



Health Indicators in the European Regions

ISARE Project

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The European Commission or any person on its behalf is not responsible for the recommendations of this project.

■ Summary

Regions in the European Union (EU) are becoming an increasingly important political and administrative level. In the field of health monitoring, the exchange of health indicators at the regional level across Europe would allow health professionals and decision-makers to put the characteristics of their own area in the wider context of all other regions across the EU.

The Fédération Nationale des Observatoires Régionaux de Santé (FNORS) has undertaken a project entitled “Health Indicators in the European Regions” (or ISARE - “Indicateurs de Santé dans les Régions d’Europe”). The ISARE project is part of pillar A of the Health Monitoring Programme from European Commission. Its aims are to identify for each country the most appropriate sub-national level for exchange of health indicators within the EU (thereafter referred to as “health regions”), and to assess the extent of data availability at these levels.

Existing literature on health care systems and local democracy, and contacts with representatives from each EU member states were used in order to identify the “health regions”. The ISARE approach consisted of focussing on the one or several sub-national administrative levels or other divisions which were most likely to be appropriate for health information exchange.

The ISARE project team felt able to make a recommendation on the appropriate “health region” for 13 countries out of the 15 EU member states. These are shown in the table, together with the corresponding NUTS level (or nearest corresponding). It is important to note that, despite the active involvement and contribution of the country representatives in the project work, these recommendations do not equate to a formal commitment from the member states.

The recommended levels represent 300 health regions across 13 countries. The average health region population size is around 1,2 million, with considerable variations. All recommended levels have responsibilities in the field of health promotion and all but one perform the function of public health reporting. Ten out of the 13 recommended regions correspond to a level of local democracy and 9 correspond exactly to one of the levels of the NUTS classification (1,2 or 3).

No recommendation for a regional level could be made for Finland and for Greece. Regarding the latter, a new level, “health region”, will be effective at the beginning of September. We had not enough information to include this level at this time. In Finland, significant responsibilities regarding health and health care lie in the municipalities, which also represent a level of local democracy. However their small population size prevents them from being an appropriate level for health information exchange. Further thought needs to be given to this problem and it is possible that we will need to identify another level for Finland.

**Regional level recommended by the ISARE project
for health information exchange in 13 EU member states**

COUNTRY	Recommended “health region”	No of regions	Average population (000)	Corresponding (or nearest) NUTS level
Austria	Bundesländer	9	892	2
Belgium	Province	10+1*	920	2
Denmark	Amtskommuner	14	335	3
England	Health Authorities	99	503	(3)
France	Régions	26	2 315	2
Germany	Land	16	5 090	1
Ireland	Health Board	10	370	(3)
Italy	Regioni	19+2**	2 857	2
Luxembourg	National level	1	420	1
Netherlands	GGD	50	315	(3)
Portugal	Health care region	5	1 721	(2)
Spain	Autonomous Communities	17	2 344	2
Sweden	County	21	422	3
All		300	1 166	

* Ten provinces + the Brussels capital region

** Nineteen Regioni + the two provinces of the Trentino-Alto Adige region

The availability of a set of key data at regional level was explored by means of a questionnaire based on the framework of the European Community Health Indicators project (or ECHI project, also part of the HMP). The wide scope of the questionnaire meant that responses did not always cover the complete range of data investigated. In some countries availability of data could only be assessed for part of the health regions.

As expected these findings suggest that demographic and mortality data are widely available across the recommended “health regions”. Assuming data comparability, it would be possible to build some indicators related to health care professionals and facilities, as well as health care utilisation for the “health regions”. The same applies to the field of socio-economic, living and working conditions, and preventative data. However, availability of data regarding generic health status and morbidity is poor at “health regions” level.

The ISARE project suggests that despite the amount of disparity between the recommended “health regions”, the exchange of health indicators is feasible. Virtually all recommended levels are already involved in public health reporting. The ISARE project approach consisted in identifying one level in each country according to a series of criteria. These “health regions” appear to be the best compromise for a successful health information exchange at sub-national level within the EU. Wherever appropriate, it might be preferable to use a more flexible approach and to recommend different sub-national levels to undertake comparisons about different levels of health care (e.g. primary, secondary), or analysis of different epidemiological patterns. Further work might be needed to identify variations in levels of competencies and autonomy at sub-national level between and within countries. Recommendations may need to evolve with regard to changes taking place in health care systems and local democracy.

It is hoped that the findings of the ISARE project represent a useful contribution towards identifying the “health regions” across the EU, understanding their role, and fostering their use as units for health indicators’ exchange within the Health Monitoring Programme. A follow up project has been proposed with the aim of collecting data in each country and building a pilot regional health indicators database.

■ 1. Introduction

In June 1997 the European parliament adopted a plan of action regarding public health across the European community. The programme itself is known as the Health Monitoring Programme (HMP) and has the remit of helping to set up a community-wide system for monitoring health in order to:

- measure health status, trends and determinants throughout the Community;
- facilitate the planning, monitoring and evaluation of Community programmes and actions;
- provide Member State with appropriate health information to make comparisons and to support their national health policies.

To reach these objectives three types of action have been undertaken:

- the establishment of Community health indicators;
- the development of a Community-wide network for sharing health data;
- analyses and reporting on health in the European Union.

Various projects have been put forward by teams in the countries of the European Union. Some are concerned with defining a set of common indicators which would enable data concerned with health and methods for investigating health issues to be compared. Much of the work carried out prior and during the HMP is concerned with comparisons between nations as a whole. Although this approach has great value and represents a necessary first step, it does not take on board the fact that a substantial amount of analysis and decisions regarding health issues are now, more than ever, taken at sub-national level.

It is in this context that the FNORS (*National Federation of Regional Health Observatories, France*) has proposed a project focusing on the feasibility of health indicators exchange within the “regions”^{*} of the European Union Member states.

^{*} The term « region » is used in this report to indicate the general concept of sub-national level, which in certain countries could be designated by other terms such as county or province.

■ 2. Justification of the project ---

Local government is developing considerably and the importance of the regions as units of political and administrative management is increasing in Europe. In Spain for instance, regional autonomous communities have acquired a high level of autonomy, which in some instances translates into responsibility for managing the health budget. In France, regions, where health care planning is already performed, are in charge of allocating budget to hospitals following the 1996 health care reforms.

The tendency towards increasing decision-making at regional level is bound to coincide with increasing use of information for health needs assessment. Sharing such regional information would allow health professionals and decision makers to put the characteristics of their own region in the wider context of all European regions as opposed to that of their own country. Similarities and differences may raise questions and stimulate exchange about the approaches chosen for solving public health problems. Theoretically, the development of health indicators exchange at regional level within Europe opens up the perspective of maximising the opportunities for learning from one another.

Other reasons draw on the epidemiological interest of sharing regional health information. Firstly, observing health indicators at an infra national level allows the identification of epidemiological patterns, otherwise hidden by national averages. Linked to this argument, is the well known fact that public health problems do not respect national boundaries. Thus, it is likely that more similarities exist between two neighbouring regions across national borders, than between two regions in the same country but geographically far apart.

3. The NUTS classification

In order to present statistics at sub-national level between EU member states, Eurostat has developed a unified classification known as the NUTS levels (for “Nomenclature des Unités Territoriales pour les Statistiques”). This is a hierarchical classification comprising five levels. Level five represents the smallest unit and corresponds to individual municipalities. Levels 4 to 1 are aggregates of adjacent areas of the lower NUTS level. Level 4 is optional for some countries. The decision of which administrative territory falls in a given NUTS level is made by the countries themselves. The tables present the names of NUTS 1 to 3 for the 15 EU member states.

The NUTS levels represent a reference for the collection and harmonisation of data, for sub-national socio-economic analysis, and for the definition regional policies within the EU. This classification represents therefore, a pre-existing key element for the ISARE project. However, regions belonging to a given NUTS level in differing countries do not necessarily share the same amount of autonomy, competencies and responsibilities (if any) in the field of public health and health sector management. Furthermore, in some countries, the boundaries of administrative areas which are important in respect to public health, may not coincide with any of the NUTS levels.

Correspondence between NUTS and national administrative divisions

	NUTS 1	NUTS 2	NUTS 3
Belgique/België	Régions/Gewesten	Provinces/Provincies	Arrondissements/Arrondissementen
Danmark	-	-	Amter
Deutschland	Länder	Regierungsbezirke	Kreise
Greece/Ellada	Regroupements NUTS 2	Diámerismata	Nomoi
España	Regroupements NUTS 2	Comunidades autónomas	Provincias
France	ZEAT + DOM	Régions + DOM	Départements + DOM
Ireland	-	-	Regional authority regions
Italia	Regroupements NUTS 2	Regioni	Provincia
Luxembourg	-	-	-
Nederland	Landsdelen	Provincies	COROP-Regio's
Osterreich	Regroupements de Bundesländern	Bundesländern	Regroupements de Politische Bezirke
Portugal	Regroupements NUTS 2	Comissões de coordenação regional + Regiões autónomas	Regroupements de concelhos
Suomi/Finland	Manner-Suomi/Ahvenanmaa	Suuralueet	Maakunnat
Sverige	-	Riksområden	Län
United Kingdom	Standard regions	Regroupements NUTS 3	Counties, local authority regions

Reference: EUROSTAT Regions Statistical yearbook 1997

■ 4. Objectives of the ISARE project ---

The aim of the project was to describe the availability and the characteristics of health related data at the most relevant sub-national level within the countries of the European Union.

Two stages were required in order to achieve this aim:

Identification of the “health regions”

This involved identifying from the several possible sub-national administrative levels, the most appropriate level for the purpose of health information exchange between regions. A number of criteria could be used in order to assess the appropriateness of a given level including: a sufficient population size so as to avoid problems linked to random variations and confidentiality issues; an appropriate level of decision making impacting on the health of the population; the correspondence with a level of local democracy...

The identification of data availability at regional level

This consisted in identifying whether or not data necessary for building health indicators could be aggregated at the relevant regional levels.

In order to achieve the above objectives, the project relied heavily on a network of country representatives who provided expertise throughout the duration of the work. More specifically this concerns a survey using a detailed questionnaire regarding health care policy and management, as well as data availability at regional level. These methods and results are described later.

■ 5. The ISARE project approach ---

5.1 Partnership and work groups

Contact was made during summer 1999 with the European Union states representatives on the Health Monitoring Programme Committee. Following this consultation and the designation of representatives, three groups were set up to manage this project:

The Project Group

The project group was composed of representatives of the Fnors and of individual French Regional Health Observatories. Together with a representative from WHO, the project group made the final proposal for the project. Then members of the groups linked with each country representatives in order to carry out the project tasks, including analysing of the collected data and report writing. The role of this group was also to maintain contacts and communicate with other HMP projects.

