clinic is a hospital".
- Don't choose too wide formulations, because of the risk of polluting the concept
- Don't choose too narrow formulation, because of the risk of escape of entities, one would like to comprise
- Be careful with references to legal regulations, not only because the sometimes very specific meaning a term might have in such a text, but also because of formulations like: "a physician is a professional in health care as meant in article 4, paragraph 2, of the general act on health care, who has fulfilled the requirements as listed in the Ministerial Decree on Medical Education and who is registered according to the Decision of the General Inspector of Public Health, dated 12 December 1937." This kind of definition can barely be understood by local nationals and is completely meaningless for foreigners. Therefore, descriptions in functional terms are preferable, especially, because this project concerns a functional breakdown of health care systems.

With regard to the list of actors it should be noticed, that this is country bound. It is not possible, for example, to use the list of actors of the Netherlands with regard to Belgium. Though in both countries Dutch is an official language, it is impossible to apply the list of the Netherlands to Belgium and vice versa. Actors might have different names and/or different functions in the national systems of health care in these countries. The same applies to Germany, Austria and Luxembourg with German as common language. This is what makes the full descriptions so useful.

2.3.2.3 Languages of the glossary

In the 17 countries of the European Union 13 languages are spoken by majorities and substantial minorities, which are recognised as such. Furthermore there are official languages, which are spoken by a part of the population like Gaelic in Ireland and Letzebürgisch in Luxembourg. With recognition of the cultural and political significance of these two languages, they nevertheless are not adopted in the glossary. The same holds true for languages, which play a role at regional administrative levels like Friesian in the Netherlands, Saame in Finland and Basque and Catalan in Spain.
The following scheme presents the 13 chosen languages and the countries, where these languages are commonly used.

Figure 20: Languages and Countries

	Danish	Dutch	English	Finnish	French	German	Greek	Icelandic	Italian	Norwegian	Portugese	Spanish	Swedish
Austria						+							
Belgium		+			+	+							
Denmark	+												
Finland				+									+
France					+								
Germany						+							
Greece							+						
Iceland								+					
Ireland			+										
Italy									+				
Luxemburg					+	+							
Netherlands		+											
Norway										+			
Portugal											+		
Spain												+	
Sweden													+
UK			+										

2.3.2.4 Results

Though not all member-states participated, it has been possible to produce glossaries on the lists of activities and the OECD list of functions and modes of production in 10 languages (Italian, Greek and Spanish are missing).

This means a first substantial glossary of health care terms in the European Union that can be approached by the greatest part of European citizens, who might be interested in this work.

It also means, that by this procedure, at least partly, gaps in statistical definitions have been filled. Definitions in the field of health care statistics are not freely available or obvious in many cases. For some countries one even might speak of a neglected domain.

This made this operation very necessary and rewarding for the participating countries.

The results are presented in Part 4 and consist of:

- A glossary of activities in health care (language based)
- A glossary of OECD functions and modes of production (language based)
- A glossary of actors (providers and funders) in health care (country based)

2.3.3 Country profiles

2.3.3.1 Introduction

The interest in international comparison has brought many initiatives regarding the description of national health care systems. One of the first leading publications was "The reform of health care: a comparative analysis of seven OECD-countries" by Jeremy Hurst (See Literature: 13). It was soon followed by a number of others.

Germany charged BASYS to compose "Gesundheitssysteme im internationalen Vergleich" (See Literature: 7). The Nordic-countries already have a long tradition of mutual comparison, which has led to the annual NOMESCO-publication on "Health Statistics in the Nordic Countries" (See Literature: 8). Also the publication on "Health Care in Europe" by Yvonne W. van Kemenade (See Literature: 9) should be referred to.

In many of these activities the need was felt to show not only the data, but also descriptions of the organisation and

operating of health care systems. In the previously mentioned publication "International comparison of health care data" (See Literature: 5) these descriptions were called "country profiles".

These country profiles were meant to provide:

- a quick introduction to the health care systems of the participating countries (Belgium, Denmark, Germany, France, The Netherlands and Switzerland).
- an exploration of the boundaries of the health care systems
- a contribution to transparency, a necessary condition for international comparison

The country profiles provide general information, but also particular characteristics, important as a framework of interpretation of statistical data on health care systems. The general basic idea is that for international comparison more is needed than pure statistical data.

The significance of country profiles in health care has been well understood, also in other initiatives.

The General Inspectorate of Social Security in Luxembourg had the lead on the EUROSTAT Project "Health Care Resources Statistics" (See Literature: 10). This was a project to test the methods of the project "International Comparison of Health Care Data" with other countries: Austria, Ireland, Italy, Luxembourg, Portugal and Spain. For these countries also country profiles have been produced.

2.3.3.2 The need for standardisation

In each publication, mentioned in the previous introduction a kind of standardisation has been used in order to facilitate comparison between countries. However, the most detailed standardisation so far has been developed by WHO/EUR in the publication "Production Template and Questionnaire" (1996, see Literature: 11). In Annex 5 this production template is presented in detail; below in figure 21 a summary on main topics is presented.

Figure 21: Production template WHO/EUR: Summary

Part I: Introduction and historical background
1 Introductory overview
2 Historical background

Part II: The health care system in country
3 Organisational structure and management
4 Health care finance and expenditure
5 Health care delivery system
6 Financial resource allocation

Part III: Health care reforms in country
7 Determinants and objectives
8 Content of reforms and legislation
9 Reform implementation
10 Conclusions

This template formed the basis for the series "Health Care Systems in Transition" (HIT), started by WHO/EUR. These reports are described as country-based documents providing an analytical description of the health care system and of any reform programmes under development.

Already many country-based reports have been produced according to this template. The work on the HIT's has been transferred to the European Observatory on Health Care Systems in London.

This Observatory is an initiative that brings together the World Health Organisation Regional Office for Europe, the Governments of Norway and Spain, the European Investment Bank, the World Bank, the London School of Economics and Political Science (LSE) and the London School of Hygiene & Tropic Medicine (LSH&TM).

The Observatory began operation in June 1998 and is comprised of three research centres: Copenhagen (WHO-

office), London, with the institutes already mentioned, and Madrid (National School of Public Health). The official launch of this initiative was at 11 February 1999. The objective of this partnership is to support and promote evidence-based health policy-making through rigorous and comprehensive analysis of the dynamics of health care systems in Europe. The work on the reports on the series "Health Care Systems in Transition" has been left in the hands of the London School of Economics and Political Science.

The standardisation of the HIT's by means of the template developed by WHO/EUR has many advantages. On the one hand it is a guarantee of the maintenance of comparable content and of quality. On the other hand the template offers a potential retrieval system which could be applied to an electronic "metadata-base" to satisfy one of the goals to be reached in the EUCOMP-project. Co-operation between EUCOMP and the Observatory was indicated as the way to realise both these potential benefits. The Observatory generously approved the use of the available HIT's by the EUCOMP-project for this purpose. The texts of these HIT's have been fragmented and each fragment was coded according to the headings used in the template, which in the context of the project underwent some minor adaptations.

Because of the links between the EUCOMP-project and the OECD regarding the application of OECD-classification some elements were added to the template:

- therapeutic appliances
- other services
- import and export of health care

Some items of the original template have been rearranged and have been put under "general characteristics" without change of the headings:

- Integrated or contract model
- Organisational relationship between third party payers and providers
- Ownership: public or private
- Freedom of choice
- Referral system

The complete adapted template of the Observatory is presented in Annex 6.

A summary of the adapted template, including the codes used, is presented in the following figure:

Figure 22: Template European Observatory: Summary

1. Introduction and historical background
2. Main functions of key bodies in the organisational structure and management of health care administration
3. Planning, regulation and management
4. General characteristics of the organisational structure
5. Out-patient care
6. In-patient care
7. Relationship between primary a Relationship between primary and secondary care
8. Prevention and public health services
9. Social care related to health care
10. Medical goods and health care technology assessment
11. Other services
12. Manpower in health care
13. Fees, rates and salary structure
14. Main system of financing and coverage (tax based, insurance based, mixture)
15. Health care expenditure
16. Import and Export
17. Health care reforms

2.3.3.3 Results

HIT's have been made available regarding the following countries: Finland, Germany, Greece, Luxembourg, Portugal, Sweden and the United Kingdom. For Austria, Italy and Spain the country profiles have been used that was provided in the project Health Care Resources by IGSS, Luxembourg. With regard to the countries Iceland and Norway the available text is derived from NOMESCO "Health Statistics in the Nordic Countries.1997 (See Literature: 8).

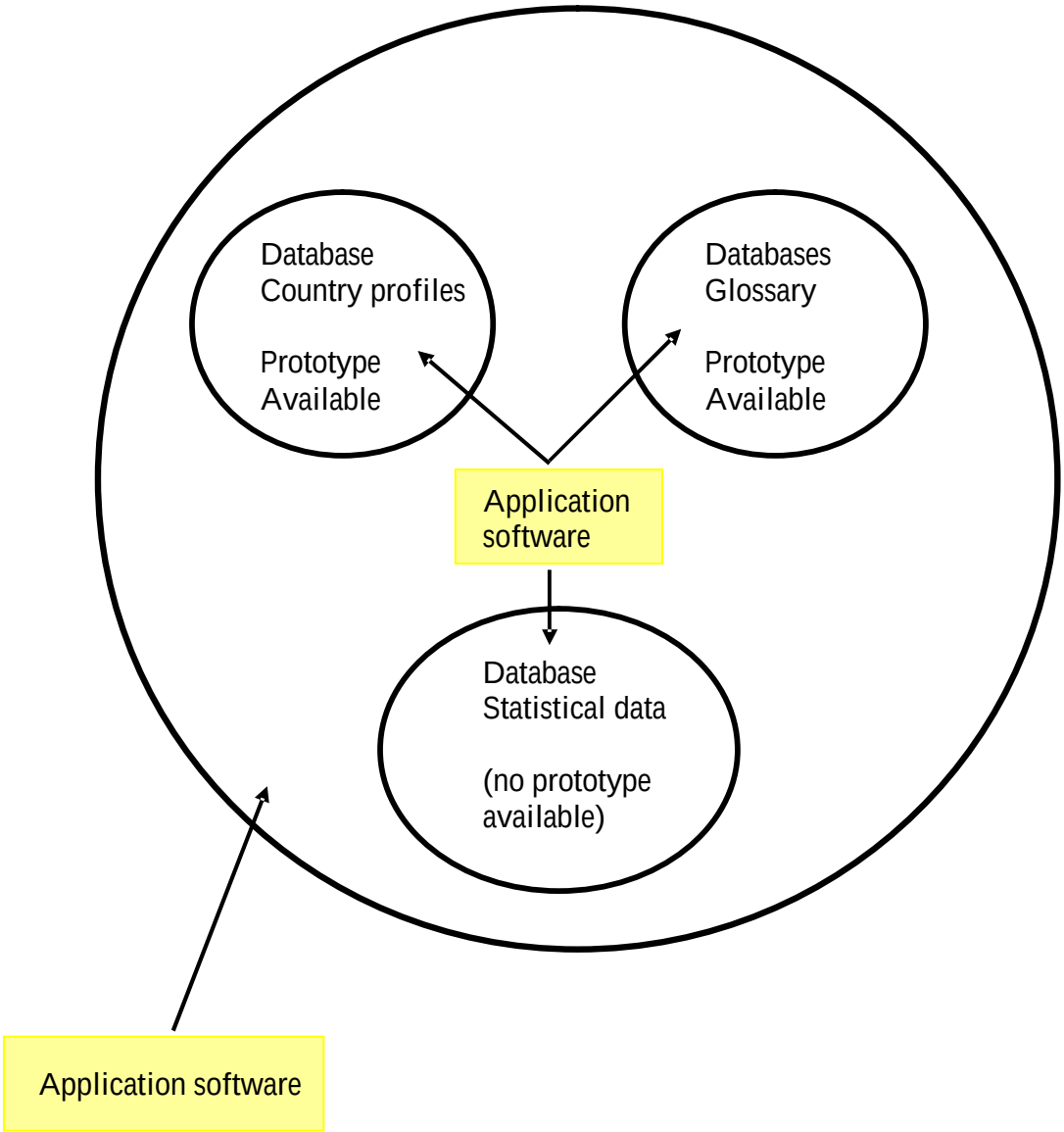
With regard to Belgium, Denmark, France and the Netherlands the country profiles have been derived from *International Comparison of Health Care Data* (See Literature: 5). The country profile for Ireland was supplied directly from Irish sources. All these texts have been reformatted in a tabular form. This means that the country profiles had to be split up in text fragments in accordance with the headings used in the adapted WHO-template and that every text fragment received a code, indications regarding country and year of production or update and specific headings and subheadings. The use of a more detailed approach was necessary.

2.4 The Internet/web-based information retrieval system

2.4.1 Introduction

Once metadata-bases regarding country profiles and the glossary on actors in health care being developed, a solution had to be found for easy public access to these sources of information. Modern information technology offers this opportunity by Internet applications. The next figure shows an outline for the realisation of this intention.

Figure 23: Connection between information



The model, presented in this figure, consists of three databases. The database with the country profiles and the

database with the glossaries should be mutually linked by hyperlinks in appropriate software.

Because these databases are in fact metadata-bases they never stand-alone. They are linked to quantitative data and in this case to a statistical database to be developed by EUROSTAT in the future.

This whole system of databases is to be directed by appropriate software, as it were, in a shell around this whole system. So far, this is a remote prospect. As an initial step within the framework of the EUCOMP-project, to meet one of the project's targets, a prototype has been developed regarding the two metadata-bases. This has been prepared as an Internet application to be installed and maintained by EUROSTAT.

2.4.2 Internet application EUCOMP-metadata-bases

After the development of the model, ascribed above, PNA Consulting BV (Heerlen, the Netherlands) has been contracted in order to develop the software for a functioning prototype. In short, PNA Consulting BV performed the following tasks:

1. Designing and building the databases
    a. Analysis of the data structure requirements including documentation of the tables
    b. Design and creation of the Oracle data-base with the resulting tables
    c. One time loading of the database with a subset of the data of the relevant problem

2. Building a dynamic web-based application
    a. Design and creation of a user friendly website (using HTML version 4.0) so that the website can be read in Netscape Navigator version 4.0 and Microsoft Internet Explorer version 4.0
    b. Design of the necessary code and SQL queries in Oracle PL/SQL to be able to perform flexible questioning of the database, using search forms and other friendly means
    c. Design of the necessary code in Oracle PL/SQL and other languages (HTML, XML) so that the results of the queries are returned to the client as HTML pages, creating a web-based application

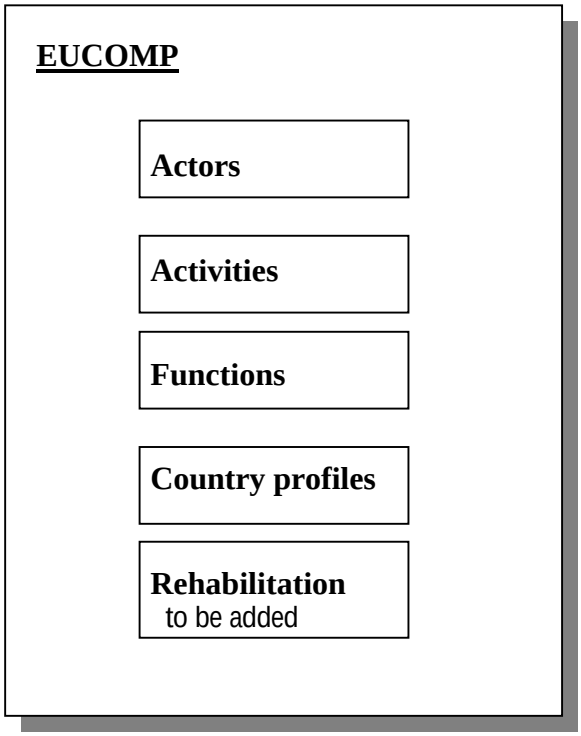
2.4.3 Results

The prototype, developed by PNA Consulting BV has been demonstrated at the EUCOMP-meeting in Noordwijk, the Netherlands, 25 March 2000. This Internet/web-based information retrieval system for centrally storing and freely displaying the results of the EUCOMP-project followed satisfactorily the requirements of a given use. The system proved to be very flexible and it is possible to query the system by way of a multiplicity of entry points, which maximises the usability and user-friendliness of the system.

A concise description of this Internet application is presented here as follows.

Opening screen of the application:

The opening screen of the application lists the four main topics on which information is available on the health care systems of the countries, participating in the project.



For all four main categories additional choices in the information supply are presented in the opening screen. On the topic Actors seven different fields are available for selection. On the topics of Activities and Functions additionally four and three information possibilities are available respectively. On the topic, dealing with the Country Profiles, also four additional choices are possible.

The last item mentioned in the above-presented screen, on the topic of Rehabilitation, is not yet incorporated in the Internet-application. On the closing of the programming for the Internet-application the datafiles on Rehabilitation were not yet available.

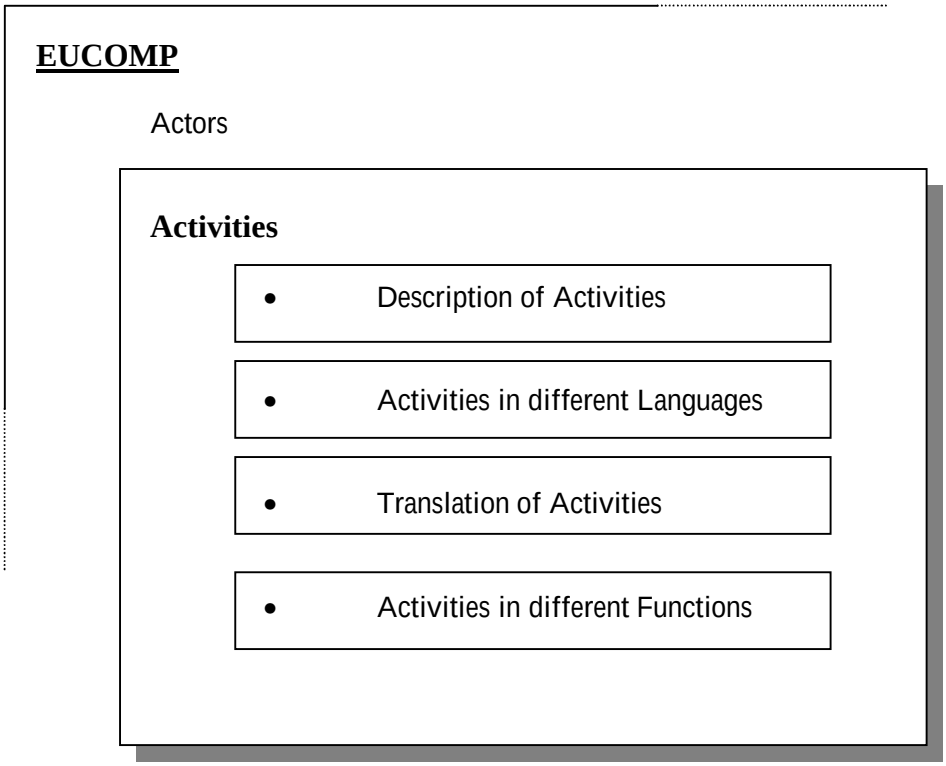
EUCOMP

Actors

- Actors in different countries
- Actors and Descriptions
- Actor Mode
- Actor Activity
- Translation of Actor Description
- Mode of Production
- Description of different Activities

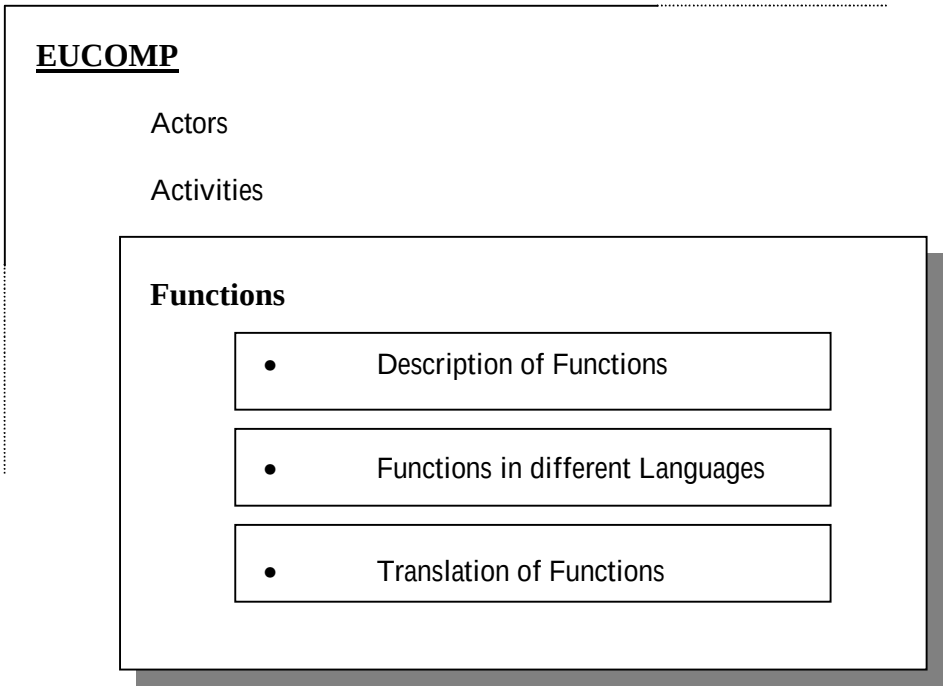
Description of the contents of possible choices:

The first option provides the information on the names of the actors available in the various systems of health care in the participating countries; the second option provides the description of the actors; the third option supplies information on the modes of production of the actors in the systems; the fourth option provides information on the functions, activities and the mode of production in which these activities and function are performed. The fifth option provides for a selected actor the name and the description of the content in two languages; the sixth option supplies information on actors by mode of production. The seventh option finally supplies a cross selection of actors by country, by mode of production, by functions and by activity performed.