The Steering Group

The steering group approved the main themes of the project, the methods used and the tools required. It was also in charge of monitoring the project's progress. The steering group membership included all members of the project group plus representatives from 5 European countries (Germany, Belgium, Spain, Sweden, Netherlands), two representatives from the European Commission (DG Sanco and Eurostat), one from WHO (Europe), one from the French department for research, study, evaluation and statistics (DREES) at the French ministry of employment and solidarity.

The European Countries Group

Members of this group were representatives from all 15 European Union Countries. This group formed the network used by the project to gather information regarding health region and data availability across the EU. Members of the European countries group proved an essential resource during the various phases of the project, particularly during the implementation of the ISARE survey, and for the validation of the country summaries (see below).

5.2 The ISARE Survey

The purpose of the survey was to gather information regarding geographical, political, and administrative characteristics of one or several sub-national levels in each EU member states. The survey also explored whether a set of key data would be available for the regional level, so as to allow the production of health indicators. With this information, the project team, in partnership with the country representatives, formulated recommendations about which, if any, sub-national levels, would be the most appropriate from the point of view of health information exchange across the European Union.

5.2.1 Questionnaire design

The questionnaire was in two parts. The first explored issues relating to responsibilities and decision making at the regional level in the health and health care fields. Specifically the questions focused on responsibilities regarding health and social policy and management, responsibilities for health promotion and of public health reporting. The questionnaire also covered issues regarding boundary stability, correspondence with a level of the NUTS classification and the existence of local information systems. Finally, basic demographic and geographical characteristics of the regions within the country were requested (e.g. average, minimum and maximum population sizes).

The second part of the questionnaire aimed at exploring data availability at the regional level under consideration. The number of individual data items that could be used to create a picture of the health status and health care provision in a community is considerable. In order for the survey to be consistent with the approach followed by the HMP, the framework of the ECHI project was used for identifying the key data items to be included in the ISARE questionnaire. The aim of the ECHI project is to determine a common set of indicators, based on a shared conceptual framework, for the purpose of describing health within the European Union. In an early version of the ECHI project, the indicators were organised in the 11 following sections: health professionals, education of health professionals, health care facilities, use of the health system, demography, mortality, generic health status measures, morbidity, biological factors and health habits, living and working environment, and prevention.

The ISARE project approach consisted of selecting key data items in each of these categories. For instance, in the demography sections, among other data items, the questionnaire explored whether the number of live births, the number of deaths, an age/sex breakdown of the population would be available at the given regional level. For the morbidity section, the selection of data items was based on a list of chronic disease taken into consideration in the European Disability Weights project. Overall, about 130 data items were included in the questionnaire. For each data item questions regarding its availability across all regions, whether the data could be obtained from a national and / or a local source, the latest year of data available and the frequency of updating were asked.

The questionnaire was presented to, piloted, and validated by the steering group.

5.2.2 Organisation of the survey

Prior to the distribution of the questionnaire, each country representative was contacted by mail and telephone by a member of the project team. The aim of this conversation was to determine which were the one or several regional levels to be investigated during the survey. The main criteria which were taken in account in making this choice were the likely value of exchanging these local indicators with other regions and the existence of decision-making process at the 'regional level'. For some countries this was easily determined. For others, it took some time to decide which and how many levels should be investigated. Once a decision was made, the agreed number of questionnaires was sent to the country representative. Most questionnaires were sent out by the end of June 2000.

The wide scope of the questionnaire meant that clarification was often required. Therefore the survey usually involved a number of successive contacts between the country representatives and their correspondents in the project team. Also, country representatives often had to refer to other experts within their own country in order to collect specific information. Only a few countries were in a position to provide answers before the initial deadline of September 2000, but most answers were obtained at the end of the year 2000. Answers came later, in 2001, for two countries where it turned out that the initial country representatives had changed positions and were no longer able to take part in the project's work.

5.3 Synthesis of the information

The information collected during the survey was used by the project team to write country summaries. These are short overviews of each of the 15 EU member states and provide concise information regarding the health care system with emphasis on the sub national level, the number of levels of local democracy, the areas of responsibilities devolved to these democratic levels, and a synthesis of the answers provided during the ISARE survey. Apart from information gathered during the survey, two other sources of information proved particularly useful for the production of the country summaries. These were the “Health Care Systems in Transition” series (HiT) from the WHO Regional Office for Europe, and the “Structure and operation of local and regional democracy” series produced by the Council of Europe.

Once written, the draft country summaries were submitted to the relevant country representatives for validation. This process took place during the first part of the year 2001. The country summaries are presented at the end of this report of the ISARE report.

■ 6. Analysis of responses for the identification of the “Health Regions”

6.1 Responses

Responses were obtained from all European Union countries for a total of 26* different regional levels which are listed in table 1. The middle columns of the table shows the number and the names of all sub-national levels investigated during the survey. The column on the right hand side indicates the level recommended by the ISARE project team as appropriate for the purpose of exchanging health indicators at sub national level within the European Union.

It may come as a surprise that the recommendations of the project team are brought up so early in the analysis. This option was chosen in order to facilitate the presentation of the data received. It is hoped that the reason for this will become apparent later on, when the characteristics of the different levels are shown. It is important to note that despite the active involvement and contribution of the country representatives in the project work, these recommendations do not correspond to a formal commitment from the member states. For some countries, a number of factors clearly point to a given administrative level. In other countries, the situation is less clear-cut, for various reasons such as population sizes, or imminent changes of responsibilities or of boundaries. These aspects are described in detail in the following sections.

For 4 countries, only one sub-national level was investigated. These were the Bundesländer in Austria, the Amtskommuner in Denmark and the Regioni in Italy and Autonomous Community in Spain. These sub-national levels clearly appeared to be the more suitable candidate for health information exchange in their relevant country. As far as they are concerned, the aim of the ISARE survey was more to describe their characteristics rather than to explore their merits against that of an alternative level. Not surprisingly the following sections of this chapter show that the majority of relevant responsibilities explored during the survey coincide at their level. For a further 7 countries, Belgium, England, France, Germany, Ireland, Portugal and Sweden, 2 or 3 sub-national levels were investigated and a recommendation of a particular level made by the project team.

The response from Luxembourg corresponds to the national level, as opposed to a given regional level. In this country, the 118 communes represent the only level of local democracy. However compared with other regions considered in this project, their population size was deemed too small for them to be part of the investigation.

Out of the 4 countries of United Kingdom, only details for England were collected during the survey. This is why we refer to England only in the following analysis. However, in another part of the report (country summaries), the relevant section is entitled United Kingdom as it includes some elements of local democracy, which applies to all four countries.

* This number does not include "Health region" for Greece which will exist on September 2001

Table 1: Responses to the ISARE survey

COUNTRY	No	Responses obtained	
		Names of the regional levels	Recommended regional level *
Austria	1	Bundesländer	Bundesländer
Belgium	2	Community Province	Province
Denmark	1	Amtskommuner	Amtskommuner
England	2	Health Authority Local Authority social services	Health Authority
Finland	2	Province Region	None
France	2	Région Départements	Région
Germany	3	Kreis Regierungsbezirk Land	Land
Greece	1	Response for Crete only	None
Ireland	2	Health Board County	Health Board
Italy	1	Regioni	Regioni
Luxemburg	1	National level	National level
Netherlands	2	GGD Region WZV region	GGD Region
Portugal	3	Community Region Health Region	Health Region
Spain	1	Autonomous Community	Autonomous Community
Sweden	2	County council Municipality	County council

* This corresponds to recommendation by the project team

Responses from Belgium were provided from the French community. On the basis of the answers, the province appears as the most appropriate regional level for health information exchange. However, as was previously stated, this recommendations only reflect the views of the project team and would need to be supported by the representatives of the Flemish and German communities.

In Greece, the "Health region" which will be effective from the beginning of September 2001, is likely to be the appropriate level. However, not enough is known about this new tier at the time of writing this report in order to recommend it.

None of the two levels explored for Finland, province and region, were chosen as a recommended region for health information exchange. Despite their appropriate population sizes, the main reason for this decision is the absence of either democratic power and of any responsibilities regarding health and social policy at these levels. In this country, the high level of decentralisation means that significant responsibilities regarding health and health care lie in the municipalities, which also represent a level of local democracy. Here again, the small population size of the 452 municipalities (average population = 11 000) prevents them from being an appropriate level for health information exchange. The outcome of the ISARE project for Finland does not mean that this country will be excluded from further work along the line of cross regional comparisons within EU.

6.2 Correspondence with local democracy - responsibilities regarding health and social policy

In the sections 6.2 to 7.3, the tables show the responses to the ISARE survey in two sections: the top half of the tables concerns sub-national levels recommended for health information exchange across regions, and the second half of the tables concerns the other investigated levels*. The purpose of this is to highlight, wherever they exist, the key differences between these two groups of sub-national levels.

Ten of the 13 recommended levels correspond to a level of local democracy. This includes the municipal services of the Netherlands, which strictly speaking correspond to groups of individual municipalities where local democracy is exercised. On the other hand, Health Authorities in England, Health Boards in Ireland and Health Care Regions in Portugal are not levels where there is full democratic accountability. In these three countries, one or two other levels were considered which represent local democracy, but with only limited, if any, remit in health matters.

It is striking that all recommended levels have responsibilities in health promotion, and that public health reporting is performed in all but one of them (the exception being Luxembourg). These functions appear to be good markers of the appropriateness of health information exchange across regions. Indeed out of the five functions investigated in the questionnaire, they are the only ones that apply to the provinces of Belgium. These and the municipal health services in the Netherlands apart, all other recommended levels are involved in the management of hospital and ambulatory care. The responsibilities for management and policy setting for social services lie less commonly at the recommended levels (9 out of 13).

Table 2: Correspondence with a level of local democracy and responsibilities of the region regarding management of health and social policy

Regional level recommended for information exchange		No of regions	Local democracy	Responsibilities re management of health and social policy				Public Health Reporting
				Hospital care	Ambulatory care	Social services	Health promotion	
Austria	Bundesländer	9	Yes	Yes	Yes	Yes	Yes	Yes ¹
Belgium	Province	11 ²	Yes	No	No	No	Yes	Yes ¹
Denmark	Amtskommuner	14	Yes	Yes	Yes	Yes	Yes	Some
England	Health Authorities	99	No	Yes	Yes	No	Yes	Yes
France	Régions	26	Yes	Yes	Yes	No	Yes	Yes
Germany	Land	16	Yes	Yes	Yes	Yes	Yes	Yes ¹
Ireland	Health Board	10	No	Yes	Yes	Yes	Yes	Yes
Italy	Regioni	21 ³	Yes	Yes	Yes	Yes	Yes	Yes ¹
Luxembourg	National level	1	Yes	Yes	Yes	Yes	Yes	No
Netherlands	GGD	50	Yes ⁴	No	No	Yes	Yes	Yes
Portugal	Health care region	5	No	Yes	Yes	Yes	Yes	Yes
Spain	Autonomous Communities	17	Yes	Yes ⁵	Yes ⁵	Yes	Yes	Yes
Sweden	County	21	Yes	Yes	Yes ⁵	No	Yes ⁵	Yes

¹ yes for some regions

² ten provinces + the Brussels capital region

³ Nineteen Regioni + the two provinces of the Trentino-Alto Adige region

⁴ municipal health services in the Netherlands correspond to grouping of municipalities, which are a level of local democracy

⁵ for 10 autonomous communities, the responsibility is shared with national level

⁶ the responsibility is shared with municipalities

* Information regarding the two non recommended levels of Germany (Regierungsbezirk, Kreis) are not yet included in the tables.

Table 2bis: Correspondence with a level of local democracy and responsibilities of the region regarding management of health and social policy

Regional level not recommended for information exchange		No of regions	Local democracy	Responsibilities re management of health and social policy				
				Hospital care	Ambulatory care	Social services	Health promotion	Public Health Reporting
Belgium	Community ²	3	Yes	No	No	No	Yes	Some
England	Local Authorities	150	Yes	No	No	Yes	No	No
France	Départements	100	Yes	No	No	Yes	Yes	Some
Finland	Region	21	No	No	No	No	No	No
Finland	Province	6	No	No	No	No	No	No
Ireland	County	26	Yes	No	No	No	No	No
Netherlands	WZV	27	No	Yes	No	No	No	No
Portugal	Community	30	No	No	No	No	No	No
Portugal	Region	7	No	No	No	No	No	No
Spain	Provinces	52	Yes	No	No	Yes	No	No
Sweden	Municipality	289	Yes	No	Yes	Yes	Yes	Yes ¹

¹ yes for some regions

² only the French community has been studied

The table shows a clear contrast between the responsibilities lying at ‘recommended’ versus ‘not recommended’ regional levels. For most countries where several levels have been considered, the choice was clear to the project team. Swedish municipalities deserve specific consideration since a significant number of responsibilities regarding health and social care are dealt with at this level, which is also a level with a significant level of local democracy. This reflects the high level of decentralisation which prevails in Sweden (cf municipalities in Finland, previous section). However, the small size of most municipalities would be an important obstacle for information exchange at this level. Provinces in Spain are involved in social service management and policy but they have little responsibility for health matters, which explains the choice of Autonomous Communities for this country.

To some extent the situation of the French "départements" is similar to that of Spanish provinces, with the differences being that "departments" have some responsibilities for public health services management and mother and child health. For these reasons, and for some public health topics, the French "départements" could represent an appropriate sub-national level for health information exchange across the European Union. However, reforms introduced in 1996 have since given more importance to the regional level.

6.3 Demographic characteristics

From the available answers, the recommended levels represent a total of 300 regions across 13* countries, thus averaging 23 regions per country. This average is close to the value for Sweden (21 counties), France (26 régions) and Italy (19 regioni and 2 provinces), slightly less so for a group of countries whose number of regions lies between 5 (Portugal) and 17 (Spain). England, with 99 health authorities, represents a clear outlier, followed by the Netherlands, with 50 GGD regions.

Examination of the average population size of the recommended regional levels clearly differentiates two groups of countries: a group of five countries with average population in the recommended level above 1,5 million (Germany, Italy, Portugal, France and Spain); the remaining 8 countries all have mean regional population sizes of around 400 000, ranging from 315 000 to 920 000. The latter group includes England and the Netherlands.

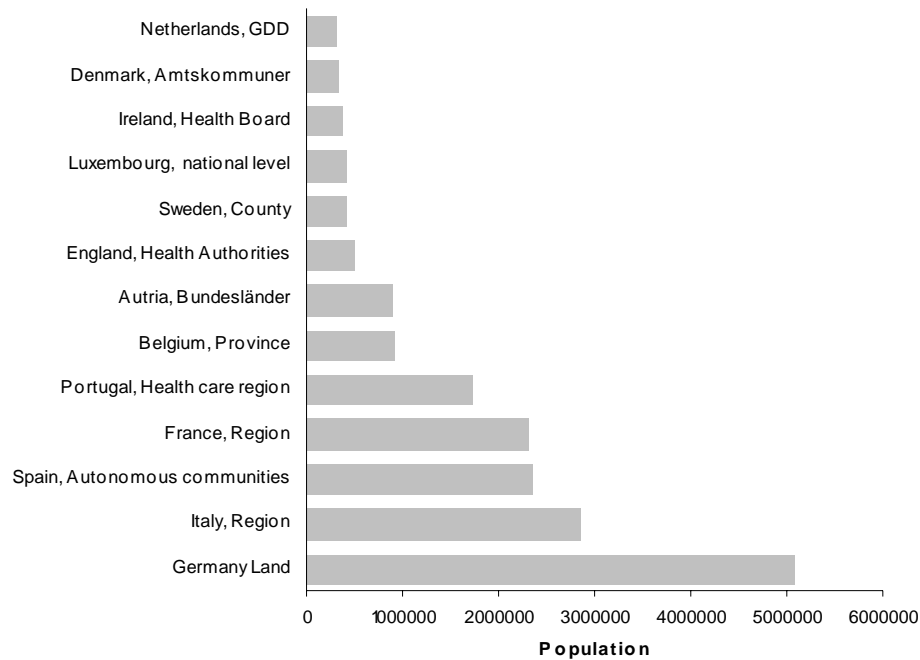
* Health regions of Greece are not included.

Among the recommended regional levels, the smallest population sizes are found in one Danish Amtskommuner and in a Swedish county each having less than 60 000 inhabitants. The smallest sizes of the 'regions' in the other countries vary between 118 000 and 682 000. The largest population of the recommended levels is found in one German region with nearly 18 million inhabitants. There is therefore a more than 390 fold variation between the smallest and the biggest population sizes of the recommended levels. Clearly this ratio is strongly influenced by outliers. Another way to examine variation of population sizes between recommended regional levels is to compare their country averages. This shows that the variation between the countries with the highest and lowest population level is around 15. If total populations are used, (excluding Luxembourg), the ratio is close to 22:1.

Table 3: Demographic and surface characteristics of the regional levels investigated during the ISARE survey

		No of 'regions'	Average	Population		Average	Surface (km 2)	
				Minimum	Maximum		Minimum	Maximum
Regional level recommended for information exchange								
Austria	Bundesländer	9	892 000	274 000	1 596 000	9 317	415	19 173
Belgium	Province	11	920 000	239 000	1 627 000	2 773	161	4 439
Denmark	Amtskommuner	14	334 644	45 076	625 224	3 071	526	6 173
England	Health Authorities	99	502 554	128 231	1 013 177	1 317	34	8 306
France	Régions	26	2 314 893	156 790	10 951 136			
Germany	Land	16	5 090 000	682 000	17 788 000			
Ireland	Health Board	10	370 000	205 500	1 295 939	8 784	4 644	14 283
Italy	Regioni	21	2 856 925	118 200	8 901 000			
Luxembourg	National level	1	420 416			2 586		
Netherlands	GGD	50	315 205	124 475	777 397	699	56	3 531
Portugal	Health care region	5	1 720 718	360 185	3 234 727			
Spain	Autonomous Communities	17	2 344 274	263 644	7 236 459	29 694	5 045	94 224
Sweden	County	21	421 973	57 428	1 803 377	19 568	2 941	98 911
All recommended regions		300	1 165 719	45 076	17 788 000	4 444	34	98 911
Regional level other level investigated								
Belgium	Community	3	3 372 000	950 000	5 856 000	10 172	161	16 844
England	Local Authorities Social services	150	331 672	2 086	1 344 023	870	3	8 038
France	Départements	100	601 872	73 508	2 554 449			
Finland	Region	20	258 565	25 706	1 290 618	16 907	1 552	
Finland	Provinces	6	861 884	25 706	2 068 259	56 358	1 552	
Ireland	County	26	139 500	25 000	1 060 000	2 703	826	7 500
Netherlands	WZV	27	583 712	238 038	1 295 645	1 295	221	3 531
Portugal	Community	30	330 070	48 300	1 836 300	3 064	779	8 503
Portugal	Region	7	1 412 500	239 200	3 503 300	13 129	779	26 931
Spain	Provinces	52	787 238	172 236	3 478 803	9 731	1 980	21 766
Sweden	Municipality	289	30 662	2 746	743 703	1 488	9	19 447

Average population sizes of the recommended regional levels



6.4 Correspondence with NUTS classification and boundary stability

Out of the 13 recommended levels, 9 correspond exactly to a level of the NUTS classification. These are NUTS I for Luxembourg and Germany, NUTS II for Austria, Belgium, Italy, France and Spain, and NUTS III for Denmark and Sweden. NUTS III is the nearest match for 3 of the 4 remaining recommended regional levels, England, Ireland and the Netherlands, whereas Health Care Region in Portugal are closest to NUTS II. The new Health regions in Greece are also closest to NUTS II.

Boundary stability was assessed by asking whether any changes had occurred in the past 10 years. The responses showed that, with the exception of counties in Sweden, levels which correspond exactly to the NUTS classification have had stable boundaries. On the other hand 3 out of the 4 levels which do not correspond to the NUTS classification, namely health authorities in England, Health Boards in Ireland and Municipal health services in the Netherlands, have experienced boundary changes.

The distribution of exact correspondence with NUTS classification in the 'non recommended' regional levels is comparable with that of the 'recommended' levels. Portugal is the only country where the non recommended levels correspond exactly to NUTS, whereas the recommended region does not. For both Ireland and the Netherlands none of the levels investigated had an exact correspondence with the NUTS classification.