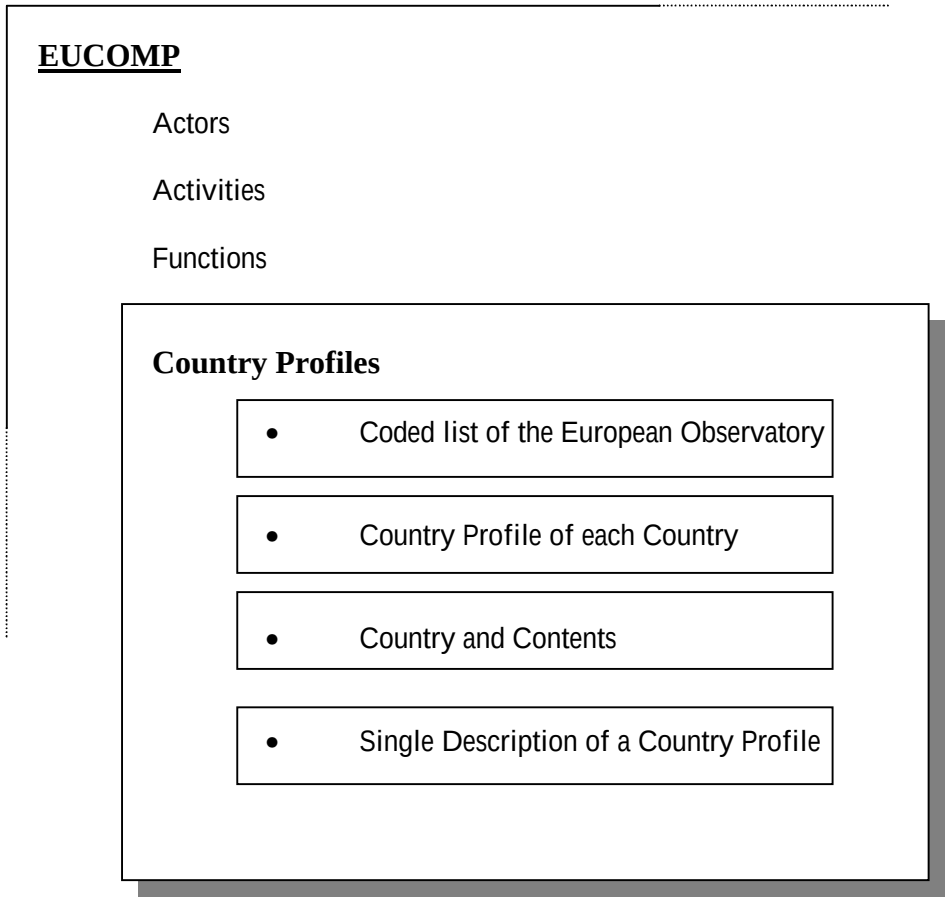
Description of the contents of possible choices:

The first option shows, for a selected function, which activities can be performed and what the contents of these activities are. The second option supplies information on activities in two languages, English and another chosen language. The third option provides information on a selection of activities by a selected number of languages. Finally the last option supplies information on all activities of a function and their description in English.



Description of the contents of possible choices:

On analogy to the possibilities offered in the screen on Activities, the screen on Functions offers the following choices:
The first option shows which functions are distinguished and what the contents of the function are. The second option supplies information on a selected function in two languages, English and another chosen language. The third option gives information on a selection of functions by a selected number of languages.

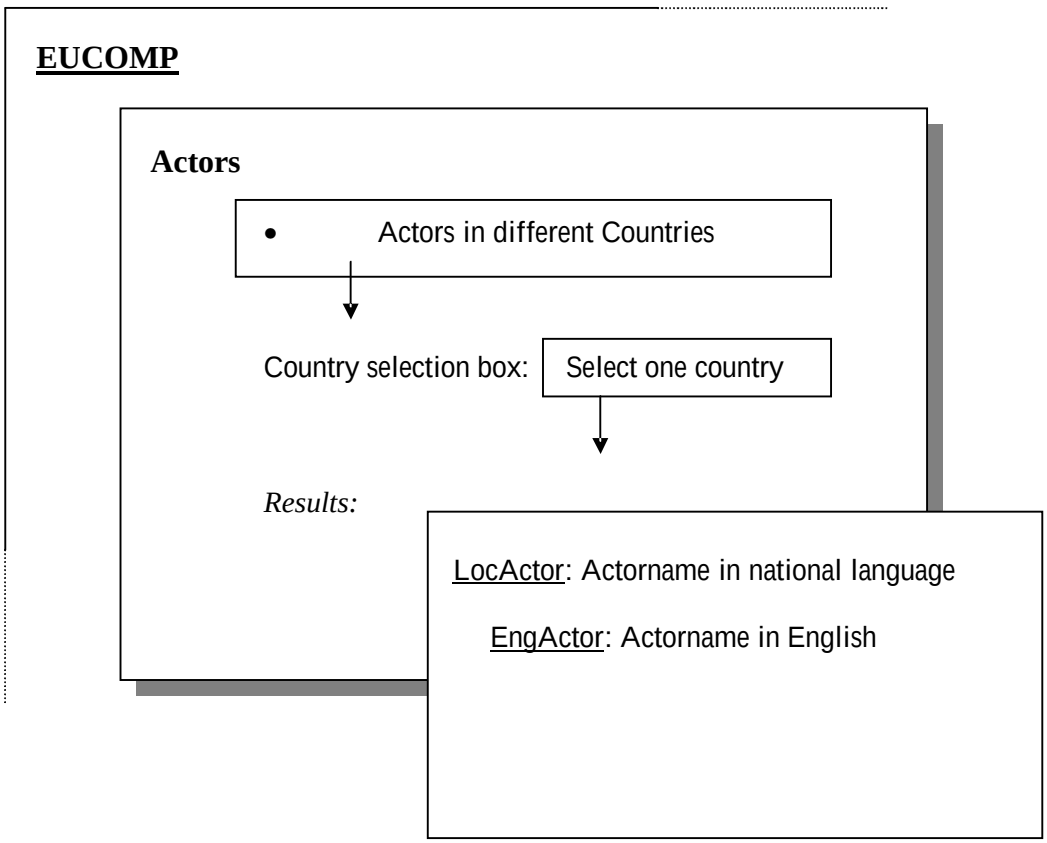


Description of the contents of possible choices:

The first option provides information on the codes or chapters that are distinguished in the Country Profiles supplied by participants and the European Observatory and the name of these codes. The second option supplies the complete Country Profile for a single country. The last two options allow various selections. The third option supplies information on a selected topic for a selected country; the last option provides a choice of country and chapter or code and supplies all the information available for that selection.

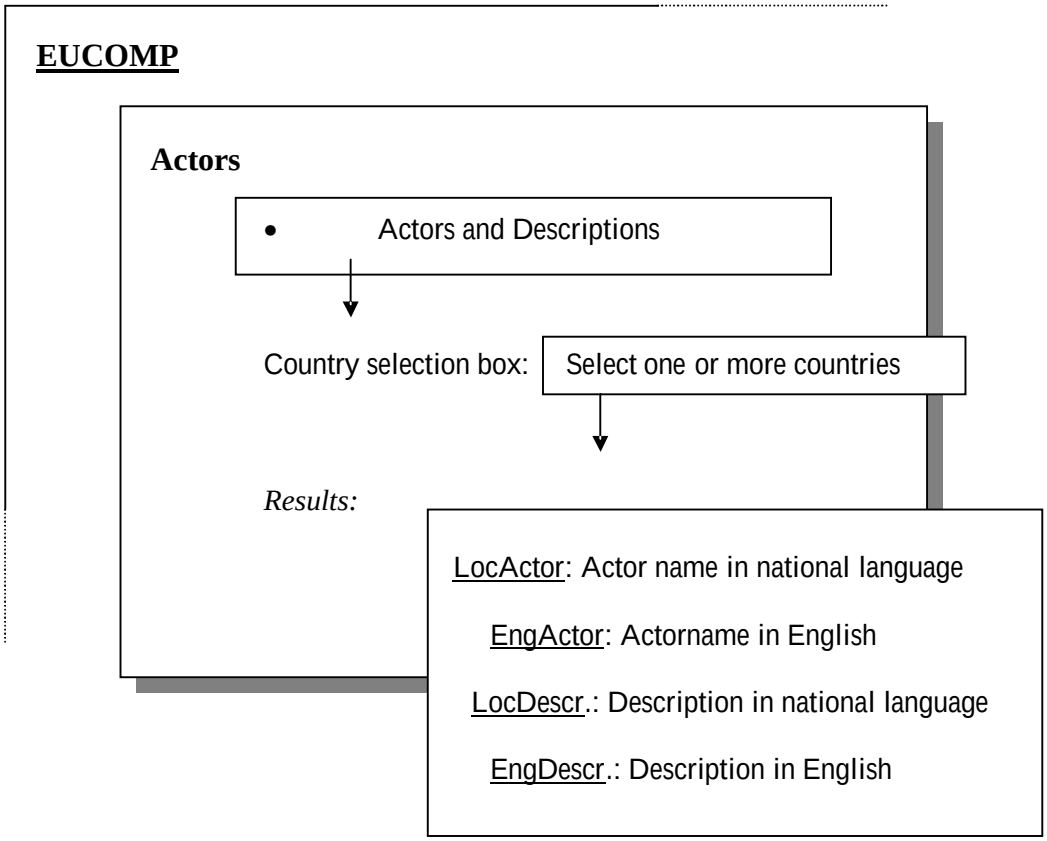
Detailed choices and results of the application:

In this part of the description of the Internet application the detailed choices and results based on these choices will be presented.



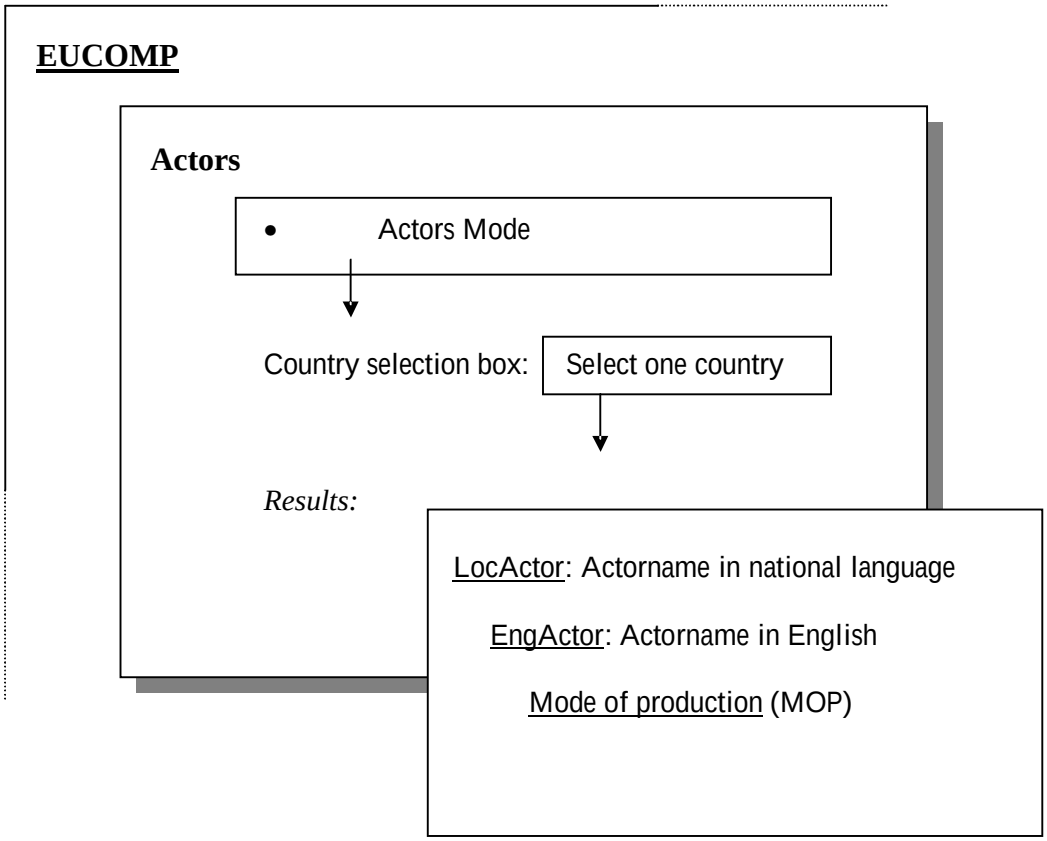
Description of the process and the results:

The only thing to do is to select a country for which information on actors is requested. After running the program the results are presented on screen, consisting of the names of the actors available in the selected country in the national language and in English.



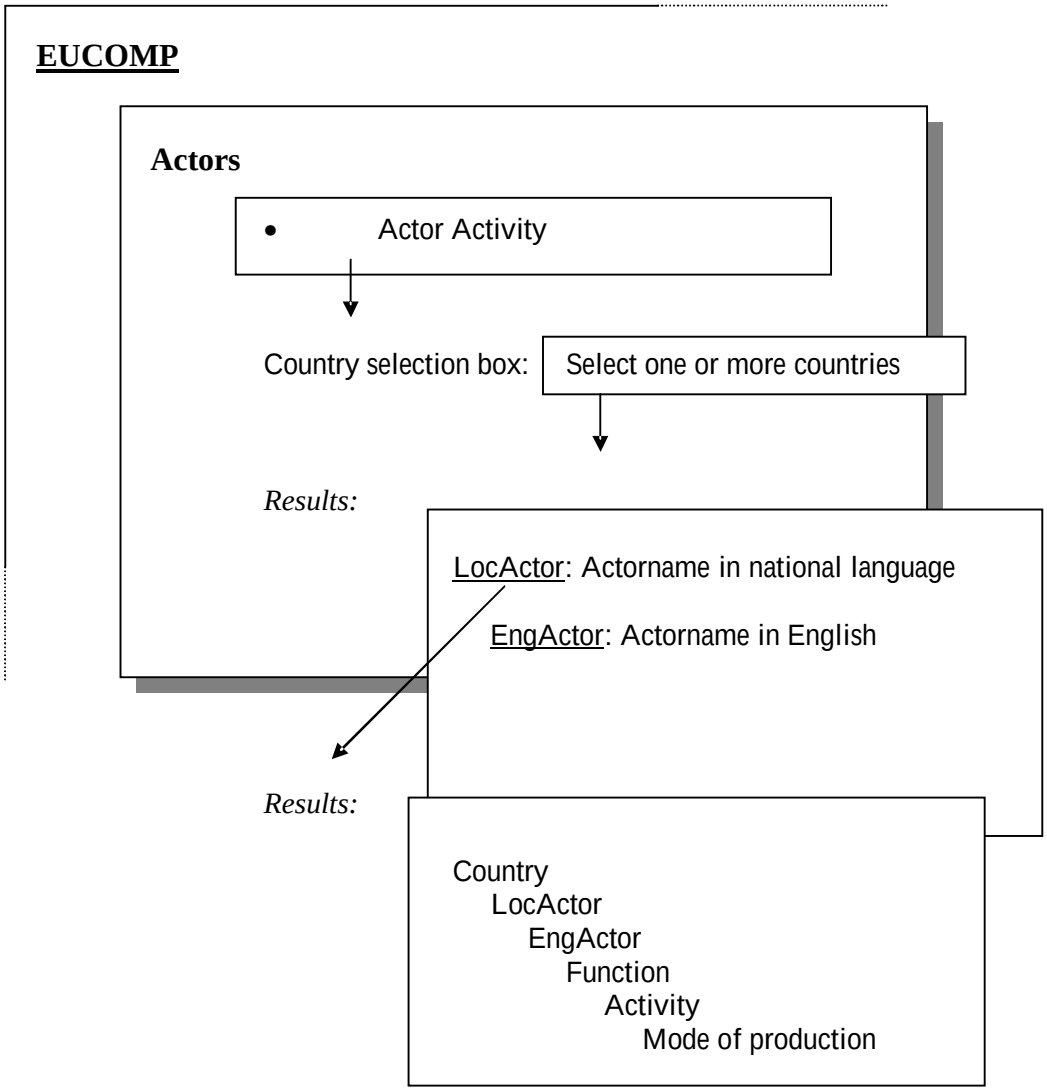
Description of the process and the results:

In this second option in the category of information on actors, a multiple choice of countries is possible. For all the countries selected the names of the actors are presented as well as the descriptions of these actors supplied in the datafiles. As in the previous option both national language and English are available.



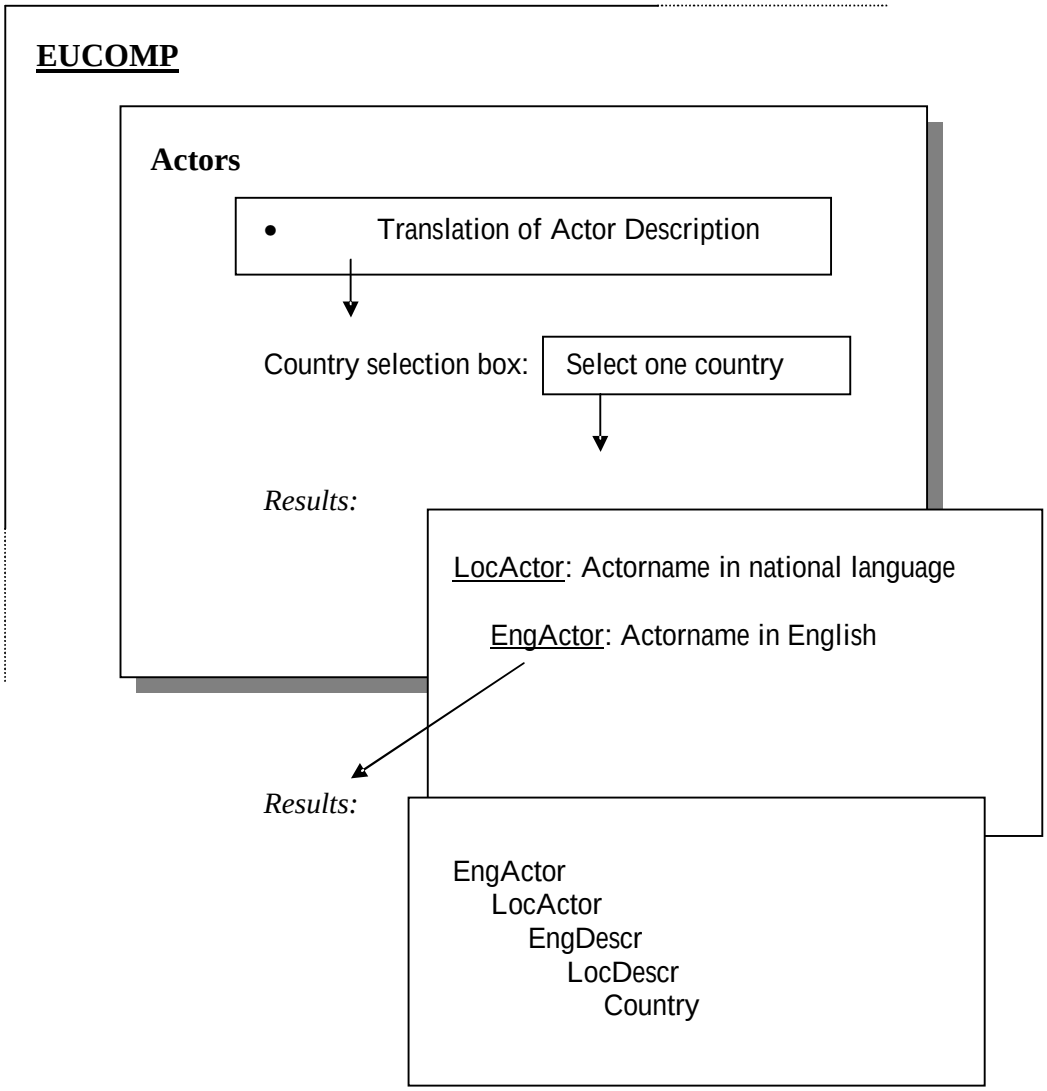
Description of the process and the results:

For one selected country the results after running the program consist of the names of the actors and the modes of production these actors perform. Four modes of production are distinguished, being in-patient care provider, provider of day care, out patient care provider and finally provider of home care. It goes without saying that the mode of production is only available for those actors that belong to the providers of care. For other actors listed in the data files as funders or providers of health care related activities, these distinctions have no meaning.



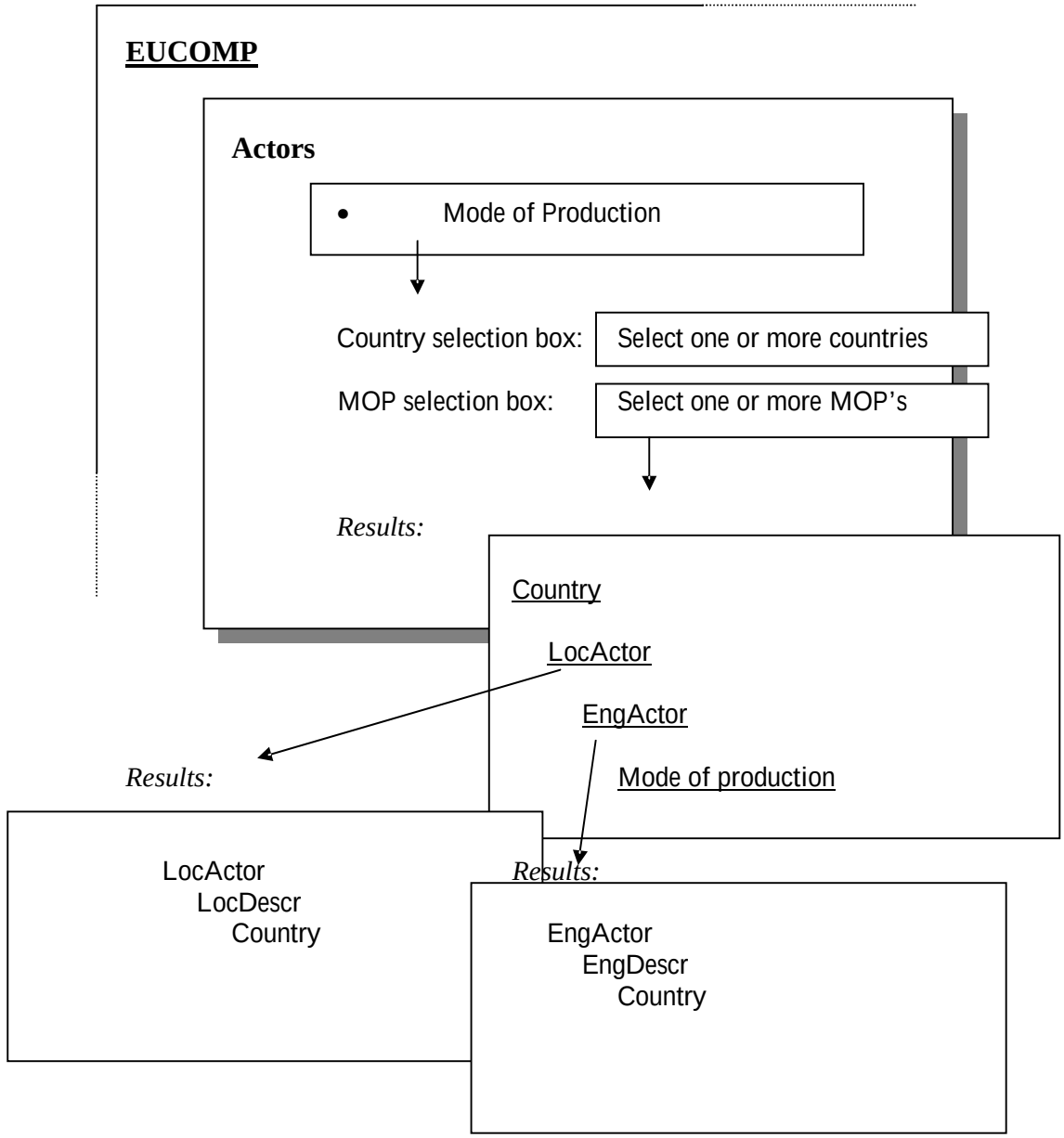
Description of the process and the results:

For the selected countries the names of the actors are presented (in national language as well as in English). The actorname however is a hyperlink, which leads to additional information. For the selected actor additionally the functions (as specified in the datamodel), activities (specified in the datamodel as well) and the modes of production (in-patient, day cases, out patient and home care) are presented.