Table 4: Correspondence of the regional levels investigated during the ISARE survey with the NUTS classification

		No of regions	Exact correspondence with NUTS levels			Boundary stability
			Exact	if yes, which level	if no, nearest level	
Regional level recommended for information exchange						
Austria	Bundesländer	9	Yes	2		Yes
Belgium	Province	11	Yes	2		Yes
Denmark	Amtskommuner	14	Yes	3		Yes
England	Health Authorities	99	No		3	No
France	Régions	26	Yes	2		Yes
Germany	Land	16	Yes	1		Yes
Ireland	Health Board	10	No		3	No
Italy	Regioni	21	Yes	2		Yes
Luxembourg	National level	1	Yes	1		Yes
Netherlands	GGD	50	No		3	No
Portugal	Health care region	5	No		2	Yes
Spain	Autonomous Communities	17	Yes	2		Yes
Sweden	County	21	Yes	3		+/-
Regional level not recommended for information exchange						
Belgium	Community	3	Yes	1		Yes
England	Local Authorities Social services	150	Yes	3		Yes (?)
France	Départements	100	Yes	3		Yes
Finland	Region	20	Yes	3		Yes
Finland	Provinces	6	No		2	No
Ireland	County	26	No		3	Yes
Netherlands	WZV	27	No		2	Yes
Portugal	Community	30	Yes	3		Yes
Portugal	Region	7	Yes	2		Yes
Spain	Provinces	52	Yes	3		Yes (?)
Sweden	Municipality	289	Yes	5		+/-

■ 7. Analysis of responses regarding data availability

7.1 Important considerations regarding responses and introduction to the analysis

The aim of this part of the ISARE survey was to find out whether it would be possible to obtain key health indicators /data for each region, at a given level. The meaning of the word “availability” should therefore be understood as “the ability to aggregate the data” for a given regional level. This usually applies to national datasets such as population census, or death certification, which can easily be broken down to a lower administrative level. It can also apply to data that are collected and analysed locally in some regions, such as specific disease registers, and health interview surveys.

The ISARE questionnaire used the framework of an early version of the ECHI project to enquire about data availability. This consists of the following 11 categories: Health care professionals, education of health care professionals, health care facilities, health care utilisation, demographic and socio-economic data, mortality data, generic health status data, morbidity data, biological factors and health habits, living and working conditions, data on prevention.

The questionnaire explored whether a set of key data would be available at the given regional level, whether this applies to all the regions in the level, whether the data could be provided by a national and / or a local institution or statistical office, the most recent year for which data is available and the frequency of updating. Thus the ISARE survey enquired about a wide range of issues related to national and local information systems. The very objective of the survey meant that a respondent working at national level might not have sufficient knowledge about the situation in some regions of his or her own country. This is particularly true for countries with a federal structure and for data items concerning specific behavioural or morbidity problems which are more likely to be the subject of a local, rather than a national, epidemiological surveillance scheme. In practice the relatively high level of detail in the questionnaire on data availability meant that the information could not always be provided, and therefore there was considerable missing data for this item.

This happened despite the fact that answering the questionnaire often involved contacting other experts at national or local levels in order to provide a clear picture of the situation. In some countries, the questionnaire was sent to individual regions within the country. This was the case for Spain, where 12 of the 17 autonomous communities were able to provide an answer. Similarly, information provided for Belgium pertains only to the French community. As mentioned before, England was the only nation from the United Kingdom involved in the survey. As a consequence, in some cases the results shown in the following sections represent generalisation to a whole country, of a situation which could only be assessed in part of it.

Given the limitations described above, a difficulty for the analysis was to pay sufficient tribute to all the work done in the individual countries, without overstating the information obtained. Indeed, answers to the ISARE survey are only indicative about data and information systems. They suggest areas where exchange of health indicators at regional level across EU could be performed. However, valid comparisons across the regions could only happen provided data definitions are comparable, data quality is sufficiently good, and sample sizes large enough. The issues of data definition and comparability are relevant for many data items, some of which are the focus of other projects within the Health Monitoring Programme.

Taking these constraints into account, we have chosen to present the result of the data availability questionnaire using two cross tabulations. In the next section, responses are presented in a cross tabulation by country and main data category. The section “data availability: responses for individual items” goes in more details, and presents the availability of individual data items across the 15 EU member states.

7.2 Data availability: overview by country and main data categories

This section provides an overview of the answers on data availability. The following section will provide much more details regarding the data items explored during the survey. In the three tables presented in this section the answer “Yes” means that the majority of data items in the category could be obtained for the given levels. The expression “Yes for some items” or “Yes for some regions” are used to provide a more qualified answer when required. Similarly the answer “No” means that none or only a minority of data items are available. As in the previous sections, responses are presented firstly for regional levels recommended for health information exchange (top half of the table), secondly for levels not recommended. Available answers from Crete have been included in the latter part of the tables.

7.2.1 Demography, socio-economic, mortality, generic health status measures and morbidity

Not surprisingly most data related to demography are available in all regional levels investigated whether or not they are recommended for health information exchange. The limitations expressed for the Lander of Germany and for Luxembourg concern the availability of socio-economic economic breakdown of the population. Regarding mortality data, death certification systems seem to allow for breakdown at all the regional levels investigated.

Generic health status data refers to information collected by means of "health interview surveys", using instruments such as the General Health Questionnaire, the SF36 or the Euroqol -5D. The ISARE questionnaire specifically asked about data availability regarding long-standing illness, long-term physical disability and mental illness. Only Sweden (county), Denmark (Amstkommmuner) and Finland (province) answered positively for all these data items. In Sweden, the data come from a national survey on living conditions. In England, the national health survey, provide information on long-standing illness, but several years of data would need to be pooled together in order to be representative at regional level. For five other recommended levels the information could be provided for some regions only, where local surveys are performed. No information on generic health status is available in the recommended regional levels of France, Italy, and Portugal, or in Luxembourg.

The morbidity section of the ISARE questionnaire enquired about data availability for five infectious diseases and 16 chronic diseases or impairment. The Amstkommmuner in Denmark is the only regional level for which most data items in this category could be provided from a variety of information sources. These include notification for infectious diseases, disease register for cancers, hospital data, and 5 yearly surveys for conditions such as asthma, diabetes or rheumatoid arthritis. Similar surveys are conducted in some regions of other countries. However the general picture is that for most recommended regions, morbidity data is limited to infectious diseases notifications, and cancer registers, which sometimes only cover some regions within the country.

**Table 5: Overview of data availability in the regional levels investigated during the ISARE survey
Demography, socio-economic, mortality, generic health status and morbidity data**

		No of regions	Demography, socio-economic	Data availability		
				Mortality	Generic health status	Morbidity
Regional level recommended for information exchange						
Austria	Bundesländer	9	Yes	Yes	Yes for some items	Yes for some items
Belgium	Province	11	Yes	Yes	Yes for some regions	Yes for some items
Denmark	Amtskommuner	14	Yes	Yes	Yes	Yes
England	Health Authorities	99	Yes	Yes	Yes for some items	Yes for some items
France	Régions	26	Yes	Yes	No	Yes for some items
Germany	Land	16	Yes for some items	Yes	Yes for some items	Yes for some items
Ireland	Health Board	10	Yes	Yes	No	Yes for some items
Italy	Regioni	21	Yes	Yes	No	Yes for some items
Luxembourg	National level	1	Yes for some items	Yes	No	Yes for some items
Netherlands	GGD	50	Yes	Yes	Yes for some regions	Yes for some items
Portugal	Health care region	5	Yes	Yes	Yes for some regions	Yes for some items
Spain	Autonomous Communities	17	Yes	Yes	Yes for some regions/items	Yes for some regions/items
Sweden	County	21	Yes	Yes	Yes	Yes for some items
Regional level not recommended for information exchange						
Belgium	Community	3	Yes for some items	Yes	Yes	
England	Local Authorities Social services	150				
France	Départements	100	Yes	Yes	No	Yes for some regions/items
Finland	Region	20	Yes	Yes	Yes for some regions	Yes for some items
Finland	Provinces	6	Yes	Yes	Yes	Yes for some items
Greece	Crete		Yes for some items	Yes	No	Yes for some items
Ireland	County	26	Yes	Yes	No	Yes for some items
Netherlands	WZV	27	Yes	Yes	Yes (to be confirmed)	Yes for some items
Portugal	Community	30	Yes	Yes	Yes for some regions	Yes for some items
Portugal	Region	7	Yes	Yes	Yes for some regions	Yes for some items
Spain	Provinces	52				
Sweden	Municipality	289	Yes	Yes	No	No

7.2.2 Health care supply and utilisation

The ISARE data availability questionnaire enquired about whether numbers of physicians, nurses, midwives, dentists and pharmacists, as well as number of hospital sites and hospital beds, nursing homes etc, were available at regional level. Data for these health professionals and health care facilities categories is widely available in the recommended regions. However in three countries, availability is limited to the public sector information (Germany, Ireland and Italy). The same applies to England, but private health care provision remains marginal in this country.

Data items in the utilisation category refer to either hospital activity indicators such as number of bed days, bed occupancy, average length of stay, or number of specific procedures such as caesarean sections, cataract operations and hip replacements. The overall pattern is consistent with what could be expected, in that availability decreases as data items become more specific (see section responses for individual items). A number of specific procedures by regions are not always available in the regions. However, there is good level of data available in more than half of the recommended regional levels (including the countries where only public sector activity is collected). Accessing hospital health care utilisation data is cumbersome in the Netherlands because the information is processed by a private company.

**Table 6: Overview of data availability in the regional levels investigated during the ISARE survey
Health care professionals, health care facilities and health care utilisation data**

		Nb of units	Data availability - Health Care Supply & Utilisation		
			Professionals	Facilities	Utilisation
Regional level recommended for information exchange					
Austria	Bundesländer	9	Yes	Yes	Yes
Belgium	Province	11	Yes	Yes	Yes
Denmark	Amtskommuner	14	Yes	Yes	Yes
England	Health Authorities	99	Yes *	Yes *	Yes *
France	Régions	26	Yes	Yes	Yes
Germany	Land	16	Yes for some items	Yes for some items	Yes for some items
Ireland	Health Board	10	Yes *	Yes *	Yes *
Italy	Regioni	21	Yes for some items	Yes	Yes
Luxembourg	National level	1	Yes	Yes until 1994	Yes for some items until 1994
Netherlands	GGD	50	Yes	Yes	Not readily accessible
Portugal	Health care region	5	Yes	Yes	Yes for some items
Spain	Autonomous Communities	17	Yes	Yes	Yes
Sweden	County	21	Yes	Yes	Yes for most items *
Regional level not recommended for information exchange					
Belgium	Community	3	Yes	Yes	Yes
England	Local Authorities Social services	150			
France	Départements	100	Yes	Yes	Yes
Finland	Region	20	Yes	Yes	Yes
Finland	Provinces	6	Yes	Yes	Yes
Greece	Crete				
Ireland	County	26	No	No	No
Netherlands	WZV	27	Yes	Yes	Yes
Portugal	Community	30	Yes	Yes	Yes for some items
Portugal	Region	7	Yes	Yes	Yes for some items
Spain	Provinces	52			
Sweden	Municipality	289	No, only pharmacists	No, only nursing homes	Yes for general information

* restricted to public sector

7.2.3 Health determinants and prevention

The biological factors and health habit categories include data items related to individual risk factors (body mass index, blood pressure level, serum cholesterol, smoking, use of illegal drugs). Compared with the other categories, data availability is fairly low for these items. As for the generic health status data category, availability at regional level may result from the existence of a national survey with sufficient sample size to derive locally representative figures. This seems to be the case in countries where some data items can be provided for all regions at the recommended level. Health determinant data is not available at health authority level in England. In the Netherlands and Spain, the data are provided via locally organised surveys, hence the availability is limited to some regions at the recommended level.