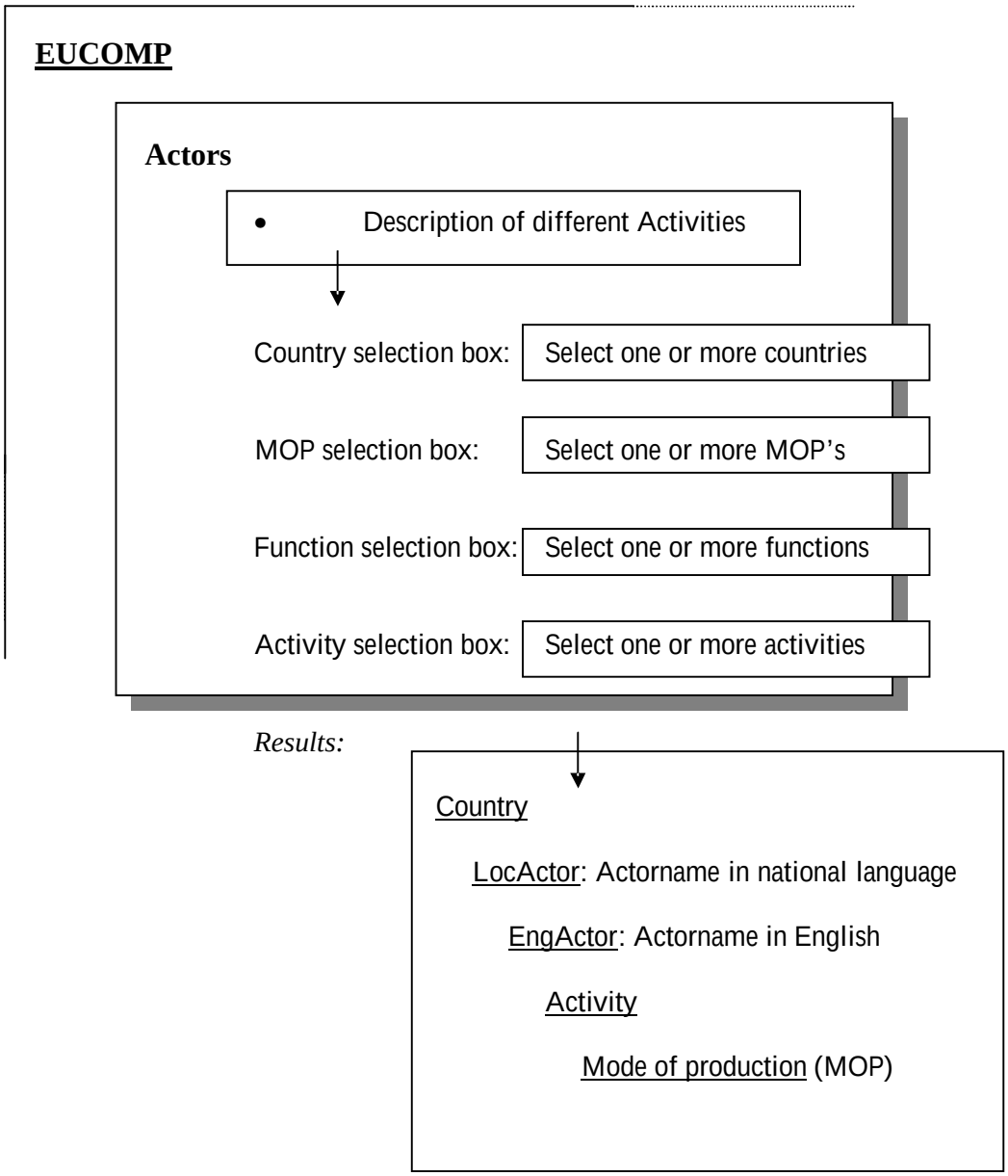
Description of the process and the results:

After selecting one country all the actors are presented (in national language and in English). Because the actorname is hyperlinked additional information can be shown. Clicking the actorname presents an additional screen showing the description of the actor both in English and in national language as well as the actorname and the selected country.



Description of the process and the results:

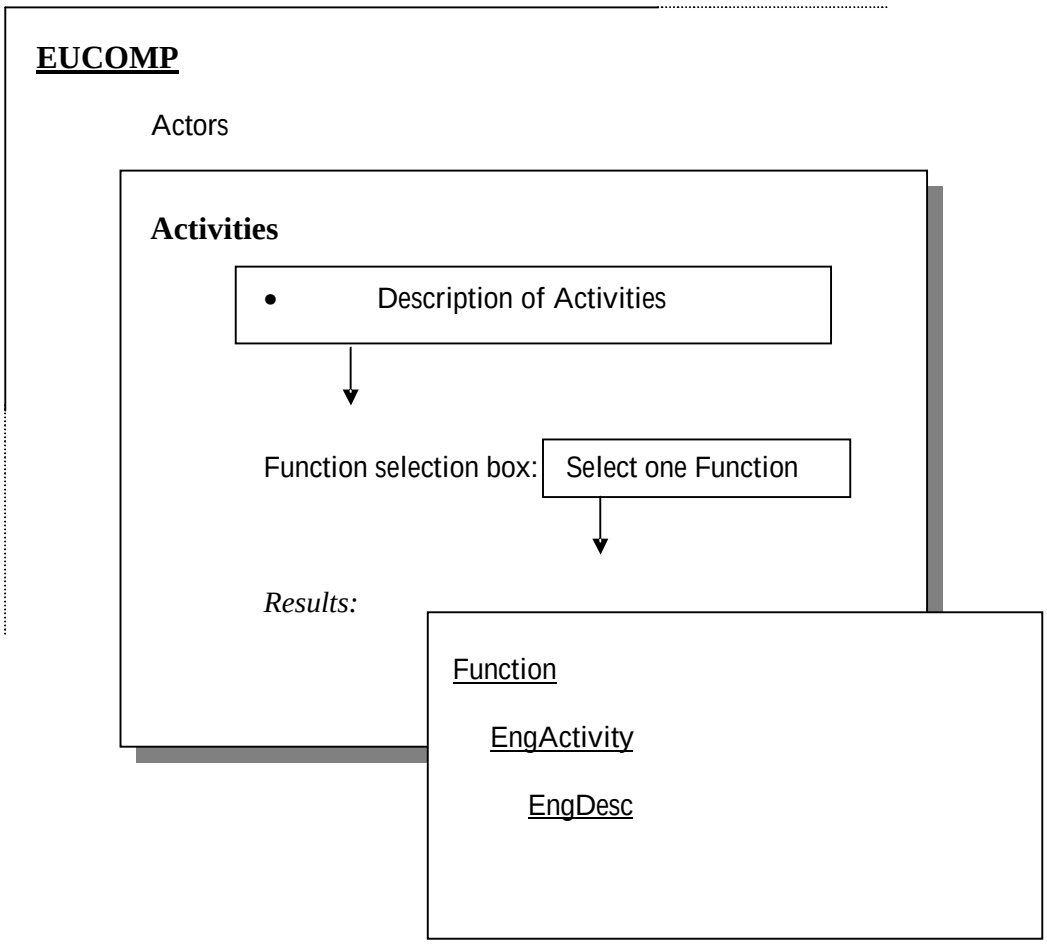
The modes of production option offers the possibility to select one or more countries as well as one or more modes of production (in-patient care, day cases, out patient care or home care). The results in this option are country, the actorname (in national language and in English) and the mode of production. Because the actorname (both in national language and in English) is a hyperlink additional information on the topic is available. This additional information contains the actorname, the description of the actor and the country. The language result is dependent on the hyperlink in the actorname used (national language or English).



Description of the process and the results:

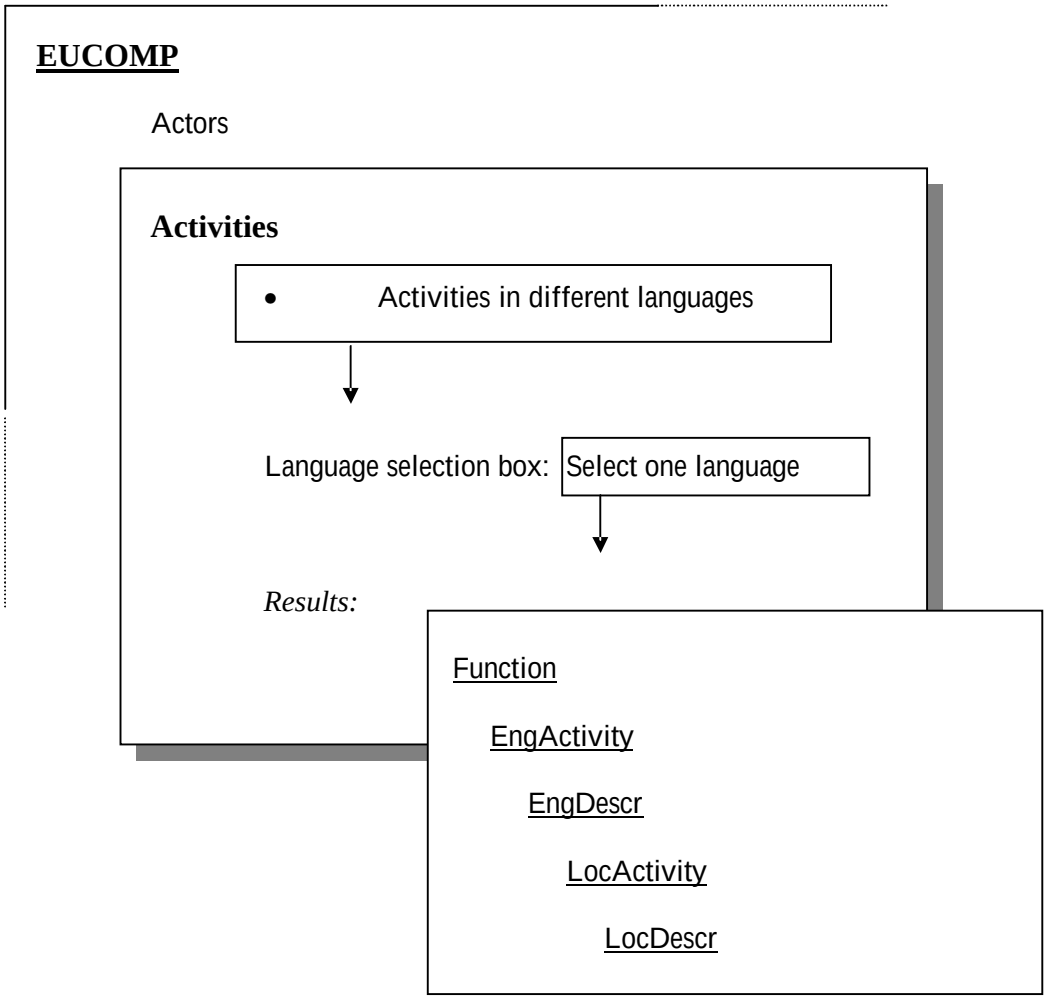
This last box in the Actor information option offers a multitude of selections. First one or more countries are selected, next a selection in the modes of production is possible followed by a selection of the functions and the activities. Running this option supplies for every selected country all the actors (national language and English) for every selected mode of production in the selected function for the selected activities.
The second main topic in the opening screen is the topic on the Activities. For this topic four additional screens are

available, of which the first one is the screen on the description.



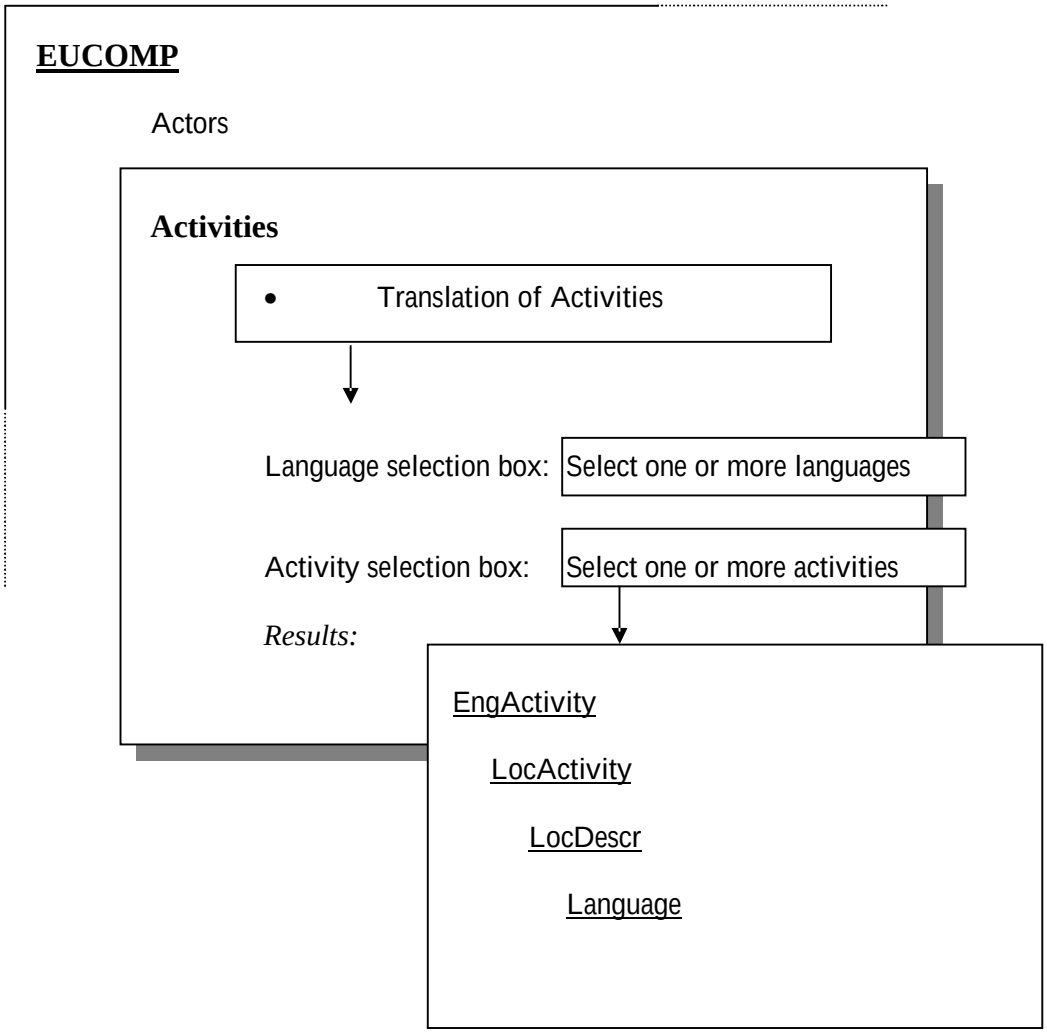
Description of the process and the results:

Activities are part of functions, so the first thing to select is a function for which one would like activities to be presented. Together with the activity the description of the activity is supplied. All the information is in the English language.



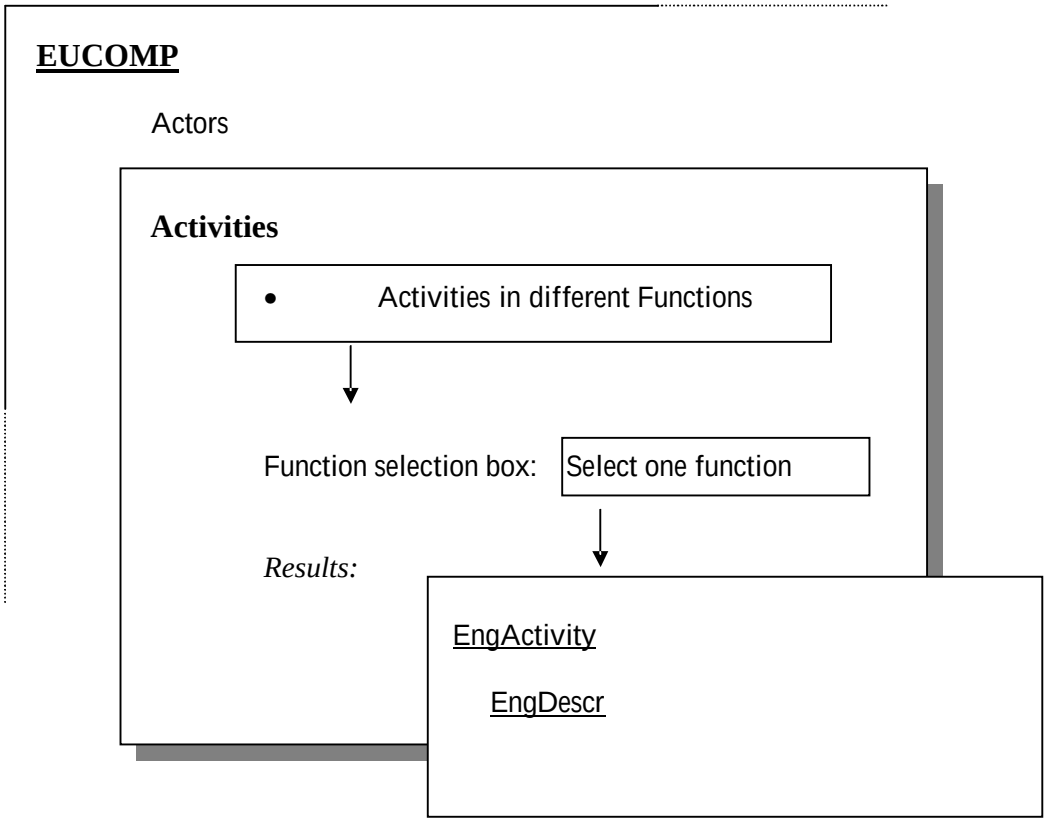
Description of the process and the results:

To present the activities in different languages a language has to be selected. The resulting screen shows for every activity (EngActivity) in which function this activity is available, the description of the activity in the chosen language (LocDescr) as well as English (EngDescr) and of course the title of the activity in the chosen language (LocActivity).



Description of the process and the results:

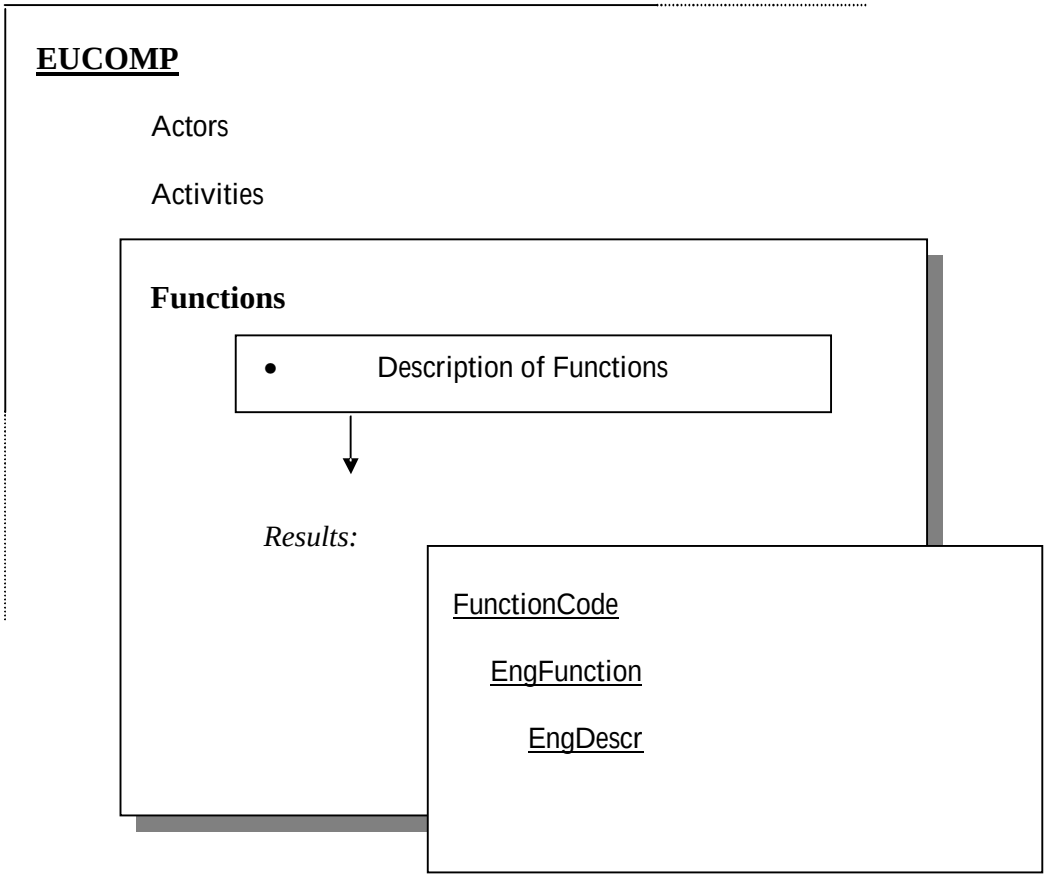
To get information on the translation of activities, first the languages for which the information is requested has to be selected as well as the activities themselves. The selection provides information on the activity names in English (EngActivity) and in the languages selected (LocActivity) as well as the description of the activities in the various selected languages (LocDescr). Finally the languages selected are presented as well.



Description of the process and the results:

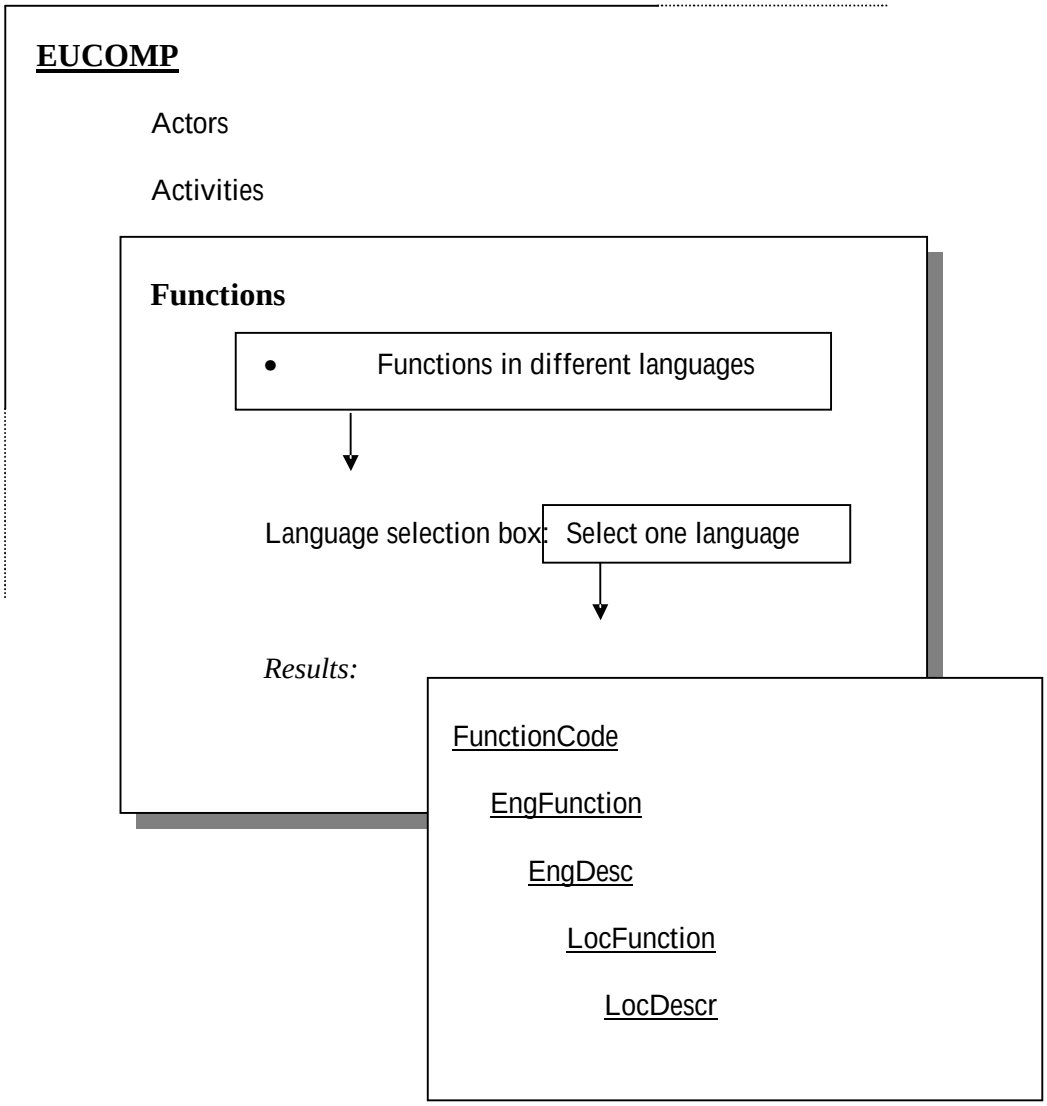
The last possibility in the activity option is the listing of the activities in a specific function. To get this information a function has to be selected in the function selection box. All the activities available in this function as well as the connected descriptions of these activities are presented in English.

The third option in the opening screen contains information on the functions performed. For functions three more information possibilities are available, presented in detail below. The first screen describes the functions itself.



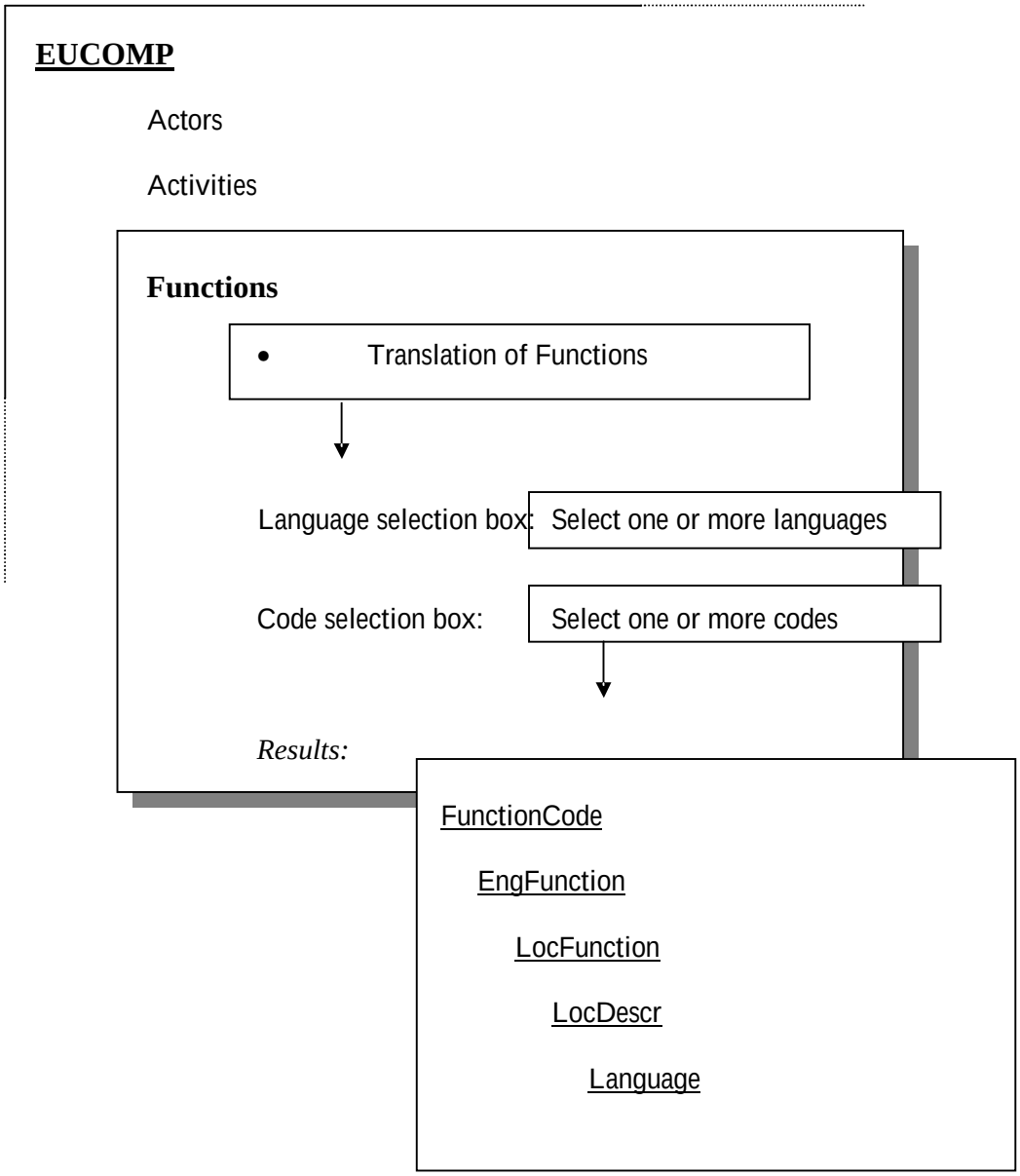
Description of the process and the results:

In this first choice in the Function option, no selection is needed. For all the functions available in the system the code of the function is presented as well as the name of the function and the description used. All the information is presented in English. If other languages are requested other selections in the function option are needed.



Description of the process and the results:

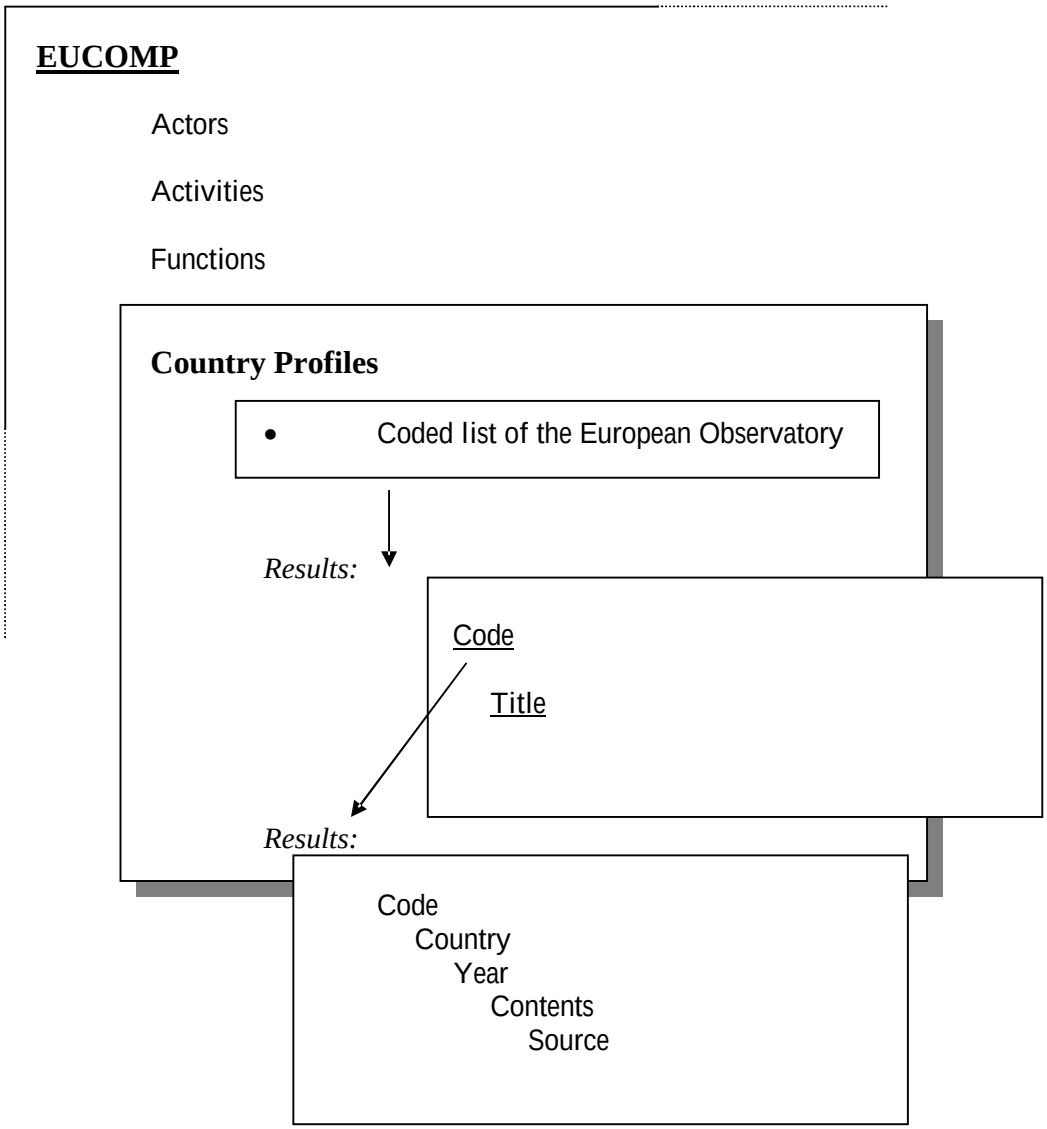
Information on the functions in different languages can be presented using this possibility. First the language is selected. Presented is the following information: The codenumber of the function, the name of the function (in English and in national language) and the contents of the function, i.e. the description in both languages as well (English and the selected language).



Description of the process and the results:

This last option on the function selection offers the possibility to present selected functions in selected languages. To get this information first the requested languages need to be selected followed by the functions needed. The results presented on screen consist of the function code, the name of the function and the description of the function as available on the system. Of course the name of the function as well as the description of the contents of the function are presented in the selected languages. The language in which the information is presented is supplied as well.

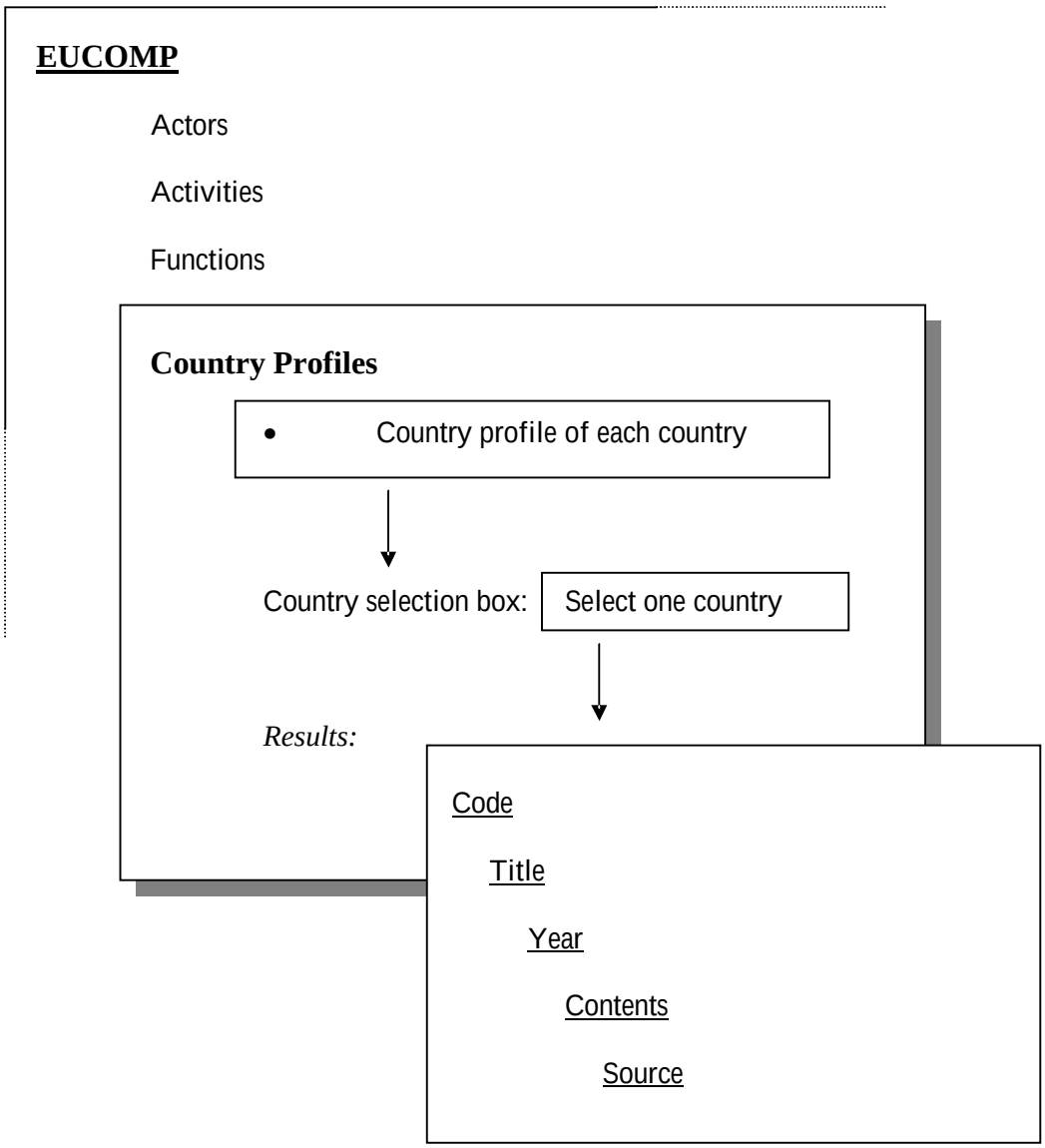
The last option for which information is available contains the country descriptions or country profiles; short concise descriptions of the various health care systems in the European Union (as well as Iceland and Norway) in English. Below the information stored in the Internet application on the country profiles is presented.



Description of the process and the results:

The first selection possibility is on the coded list used to make a description of the country's health care system in a tabular format. Using this first option in the country profiles supplies a complete list of all codes available and the title linked to these codes. The code itself contains a hyperlink. Using this hyperlink presents for the selected code the information for all the countries, all the years the contents and the sources used.

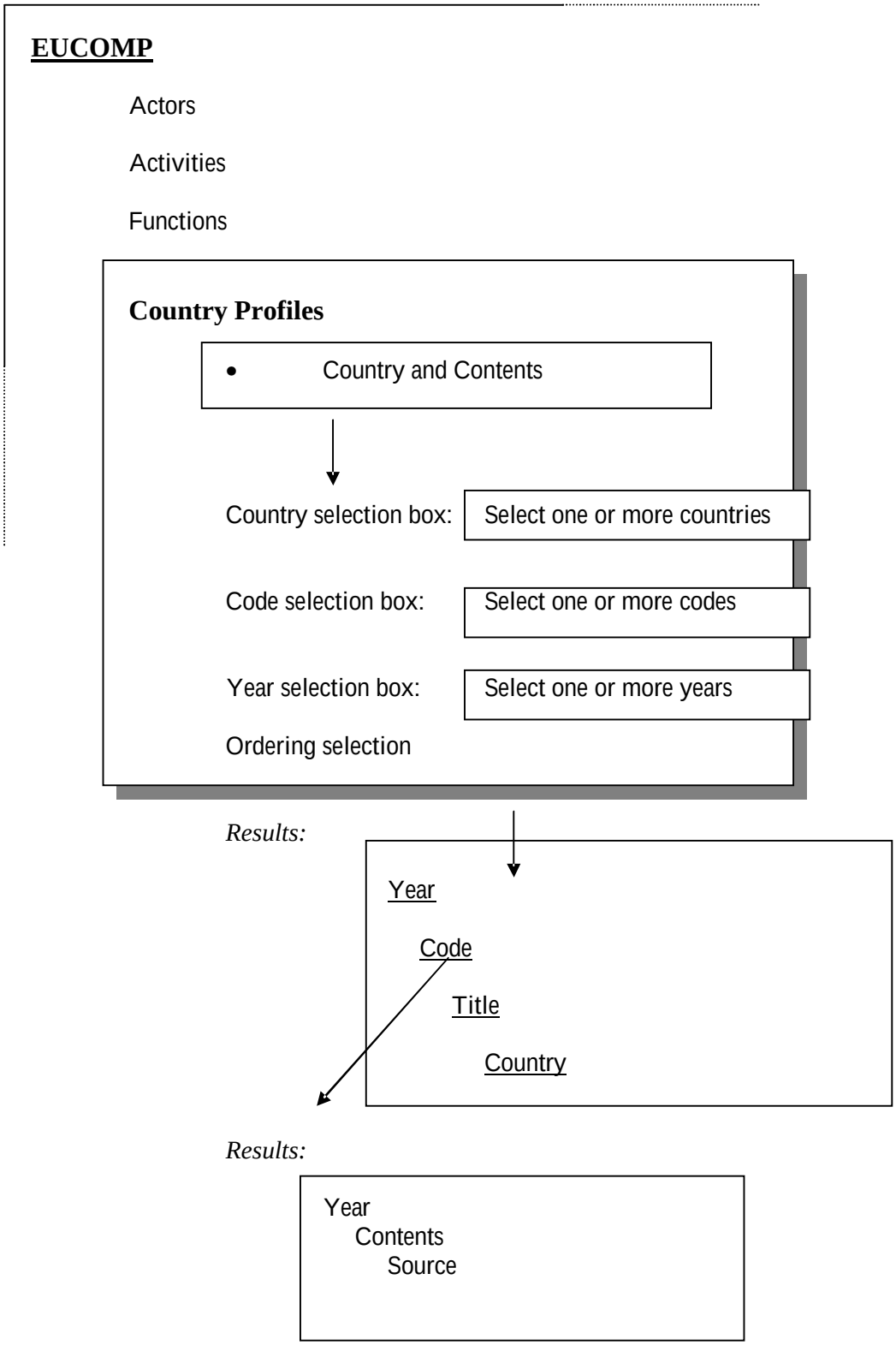
In this second option the topics on the information for a selected country is presented,



Description of the process and the results:

For each country in the database a country profile can be produced. After the country is selected information is presented on the contents, source and years for which information is available for every code in the system.

The third option in the country profiles is presented below. In this option the information available is presented for selected countries and selected codes.

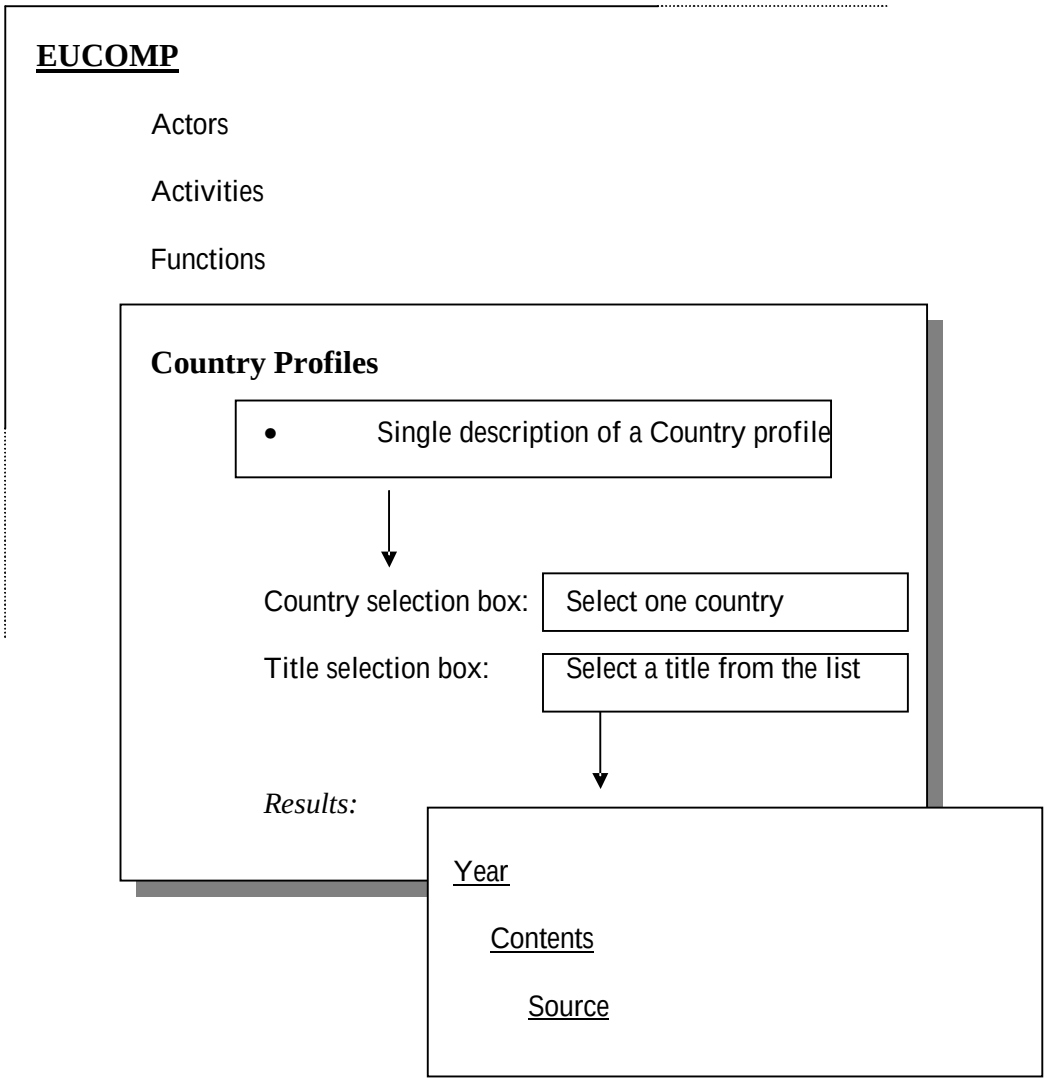


Description of the process and the results:

After selecting one or more countries for which information is requested; one or more codes and one or more years, the resulting information on these items can be ordered in various ways. Because the code used is hyperlinked additional

information on the years, the contents and the sources are presented for the selected countries and codes.

The last option contains the information on a selected country and a selected code, for which the information on the contents is presented.



Description of the process and the results:

In this last frame of the internet application the information on the contents and the years available is presented for the selected country and the selected title or name in the list.