The situation is further highlighted in the Living and working conditions categories. This includes data on living environment (dwelling size, bathroom, shower) and on accidents (road traffic, home, leisure, work). For most recommended levels apart from GGD regions in the Netherlands, some or all the data items appear to be available. This is not surprising for dwelling characteristics, which in most cases can be derived from census data. Road traffic accidents data, often collected in a national information system, are also widely available. Information relating to home / leisure accidents or work accidents is scarcer.

The prevention data category includes immunisation and cancer (breast and cervical) screening coverage figures. Responses can be of course affected by the existence or not of the relevant immunisation or screening programme at regional or national levels. This might explain the rather low level of availability for cancer screening coverage data, and for tuberculosis immunisation coverage data (see relevant paragraph in the next section). Responses suggest a wider availability of other immunisation coverage data.

**Table 7: Overview of data availability in the regional levels investigated during the ISARE survey
Biological factors and health habits, living and working conditions and prevention data**

		No of units	Data availability - Health determinants & Prevention		
			Bio. Factors & Health Habits	L&W conditions	Prevention
Regional level recommended for information exchange					
Austria	Bundesländer	9	Yes for some items	Yes for some items	No
Belgium	Province	11	Yes for some items	Yes for some items	Yes for some items
Denmark	Amtskommuner	14	Yes for some items	Yes for some items	Yes for some items / regions
England	Health Authorities	99	No ¹	Yes for some items	Yes
France	Régions	26	No	Yes for some items	No
Germany	Land	16	Yes for some items	Yes for some items	Yes for some items
Ireland	Health Board	10	No	Yes for some items	Yes
Italy	Regioni	21	Yes for some items	Yes	Yes for some items
Luxembourg	National level	1	Yes for some items	Yes	Yes
Netherlands	GGD	50	Yes for some regions	No	Yes
Portugal	Health care region	5	No	Yes	Yes
Spain	Autonomous Communities	17	Yes for some regions	Yes	Yes
Sweden	County	21	Yes for some items	Yes	Yes
Regional level not recommended for information exchange					
Belgium	Community	3			
England	Local Authorities Social services	150			
France	Départements	100	No	Yes for some items	No
Finland	Region	20	Yes for some items	Yes for some items	Yes for some items
Finland	Provinces	6	Yes for some items	Yes for some items	Yes for some items
Greece	Crete				
Ireland	County	26	No	Yes for some items	No
Netherlands	WZV	27	? idem GGD	? idem GGD	? idem GGD
Portugal	Community	30	No	Yes	Yes
Portugal	Region	7	No	Yes	Yes
Spain	Provinces	52			
Sweden	Municipality	289	No	Yes for some items	Yes

1 but possible via Health survey for England, see text.

7.3 Data availability in the recommended regions: Responses for individual data items

In the following pages the tables and related comments concern only the 13 recommended regional levels. Thus Finland and Greece are not considered in this section. Compared to the preceding section, the tables go into more detail by displaying responses at the individual data item level.

The tables present the distribution of the 13 countries according to the answers to the question enquiring about availability of a data item across regions within the country. Please note that for some countries such as Spain and Belgium, answers were obtained from only part of the country. For these countries, the answers “all the regions” means “all the regions covered during the survey”. As a result, the figure in the relevant column is likely to overestimate the level of data availability. The tables are entitled “assessment of data availability” so as to convey this generalisation process and to avoid misinterpretation of the figures.

Answers to the other questions are not presented in the tables but are commented in the text wherever appropriate.

7.3.1 Demography and socio-economic data

Age / sex population breakdown, and basic vital statistics are widely available across all regions for all countries. However this is not the situation for socio-economic data. Thus 9 countries replied that it would be possible to provide a breakdown of the regional population by social classes, whereas this was not deemed possible in the Lander of Germany and in Luxembourg. The situation looks better for unemployment figures, even broken down by sex, which should be available in 12 countries, and for some GGD regions of the Netherlands. In Spain and Germany data are available only from a local source.

For most countries, the most recent year when demographic data are available is 1999 (range 1996 to 1999). The questionnaire did not make it explicit how the demographic data are updated. It is therefore possible that the yearly updating indicated by some countries may refer to population estimates, as opposed to population census, which is probably the case for countries where update is done on a 5 or 10 yearly basis. As one would expect, social class breakdown tends to be more dated and is less frequently updated. This is not so for unemployment figures, where the latest year of availability ranges from 1996 to 2000. Thus unemployment appears as a widely available and updated socio-economic indicator even at regional level across the European Union.

**Table 8: Assessment of data availability at the recommended regional level of 13 EU member states *
Demographic and socio-economic data**

	Number of countries where data are likely to be available in:			
	<i>most or all the regions †</i>	<i>some regions</i>	<i>no regions.</i>	<i>non response</i>
Age/sex population breakdown	13			
No of live births per year	13			
No of deaths per year	13			
Socio-economic population breakdown	9		2	2
Active population (labour force)	12	1		
if yes, by age	11	1	1	
if yes, by sex	11	1	1	
No of unemployed	12	1		
if yes, by age	11	1	1	
if yes, by sex	12	1		
% of workers in agricultural, industrial, market services, and public sectors	11	1	1	
% of the adult population that has completed upper secondary education	11	1	1	
% of the adult population that has completed tertiary education	11	1	1	

* see text for definition of recommended level

† for some countries answers did not always cover all the regions at the recommended level

7.3.2 Mortality data

Both perinatal deaths and all deaths broken down by age and sex are available in all regions of the 13 countries. These data items can be obtained from a national source in 11 countries, and from local sources in Germany and Spain. In all countries, regional mortality data are available and regularly updated since the survey results show that the latest year of data availability ranged from 1995 to 1999. In all countries, regional mortality data are updated on a yearly basis. Three countries indicated using the International Classification of Diseases version X, the remaining 9 countries (one non-response) use version IX. For two countries, cause of death is coded at the 3 digits level, whereas 4 digits coding is the practice in 10 other countries (one non response).

**Table 9: Assessment of data availability at the recommended regional level of 13 EU member states *
Mortality data**

	Number of countries where data is likely to be available in:			
	<i>most or all the regions †</i>	<i>some regions</i>	<i>no region</i>	<i>non response</i>
Number of perinatal deaths	13			
Age/sex breakdown of deaths by cause	13			

* see text for definition of recommended level

† for some countries answers did not always cover all the regions at the recommended level

7.3.3 Generic health status data

Only in Denmark and Sweden were the three data items of this category deemed to be available in all regions. Number of persons with long standing illness can be provided for all regions of Austria and all those explored in the survey in Spain. These two countries and Germany would also be able to provide data relating to long-term physical disability. In Spain, the two other items could only be provided for some regions explored. All items in the category would only be available for some regions of Belgium, the Netherlands and Portugal.

**Table 10: Assessment of data availability at the recommended regional level of 13 EU member states *
Generic health status data**

No of persons with (by sexe and age group)	Number of countries where data is likely to be available in :			
	<i>most or all the regions †</i>	<i>some regions</i>	<i>no regions</i>	<i>non response</i>
Long-standing illness	4	4	5	
Long-term physical disabilities	5	3	5	
Mental illness	2	4	7	

* see text for definition of recommended level

† for some countries answers did not always cover all the regions at the recommended level

Responses suggest that the data concerning general health status come either from national surveys (e.g. Survey of living conditions in Sweden, Health Survey for England) or from local surveys (The Netherlands, Spain). Despite being carried out on nationally representative samples, data from national surveys could provide regionally representative results by pooling several years of data together. Timeliness and updating vary between countries. In Denmark, the three data items are available for the year 2000 and are updated on a 5 yearly basis. In Sweden, the survey of living conditions allows updating on a yearly basis. Updating seems less regular in the regions of the Netherlands and Spain where data on long-standing illness and long-term physical disability are collected.

7.3.4 Morbidity

The non-response level in this section of the availability questionnaire was high compared to the other data categories. This is probably a result of the higher level of detail required as well as the likelihood of greater variation within countries between the regions, making it difficult to have precise information. On top of the usual questions asked for all data categories, the nature of the data source (register, notification, survey or other) was requested for morbidity items, and a distinction was usually made between incidence and prevalence data. Responses are presented in two tables, one for infectious diseases, and the other for chronic diseases.

Infectious diseases

There is wide availability of incidence data regarding the infectious diseases included in the questionnaire across all regions explored in the 13 countries. This is particularly the case for Tuberculosis, and less so for HIV/AIDS, sexually transmitted diseases, Hepatitis B and C. There was limited coverage of HIV/AIDS data from the Netherlands and limited hepatitis prevalence data from Italy. As would be expected, the source of information is often a notification system. However some countries indicated that they maintain disease registers. For instance, this is the case for HIV / AIDS in Denmark, Germany, Spain and Portugal. The same applies to Hepatitis B and C in Denmark and Ireland. Wherever available, data tend to be recent (range of latest year available:1997-2000) and updated on an annual basis

Chronic diseases

The ISARE questionnaire asked about the availability of incidence and prevalence data at regional level for 16 chronic diseases or impairments. The answers suggest low level of availability for the majority of these, and the table shows the 10 diseases (responses for the three cancers were similar) for which data most frequently exists in all or some regions of the countries.

Not surprisingly, registration for the most common cancers comes at the top of the list, with 11 out of the 13 countries indicating the existence of such an information system. Answers suggest that some kind of regional cancer data would be available in all the regions explored in 9 out of the 13 countries. This should not be interpreted as the existence of universal coverage of cancer registration in these 9 countries though. The 4 countries indicated specifically partial coverage are Italy, France, Spain and Portugal. After cancers, Down's syndrome comes second in the league of diseases for which data is frequently available, but the source is more often a notification system for this genetic disorder. Disease registers remain the most common information system providing data regarding diabetes, chronic renal failure and multiple sclerosis. For the latter two diseases however, data is available at regional level only in respectively 4 and 3 countries, compared with 7 countries for diabetes. Finally, data regarding asthma, vision disorders and hearing disorders are nearly exclusively derived from surveys. The other sources of information involved are a national laboratory (Down's Syndrome in Luxembourg), a sentinel network (diabetes in Spain), and a survey of living conditions (asthma in Sweden).