2.5 Results and Conclusions

2.5.1 Targets reached

The results of the EUCOMP-project can be summarised against the background of the aimed results as described in the outline of the project (see par. 1.2.6)

- The questionnaire on the functional breakdown of health care systems has been completed regarding 13 Member States of the European Union and, furthermore, also regarding Iceland and Norway.
  With regard to the selected area "rehabilitation" completed questionnaires have been received from 8 Member States and from Iceland.
- For this purpose a blue print of a data collection system has been developed consisting of two electronic questionnaires, which have been tested in the data collection procedure as described in the analysis chapters.
- A manual has been developed for the Blaise application used for the electronic questionnaires. The contents are made available in all languages of the participating countries and presented in Part 4 "Glossaries".
- Glossaries have been developed regarding activities, functions and actors in the health care systems of the participating countries (see Part 4)
- The collaboration of the European Observatory of Health Care Systems created the basis for a flexible framework for the functional breakdown descriptions of health care systems in the EU. The integration with the country profiles and the development of the Internet application enable the flexible adoption and adaptation of contributions to this information retrieval system by which a comparative picture of health care systems in the European Union can be provided.
- The availability of all results of the project at the Internet Website will stimulate the use of this type of information. It is only by frequent use, that information can be improved by supplements and corrections and brought at higher levels. In this way the results of the project can be exploited to the benefit of international organisations and health care planning and policy institutions in Member States.

2.5.2 Value of methodology

During the EUCOMP project a methodology was developed for collecting structured information of the provision of health care in the participating countries. This methodology is tightly related to a new classification of functions of health

care, whose prototype version was presented in the System of Health Accounts (SHA) Manual from 1999 for the first time.

Starting from this prototype, the EUCOMP project detailed the structural categories of the prototype in order to "put more flesh to the bones" of that classification. The participants did extensive tests with the tools and instruments used in the project in order to reach a problem-oriented solution that can be used in day-to-day practice.

The structure developed has far-reaching implications, the usability of the methodology stretches beyond the immediate targets of the EUCOMP project itself. The developed application of the classification presents itself as one axis in the multidimensional system used for describing the processes used in providing health care in a structured way.

All further projects aiming at an improved comparability of health care-related data can profit from the results of the EUCOMP project. All data relating to health care inputs, throughputs and outputs as well as data on health expenditures and health care financing may use the elements of this new classification as break-down categories, if they want to rely on a provider-independent classification.

The use of the application developed during the EUCOMP project can in turn profit from co-operation with other projects. Synergies leading to improvements and further developments of the classification will occur in dealing with challenges of new conceptual requirements. Adding further details or reorganising the existing classification structure will lead to an improved version, which will allow external projects to take advantage of the EUCOMP work and, at the same time, improves the quality of the original EUCOMP metadata system.

2.5.3 Value added

2.5.3.1. The users of the results

The results of the EUCOMP-project may prove useful to different audiences. In general these audiences may be divided into four main groups: the public (consumers), health care professionals, producers of health care services, and organisers of these services. In addition the results have many links to ongoing and starting projects by the Commission in general and EUROSTAT in particular and international organisations.

For the public the results and especially the Internet application provide an easy to understand presentation of health care systems in countries participating the project. This helps them in contacting the service system and planning their use of health care services.

For health care professionals the results provide a tool to get insight to organisation and functioning of the health care sector in their own country as well as in other countries participating in the project. This may get more and more important with increasing mobility of labour force from country to country. It also provides them a possibility of benchmarking their own practice by comparing the set of functions they provide to those of other countries.

For producers of health care services benchmarking their own activity is of outmost importance. With the Internet application e.g. a hospital is able to improve the validity of international comparisons by adjusting the figures to the service pattern (functions) produced by other hospitals taking part in this comparison.

For organisers of health care services and decision makers (health policy makers, politicians, health directors, national- and local authorities etc.) the results provide a set of international examples of different ways of organising health care services both in macro- (national-) and detailed level. The results also decrease the present confusion caused by international statistics heavily affected by differences in organising the services.

2.5.3.2 Links to other projects

BASYS: Project Human Resources of European Health Care Systems

This project aims at developing a system, which will consistently provide data on human resources of European health systems due to support health policies of the Commission and the Member States. The project will cover all organisations providing preventive services, care and cure such as hospitals and other organisations. All organisations active in administering health care such as public sickness funds and economic sectors providing exclusively intermediate production for health care such as the pharmaceutical and medico-technical industry are equally included.

The results of the EUCOMP-project can be used immediately for the benefit of this human resources project. The

functional breakdown of health care systems provides a detailed overview of actors (providers and funders) in the health care of most European countries. These actors are described in the national languages and in English. Also the activities performed by these actors are indicated and described in the national languages and in English. The Internet application with retrieval system facilitates the downloading of relevant information from the glossaries and the country profiles on behalf of this project.

EUROSTAT / OECD: System of Health Accounts (SHA)

The EUCOMP-project intends to base its work around agreed and proposed international classifications for health care as, for example, in recent papers by OECD ("A System of Health Accounts for International Data Collection", see Literature: 6). The project will build and further elaborate on recent methodological progress of OECD and EUROSTAT in health accounting and international comparisons.

This collaboration between the EUCOMP-project and the OECD and EUROSTAT resulted in the application of classification of health care functions for the functional breakdown of health care systems and the classification of providers for the coding of actors in health care. From this coding actors performing health care related activities have been excluded. The remaining actors are listed in Annex 4. This can be considered as a feasibility test of the OECD-proposals, followed by useful comments and suggestions.

European Observatory on Health Care Systems

The European Observatory on Health Care Systems was launched in London, February 1999, and is a collaboration of the World Health Organization Regional office for Europe, the Governments of Norway and Spain, the European Investment Bank, the World Bank, the London School of Economics and the London School of Hygiene and Tropical Medicine.

The Observatory produces the series "Health care in transition", profiles of national health care systems, originally started by WHO Europe. The Observatory compares trends across countries, analyses key policy issues and runs a clearing-house for publications on health care reform.

The Observatory is established in London and is made up of three hubs: Copenhagen at WHO Europe, London at the London School of Economics and Madrid at the National School of Public Health.

Because of their significance as metadata, the EUCOMP-project has recognised the value of the information as laid down in the country profiles. Contact has been established with the European Observatory in order to find out, whether this documentary information could be stored in an electronic metadata-database and retrieval system, linked with determined data categories in a statistical database.

The European Observatory on Health Care Systems approved the use of their "Health Care in Transition"-reports for this purpose and made available their published country reports in electronic form.

HIEMS-project

The HIEMS-project (Health Information Exchange and monitoring System) aims at the exchange of statistical information via the EUPHIN-network. This network links Member States administrations, the Commission and international organisations. HIEMS is the continuation in 1997 of the previous ENS/CARE (European Nervous System/Care)-project. Though there is a statistical component, strong emphasis has been given to the development and testing of data transfer facilities between users and databases. Given this technical predominance there is no direct link between EUCOMP and HIEMS. The results of the EUCOMP-project, especially regarding metadata, can become relevant with respect to the further statistical deployment of the HIEMS-project.

Statistical programmes of EUROSTAT

In 1997 the Working Group on Public Health Statistics (WG) approved a proposal of the TF/CARE on a framework for the revision and further development of health care statistics: on financial statistics, manpower, health care resources and the use of the services. The improvement of financial statistics on health care (health accounts) was chosen as the highest priority and a metadata information system was indicated as a prerequisite for this statistics. The proposals were endorsed by the Statistical Programme Committee (SPC) as part of the five-year and annual statistical programmes of the Commission, also ensuring a support by the statistical authorities of all Member States.

In the context of the European Statistical System (ESS) health care statistics have several links with both social and economic statistics, e.g. on social security, national and European accounts, on manpower and registers. This implies

a harmonisation of concepts, definitions, classifications and instruments, e.g. NACE .

Results of EUCOMP will be indispensable for the further development of health care statistics in general and for health accounts in particular, while ensuring valuable support to other related statistics. The contribution of EUCOMP will be on a more solute rearrangement of data in order to disseminate better comparable statistics and also on a better understanding and interpretation of the results.

2.5.3.3 Additional offsprings

Not only the results of EUCOMP-project provide value added, but the process of producing these results has been of great value. It has created a network of committed people, who have developed a productive way of working together not only during the meetings but also by using the possibilities provided by modern information technology. The working process has also given birth to several ideas, which might in time grow to new projects providing further development of international health care statistics.

The exceptional synergy demonstrated by all the contributors of participating countries throughout the EUCOMP project (which is clearly obvious in the richness of the data provided) shows that the contributors have the potential to form a very important network to take this work further and keep the information provided up to date into the future. There is a continuous need to improve data quality and record the path of developments in health care by way of well-structured clearly appropriate and commonly understood information. The EUCOMP project has already shown where gaps in data exist and has highlighted where efforts can best be directed to fill these gaps on a prioritised basis.

The clear advantages of the framework used and the presentation of the data obtained in an open, transparent and easily analysable way via an Internet application will be lost by a failure to update the information.

The framework used and the internet application have the potential to act as a context within which all public health data can be placed in a way that can be commonly understood shared. The methodology used in the EUCOMP project can act as a basis for the future development of well structured metadata across the entire public health area in a well standardised way with all the necessary linkages and integration combined with much improved data definition.

The potential for future research and development in this area arising from the EUCOMP project should be taken full advantage of and the next steps should include extending this approach deeper into priority areas such as health personnel and hospital data.

The Internet application makes the results and also the working process open and visible to people outside this project. Hopefully this will encourage them to take part in this continuous process of development with their expertise, ideas and criticism. The easy access to the results via Internet and the use of this data will also improve the quality of the data by making it used and tested in real life.

The maintenance and developments of the system as developed in the EUCOMP project has the potential to provide public health information that is truly independent of individual provider structures. This is very valuable to improve usability and deserves to be retained and enhanced. The data and methodology used can contribute to the work of a very wide range of developments in many projects dealing with public health information across Europe.

2.5.3.4 Value for Health Monitoring Programme

It is widely acknowledged that public health data cannot be effectively used when it is only defined in terms of technical metadata. This is emphasised when significant differences in the systems that deliver health care across EU member states and around the world are so apparent. To be effectively used as a basis for comparison or to inform any decision making process in such a complex area as health it is vital that data is set in a context of good systems descriptions within a framework based on acknowledged international standards.

When data is set within such a framework better validation and much enhanced interpretation of data is possible. Data becomes real information and useful comparability emerges. The result is that better answers to relevant questions are provided. In addition better more sophisticated questions are prompted which in turn sparks improvements in data quality setting data collection on a virtuous circle of improvement which comes to focus on key areas. The usability of data is improved and improvements in public health derived from decision making based on focussed data enabling member states to learn from each other more effectively thus improving public health across the EU and world-wide.

The value of the EUCOMP project is therefore that by using international standards with structured systems descriptions

and country health system profiles it provides the framework and crucial reference points which will enable truly effective and usable comparable analyses of all public health data in a shared context. The basis of the reference points provided by the EUCOMP project are system descriptions for participating countries linked to the activity focussed international classification standards of the Systems of Health Accounting proposed by the OECD. This standard allows participants to represent a full econometric model of health care provision by reference to a standardised functional breakdown of health care activities which produces a common context not bound or restricted unduly by the structure of health care providers in any one country. However in the current state of health data provision it is impossible to interpret data effectively or understand the differences and trends in the data supplied without knowing the systems which provide health care. Many apparent biases or artefacts in data can explained and/or eliminated if there is a clear understanding of different types of source providers of health care and how they operate within the various systems in different member states.

It has been acknowledged in almost all spheres of health services research that comparability of health care data is critical to better interpretation and understanding of such data. The improvement of public health can only benefit from such comparability allowing countries to draw better judge the effectiveness of reform and draw on the experiences of others through analysis via a commonly understood context. In this context the EUCOMP project advances the process of producing truly comparable health care data forward on various levels in that it:

- Used well defined structure as a basis for comparison and provides the high level metadata crucial to an effective understanding of public health data in context;
- Creates clear links between a common well defined standardised set of functions and each set of local actors or providers in the health care sphere;
- Allows boundary issues to be explored in a way which clarifies what activities are carried out where allowing better understanding and interpretation of the data in a clear and informative context while acknowledging delivery systems differences which must be taken into account;
- Prompts areas for further research, which promises to improve existing standards and data definitions;
- Prepares the way for work on detailed data definitions and metadata which is essential in the longer term to enable members states focus on the priority areas for health care.

The EUCOMP project provides a framework which encompasses data independent of the provider structures in participating countries which still integrates with details of the organisation of health care in a way that clearly shows the impact of provider structures in each country. This will provide a context, which will allow differences apparent in indicators relating to many areas such as hospital activity, personnel numbers and indeed in a whole range of other registers to be better interpreted and more easily understood.

A common functional breakdown of data such as this also serves to highlight gaps and provides a good foundation for the data definitions essential to the further build up of that metadata which is the key to turning data into real useable information. In this way the EUCOMP project will contribute significantly to the better understanding of public health data by providing the top level definitions and structural framework in which all health indicators can be placed. This in turn will promote a logical and structured development of systems containing public health data so that comparability is much improved and the interpretation and analysis of the data is made easier. In this way the EUCOMP project will provide a concrete context for data in systems such as HIEMS and EUROSTAT statistics supporting public health programmes.

2.5.4. Immediate Improvements Possible in the Information

Further improvements in the information in EUCOMP can be obtained in the short term. The actions required to realised these improvements are:

- Complete the current picture by seeking answers to questions raised in the analyses described in this report by getting complete data from all member states who supplied partial or no data so far.
- Feedback the results of the analyses (by making this report and the internet database which has been created available to contributors in participating countries via a closed loop intranet) and seek amending data so as to enhance data quality
- Seek to use the above feedback mechanism to encourage homogeneity particularly in the levels of actors specified by contributors without losing clarity and differentiation where that is necessary to describe the structures involved.
- Re-examine actors not matched with functions to check (1) if the actors truly represent health care as defined within the standards used in EUCOMP or (2) if additional functions are now required to match any of these actors.

Part 3: Annexes

Annex 1:Project description

PART TWO

Detailed description of the project

(In French, English or German if possible)

(Sections to be completed irrespective of field of activity)
N.B. Do not write outside the boxes or add extra pages.

1) Statement of project aims

The aim of the project is to set up a European system of standardised descriptions and comparisons of health care systems to create the basis of common EU health care statistics as the fundamental foundation for routine data collection and comparative analysis. A functional breakdown of health care delivery systems in Member States(MS) will be produced,. (by reference to international health care classifications) detailing health care functions performed. This will enable an EU wide comparative picture to be produced at an appropriate level derived directly from MS country profiles. The feasibility of the system will be tested by applying it to existing national data sets relating to health care delivery in selected areas in member states. The project also aims to contribute to the development of comparable EU healthcare indicators and to assist MS in health care policy making by sharing the functional descriptions of MS health care systems and enabling the sharing of well defined comparable data by MS starting in selected areas.

2) How does your project relate to what has already been done in the field?

This project will build on the work of the Eurostat-DGV Working Group on Health Statistics and the existing Taskforce on 'Health Care Statistics'(TF CARE) and the Netherlands CCP1 and on-going CCP2 DGV/EUROSTAT projects on Health Care Resources Statistics . The project intends to base its work around agreed and proposed international classifications for health care as, for example, in recent papers by OECD (Principles of Health Accounting for International Data Collections).This project will establish links to the work in the LEGS framework with the IDA projects and will seek to contribute significantly to the data dictionary requirements for the HIEMS project. In addition the project will use the data collection guidelines of the WHO HFA data collection system , the existing OECD data collections guidelines and the framework endorsed by the Working Group on Public health Statistics (Doc OS/E3/97/HEA/2)
The project will build and further elaborate on recent methodological progress of EUROSTAT/OECD in health accounting and international comparisons (see OECD draft Manual on Principles of Accounting for International Data Collections; Project reports Dutch CCP1/DGV,EUROSTAT CCP2 projects).

3) Description of tasks/sequence of work/timetable

(This section must be completed with great care as it will be incorporated into the contract to be signed by the applicant if the project is approved)

1. Development of a draft instrument to collect the functional breakdown description of MS health care systems based on work from previous projects (the Dutch CCP1 EUROSTAT/DGV CCP2) and international healthcare classifications as suggested by EUROSTAT/OECD research for pilot data collections (Timescale : weeks 1 to 13)

2 Send out collection instrument for functional descriptions to all MS for completion (Week 13)

3. Develop data collection instrument to obtain data items from MS for selected areas with definitions, commentary (assumptions/interpretations)and sources per item (Weeks 10 to 17)

4.Meet representatives of all members states to review functional descriptions collected (via 1. above); explain and distribute the data items collection instrument for selected areas for completion and return by MS (week 17)

5.Collate analyse, refine and quality assure data collected via 1 and 4 above by reference to international health care classifications.(weeks 18 to 26)

6. Visit selected MS to discuss problems and clarify aspects of data returns and seek the data requested at 4 above. (weeks 22 to 26)

7.Draft a first version of the report containing the functional breakdowns of MS health care systems (weeks 26 to 37)

8 Define the metadata for the selected areas by reference to the draft functional descriptions with the use of data modelling techniques and software as appropriate (weeks 26 to 35).

9.Develop a basic template for a data collection system for input and basic analysis of the data (with regard to that proposed by HIEMS) (weeks 27 to 37)

10 A further meeting of MS representatives to discuss the draft comparative functional breakdowns, data items and data collected for selected areas.(week 38)

11 Develop common data definitions for the selected areas and test by use of real data which is already used and collected in MS.(weeks 38 to 45)

12. Collect further feedback from MS and write the final report containing the proposed comparative functional breakdown of MS health care systems (weeks 38 to 48)

13.Develop guidelines for the collection of data and metadata information for data collection and build these guidelines into the system.(week 45 to 49)

14 Sign off and present final report with comparative MS functional breakdown data dictionary for selected areas, with data collection prototype system and guidelines (week 50)

At the appropriate stages in the project consultations will be carried out with specialists in MS.

4) Applicant's ability to attain the objectives set
(Experience, facilities, etc.)

1. Curriculum vitae of the person responsible for the project
2. If the applicant is a corporate body, a copy of the document by which it was constituted
3. Brief description of the applicant body (aims, previous and current activities, etc.)

1. Project Manager:
Dr Rosaleen Corcoran LRCPSI, MICGP, DCH, D Obs, MFPHM, FFPHMI.

Current Position: Director of Public Health, North Eastern Health Board. (1995)
Previous Position: Director of Community Care/Medical Officer for Health., Eastern Health Board.

Dean of the Faculty of Public Health Medicine, 1994-1997.

Director of Public Health(DPH): Dr Corcoran is responsible for carrying out the public health function in the North Eastern Health Board region, population 300,000. As DPH she heads up the Department of Public Health and is part of the Management Team of the health board. She has specific responsibility for advising the Chief Executive Officer on developments in healthcare which add to health and social gain for the population served by the health board. She has a responsibility for developing outcome measures in the region for evaluating healthcare services. She is also responsible for the management and control of infectious diseases. In her penultimate position she was responsible for the management and development of community based healthcare services.
She was elected as Dean of the Faculty of Public Health Medicine in 1994 and served as Dean until 1997. The Faculty of Public Health Medicine is the sole body in Ireland, which has responsibility for training doctors to be Specialists In Public Health Medicine.

Dr Corcoran is actively involved in healthcare research and has many peer reviewed publications to her credit dealing with such diverse issues as Folic Acid, Tuberculosis, Care of the Elderly, Breastfeeding, Safety of Public Water Supplies, Learning disability, Family Planning etc.

2. The North Eastern Health Board is a statutory body formed by the 1970 Health Act.

3. The North Eastern Health Board serves a population of some 300,000 residents. The board is responsible for providing health and personal social services to this population. This includes the provision of all primary care services, secondary hospital care, long term care, rehabilitation services, health promotion, child health and child protection services. In addition the board provides personal social services for its client population.

The North Eastern Health Board is very active in research and has successfully participated in European Union sponsored telematic projects and in projects funded by the Peace and Reconciliation fund.

5) Collaboration with partners from other Member States
(State name, address, telephone and fax numbers)

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(State name, address, telephone and fax numbers)

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6) Community dimension and Community added value (see Information Notice III.2)

This project is an essential precursor to providing Member states with appropriate health information to make comparisons and support national health policies. It is critical to the aims of all three pillars of the Health Monitoring programme. Without comparative functional descriptions and metadata at an appropriate level effective analysis comparison and policy making on the basis of EU wide information will be virtually impossible. We know that, definition and context are what turns data into information for decision making. **This project will involve all member states**.
The proposing consortia consists of representative of six member states Ireland Netherlands Germany Denmark Finland and Luxembourg (experts from the OECD have agreed to take an active role in the project to assist in relation to statistical standards and data collection to avoid duplication of work and enhance comparability). The intention is to produce a result which is capable of application in all member states with the template for a data collection and comparisons toolkit for MS and international organisations including the EU commission itself. This should lead to harmonisation and rationalisation in the flows of data and better defined health care information across the EU. It will also assist in the production of more appropriate economic indicators for health care.

7) Expected results of the project

A comparable functional breakdown description of the Health care systems in as many member states as possible at an appropriate level with detailed descriptions (essentially structured metadata) of selected health care areas as a prototype.
The blueprint of a data collection system for the collection of data using the functional breakdown and metadata defined for the data items in selected health care areas tested by the use of actual MS data collected from data used in MS.
A manual and glossary (in MS own language) as practical guidelines.
A flexible framework for the functional breakdown descriptions of health care systems in the EU which can be added to so as to maintain a comparative picture of health care systems in the EU into the future .

8) Assessment and follow-up of the project **(o)**

Preliminary results of the project will be presented to the bi-annual meeting of the programme committee of the Health Monitoring Programme and their comments will inform future conduct of the project.

The results of meetings with member states will be made available to all MS and the EU Commission as soon as possible after the meetings

The acceptance of the comparative functional breakdown structure as a European pre-standard Assist the Commission in their efforts towards the harmonisation of health care policy leading to convergence within the EU of health care systems descriptions and data to appropriate international standards

9) Utilisation and dissemination of results

Following the appropriate approval by the Health Monitoring Programme board, DGV and the EU Commission the results of the project will be made available to MS, the EU Commission, other EU projects such as IDA and international organisations (OECD, WHO) to facilitate the development of health care policies across the EU. The report, functional breakdowns, data dictionary framework with detail for selected areas and the template for a data collection system to match will be available over the internet via a web page for download and use in MS. Only by piloting the use of the data can quality truly improve and good communication be established between MS. It is intend that the results of the project be used by international organisations the EU and health care planning and policy institutions in MS

10) Methods (consistency with aims)

Structured instruments for collection and presentation of function breakdown descriptions of health care and metadata for selected areas.

Structured workshops/seminars and selected structured interviews

Use data modelling techniques and software. Including a review of existing structured templates for health care systems descriptions and synthesis for further development of appropriate methods into an EU framework.

Review of recent European health care glossaries and relevant classifications

Use of standard definitions where appropriate (ESA95,MISSOC,ESPROS, CEN/TC251,GALEN ICD ICIDH ICOPM, Euclamep)

Literatures searches associated with the above

Annex 2: Functions and Activities

Function	Code	Title
HC.1	***Cure***	
HC1Cure	GenMed	General medical treatment
HC1Cure	GenDent	General dentistry
HC1Cure	Firstaid	Emergency care / first aid
HC1Cure	SpecMed	Specialised medical treatment
HC1Cure	Midw	Midwifery
HC1Cure	Speech	Speech therapy
HC1Cure	Diet	dietetic advice
HC1Cure	DemntHyg	dental hygiene
HC1Cure	Podo	podotherapy
HC1Cure	Physio	physiotherapy
HC1Cure	Ergo	ergonomic therapy
HC1Cure	Movem	movement therapy
HC1Cure	Psycho	Psychotherapy
HC1Cure	PsDiag	psychosocial diagnostics/treatment
HC1Cure	PedDiag	pedagogic diagnostics/training
HC1Cure	MedWelf	Medical welfare
HC1Cure	Pastor	Pastoral care for the ill
HC1Cure	Hydro	Hydro- and balneotherapy
HC1Cure	AltMed	Alternative medicine
HC1Cure	Anthrop	Anthroposofic medical treatment
HC1Cure:Spec	IntMed	Internal medicine
HC1Cure:Spec	Surgery	Surgery
HC1Cure:Spec	Obstret	obstetrics & gynecology
HC1Cure:Spec	Otorhi	otorhinolaryngology
HC1Cure:Spec	Ophtha	ophthalmology
HC1Cure:Spec	Pedia	paediatrics
HC1Cure:Spec	Derma	dermatology
HC1Cure:Spec	Aller	allergology
HC1Cure:Spec	Anest	anaesthesiology
HC1Cure:Spec	Cardio	cardiology
HC1Cure:Spec	CardPul	cardiopulmonal surgery
HC1Cure:Spec	Gastro	gastro-enterology
HC1Cure:Spec	MedChem	medical chemistry
HC1Cure:Spec	Lung	diseases of lung and tuberculosis
HC1Cure:Spec	ClinGer	clinical geriatrics
HC1Cure:Spec	MedMicro	medical microbiology
HC1Cure:Spec	NeuroSur	neurosurgery
HC1Cure:Spec	Neurol	neurology
HC1Cure:Spec	NucMed	nuclear medicine
HC1Cure:Spec	Orthop	orthopedics
HC1Cure:Spec	Patho	pathology
HC1Cure:Spec	PlastSurg	plastic surgery
HC1Cure:Spec	Psych	psychiatry
HC1Cure:Spec	Radiod	radiodiagnostics
HC1Cure:Spec	RadTher	radiotherapy
HC1Cure:Spec	Rheuma	rheumatology
HC1Cure:Spec	Rehab	rehabilitation

HC1Cure:Spec	Urol	urology
HC1Cure:Spec	ClinGen	clinical genetics
HC1Cure:Spec	Mouth	mouth diseases and jawsurgery
HC1Cure:Spec	Orthod	orthodontics
HC1Cure:Spec	ClinPhysio	clinical physiology
HC1Cure:Spec	ClinPhys	clinical physics
HC1Cure:Spec	ClinPsych	clinical psychology
HC1Cure:Spec	Endo	endocrinology
HC1Cure:Spec	Chemo	chemotherapy
HC1Cure:Spec	Angio	angiology
HC1Cure:Spec	Neprho	nephrology
HC1Cure:Spec	ForMed	forensic medicine
HC1Cure:Spec	Neonat	neonatology
HC1Cure:Spec	PsyGer	psychogeriatrics
HC1Cure:Spec	OccHealth	occupational health care
HC1Cure:Spec	PrevMed	preventive medicine
HC1Cure:Spec	ClinPharma	clinical pharmacology
HC1Cure:Spec	Onco	oncology
HC1Cure:Spec	Haema	haematology

HC.2	***Rehabilitation***	
HC2Rehab	GenMed	General medical treatment
HC2Rehab	GenDent	General dentistry
HC2Rehab	Firstaid	Emergency care / first aid
HC2Rehab	SpecMed	Specialised medical treatment
HC2Rehab	Midw	Midwifery
HC2Rehab	Speech	Speech therapy
HC2Rehab	Diet	dietetic advice
HC2Rehab	DemntHyg	dental hygiene
HC2Rehab	Podo	podotherapy
HC2Rehab	Physio	physiotherapy
HC2Rehab	Ergo	ergonomic therapy
HC2Rehab	Movem	movement therapy
HC2Rehab	Psycho	Psychotherapy
HC2Rehab	PsDiag	psychosocial diagnostics/treatment
HC2Rehab	PedDiag	pedagogic diagnostics/training
HC2Rehab	MedWelf	Medical welfare
HC2Rehab	Pastor	Pastoral care for the ill
HC2Rehab	Hydro	Hydro- and balneotherapy
HC2Rehab	AltMed	Alternative medicine
HC2Rehab	Anthrop	Anthroposofic medical treatment
HC2Rehab:Spec	IntMed	Internal medicine
HC2Rehab:Spec	Surgery	Surgery
HC2Rehab:Spec	Obstret	obstetrics & gynecology
HC2Rehab:Spec	Otorhi	otorhinolaryngology
HC2Rehab:Spec	Ophtha	ophthalmology
HC2Rehab:Spec	Pedia	paediatrics
HC2Rehab:Spec	Derma	dermatology
HC2Rehab:Spec	Aller	allergology
HC2Rehab:Spec	Anest	anaesthesiology

HC2Rehab:Spec	Cardio	cardiology
HC2Rehab:Spec	CardPul	cardiopulmonal surgery
HC2Rehab:Spec	Gastro	gastro-enterology
HC2Rehab:Spec	MedChem	medical chemistry
HC2Rehab:Spec	Lung	diseases of lung and tuberculosis
HC2Rehab:Spec	ClinGer	clinical geriatrics
HC2Rehab:Spec	MedMicro	medical microbiology
HC2Rehab:Spec	NeuroSur	neurosurgery
HC2Rehab:Spec	Neurol	neurology
HC2Rehab:Spec	NucMed	nuclear medicine
HC2Rehab:Spec	Orthop	orthopedics
HC2Rehab:Spec	Patho	pathology
HC2Rehab:Spec	PlastSurg	plastic surgery
HC2Rehab:Spec	Psych	psychiatry
HC2Rehab:Spec	Radiod	radiodiagnostics
HC2Rehab:Spec	RadTher	radiotherapy
HC2Rehab:Spec	Rheuma	rheumatology
HC2Rehab:Spec	Rehab	rehabilitation
HC2Rehab:Spec	Urol	urology
HC2Rehab:Spec	ClinGen	clinical genetics
HC2Rehab:Spec	Mouth	mouth diseases and jawsurgery
HC2Rehab:Spec	Orthod	orthodontics
HC2Rehab:Spec	ClinPhysio	clinical physiology
HC2Rehab:Spec	ClinPhys	clinical physics
HC2Rehab:Spec	ClinPsych	clinical psychology
HC2Rehab:Spec	Endo	endocrinology
HC2Rehab:Spec	Chemo	chemotherapy
HC2Rehab:Spec	Angio	angiology
HC2Rehab:Spec	Neprho	nephrology
HC2Rehab:Spec	ForMed	forensic medicine
HC2Rehab:Spec	Neonat	neonatology
HC2Rehab:Spec	PsyGer	psychogeriatrics
HC2Rehab:Spec	OccHealth	occupational health care
HC2Rehab:Spec	PrevMed	preventive medicine
HC2Rehab:Spec	ClinPharma	clinical pharmacology
HC2Rehab:Spec	Onco	oncology
HC2Rehab:Spec	Haema	haematology
HC.3	***Care***	
HC3Care	QualNurs	qualified nursing care
HC3Care	Home	Home care/Home help
HC3Care	MatHome	maternity home care
HC.4	***Ancillary services***	
HC4Ancillary	Funct	function tests (imaging included)
HC4Ancillary	Labor	laboratory tests
HC4Ancillary	Trans	patient transport

HC.5	***Medical goods***	
HC5MedGoods	PresMed	prescribed medicines
HC5MedGoods	OTC	over the counter medicines(OTC medicines)
HC5MedGoods	Wound	wound dressings etc.
HC5MedGoods	Glasses	glasses and other vision products
HC5MedGoods	OrtAppl	orthopaedic appliances other prosthetics
HC5MedGoods	Hearing	hearing aids
HC5MedGoods	PersCare	personal care materials (e.g.incontinence)
HC5MedGoods	Walking	walking aids, including wheel chairs
HC5MedGoods	Other	all other miscellaneous medical goods
HC.6	***Prevention***	
HC6Prevention	Child	maternal and child health
HC6Prevention	FamPlan	family planning and counseling
HC6Prevention	School	school health services
HC6Prevention	Communic	prevention of communicable diseases
HC6Prevention	NonCommunic	prevention of non-communicable diseases
HC6Prevention	Occup	occupational health care
HC6Prevention	Other	all other miscellaneous public health services
HC.7	***Administration***	
HC7Administration	GovAdmin	government administration of health programmes and policies administration, operation and support
HC7Administration	SocSecur	activities of social security covering health services health programme administration and health insurance
HC.R.1	***Education***	
HCR1Education	Educat	training & education of health personnel
HC.R.2	***RandD***	
HCR2RandD	RandD	research & development in health (pharmaceutical & biomedical)
HC.R.3	***Drinking water***	
HCR3Food	NutSurv	nutritional surveillance
HCR3Food	Drink	drinking water surveillance
HC.R.4	***Environmental health***	
HCR4Environmental	Envir	environmental hygiene / surveillance

HC.R.5	***Social services in kind***	
HCR5Social	ServKind	provision of social services in kind
HCR5Social	Admin	administration of social services in kind
HC.R 6	***Social benefits***	
HCR6CashBenefits	CashBen	provision of cash benefits
HCR6CashBenefits	Admin	administration of cash benefits

Annex 3: Provider categories (OECD Health Manual)

Code				Description
1				Hospitals
	11			General hospitals
	12			Mental health and substance abuse hospitals
	13			Speciality hospitals (not mental health/substance abuse)
2				Nursing and residential care facilities
	21			Nursing care facilities
	22			Residential mental retardation or substance abuse facilities
	23			Community care facilities for the elderly
	29			All other residential care facilities
3				Providers of ambulatory health care
	31			Offices of physicians
	32			Offices of dentists
	33			Offices of other health practitioners
	34			Out-patient care centers
		341		Family planning centers
		342		Out-patient mental health and substance abuse centers
		343		Free-standing ambulatory surgery centers
		344		Dialysis care centers
		345		All other out-patient multi-specialty service centers
		349		All other out-patient community or integrated care centers
	35			Medical and diagnostic laboratories
	36			Providers of home health care services
	39			Other providers of ambulatory health care
		391		Ambulance services
		392		Blood and organ banks
		399		Providers of all other ambulatory care services
4				Retail sale and other providers of medical goods
	41			Dispensing chemists
	42			Retail sale and other suppliers of optical glasses
	43			Retail sale and other suppliers of hearing aids
	44			Retail sale and other suppliers of other medical appliances
	49			All other miscellaneous suppliers of medical goods
5				Provision and administration of public health programmes
6				General health administration and insurance
	61			Government administration of health
	62			Social security funds
	63			Other social insurance
	64			Other (private) insurance
	69			All other providers of health administration
7				Other industries (rest of the economy)
	71			Establishments as providers of occupational health care
	72			Private households as providers of home care
	79			All other industries as secondary producers of health care
9				Rest of the world

Annex 4: Providers (EUCOMP) and Provider classification (OECD)

Code	COUNTR	LOCACTOR	ENGACTOR
110	Austria	Universitätskrankenanstalten	University hospitals
110	Austria	Nicht-universitäre Zentralkrankenanstalt	Non-university Central Hospitals
110	Austria	Schwerpunktkrankenanstalten	Focal point hospitals
110	Austria	Standardkrankenanstalten	Standard hospitals
110	Finland	Aluesairaala	Regional hospital
110	Finland	Keskussairaala	Central hospital
110	Finland	Terveyskeskuksen tai kaupungin erikoi...	Health centre or city hospital
110	Finland	Yliopistollinen sairaala	University hospital
110	France	Centre hospitaliers régionaux	Regional hospiatal
110	France	Centres hospitaliers et hopitaux	Hospital center and hospital
110	France	cliniques	clinics
110	France	cliniques privées	private clinics
110	France	hopital universitaire	university hospital
110	France	hôpitaux	hospital
110	France	hôpital	hospital
110	Germany	Akademische Lehrkrankenhäuser	Teaching hospitals
110	Germany	Belegkrankenhäuser	Hospitals for "family doctor" care
110	Germany	Lokale allgemeine Krankenhäuser	Local general hospitals
110	Germany	Regionale allgemeine Krankenhäuser	Regional general hospitals
110	Germany	Universitätskrankenhäuser	University hospitals
110	Greece		Hospital
110	Iceland	Almennt sjúkrahús	General hospital
110	Iceland	Deildasjúkrahús	District hospital
110	Iceland	Svæðissjúkrahús	Regional hospital
110	Ireland	Acute General Teaching Hospital	Acute General Teaching Hospital
110	Ireland	District/Community Hospitals	District/Community Hospitals
110	Ireland	General Hospital Private	General Hospital Private
110	Ireland	Genral Acute Non-Teaching Hospitals	Genral Acute Non-Teaching Hospitals
110	Ireland	Private Consulting Clinics	Private Consulting Clinics
110	Luxemburg	Hôpitaux de suite	Follow up hospitals
110	Luxemburg	Hôpitaux locaux	Local hospitals
110	Luxemburg	Hôpitaux principaux	Principal hospital
110	Luxemburg	Hôpitaux régionaux	Regional hospitals
110	Norway	Alminnelig somatisk sykehus	General somatic hospital
110	Norway	Sykestuer	Cottage hospitals
110	Portugal	Hospitais Centrais Gerais	Central General Hospitals
110	Portugal	Hospitais Distritais de Nível 1	Districts Hospitals Level 1
110	Portugal	Hospitais Distritais Gerais	District General Hospitals
110	Portugal	Hospitais Privados (Gerais C/ f.l.)	Private Hospitals (Profit) Generals
110	Portugal	Hospitais Privados (Gerais S/ f.l.)	Private Hospitals (non-profit) General

110	Portugal	Hospitais Universitários	University / Teaching Hospitals
110	Spain	Hospital General	General Hospital
110	Spain	Hospitales universitarios	University hospitals.
110	Spain	Unidadesdedesintoxicacionhospitalaria	Hospitalunits fordrug addictpersons
110	Sweden	Länssjukhus	County hospital
110	Sweden	Privat sjukhus	General Hospital Private
110	Sweden	Privatläkarhus	Private Consulting Clinics
110	Sweden	Regionsjukhus	Region Hospital
110	Sweden	Sjukhusapotek	Pharmacy at hospital
110	Sweden	Universitetssjukhus	University hospital
110	Netherlands	Academisch ziekenhuis	University hospital
110	Netherlands	Algemeen ziekenhuis	General hospital
110	United Kingdom	NHS Trust	NHS Trust
110	United Kingdom	Private Hospital	Private Hospital
120	Austria	Psychiatrische Krankenanstalten	Psychiatric hospitals
120	Denmark	Psykiatrisk hospital	Psychiatric hospitals
120	Finland	Valtion mielisairaalat (kriminaalimie...	State mental hospitals (forensic psyc...
120	France	Centre hospitalier en psychiatrie	Psychiatric hospitals
120	Germany	Drogenentzugseinrichtungen	Institutions for alcohol/drug withdrawal
120	Germany	Psychiatrische Krankenhäuser	Psychiatric hospitals
120	Iceland	Áfengismeðf.stofn. vinnu- og dvalarh.	Alcohol treatment inst.-longterm
120	Ireland	Psychiatric Hospital	Psychiatric Hospital
120	Ireland	Psychiatric Hospital (Private)	Psychiatric Hospital (Private)
120	Norway	Barne-og ungdomspsykiatriske instit.	Psych. inst. for children and adolecents
120	Norway	Psykiatriske sykehus	Mental hospitals
120	Portugal	Centros Regionais de Alcoologia	Regional Centres for Alcoholics
120	Portugal	Comunidade Terapêutica (Sector Público)	Therapeutic Community (Public Sector)
120	Portugal	Hospitais Psiquiátricos (Especializados)	Psychiatric Hospitals (Spec. Hospitals)
120	Portugal	Hospitais Psiquiátricos (Priv. Esp.C/f.l	Psychiatric Hospitals (Priv. Spec.Profit
120	Portugal	Hospitais Psiquiátricos (Priv.Esp.S/f.l	Psychiatric Hospitals (Priv.Esp.Non Prof
120	Portugal	Unidades Apoio Tratam. Toxicodependentes	Detoxification Units / Therap. Community
120	Portugal	Unidades de Reabilitação Psiquiátrica	Centres for the mentally ill
120	Spain	Comunidadesterapeuticas asist.drogodepen	Residentltherapeuticcommunitiesdrugad
120	Spain	Hospitales psiquiatricos	Psychiatric hospitals.
120	Sweden	Mentalsjukhus	Psychiatric Hospital
120	Netherlands	Algemeen psychiatrisch ziekenhuis	General psychiatric hospital
120	Netherlands	Inrichting voor psychisch gestoorde deli	Forensic psychiatric clinic
120	Netherlands	Kinder- en Jeugdpsychiatrisch ziekenhuis	Juvenile psychiatric clinic
120	Netherlands	Kliniek voor verslavingsziekten	Addiction clinic
130	Austria	Nichtpsychiatrische Sonderkrankenanstalt	Non-psychiatric special hospitals
130	Austria	Sanatorien	Sanatoriums
130	Austria	Tages- und Nachtkliniken	Day clinics and night clinics
130	Austria	Rehabilitationseinrichtungen	Rehabilitation facilities

130	Austria	Kuranstalten	Spa Institutions
130	Denmark	Fertilitetsklinik	Fertility clinic
130	Denmark	Fødeklinik	Maternity clinic
130	Denmark	Genoptræningscenter	Rehabilitation center
130	Denmark	Revalideringsklinik	Rehabilitation clinic
130	Denmark	Sanatorium	Sanatorium
130	Denmark	Somatisk hospital	Somatic hospital
130	Finland	Puolustusvoimien ja rajavartiolaitoks...	Military and frontier guard hospital ...
130	Finland	Vankisairaalat	Prison hospitals
130	Finland	Yksityinen kuntoutuslaitos	Private rehabilitation institution
130	Finland	Yksityinen sairaala	Private hospital
130	France	Cures thermales	Thermal spa
130	France	Hopitaux militaires et pénitentiaires	Prison and military hospitals
130	Germany	Rehabilitationseinrichtungen	Rehabilitation clinics
130	Germany	Tages- und Nachtkliniken	Day care and night care clinics
130	Germany	Vorsorgeeinrichtungen, Kurkliniken	Preventive care clinics, spa clinics
130	Greece	• • • •	National Centre of Emergency Care
130	Greece		SPA
130	Greece		Rehabilitation Centre
130	Iceland	Endurhæfingarstofnun	Rehabilitation centre (institution)
130	Ireland	Cancer Hospital	Cancer Hospital
130	Ireland	Children's Hospital	Children's Hospital
130	Ireland	Dental Hospital	Dental Hospital
130	Ireland	Maternity Hospital	Maternity Hospital
130	Ireland	Military Hospital	Military Hospital
130	Ireland	Orthopaedic Hospital	Orthopaedic Hospital
130	Ireland	Private Maternity Hospital	Private Maternity Hospital
130	Ireland	Rehabilitation Hospital	Rehabilitation Hospital
130	Luxemburg	Centre de rééduc. et de réadapt. fonct.	Reeducation and rehabilitation Centre
130	Luxemburg	Centre hospitalier neuropsychiatrique	Neuropsychiatric hospital centre
130	Luxemburg	Centre thermal de santé	Spa centre
130	Luxemburg	Centres de convalescence	Convalescence centres
130	Luxemburg	Hôpital Dr. Bohler	Maternity hospital Dr. Bohler
130	Norway	Fødehjem	Maternity homes
130	Norway	Opptreningsinstitusjoner	Institutions for rehabilitation
130	Norway	Somatiske spesialsykehjem	Som. nursing homes for spec. diseases
130	Norway	Somatiske spesialsykehus	Somatic specialized hospitals
130	Portugal	Centro de Reabilitação (Sector Privado)	Rehabilitation Centre (Private Sector)
130	Portugal	Hospitais Militares	Military Hospitals
130	Portugal	Hospitais Ortopédicos (Hosp. Espec.)	Orthopaediatrics Hospitals (Spec. Hosp.
130	Portugal	Hospitais Ortopédicos (Priv.Esp.C/f.l	Orthopaediatrics Hospitals (Priv. Profit
130	Portugal	Hospitais Pediátricos (Especializados)	Paediatric Hospitals (Spec. Hospitals)
130	Portugal	Hospitais Prisionais	Prison Hospitals

130	Portugal	Hospital Termal (Especializado)	SPA (Hydrology)
130	Portugal	Instituto de Oftalmologia (Hosp. Espec.	Ophthalmology Institute (Spec. Hosp.)
130	Portugal	Instituto de Reumatologia (Hosp. Espc.)	Rheumatological Institute (Spec. Hosp.
130	Portugal	Institutos de Oncologia (Hosp. Espec.)	Oncological Institutes (Special. Hosp.
130	Portugal	Maternidades (Hosp. Especializados	Maternity (Specialised Hospitals)
130	Portugal	Maternidades (Hosp. Priv. Esp. C/f.l.)	Maternity (Priv. Spec. Hosp. Profit)
130	Portugal	Maternidades (Hosp.Priv.Esp. S/f.l.)	Maternity (Priv. Spec. Hosp.Non Profit)
130	Portugal	Oncologia e Radioterapia (Sec. Priv.)	Oncological & Radiotherapeutic (Priv.Sec
130	Portugal	Sanatório (H. Especializado)	Sanatorium (Specialised Hospital)
130	Portugal	Termas (Instituições Privadas)	SPA Centres (Private Institutions)
130	Spain	Centros termalismo social	Social thermal centres
130	Spain	Hospital infantil	Paediatric hospital
130	Spain	Hospital maternal	Maternity hospital.
130	Spain	Hospital Quirurgico	Surgery Hospital
130	Spain	Otros hospitales especializados	Other specialised hospitals.
130	Spain	Residencias recuperacion minus.fisicos	Residential centres,recov.physicaldisab
130	Sweden	Militärsjukvård	Military health care
130	Sweden	Riksförsäkr.-verkets rehab.-sjukhus	Rehabilitation Hospital
130	Netherlands	Astmakliniek	Asthma clinic
130	Netherlands	Categoraal ziekenhuis	Specialised hospital
130	Netherlands	Epilepsiekliniek	Epilepsy clinic
130	Netherlands	Kankerkliniek	Oncological clinic
130	Netherlands	Kinderziekenhuis	Pediatric hospital
130	Netherlands	Kraaminrichting	Maternity home
130	Netherlands	Kraamkliniek	Maternity clinic
130	Netherlands	Longkliniek/sanatorium	Lung clinic/sanatorium
130	Netherlands	Medisch kindertehuis	Medical children's home
130	Netherlands	Oncologisch radiotherapeutisch centrum	Oncological therapeutic centre
130	Netherlands	Oogziekenhuis	Ophthalmic hospital
130	Netherlands	Orthopedische kliniek	Orthopaedic clinic
130	Netherlands	Reumakliniek	Rheuma Clinic
130	Netherlands	Revalidatiekliniek	Rehabilitation clinic
210	Austria	Pflegeheime	Nursing homes
210	Denmark	Plejehjem	Nursing home
210	Finland	Yksityinen hoivalaitos	Private nursing home
210	Germany	Pflegeheime	Nursing homes
210	Iceland	Hjúkrunarheimili	Nursing home
210	Ireland	Community Nursing Homes (public)	Community Nursing Homes (public)
210	Ireland	Private Nuirsing Home	Private Nuirsing Home
210	Luxemburg	Centres intégrés pour personnes âgées	Integrated centres for elderly persons
210	Luxemburg	Centres psycho-gériatriques	Psycho-geriatric day centres
210	Luxemburg	Maisons de soins	Nursing homes
210	Norway	Alminnelige somatiske sykehjem	General somatic nursing homes