**Table 11: Assessment of data availability at the recommended regional level of 13 EU member states*
Morbidity data: Infectious diseases**

	Number of countries where data is likely to be available in :				Number of countries where data is gathered via				
	<i>most or all the regions†</i>	<i>some region</i>	<i>no regions</i>	<i>non response</i>	<i>Disease Register</i>	<i>Notification</i>	<i>Survey</i>	<i>Other</i>	<i>non response</i>
HIV/AIDS									
Incidence	12	1			4	7			2
Prevalence	4	2	6	1	4				2
Tuberculosis									
Incidence	13				1	10			2
STD excl. HIV									
Incidence	11		2		1	7			3
Hepatitis B									
Incidence	10		2	1	2	6			2
Prevalence	2	1	8	2	1	1	1		
Hepatitis C									
Incidence	8		5		2	5			1
Prevalence	2	1	9	1	1	1			1

* see text for definition of recommended level

† for some countries answers did not always cover all the regions at the recommended level

Table 12: Assessment of data availability at the recommended regional level of 13 EU member states *
Morbidity data: most frequently available chronic diseases

	Number of countries where data is likely to be available in:				Number of countries where data is gathered via				
	<i>most or all the regions †</i>	<i>some regions</i>	<i>no regions</i>	<i>non response</i>	Disease Register	Notification	Survey	Other	<i>non response</i>
Lung, breast, & colorectal cancers									
Incidence	9	4		0	11				2
Down's syndrome									
Incidence	7	1	4	1	3	4		1	
Diabetes mellitus									
Prevalence	3	4	5	1	4		2	1	
Incidence	2	4	5	2	4	1		1	
Vision disorders									
Prevalence	5	1	5	2			6		
Asthma									
Prevalence	5		7	1	1		4	1	
Hearing disorders									
Prevalence	5		6	2			5		
Chronic renal failure									
Prevalence	2	3	7	1	2		1		2
Multiple sclerosis									
Incidence	1	3	7	2	3				1

* see text for definition of recommended level

† for some countries answers did not always cover all the regions at the recommended level

The diseases included in the questionnaire but not presented in the table are Rheumatoid arthritis, Schizophrenia, Parkinson disease, cerebrovascular diseases, ischaemic heart disease and chronic obstructive pulmonary diseases. For all these conditions, the answers suggest data was available at regional level for no more than 4 of the 13 countries.

7.3.5 Health professionals

For most countries data regarding health care professionals seem to be widely available across all regions. However this does not apply to Ireland whose answer is no for all items, to Italy for number of physicians, specialists and pharmacists, and to Sweden for number of midwives. Respectively, four and three countries could not provide information regarding data availability for nurses and midwives. For this category of data, the only answer from the Netherlands concerns number of dentist, which can be obtained in some regions. When they are available, the data are recent (range of latest year of availability: 1998-2000) and updated on a yearly basis.

Table 13: Assessment of data availability at the recommended regional level of 13 EU member states *
Data related to health care professionals

Number of	Number of countries where data is likely to be available in:			
	<i>most or all the regions †</i>	<i>some regions</i>	<i>no regions</i>	<i>non response</i>
Physicians	11		1	1
General practitioners	10		1	2
Physicians specialist	10		2	1
Nurses	8		1	4
Midwives	8		2	3
Dentists	11	1	1	
Pharmacists	10		2	1

* see text for definition of recommended level

† for some countries answers did not always cover all the regions at the recommended level

7.3.6 Health care facilities

Providing data regarding number of acute care hospital and beds in all regions is possible in 9 countries out of 13. Answers from the Netherlands suggest data availability only in some regions. Both Ireland and Luxembourg answers suggest that this kind of information is not available at regional level. In Luxembourg there has been a disruption of data on hospital provision and activity (see next section on health care utilisation) since 1994. Accurate information will be available again as soon as the new hospital plan is finalised. The negative answer from Ireland corresponds to the fact that no information is held regarding the private sector. Although this also applies to Sweden and England the answer are positive for these countries. In the latter the private sector accounts for a minority of the health care provision (~ 7% of activity). Nursing home / elderly care beds information is slightly less commonly held in the regions since four countries answered negatively for this item (Germany, Ireland, Italy and Luxembourg). The latest year of availability range from 1998-2000, and data are updated on a yearly basis.

Table 14: Assessment of data availability at the recommended regional level of 13 EU member states *
Data related to health care structures

Number of	Number of countries where data is likely to be available in:			
	<i>most or all the regions †</i>	<i>some regions</i>	<i>no regions</i>	<i>non response</i>
Hospitals (geographical sites)	10	1	2	
Acute care hospitals	9	1	3	
Hospital beds acute care	9		2	2
Obstetrics or maternity beds	9		2	2
Hospital beds Psychiatric care	10	1	2	
Nursing/elderly home care beds	8	1	4	
Pharmacies	11	1	1	

** see text for definition of recommended level*

† for some countries answers did not always cover all the regions at the recommended level

7.3.7 Health care utilisation

The questionnaire enquired about the availability of a range of hospital activity indicators, such as number of hospital in-patient admissions, bed occupancy, number of bed days and average length of stay. For these data items, the varying levels of non response make it difficult to interpret the answers, and in the table below only availability for in-patient admission and average length of stay are presented.

As one would expect, availability for these data items correlates with answers in the health care structure category (see preceding paragraph). Thus, for reasons already mentioned, both Luxembourg and Ireland gave negative answers to the hospital activity indicators, and answers from England and Sweden only apply to public sector hospitals activity. Activity figures are less commonly available from nursing homes.

This category of data also included a series of specific procedures: caesarean sections, induced abortions, Coronary Artery Bypass Grafting or (CABG), Percutaneous Transluminal Coronary Angiographies (PTCA), cataract operations and hip replacements. Unfortunately the questionnaire did not make clear the meaning of the abbreviations CABG and PTCA which led to non response to this item from one country. Data availability for all these items was requested regarding either the number of interventions performed on residents in the regions (top part of the table), or the number performed by hospitals within the regions, irrespective of the patients place of residence (bottom part of the table). The interest of data referring to patient's place of residence is their potential for the calculation of intervention rates specific to a given region.

Answers to the ISARE survey suggest that such rates can be calculated for all regions in 8 out of the 13 countries. Regarding cataract operations and hip replacements, negative answers concern Germany, Ireland, Portugal and the Netherlands. In the Netherlands, hospital activity data are processed by a private company for the hospitals themselves. As a result the data are not easily accessible to other institutions, hence the negative answers for this country. The non response from Luxembourg is presumably related to the issue mentioned above in the health care structure paragraph.

When hospital activity without reference to patients' place of residence is taken in consideration, Portugal joins the group of countries where data is available in all regions.

Whenever available, the hospital general activity indicators (admissions, average length of stay) or specific intervention data are recent (range of latest year of availability 1997-2000) and frequently updated (6 monthly – yearly).

Table 15 : Assessment of data availability at the recommended regional level of 13 EU member states *
Data related to health care utilisation - hospital activity

	Number of countries where data is likely to be available in :			
	<i>most or all the regions †</i>	<i>some regions</i>	<i>no regions</i>	<i>non response</i>
No of hospital in-patient admissions / year				
Overall	11		2	
acute care	10		3	
psychiatric care	11		2	
Nursing home / elderly care	6		6	1
Average length of stay				
acute care	10		3	
psychiatric care	10		2	1
Nursing home / elderly care	5	1	6	1

* see text for definition of recommended level

† for some countries answers did not always cover all the regions at the recommended level

Table 16: Assessment of data availability at the recommended regional* level in 13 EU member states
Data related to health care utilisation - specific procedures

No of procedures	Number of countries where data is likely to be available in :			
	<i>most or all the regions †</i>	<i>some regions</i>	<i>no regions</i>	<i>non response</i>
Performed on residents of the region				
Caesarean sections	8	1	4	
Induced abortions	8	1	4	
CABG	8		2	3
PTCA	8		2	3
Cataract operations	8		4	1
Hip replacements	8		4	1
Performed by all hospitals in the region				
Caesarean sections	8	1	2	2
Induced abortions	8	1	2	2
CABG	9		1	3
PTCA	9		1	3
Cataract operations	9		2	2
Hip replacements	9		2	2

* see text for definition of recommended level

† for some countries answers did not always cover all the regions at the recommended level

7.3.8 Biological factors and health habits

Responses to items related to biological factors reflect that, overall, availability is low for such data, and that when data are available, they rarely cover all the regions in the country. This is clearly the case for blood pressure (all regions for Germany and Luxembourg, some regions for Belgium, the Netherlands, Portugal, Spain and Sweden). Comparatively body mass index (BMI) is available across all regions of 6 out of the 13 countries, but not in France and Ireland. The non response of England for biological factors needs being qualified since regional data could be produced by pooling several years worth of data from the “Health Survey for England” (national sample).

Table 17 : Assessment of data availability at the recommended regional level of 13 EU member states *
Data related to biological factors and health habits

	Number of countries where data is likely to be available in :			
	most or all the regions †	some regions	no regions	non response
Biological factors: Distribution of				
Body mass index	6	4	2	1
Blood pressure level	2	5	5	1
Serum cholesterol level	1	4	7	1
Health habits				
No of cigarettes consumed (/person/year)	4	2	7	
% of regular daily smokers (≥15 years)	8	3	2	
No of illegal drugs users (/age,sex)	3	1	8	1
Average No of calories (/person, /day)	0	1	11	1

* see text for definition of recommended level

† for some countries answers did not always cover all the regions at the recommended level

In this category the most widely available data item is number of adult smokers. Only France and Ireland declare no availability at regional level for this item, whereas in 8 countries data can be provided in all regions. In contrast, regional data for nutritional information and illegal drug use are very scarce.

7.3.9 Living and working conditions

Typically the two first items, “average dwelling size” and “dwelling with bath or shower”, in this category are collected during population census. This explains why four countries answered that these data are available but only updated every 10 years. One country mentioned that because of the generalisation of bath and shower facilities this item is no longer collected during the census.

Data related to road traffic accidents are fairly widely available across regions in Europe since only Germany and the Netherlands gave negative answers to this item. Compared to what usually applies to Spain and sometimes to Portugal, road traffic accident information is collected and accessible via a national source of information. This also applies to home / leisure accidents and accidents related to work. However, home / leisure accidents data are less frequently available.

Table 18 : Assessment of data availability at the recommended regional level of 13 EU member states *
Data related to living and working conditions

	Number of countries where data is likely to be available in :			
	most or all the regions †	some regions	no regions	non response
Average dwelling size	9		3	1
Dwelling with bath or shower	8		4	1
No of road traffic accidents	11		2	
No of home / leisure accidents	6		7	
No of incident cases of accidents related to work	8		5	
No of incident cases of occupational diseases	8		5	

* see text for definition of recommended level

† for some countries answers did not always cover all the regions at the recommended level

7.3.10 Prevention

Items in this category are related to activity of immunisation or screening programmes. Thus negative answers may reflect either the absence of such programmes in the country or regions, or the unavailability of regional data from existing programmes. The former explanation is probably the reason why tuberculosis immunisation coverage is not as commonly available as figures for the other childhood diseases. Measles and rubella immunisation coverage data are available only for some regions of France and Italy. Although these diseases are part of the immunisation schedule in France, accurate coverage information is not available for some regions.