210	Spain	Hospitales geriatricos y cronicos.	Nursing homes,chronicall ill hospitals
210	Spain	Residenciasancianos(personas asistidas)	Social nursing homes
210	Sweden	Privat vårdhem	Private nursing home
210	Sweden	Sjukhem, Särskilt boende	Community Nursing Homes (public)
210	the Netherlands	Verpleeghuizen	Nursing home
210	United Kingdom	Private Nursing Home	Private Nursing Home
220	Austria	Einrichtungen zur Betreuung von Suchtkra	Institutions for care of addicted person
220	Finland	Kehitysvammahuolto	Service system for mentally handicapped
220	Spain	Residencias aten.especia.minus.psiquicos	Residentialcentresspeccare mentdisabled
220	Spain	Residenciasincorporac.socialdrogodepend	Superviseddwellingsdrugaddict
220	Netherlands	Instelling voor verstandelijk gehandicap	Institute for the mentally weak
220	Netherlands	Regionale instelling voor beschermd wone	Regional institution for sheltered dwell
230	Denmark	Institutioner for ældre	Institutions for the elderly
230	Finland	Vanhusten laitoshoito (vanhainkodit)	Old peoples homes
230	France	sections médicalisées	medicalized sections
230	Greece		Happy old age house
230	Iceland	Dvalarheimli aldraðra	Residential homes for the elderly
230	Spain	Hogares ancianos.Centros de dia.	Homes for elderly.
230	Spain	Residenciasancianos(personas validas)	Residential institutions for elderly
230	Netherlands	Dagverblijf voor bejaarden	Day centre for the elderly
230	Netherlands	Verzorgingshuis	Home for the elderly
290	Austria	Einrichtung für Palliativmedizin/Sterbeb	Institutions for palliative medicine/hos
290	Austria	Betreutes Wohnen	Supervised living
290	Denmark	Hospice	Hospice
290	Germany	Betreutes Wohnen	Supervised dwelling
290	Germany	Kurzzeitpflegeeinrichtungen	Institutions for short-term nursing
290	Ireland	Disability Voluntry Organisation	Disability Voluntry Organisation
290	Luxemburg	Centres d'hébergement pour pers. handic.	Housing for the handicapped
290	Luxemburg	Centres socio-gérontologiques	Socio-gerontological centres
290	Luxemburg	Logements encadrés pour personnes âgées	Supervised accommo dations for elderly p
290	Spain	Residencias atencion minus.fisicos	Residential centrescare physicaldisabled
290	Netherlands	Gezinsvervangend tehuis	Family replacement home
290	Netherlands	Herstellingsoord	Short term recovery home
290	Netherlands	Inrichting voor zintuiglijk gehandicapte	Institute for the sensorily handicapped
290	Netherlands	Medisch kleuterdagverblijf	Nursery for toddlers under medical super
310	Austria	Praktische Ärzte/Ärzte für Allgemeinmedi	Practices of general practitioners/physi
310	Austria	Hausapothekenführende Ärzte	General practitioner with an own pharmac
310	Austria	Praxen von Internisten	Practices of internists
310	Austria	Praxen von Frauenärzten	Practices of gynaecologists
310	Austria	Praxen von Kinderärzten	Practices of paediatrics
310	Austria	Praxen von Augenärzten	Practices of ophtamologists
310	Austria	Praxen von Orthopäden	Practices of orthopedists
310	Austria	Praxen von HNO-Ärzten	Practices of otorhinolarygologhists

310	Austria	Praxen von Neurologen	Practices of neurologists
310	Austria	Praxen von Urologen	Practices of urologists
310	Austria	Praxen von Dermatologen	Practices of dermatologists
310	Austria	Praxen von Radiologen	Practices of radiologists
310	Austria	Praxen von sonstigen Fachärzten	Practices of other medical specialists
310	Denmark	Almen praktiserende læge	General practitioner
310	Denmark	Praktiserende speciallæge	Medical specialist in own practice
310	Finland	Yhden lääkärin itsenäinen vastaanotto	Solo practice of one private practitione
310	France	docteurs	doctors
310	France	médecins généralistes	general practioner
310	France	médecins spécialistes	general pactitioner
310	France	spécialiste	Specialist doctor
310	Germany	Hausarztpraxen	Practices of general practitioners
310	Germany	Praxen von Augenärzten	Practices of ophtamologists
310	Germany	Praxen von Chirurgen	Practices of surgeons
310	Germany	Praxen von Frauenärzten	Practices of obstetrics/gynaecologists
310	Germany	Praxen von HNO-Ärzten	Practices of otorhinolaryngologists
310	Germany	Praxen von Internisten	Practices of internal medics
310	Germany	Praxen von Kinderärzten	Practices of paediatrics
310	Germany	Praxen von Neurologen	Practices of neurologists/psychologists
310	Germany	Praxen von Orthopäden	Practices of orthopaedics
310	Germany	Praxen von sonstigen Fachärzten	Practices of medical specialists n.m.e.
310	Greece		Doctors in private practice
310	Iceland	Heimilislæknir utan heilsug.stöðva	General practitioner in private practice
310	Iceland	Sérfræðingur (sjálfstætt starfandi)	Specialist, self-employed (consultant)
310	Ireland	General Practitioner	General Practitioner
310	Ireland	Private Consulting Rooms	Private Consulting Rooms
310	Luxemburg	Médecins généralistes	General practitioner
310	Luxemburg	Médecins spécialistes	Medical specialists
310	Norway	Allmennlegetjeneste	General medical service
310	Norway	Legespesialisttjeneste	Specialized medical service
310	Portugal	Médicos Especialistas (Consultórios P)	Specialists (Private Sector)
310	Portugal	Médicos Generalistas (Consul. Privado).	General Practitioner (Private Sector)
310	Spain	Medicosgenerales/especialistasSprivado	Officesgeneral/specialist physicians
310	Sweden	Allmänläkare i egen praktik	General practitioner in practice of his
310	Netherlands	Apotheekhoudend huisarts	Dispensing general practitioner
310	Netherlands	Huisarts	General practitioner
310	Netherlands	Specialist	Medical specialist
310	United Kingdom	General Medical Practice	General Medical Practice
310	United Kingdom	Primary care group	Primary care group
310	United Kingdom	Primary care Trust	Primary care Trust
320	Austria	Zahnarztpraxen	Practices of dentists
320	Denmark	Praktiserende tandlæge	Dentist in own practice

320	Finland	Hammaslääkäriasema	Joint dentist practice
320	Finland	Yhden hammaslääkärin vastaanotto	Solo practice of private dentist
320	France	dentistes	dentists
320	Germany	Zahnarztpraxen	Practices of dentists
320	Iceland	Tannlæknir	Dentist
320	Luxemburg	Médecins dentistes	Dentists
320	Norway	Offentlig tannhelsetjeneste	Public dental service
320	Norway	Praktiserende tannleger	Dental practice
320	Portugal	Médicos Dentistas (Sector Privado)	Dentists (Private Sector)
320	Spain	Medicos dentistas(sectorprivado)	Officesofdentists(privatesector)
320	Sweden	Specialisttandläkare	Dentist, specialist in a field
320	Sweden	Tandläkare	Dentist
320	Netherlands	Tandarts	Dentist
320	United Kingdom	Dental Practice	Dental Practice
330	Austria	Ernährungsberatung	Dietetic counselling institutions
330	Austria	Praxen von Psychiatern	Practices of psychiatrics
330	Austria	Praxen von Hebammen	Practices of midwives
330	Austria	Praxen von Physiotherapeuten	Practices of physiotherapeutists
330	Austria	Praxen von Ergotherapeuten	Practices of ergotherapists
330	Austria	Praxen von Psychotherapeuten	Practices of psychotherapists
330	Austria	Praxen von Sprachtherapeuten	Practices of speech therapists
330	Denmark	Fodterapeut	Podotherapist
330	Denmark	Jordemor	Midwife
330	Denmark	Praktiserende alternativbehandlere	Alternative healers in own practice
330	Denmark	Praktiserende ergoterapeut	Practicing ergotherapist
330	Denmark	Praktiserende fysioterapeut	Practcing physiotherapists
330	Denmark	Praktiserende psykolog	Practicing psychologist
330	Denmark	Praktiserende tale- og hørepædagog	Practicing speech and hearingpedagog
330	Finland	Ammatinharjoittajana toimiva yksityin...	Solo practice of licensed private par...
330	Finland	Yksityinen hoitolaitos (fysikaalinen ...	Private paramedical centre (physiothe...
330	France	autres auxiliaires médicaux	Other paramedical care
330	France	infirmiers	Nurses
330	France	masseurs-kinésithérapeutes.	Physiotherapists
330	Germany	Ernährungsberatung	Dietetic counselling institutions
330	Germany	Praxen sonst. nichtärztlicher Heilberufe	Practices of other medical professionals
330	Germany	Praxen von Ergotherapeuten	Practices of ergotherapists
330	Germany	Praxen von Hebammen	Practices of midwives
330	Germany	Praxen von Heilpraktikern	Alternative medicin practitioners
330	Germany	Praxen von Physiotherapeuten	Practices of physiotherapists
330	Germany	Praxen von Psychotherapeuten	Practices of psychotherapists
330	Germany	Praxen von Sprachtherapeuten	Practices of speech therapists
330	Greece		Selfemployed Midwife
330	Greece	•••••••••/•	Nurse (selfemployed)

330	Greece		Physiotherapist
330	Iceland	Félagsráðgjafi	Social worker
330	Iceland	Fótaaðgerðarfræðingur	Chiropodist
330	Iceland	Hnykkir	Chiropractor
330	Iceland	Sjúkraþjálfari	Physiotherapist
330	Iceland	Sálfræðingur	Psychologist
330	Ireland	Alternative Medicine Practitioners	Alternative Medicine Practitioners
330	Luxemburg	Ergothérapeutes	Ergotherapists
330	Luxemburg	Infirmiers	Nurses
330	Luxemburg	Kinésithérapeutes	Physiotherapists
330	Luxemburg	Sages-femmes	Midwifes
330	Norway	Praktiserende fysioterapeuter	Practicing physiotherapists
330	Norway	Praktiserende kliniske psykologer	Practicing clinical psychologists
330	Portugal	Fisioterapêutas	Physiotherapist (Private Sector)
330	Spain	Graduados interm.personal.Privados.	Interm.graduate personnel.Private.
330	Spain	Profesionales medicina alternativa	Alternative medicine professionals.
330	Sweden	Dietist	Dietician
330	Sweden	Logoped	Speech therapist
330	Sweden	Naprapat	Naprapath
330	Sweden	Podotherapeut	Podotherapist
330	Sweden	Psykoterapeut	Psychotherapist
330	Sweden	Sjukgymnast	Physiotherapist
330	Sweden	Tandhygienist	Dental hygienist
330	Netherlands	Dietist	Dietician
330	Netherlands	Ergotherapeut	Ergotherapist
330	Netherlands	Fysiotherapeut	Physiotherapist
330	Netherlands	Logopedist	Speech therapist
330	Netherlands	Mondhygienist	Dental hygienist
330	Netherlands	Oefentherapeut Cesar of Mensendieck	Movement therapist Cesar or Mensendieck
330	Netherlands	Orthoptist	Orthoptist
330	Netherlands	Podotherapeut	Podotherapist
330	Netherlands	Psychotherapeut	Psychotherapist
330	Netherlands	Verloskundige	Midwife
341	Austria	Familienberatung; schulpsychologischer D	Familiy Counselling; school-psychologica
341	Germany	Familienberatung	Family counselling offices
341	Spain	Centros de PlanificaciónFamiliar.AtenPr	Family planning centres.
341	Netherlands	Abortuskliniek	Abortion clinic
342	Austria	Psychosoziale und psychiatrische Dienste	Psycho-social and psychiatric services
342	Austria	Drogenberatung	Counselling offices for drug addicts
342	Austria	AIDS-Beratung	AIDS counselling offices
342	Finland	Mielenterveystoimisto	Municipal psychiatric outpatient clinic
342	Finland	Päihdehuolto	Service system for addicts
342	Germany	AIDS-Beratung	AIDS counselling offices

342	Germany	Drogenberatung	Counselling offices for drug addicts
342	Portugal	Centros Atendimento Toxicodependentes	Detoxification Units for Drug Users
342	Spain	Centr.ambul.asistencia drogodependientes	Ambulatorycentresfor drug addict
342	Spain	Centros de dia para drogodependientes	Daycentres for drug addict persons
342	Spain	Centros de Salud Mental.Aten.Primaria	MentalHealthCentres.Primary Care.
342	Sweden	Kommunal psykiatrivård	Local authority psychiatric care
342	Netherlands	CAD (Consultatiebureau voor Alcohol en D	CAD (Centre for Alcohol and Drug Abuse)
342	Netherlands	RIAGG (Regionale Instelling voor ambulan	RIAGG (Regional Institute for ambulatory
344	Portugal	Centros de Hemodiálise (Sec. Privado)	Dialysis Treatment Centre (Priv. Sec.)
345	Austria	Selbständige Ambulatorien	Independent out-patient departments
345	Finland	Yksityinen lääkäriasema ilman vuodeosast	Private joint practice without beds
345	Finland	Yksityinen lääkäriasema vuodepaikoilla	Private joint practice with beds
345	Greece		Health Centre
345	Iceland	Heilsugæslustöð	Health centre
345	Ireland	Health Centres	Health Centres
345	Norway	Kommunehelsetjenesten	Health service in the municipalities
345	Portugal	Postos médicos (Privados s/f lucrativos	Medical Clinics (Private non profit)
345	Spain	Ambulatoriosconsultorios.AtencPrimaria	Surgeries.Ambulatory centres
345	Spain	Centros de Salud.Atencion primaria.	Health centres.Primary health care
345	Spain	Servicios de urgencia.AtenPrimaria	Emergency care centres.Primarycare
345	Sweden	Barn- och mödrahälsovård	Mother and child health care
345	Sweden	Vårdcentral / husläkarcentral	Local health care unit
345	Netherlands	Gezondheidscentrum	Health centre
345	Netherlands	Polikliniek	Out-patient department
345	Netherlands	Revalidatiedagbehandelingscentrum	Rehabilitation day centre
349	Finland	Asuntopalvelut	Service and supportive housing
349	Finland	Terveyskeskus (ja yleislääkäritason v...	Health centre (with general practitio...
349	Finland	Terveyskeskus opetusvelvollisuudella ...	Health centre with medical education ...
349	Germany	Mobile soziale Dienste	Mobile social services
349	Ireland	Disability Service Agency	Disability Service Agency
349	Spain	CentrosBaseparaminus.fisicos ypsiquicos	Basiscentresforphysical/mentaldisabled
349	Spain	Centrosdiaparaincorpora.socialdrogodepen	Daycentressocialreintegratdrugaddict
349	Netherlands	Consultatiebureau voor zuigelingen en kl	ConsultatiBureau for babies and toddlers
349	Netherlands	Dagverblijf voor gehandicapten	Day centre for the physically disabled
349	Netherlands	Dagverblijf voor verstandelijk gehandica	Day centre for the mentally weak
349	Netherlands	Sport Medisch Adviescentrum	Medical sport examination and advice bur
349	United Kingdom	NHS community services trust	NHS community services trust
349	United Kingdom	Prison Health Service	Prison Health Service
350	Austria	Bakteriologische/serologische Untersuchu	Bacteriological and serological institut
350	Austria	Medizinische Labors	Medical Labs
350	Denmark	Laboratorium	Laboratory
350	Denmark	Røntgenklinik	X-ray clinic
350	Finland	Yksityinen patologian laboratorio	Private pathology laboratory

350	Finland	Yksityinen tutkimuslaitos	Private laboratory and imaging centre
350	France	analyses médicales	Laboratories, analysis
350	Germany	Medizinische Labors	Medical labs
350	Greece		Diagnostic Centre
350	Greece		Radiological laboratory
350	Greece		Bacteriological laboratory
350	Iceland	Greiningar-og ráðgjafarstöðvar	Diagnostic and evaluation centres
350	Luxemburg	Laboratoires d'analyse médicale	Medical laboratories
350	Norway	Frittstående medisinsk laboratorium	Independent medical laboratorium
350	Portugal	Imagiologia (Sector Privado)	Diagnostic imaging (Private Sector)
350	Portugal	Laboratórios de análises (Sec. Priv.)	Clinical Laboratory (Priv. Sec.)
350	Spain	Laboratorios/Ctros.radiodiagnost.Privado	Private laboratories , imaging centres
350	Netherlands	Medisch laboratorium	Medical laboratory
350	Netherlands	Trombosedienst	Thrombosis service
360	Austria	Medizinische Hauskrankenpflege	Medical Home Care
360	Austria	Alten- und Pflegehilfe	Nursing and home care services
360	Austria	Heimhilfe	Home care
360	Denmark	Hjemmepleje	Home care and nursing
360	Finland	Kotipalvelu	Home help and support
360	Germany	Dorfhelferinnenstationen	Home helper stations
360	Germany	Gemeindekrankenpflegestationen	District nursing stations
360	Germany	Haus- und Familienpflegestationen	Home and family nursing stations
360	Germany	Sozialstationen	Social service stations
360	Greece		Home Care
360	Ireland	Home Help Services	Home Help Services
360	Luxemburg	Réseaux d'aides et de soins	Home care networks
360	Norway	Hjemmesykepleie	Home care
360	Portugal	Postos de Enfermagem	Nursing care units
360	Spain	Ayuda a domicilio para ancianos	Home help(elderly,disabled,others)
360	Sweden	Kommunal hemtjänst	Home help and support
360	Netherlands	Kraamcentrum	Maternity centre
360	Netherlands	Thuiszorg organisatie	Organisation for district nursing and ho
391	Austria	Rettungsdienste	Emergency units
391	Austria	Krankentransport- und -beförderungsdiens	Patient transport services
391	Denmark	Ambulance tjeneste	Ambulance service
391	Denmark	Patient transport	Transportation of patients
391	Finland	Kunnallinen pelastustoimi	Municipal emergency and rescue service
391	Finland	Yksityinen sairaankuljetusyrittäjä	Private patient transport and ambulan...
391	France	Transport de malades	Ambulance services
391	Germany	Feuerwehren	Fire brigades
391	Germany	Krankentransportdienste	Patient transport services
391	Germany	Rettungsdienste	Emergency units
391	Germany	Rettungsleitstellen	Emergency control units

391	Greece		Greek Red Cross
391	Ireland	Ambulance Services (Fire Brigade)	Ambulance Services (Fire Brigade)
391	Luxemburg	Ambulances	Ambulances
391	Luxemburg	Services d'aide médicale d'urgence	Ambulances with a medical doctor
391	Norway	Ambulansetjeneste	Ambulance service
391	Norway	Luftambulanse	Air ambulance
391	Portugal	Instituto Nacional de Emergência Médica	National Institut for Emergency Care
391	Portugal	Transporte de doentes (sector privado)	Transport of patients (private sector)
391	Spain	Servicios transporte,ambulac.privados	Private patient transport and ambulance
391	Spain	Transporte sanitario publico	Ambulance services(Publicsector)
391	Sweden	Ambulanssjukvård	Ambulance health care
391	Sweden	Ambulanstjänst	Ambulance service
391	Sweden	Räddningstjänst, kommunal	Rescue service, run by local authority
391	Sweden	Statlig räddningstjänst	State rescue service
391	Netherlands	Ambulancedienst	Ambulance service
391	United Kingdom	NHS Ambulance trust	NHS Ambulance trust
392	Luxemburg	Centre de transfusion sanguine	Blood transfusion centre
392	Netherlands	Stichting Sanquine	Sanquine Foundation
399	Austria	Ernährungsmedizinischer Beratungsdienst	Diatetic Counselling Services
399	Austria	Gesundheits- und Lebensberater	Life- and social advisers
399	Austria	Mobile soziale Dienste und Laiendienste	Mobile social services
410	Austria	Apotheken	Pharmacies
410	Denmark	Apotek	Pharmacy
410	Finland	Apteekki	Pharmacy
410	France	Pharmaciens	Pharmacists and drugstores
410	Germany	Apotheken	Pharmacies
410	Greece		Pharmacy
410	Iceland	Apótek	Pharmacy
410	Iceland	Lyfjafræðingur	Pharmacist
410	Ireland	Pharmacists	Pharmacists
410	Luxemburg	Pharmacies	Pharmacies
410	Norway	Apotek	Pharmacy
410	Portugal	Farmácias (privadas)	Pharmacies (Out side hospitals)
410	Spain	Farmacias(Publica y Privada)	Pharmacies(Private/outsidehospitals)
410	Sweden	Apotek	Pharmacy
410	Sweden	Apotekare	Pharmacists
410	Netherlands	Apotheker (Officine)	Pharmacist (officinal)
410	United Kingdom	Pharmacy Practice	Pharmacy Practice
420	Austria	Augenoptiker	Opticians
420	Denmark	Optiker	Optician
420	Finland	Optikkoliike	Optician services
420	Germany	Augenoptiker	Opticians
420	Greece		Optician Service

420	Iceland	Sjóntækjafræðingur	Optician
420	Ireland	Opticians	Opticians
420	Luxemburg	Opticiens	Opticians
420	Norway	Optiker	Optician
420	Portugal	Centros Ópticos e Oculistas	Opticians
420	Spain	Empresas de servicios opticos	Optician private enterprises.
420	Sweden	Optiker	Optician
420	Netherlands	Opticien	Optician
420	United Kingdom	Opthalmic practitioner	Opthalmic practitioner
430	Austria	Hörgeräteakustiker	Audiologists
430	Germany	Hörgeräteakustiker	Audiologists
430	Ireland	Audiologists	Audiologists
430	Sweden	Audiolog	Audiologists
430	Sweden	Hörcentral	Audiology centre
430	Netherlands	Leverancier hoorapparaten	Hearing aid shop
440	Austria	Sanitätshäuser	Special shops for medical goods
440	Austria	Orthopädietechniker und Bandagisten	Orthopaedic shoe makers
440	Austria	Zahntechniker	Dental labs
440	Denmark	Ortopædisk bandageri/skomager	Orthopeadic bandage/shoemaker
440	Denmark	Tandteknikker	Dental technician
440	Finland	Apuvälinepalvelujen tuottaja	Provider of therapeutic appliances
440	Finland	Hammasteknikko	Dental technician
440	Germany	Orthopädieschuhtechniker	Orthopaedic shoe makers
440	Germany	Orthopädietechniker	Orthopaedic technicians
440	Germany	Zahntechniker	Dental labs
440	Greece		Provider of theraputic appliances
440	Greece		Dental technician
440	Iceland	Tannfræðingur	Dental technician
440	Norway	Butikkhandel med med. og ortoped. art.	Retail sale of med. and orthopa. goods
440	Portugal	Comércio de produtos de consumo médico	Sale of medical goods
440	Spain	Proveedores privados de prótesis.	Private provider therapeut.appliances
440	Sweden	Tandtekniker	Dental technician
440	Netherlands	Orthopedisch schoenmaker	Orthopaedic shoemaker
440	Netherlands	Prothesemaker	Prothetist shop
440	Netherlands	Tandprotheticus	Dental prothetist
440	Netherlands	Tandtechnicus	Dental technician
490	Austria	Drogerien/Reformhäuser	Drugstores
490	Austria	Supermärkte	Super markets
490	Denmark	Hjælpemiddelcentral	Aid central
490	Denmark	Hjælpemidler for handicappede	Aid for handicapped
490	Denmark	Materialist	Drug store
490	Germany	Drogerien	Drug stores
490	Germany	Sanitätshäuser	Special shops for medical goods