Table 19 : Assessment of data availability at the recommended regional level of 13 EU member states *
Data related to prevention

No of persons with	Number of countries where data is likely to be available in :			
	<i>most or all the regions †</i>	<i>some regions</i>	<i>no regions</i>	<i>non response</i>
Immunisation coverage				
Tuberculosis, at 1 year old	5	1	7	
Diphtheria, tetanus, pertussis & polio, at 1 year old	8	1	4	
Measles, at 1 or 2 years old	8	2	3	
Rubella, 1 or 2 years old	8	2	3	
Screening coverage				
Breast cancer	6	4	3	
Uterus cervix cancer	5	3	4	1

* see text for definition of recommended level

† for some countries answers did not always cover all the regions at the recommended level

Responses suggest that breast and cervical cancer screening coverage data are available for all regions in, respectively, 6 and 5 countries. Conversely Austria, Belgium and France hold no regional data on breast cancer screening. For these countries and for Spain, this also applies regarding cervical cancer screening. Again information on the existence of national or regional screening programmes are required to interpret these answers.

■ 8. Discussion

This section presents the limitations of this project's approach, and their consequences on the interpretation and use of the recommendations. Most comments are drawn from the debate which took place during the May 2001 meeting between the country representatives in Strasbourg, where the results of the ISARE survey were presented.

8.1 Limitations of the ISARE approach

The approach of the ISARE project was not systematic, in that not every administrative sub-national levels was considered as a potential contender for health indicators exchange across Europe. Instead the participation of the country representatives, all of them involved in public health, allowed us to focus on the likely appropriate sub-national levels, and probably avoided unnecessary requests for information. It should be noted that the choice of levels expressed in this report corresponds only to the recommendation made by the project team. Furthermore their relevance may be restricted in countries such as Belgium and Spain, where all necessary information could be obtained from only part of the country. This also applies to the United Kingdom where out of the four countries only England was formally involved in the project work.

No recommendations could be made by the project team regarding Finland and Greece. For the latter, it is likely that the newly created "Health Regions" will represent the appropriate level. Unfortunately, because of the timing of the project, this level could not be included in the analysis. As discussed in the following sections (8.2 and 8.3) the case of Finland calls for a more flexible approach than the one used by the project at its outset.

It is likely that substantial variation exist in the level of autonomy enjoyed by the different recommended health regions. In some countries, regions may have sufficient autonomy to decide their own priorities, identify the necessary interventions and allocate funds for implementing them. In other countries, the autonomy may be minimal and the responsibility may only concern the implementation of nationally defined policies. This comment applies not only to specific competencies regarding the health and social sector, but also to the full extent of democratic powers exerted by the health regions which correspond to a level of local democracy.

An early version of the questionnaire of the ISARE survey actually did address in more details the extent of responsibilities in health and social policy and for local democracy. During the process of devising the ISARE survey, the complexity of these issues was anticipated. Although they were seen as relevant for the project, it was felt that going into too much details about them was outside the remit of the project. Therefore the project opted for a pragmatic approach which consisted in relying on existing work (e.g. documents of the European Council on local democracy, Health care in Transition series from WHO) and on an abridged version of the questionnaire. There is no doubt that more work needs to be done on the levels of decentralisation regarding health and other sectors, and the way these affect health policy and public health. The wide variation within Europe along in decentralisation and regional autonomy makes it a fertile ground for further research. This could be done, either within the Health Monitoring Programme, or in an other setting.

As has been mentioned in the results section, assessing the availability of data proved a complex task to achieve for some data categories. For some of them the analysis was hampered by non-responses. For some countries, answers represent a generalisation of a situation which could only be assessed in part of them. In many cases, the question asked on individual data item required more qualified answers than a mere "yes" or "no". For instance, the lack of data regarding private health care facility led to a different answer in two different countries despite that in both private

sector accounts for a minority of the provision. For some data items, a positive answer may relate to significantly differing data sources from one country to another (e.g., in the morbidity category). Therefore by pooling such positive answers together the results presented in the tables of the section on data availability might overestimate the scope for really valid comparisons. As the results the ISARE survey can only provide an assessment of data availability and it is therefore important to consider the figure shown in this section as indicative.

8.2 Deciding criteria for the recommendation

Beyond the mere interest of international comparisons, lies the important goal of building and implementing better health policies. It is quite clear that among the array of criteria chosen for recommending a particular health region, the involvement in health promotion and public health reporting stand out as the most commonly performed activity at the recommended levels. This indicates that if health indicators exchange were to happen between these health regions it would involve institutions which are part of the public health diagnostic process for their community and have responsibilities for designing and / or providing the interventions to address public health problems.

The absence of recommendation for Finland exemplifies one difficulty faced by the project. For this country, municipalities would represent the most appropriate levels for sub-national health information exchange on the ground of their competencies in the health sector. However, municipalities in Finland have too small a population size to allow statistically meaningful comparisons to be made. In other words, the case of municipalities in Finland is one where the policy criteria are met whereas the epidemiological criteria are not. Similar dilemmas were met in other countries, but in these cases another level existed which was seen as a sufficiently good compromise in respect of meeting both the policy and epidemiological criteria. Of course the outcome of the ISARE project for Finland does not mean that this country will be excluded from further work along the line of cross regional comparisons within EU.

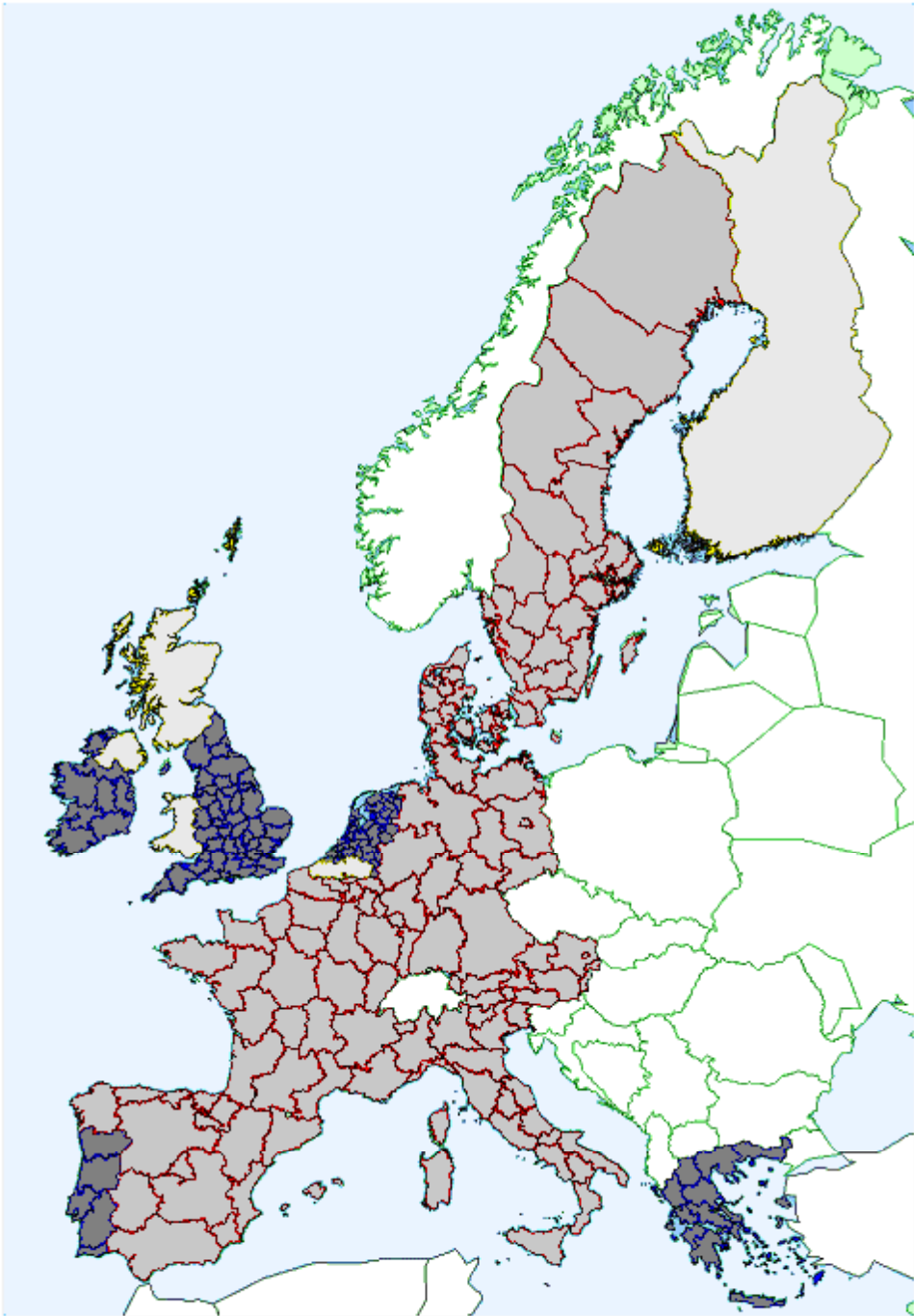
8.3 Another look at the ISARE recommendations

Not surprisingly NUTS levels are appropriate for identifying health region for the majority of countries. One lesson of the ISARE project though is that levels ranging from 1 to 3 within the NUTS classification are required to define the health regions. The implication is that for these countries, a number of standard demographic, socio-economic and mortality indicators can most probably be readily available from data currently held by Eurostat. Using the proxy NUTS levels for countries where health regions do not follow NUTS boundaries would also be an easy option to implement. Alternatively, these countries might consider providing data aggregated at their health region level.

The variations in number of recommended health regions and their average population sizes are well illustrated in figure 3. It shows the divide between the group of countries where health regions cover on average more than a million population and the other countries with average population size under this figure. England, and to a lesser extent the Netherlands, appear as outliers in this graphic. They illustrate that the relationship between the country population size and that of their recommended health regions is not straightforward.

With respect to data availability, the findings from the ISARE project clearly suggest that health indicators exchange is feasible between the recommended sub-national level. However this conclusion needs being qualified. As expected, comparing standard demographic and mortality indicators seems relatively easily achievable. Assuming data comparability, indicators related to health care professionals and facilities, as well as health care utilisation could be feasible at least for some specific data items. The same applies to socio-economic, living and working conditions, and

prevention data. On the other hand, availability across all health regions for data regarding the generic health status, and especially the morbidity categories, is low.