490	Germany	Supermärkte	Super markets
490	Ireland	Shops Supermarkets	Shops Supermarkets
490	Norway	Hjelpemiddelsentraler	Centrals for medical aids
490	Netherlands	Drogist	Druggist
490	Netherlands	Supermarkt	Supermarket
500	Austria	Gesundheitsämter	Public health offices
500	Austria	Bundesinstitut für Arzneimittelüberwachu	Federal Institute of pharmaco-vigilance
500	France	Médecine scolaire	School medecine
500	France	Prophylaxie, dépistage, et programme su	Prophylaxy, screening and specific progr
500	France	Protection maternelle et infantile et pl	Motherhood and infant protection and fam
500	Germany	Gesundheitsämter	Public health offices
500	Greece		Public Health Services and Institutions
500	Greece		Social Welfare Institutions
500	Ireland	Food Safety Authority	Food Safety Authority
500	Norway	Folkehelsa	National Institute of Public Health
500	Norway	Helsestasjon	Maternal and child health centre
500	Norway	Skolehelsetjeneste	School health service
500	Norway	Statens helseundersøkelser	National Health Screening Service
500	Portugal	Centros de Saúde	Health Centers
500	Sweden	Folkhälsoinstitutet	The National Institute of Public Health,
500	Sweden	Skolhälsovård	School health care
500	Netherlands	Gemeentelijke gezondheidsdienst	Municipal health service
610	Austria	Ministerien, Ämter der Landesregierungen	Ministeries and offices of the state gov
610	Denmark	Amter og kommuner	Local government
610	Denmark	Centraladministration	Central administration
610	Finland	Kunnallinen lautakunta	Municipal health care board
610	Finland	Kunta	Municipality
610	Finland	Lääninhallitus	County council
610	Finland	Sosiaali- ja terveysministeriö	Ministry of social affairs and health
610	Finland	Valtio	State
610	France	Etat et collectivités locales	State and local government
610	Germany	Gesundheitsministerien	Health Ministries
610	Greece		Local Authorities' Welfare Services.
610	Greece	••••••	State
610	Iceland	Heilbrigðis- og tryggingamálaráðuneytið	The Ministry of health and Social Securi
610	Iceland	Landlæknisembættið	Directorate of Health
610	Iceland	Sveitarfélag	Local government (municipalities)
610	Ireland	Department of Health and Children	Department of Health and Children
610	Ireland	Health Boards/Health Authorities	Health Boards/Health Authorities
610	Luxemburg	Direction de la santé	Health directorate
610	Luxemburg	Ministère de la santé	Ministry of Health
610	Luxemburg	Ministère de la sécurité sociale	Ministry of Social Security
610	Norway	Fylkeskommunene	County Councils

610	Norway	Kommunene	Municipalities
610	Norway	Statens helsetilsyn	Norwegian Board of health
610	Portugal	Administração Central (Financiamento)	Central Government (Financing)
610	Portugal	Administrações Regionais (Financiamento	Regional Government (Financing)
610	Portugal	Financiador : Administração Central	Central Administration (Financing)
610	Spain	Administración Central	Central State
610	Spain	Administración Local	Local Government
610	Spain	Administración Regional	Regional Government
610	Spain	Comité de Salud Publica.	Committee of Public Health.
610	Spain	Consejo Interterritorial del Sist.Nacion	Coordinating Bodies.Interterrit.Council.
610	Spain	Ministerio de Sanidad.	Ministry of Health.
610	Sweden	Arbetarskyddsstyrelsen	Nat'l Board of Occupation Safety &Health
610	Sweden	Handikappombudsmannen	Handicap ombudsman
610	Sweden	Hälso- och sjukvårdens ansvarsnämnd	Medical responsibility board
610	Sweden	Kommun	Local authority
610	Sweden	Kommunförbundet	The Swedish Association of Local Authori
610	Sweden	Landsting / sjukvårdshuvudman	County council
610	Sweden	Landstingsförbundet	Federation of County Councils
610	Sweden	Socialdepartementet	Ministry of health and social affaires
610	Sweden	Socialstyrelsen	National Board of Health & Welfare, NBHW
610	Netherlands	Adviesorganen	Advisory bodies
610	Netherlands	Gemeente	Municipality
610	Netherlands	Provincie	Province
610	Netherlands	Rijk	State
610	United Kingdom	CHI - Commission for Healtrh Improvement	CHI - Commission for Healtrh Improvement
610	United Kingdom	Department of Health	Department of Health
610	United Kingdom	Health Authority	Health Authority
610	United Kingdom	Local Authority	Local Authority
620	Austria	Hauptverband der österreichischen Sozial	Main Association of Austrian Social Secu
620	Austria	Unfallversicherung (UV)	Public accident funds
620	Austria	Pensionsversicherung (PV)	Public pension funds
620	Denmark	Fond	Fund
620	Finland	Avustuskassat	Relief funds ("krankenkasse")
620	Finland	Kansaneläkelaitos	Social Insurance Institution
620	France	sécurité sociale	social security
620	Germany	Gesetzliche Krankenversicherungen (GKV)	Public sickness funds (PSF)
620	Germany	Gesetzliche Pflegeversicherungen (GPV)	Public nursing care funds (PNF)
620	Germany	Gesetzliche Rentenversicherungen (GRV)	Public pension funds (PPF)
620	Germany	Gesetzliche Unfallversicherungen (GUV)	Public accidents funds (PAF)
620	Greece		Social Insurance Funds
620	Iceland	Tryggingastofnun ríkisins	State Social Security Institute
620	Luxemburg	Contrôle médical de la sécurité sociale	Medical control service of the soc. sec.
620	Luxemburg	Union des caisses de maladie	Health insurances union

620	Norway	Rikstrygdeverket	National Insurance Administration
620	Portugal	Segurança Social	Social Security Services
620	Spain	Sistema de Seguridad Social	Social Security System
620	Sweden	Allmän försäkringskassa	The local insurance administration
620	Sweden	Riksförsäkringsverket, RFV	The National Social Insurance Board
620	Netherlands	Ziekenfondsen	Sicknessfunds
630	Austria	Soziale Krankenversicherung (KV)	Social health insurance
630	Portugal	Outras Instituições Públicas Financiador	Other Public Institutions of Financing
630	Portugal	Sistemas Privados de Segurança Social	Private Social Insurance Schemes
630	Spain	Otro Aseguramiento Social.	Other Social Insurance.
640	Austria	Private Krankenversicherung (PKV)	Private health insurance
640	Austria	Sonstige Privatversicherungen	Privat insurance providers
640	Denmark	Forsikringsselskab	Insurrance company
640	Finland	Yksityinen vakuutuslaitos	Private insurance company
640	France	mutuelle	mutual insurance
640	France	Sociétés d'assurance	Insurance industry
640	Germany	Private Krankenversicherungen (PKV)	Private health insurances (PHI)
640	Germany	Private Pflegeversicherungen (PPV)	Private nursing care insurances (PNI)
640	Germany	Sonstige Privatversicherungen	Private insurances n.m.e.
640	Greece		Private Insurance Company
640	Portugal	Outros agentes financiadores	Other private financing agents
640	Sweden	Läkemedelsförsäkringen	Drug injury insurance
640	Netherlands	Particuliere ziektekostenverzekeraar	Private health care insurer
640	United Kingdom	Private health insurance company	Private health insurance company
690	Austria	Sanitätsräte	Boards of experts/Boards of health
690	Austria	Strukturkommission	Federal commission
690	Austria	Kammern und Gremien (Berufsvertretungen)	Chambers and comittes (professional asso
690	Austria	Inspektion für Lebensmittelkontrolle	Offices for drinking water and food cont
690	Austria	Fonds gesundes Österreich und die Netzwe	Funds for a Healthy Austria and the netw
690	Austria	Versorgungsverwaltungen	Social benefits administrations
690	Finland	Lääkelaitos	National Agency of Medicines
690	Finland	Terveydenhuollon oikeusturvakeskus	National Board of Medicolegal Affairs
690	Finland	Tuotevalvontakeskus	National Product Control Agency
690	Finland	Sosiaali- ja terveysalan tutkimus ja ...	National Research and Development Cen...
690	Germany	Arzneimittelüberwachung	Offices of pharmaco-vigilance
690	Germany	Konzertierte Aktion	Concerted Action Boards
690	Germany	Sachverständigenräte	Expert Councils
690	Germany	Selbstverwaltung der Leistungserbringer	Self-administration of care providers
690	Germany	Trinkwasser und Lebensmittelkontrolle	Drinking water and food control
690	Germany	Umweltüberwachung	Offices for environmental control
690	Germany	Versorgungsverwaltungen	Social benefits administrations
690	Iceland	Lyfjaeftirlit	State State Drug Inspectorate
690	Ireland	General Medical Services (Payments Boar	General Medical Services (Payments Boar

690	Luxemburg	Cellule d'évaluation et d'orientation	Evaluation and orientation service
690	Norway	Statens forurensningstilsyn	Norwegian Pollution Control Authority
690	Norway	Statens næringsmiddeltilsyn	Norwegian Food Control Authority
690	Norway	Statens råd for ernær. og fys. aktivitet	Nat. Council on Nutrit. and Phys. Act.
690	Norway	Statens tobakkskaderåd	national Council on Tobacco and Health
690	Spain	Comisión Seguridad y Salud en el Trabajo	Committee for Health and Safety at Work.
690	Sweden	Giftinformationscentralen	Swedish Poisons Information Centre
690	Sweden	Livsmedelsverket	The National Food Administration, NFA
690	Sweden	Läkemedelsverket	Medical products agency
690	Sweden	Räddningsverket	The Swedish Rescue Services Agency
690	Netherlands	Inspectie Gezondheidsbescherming, Waren	Inspectorate for health protection, prod
710	Austria	Arbeitsschutzeinrichtungen	Institutions for work safety
710	Austria	Berufliche und soziale Rehabilitation	Occupational and social rehabilitation
710	Austria	Arbeitsmedizinische Zentren	Work medical centres
710	Finland	Yksityinen työterveysasema	Private occupational health centre
710	France	Médecine du travail	Labor medecine
710	Germany	Arbeitsschutzeinrichtungen	Institutions for work safety
710	Germany	Berufliche und soziale Rehabilitation	Occupational and social rehabilitation
710	Iceland	Iðjuþjálfi	Occupational therapist
710	Luxemburg	Services de médecine du travail	Occupational health services
710	Norway	Bedriftshelsetjeneste	Industrial health service
710	Spain	Equipos privados salud laboral	Private teams laboral health.
710	Sweden	Företagshälsovård	Occupational health unit
710	Netherlands	Arbo- en Bedrijfsgezondheidsdienst	Occupational health service
720	Austria	Selbsthilfegruppen	Self-help groups
720	Austria	Private Haushalte	Private households
720	Denmark	Privat husholdning	Private households
720	Finland	Kotitaloudet	Households
720	France	Ménages	Households
720	Germany	Private Haushalte	Private households
720	Germany	Selbsthilfegruppen	Self-help groups
720	Portugal	Financiamento efectuado pelas famílias	Out-of-pocket payments and cost sharing
720	Spain	Aportación Privada	Privatehousehold'sout-of-pocket payment
720	United Kingdom	Individuals and Families	Individuals and Families
790	Austria	Taxi	Taxis
790	Austria	Private Organisationen ohne Erwerbschara	Non-profit organisations
790	Denmark	NPISH	NPISH
790	Finland	Kansanterveyslaitos	National Public Health institute
790	Germany	Taxis	Taxis
790	Germany	Private Organisationen o.E.	Non-profit organisations
790	Greece		Other carriers of primary health care
790	Luxemburg	Laboratoire national de santé	National health laboratory
790	Norway	Taxi	Taxi
790	Spain	Centros ocupacionales minus.psiquicos	Occupational centresfor mental disabled
790	Netherlands	Rijksinstituut voor de Volksgezondheid	State Institute for Public Health and En

Annex 5: Production template WHO/EUR

Part I: Introduction and historical background
1. Introductory overview
2. Historical background

Part II: The health care system in country
3. Organisational structure and management
3.1. Organisational structure of the health care system
3.2. Planning, regulation and management
3.2.1. Decentralisation of the health care system

4. Health care finance and expenditure
4.1. Main system of financing and coverage
4.2. Health care benefits and rationing
4.3. Complementary sources of finance
4.3.1. Out-of-pocket payments
4.3.2. Voluntary health insurance
4.3.3. External sources of funding
4.4. Health care expenditure
4.4.1. Structure of health care expenditures

5. Health care delivery system
5.1. Primary health care and public health services
5.1.1. Public health services
5.2. Secondary and tertiary care
5.3. Social care
5.4. Human resources and training
5.5. Pharmaceuticals and health care technology assessment

6. Financial resource allocation
6.1. Third party budget setting and resource allocation
6.2. Payment of hospitals
6.3. Payment of physicians

Part III: Health care reforms in country
7. Determinants and objectives
8. Content of reforms and legislation
8.1. Health for all policy
9. Reform implementation
10. Conclusions

Annex 6: Adapted Production template European Observatory

1	Introduction and historical background
1.1	Introductory overview
1.2	Historical background
2	Main functions of key bodies in the organisational structure and management of health care administration
2.1	(Con-)Federal/National government, Ministry with main responsibility for health care and other ministries with health care competence
2.2	Regional government
2.3	Local government
2.4	Insurance organisations
2.5	Professional groups
2.6	Providers
2.7	Voluntary bodies
3	Planning, regulation and management
3.1	Extent of system decentralisation (deconcentration, devolution, delegation, privatisation)
3.2	Existence of national health planning agency/plan
3.3	Supervision of the health services
3.4	Financial resource allocation
3.4.1	Third party budget setting and resource allocation
3.4.2	Determination of overall health budget
3.4.3	Determination of programme allocations
3.4.4	Determination of geographical allocations
3.4.5	Health care budget decision-making at national/regional/local level
3.4.6	Approach to capital planning
3.4.7	Capital investment funding
3.4.8	Recent changes in resource allocation system
4	General characteristics of the organisational structure
4.1	Integrated or contract model
4.2	Organisational relationship between third party payers and providers
4.3	Ownership: public, private, mix
4.4	Freedom of choice
4.5	Referral system
5	Out-patient care
5.1	Medical care
5.1.1	General practitioner (solo-, group practices)
5.1.2	Medical specialist with own premises
5.1.3	Out-patient department
5.1.4	Combined services: health centres
5.2	Dental care
5.2.1	General dentist
5.2.2	Dental specialist

5.3	Pharmacists
5.4	Midwifery
5.5	Paramedical care
5.6	Home nursing and home care (maternity home care included)
5.7	Out-patient mental health care services
5.8	Ambulance services and patient transport
5.9	Medical laboratories
6	In-patient care
6.1	Hospital categories
6.2	Other in-patient provisions
7	Relationship between primary and secondary care
7.1	Planned or actual substitution policies for inpatient care
7.2	Degree of co-operation between primary and secondary health care providers
7.3	Imbalance between primary and secondary care
8	Prevention and public health services
8.1	Maternal and child health: family planning and counselling
8.2	School health services
8.3	Prevention of communicable diseases
8.4	Prevention of non-communicable diseases
8.5	Occupational health care
8.6	All other miscellaneous public health services
9	Social care related to health care
9.1	Organisation and financing of social care
9.2	Role of central/regional/local government
9.3	Role of other organisations
9.4	Responsibility of family members
9.5	Financing of social care
9.6	Explicit health/social care policy
10	Medical goods and health care technology assessment
10.1	Pharmaceuticals
10.2	Therapeutic appliances
10.3	Health care technology assessment
11	Other services
11.1	Education and training of personnel
11.2	Research and development in health
11.3	Environmental health and control of drinking water
11.4	Health programme administration and health insurance
11.5	Administration and provision of cash benefits
12	Manpower in health care
13	Fees, rates and salary structure
13.1	Methods of payment to (specialist) physicians
13.1.1	Integrated or contracted
13.1.2	Type of payment
13.1.3	Method for deciding fees/salaries

13.2	Methods of hospital payment
13.2.1	Method of payment
13.2.2	Method for deciding rates
13.2.3	Recent changes in payment method
14	Main system of financing and coverage (tax based, insurance based, mixture)
14.1	Main features of tax based systems
14.1.1	Main body(ies) responsible for providing health care cover to beneficiaries
14.1.2	Extent of population coverage (excluded groups)
14.2	Main features of social health insurance
14.2.1	Organisation of main body responsible for insuring/providing coverage
14.2.2	Extent of population coverage
14.2.3	Stipulations in premium contribution
14.2.4	Competition between insurance schemes
14.2.5	Provision for risk adjustment
14.3	Health care benefits and rationing; recent reductions in benefits package and variations in extent between different insurance plans
14.4	Complementary sources of finance
14.4.1	Voluntary health insurance
14.4.1.1	Organisation of voluntary health insurance: public, quasi public, private, not for profit
14.4.1.2	Type and nature of services covered
14.4.1.3	Proportion of population covered
14.4.2	Out-of-pocket payments: main cost sharing measure (partial reimbursement, co-payment) by care category: ambulatory, inpatient, drugs, medical aids and prostheses
14.4.3	External sources of funding: employers, fund raisers etc.
15	Health care expenditure
15.1	Structure of health care expenditures
15.2	Total and public health expenditure as % GDP
15.3	Health care expenditure by category (%) of total expenditure on health care
16	Import and Export
16.1	Import
16.2	Export
17	Health care reforms
17.1	Determinants and objectives
17.2	Content of reforms and legislation
17.2.1	future development of planning: move to be integrated/move to contract based
17.2.2	tax based system: change in population coverage; opting out permitted/encouraged
17.2.3	insurance based system: development of the degree of benefit coverage in the future

Annex 7: Literature

1. Australian Institute of Health and Welfare, “National Health Data Dictionary, Version 7.0”, Canberra, 1998
2. Brückner, Dr. G.,"Developing a new system of health care statistics. A major challenge for all participants?", Federal Statistical Office, Wiesbaden, 1997.
3. Sundgren, Bo: “Guidelines on the design and implementation of staitical metainformation systems”, Statistics Sweden, 1993.
4. Hospital Committee of the European Community, “Hospital Services in the E.C.”, Leuven, 1993
5. Mosseveld, C.J.P.M. van, Son, P.van, “International Comparison of Health Care Data”, Dordrecht, 1999
6. OECD, “A System of health Accounts, Version 1.0”, Paris, 2000
7. Schneider e.a., "Gesundheitssysteme im internationalen Vergleich”, Ausgabe1994, BASYS,Augsburg, 1995
8. NOMESCO, “Health Statistics in the Nordic countries 1996” Copenhagen, 1998
9. Kemenade, Y.W. van, “Health Care in Europe 1997”, Maarssen, 1997
10. Inspection Générale de la Sécurité Sociale, “Health Care Resources Statistics”, Luxembourg, 1998

a. Report I: Feasibility of implementing a common method for comparing Health Care Resources Statistics
b. Report II: Description of Country Health Systems

11. WHO/Europe, “Production Template and Questionnaire”: In the series "Health Care Systems in Transition", Copenhagen, 1996
12. “Dorland’s Illustrated Medical Dictionnary, 27th Edition”, W.B. Saunders Co, Philadelphia, 1988
13. Hurst, J., “The reform of health care; a comparative analysis of seven OECD countries”, OECD, Paris, 1992

Annex 8: Abbreviations

ASCII	American Standard Code of Information on Interchange
ANSI	American National Standards Institute
CAPI	Computer Assisted Personal Interviewing
CASI	Computer Assisted Self-Interviewing
CATI	Computer Assisted Telephone Interview
CBS	Centraal Bureau voor de Statistiek (Statistics Netherlands)
CCP1	Project "International Comparison of Health Care Data", Statistics Netherlands, in which the concept "Common Comparable Package" (CCP) has been developed . See: Mosseveld, C.J.P.M. van, Son, P.van, "International Comparison of Health Care Data", Dordrecht, 1999
CCP2	Project on "Health Care Resources", Inspection Générale de la Sécurité Sociale, Luxembourg. See: . Inspection Générale de la Sécurité Sociale, "Health Care Resources Statistics", Luxembourg, 1998 Report I: Feasibility of implementing a common method for comparing Health Care Resources Statistics; Report II: Description of Country Health Systems
CEN/TC251	Commission Européenne de Normalisation/Technical Committee 251
CMSD	C.J.P.M. van Mosseveld (Statistics Netherlands)
DRG's	Diagnosis Related Groups
EHLASS	European Home and Leisure Accident Surveillance System
ESA95	European System of Accounts, version 1995
ESSPROS	European System of Integrated Social Protection Statistics
EU	European Union
EUCOMP	Towards Comparable Health Care Data in the European Union
EUPHIN	European Union Public Health Information Network
EUROSTAT	Statistical Office of the European Communities
GALEN	General Architecture for Languages, Encyclopaedias and Nomenclature in Medicine
HFA	Health for All
HIEMS	Health Information Exchange and Monitoring System
HIT	Health Care in Transition

HMP	Health Monitoring Programme
HTML	Hyper Text Markup Language
IDA	Interchange of Data between Administrations
ICD	International Classification of Diseases
ICIDH	International Classification of Impairments, Disabilities and Handicaps
IGSS	Inspection Générale de la Sécurité Sociale (Luxembourg)
ISO/IEC	International Organization for Standardization/International Electrotechnical Commission
IT	Information Technology
LEGS	Leadership Groups
MISSOC	Mutual Information System on Social Protection in the Member States of the European Union
MS	Member States
NEHB	North Eastern Health Board (Ireland)
Nenonen	M.T. Nenonen, Dr. Med., STAKES, Helsinki
NOMESCO	Nordic Medico Statistical Committee
NRV	Nationale Raad voor de Volksgezondheid, Zoetermeer, the Netherlands (recently turned into RVZ: Raad voor de Volksgezondheid en Zorg)
OECD	Organisation for Economic Co-operation and Development
PVS	P. van Son, collaborator EUCOMP-project
RAD	Raw Aggregated Data
RDBMS	Relational Data Base Management System
SHA	System of Health Accounts
SQL	System Query Language
STAKES	National Research and Development Centre for Welfare and Health, Helsinki, Finland
StBA	Statistisches Bundesamt (Germany)
WHO	World Health Organization
WHO/EUR	World Heath Organization Reginal Office for Europe

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