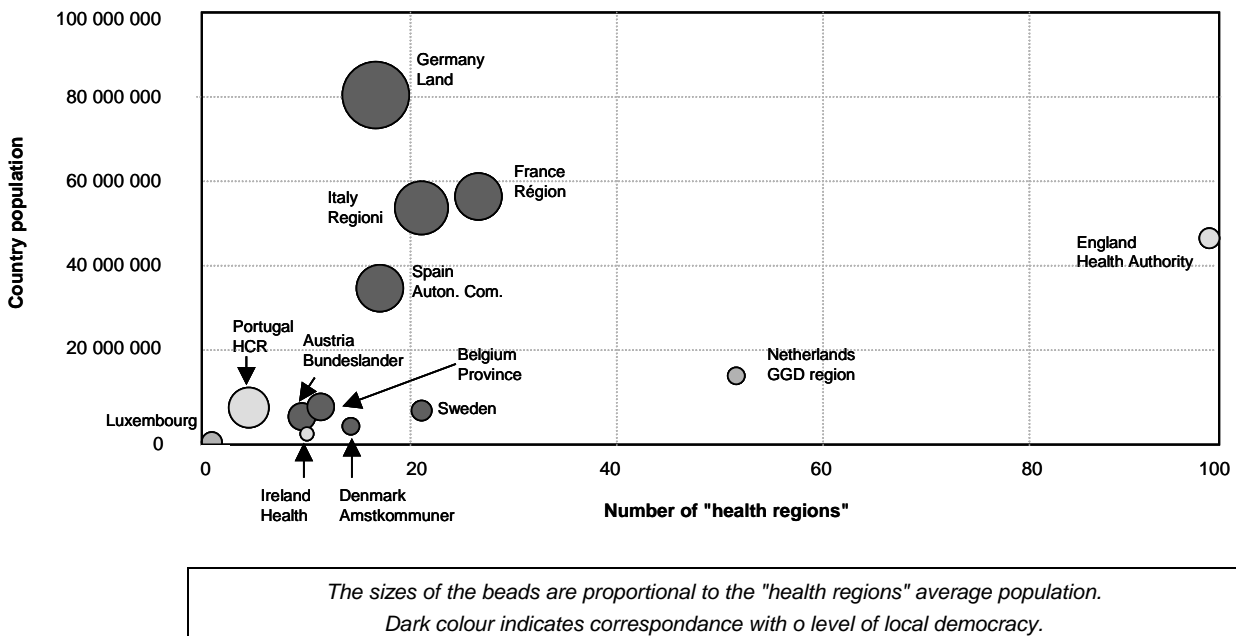
-  Recommended level which exactly correspond at a NUTS
-  Recommended level which correspond not exactly at a NUTS (nearest NUT)
-  No Recommended level

Fig 3: Number of "Health regions" as per Isare recommendation, according to country population sizes



The later fact will come as no surprise, since gathering reliable and timely information on health and its determinants is a costly activity that few countries have managed to implement over their whole territory. In some countries, individual health regions do appear to collect such data. As a consequence, and despite the absence of universal coverage, the scope of health indicators exchange may be wider than what can be shared between countries as a whole. Further evidence of the feasibility of health indicators exchange across sub-national level is provided by ongoing experiences between neighbouring health regions across national borders. These experiences demonstrate that the dynamic for international comparisons exists. They also point out the difficulties involved in making valid comparisons. Although the ISARE project has identified clear prospects for health indicators exchange at regional level, the data collected during the project does not allow addressing the issues of data quality and comparability. This was the topic of other projects within the HMP.

8.4 The need for a flexible approach

The Finnish example demonstrates that from a purely epidemiological perspective, a more flexible approach is required than that taken by the ISARE project. The frequency of the event under study would obviously determine the most appropriate aggregation level to use. Theoretically this could be as low as municipality for the description of frequent events (e.g. incidence of flu) general mortality pattern, but necessarily higher for rare events (e.g. specific cancer mortality). The finding of the ISARE project shows that a similar qualification can be made for the policy argument. Competencies and responsibilities in the health sector are often shared between several sub-national levels (e.g. municipalities and counties). It could therefore be argued that exchange focussing on primary care policy should be undertaken at a different level than exchange about secondary care policy. For all these reasons, the ISARE recommendations are best seen as a compromise between the different criteria underlying the identification of health regions and as the first step towards the construction of a health information system for the regions of Europe.

Consideration should also be given to the inevitable evolution of both health care systems and local democracy. The cases of the United Kingdom and of Greece illustrate these phenomena. In the past decade, the devolution process has brought substantial changes in the level of autonomy attributed to the component nations of the UK. Further changes regarding local democracy may develop within England. At the same time, the structure of the National Health System in England is about to undergo considerable reorganisation. As a result the number and the roles of the health authorities, recommended as health regions, are likely to change significantly. At the time of writing the report Health Regions are being created in Greece, which will significantly affect the way the health will be managed at sub-national level in this country. In the future, changes of similar nature are likely to take place in other EU member states. Therefore whether the currently recommended health regions still represent the best compromise for health information exchange across the European Union may need to be reconsidered.

■ 9. Conclusions

Exchanging health information at regional level between EU member states offers prospects for a better description and understanding of public health problems, and is a prerequisite to meaningful comparisons of policies. Using criteria such as the existence of competencies in the health sector, particularly regarding health promotion and performance of public health reporting, and the correspondence with a level of local democracy, the ISARE project has tried to identify which sub-national administrative levels are the most appropriate for health indicators exchange. The ISARE project team formulated recommendations for 13 countries of the 15 EU member states. Variations in the level of competencies and autonomy enjoyed by these "health regions" may be important. Investigation of the level of data availability suggests that the exchange across all health regions is feasible for most standard demographic and mortality indicators. Coverage of information regarding morbidity and health determinants is less and would appear to be feasible only for some indicators and between some regions. Although not fully comprehensive, it is hoped that the findings of the ISARE project represent a useful contribution towards identifying the "health regions" across the EU, understanding their role, and fostering their use as a units for health indicators exchange within the Health Monitoring Programme. A follow up project has been proposed with the aim of collecting data in each country and building a pilot regional health indicators database.

■ 10. Country Summaries

Austria

Belgium

Denmark

Finland

France

Germany

Greece

Ireland

Italy

Luxembourg

Netherlands

Portugal

Spain

Sweden

United Kingdom

Austria

Health care system

Based upon a 1955 law stating health care as a legal right for the population, the Austrian national health system is financed by the social insurance funds, to which all citizens pay a 7% tax.

Most hospitals are public, the private for-profit sector amounting to only 5% of hospital beds. The organisation and management of hospitals depend on the internal authorities of the "Länder". The federal body sets the health system's legal framework. Then the Länder are responsible for implementing these laws and running the health system. The 28 social and health insurance funds are federated in the "Hauptverband der Sozialversicherungsträger", that plays an important role in the activities management and is supervised by the federal State. The health expenditure is regulated jointly by the State and the Länder through the "LKF"-System (Leistungsbezogene Krankenhaus-Finanzierung).

Regarding personal health expenses, only a low value prescription charge has been set for prescription of drugs. In-patients are being charged a moderate per diem. All other expenses (such as visits to the physician, or hospital care) are totally provided for, except for the self-employed, whose insurance covers 80% of the costs, and partly for the civil servants. Besides that, in 1990, 38% of the Austrians had subscribed to a private insurance contract.

Local democracy

Austria is a federation of nine autonomous provinces (Länder or Bundesländer). The share of power between the central state and the Länder is governed by the federal constitution.

At the regional level, each Bundesland has its own internal government. It finances and controls hospital investment and dispensaries. Depending on the regional and federal guidelines, it monitors the decisions made by the communes on health matters. As legal bodies, the Länder play a role as important as the State in many fields, prominent exceptions being that of justice, public security, higher education, individual health services and insurance.

Responses to the ISARE questionnaires

The answers to the ISARE questionnaire concern the "Bundesländer" level (NUTS 2).

Bundesland

Legal competence for hospitals and rest homes is split between the State and the Länder, the latter having full executive responsibility.

Available indicators, updated every year and as recent as 1998 or 1999, are calculated at the Bundesländer level by a national statistical service.

Data is thus available for health care supply, mortality, health workers and their education, as well as the population's socio-demographic characteristics.

The absence of some indicators may be noted: only 12 in 30 morbidity indicators are available. For instance, data regarding psychiatry, vascular diseases and renal failure are unavailable. In the same way, tobacco consumption or that of illegal drugs is unknown. Lastly, no data is available on prevention.

Conclusion

It seems that the level presented here is the only relevant one for an exchange between European regions. It is politically relevant since the care system is managed nearly entirely by the provinces. It is geographically relevant as well as it is the most important level between the State and communes. Finally it is statistically relevant as data is available at this provincial level.

The district level is the other one between the State and the communes. Despite the name “Politischer Bezirk”, it is an administrative subdivision of the Land and has no political power except where a district coincides with an autonomous city, which is the case with most provincial capitals. The district is used as a geographical unit for statistics; however, there are less data available than for provinces. In the health reports of the Länder the district level is used if possible to describe the internal structure.

Summary tables

Principal characteristics of the level

	Bundesland
Number of units	9
Population size	
Minimum	274 000
Average	892 000
Maximum	1 596 000
Standard deviation	469 000
Surface (km²)	
Minimum	415
Average	9 317
Maximum	19 173
Standard deviation	591
Correspondence with NUTS level	
Exact correspondence to a NUTS level	Yes level 2
If no, nearest corresponding level	
Boundaries stability	Yes

Responsibilities regarding the management of health and social policies

	Bundesland
Definition and management of policy regarding	
hospital care	Yes
ambulatory care	Yes
social services	Yes
health promotion	Yes
Public health reporting	Yes

Data availability

	Bundesland
Health care professionals	Yes for some items
Education of health care professionals	Yes
Health care structures	Yes
Health care utilisation	Yes
Demographic and socio-economic data	Yes
Mortality data	Yes
Generic health status data	Yes for some items
Morbidity data	Yes for some items
Biological factors and health habits	Yes for some items
Living and working conditions	Yes for some items
Data on prevention	No

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Belgium

Health care system

The current features of the Belgian health care system are the result of the decision to create, at the end of the second world war, a compulsory national health insurance scheme, based on independence of medical practice, freedom of choice for the patient and a pay-as-you-go basis for health professionals with refunds (even in hospitals).

Ambulatory care is freely available. On the other hand, the offer of hospital care is to a large extent public or like public (“parapublic”). There is also a private sector (religious or not).

The health administration is divided between three regions (Flanders, Wallonia and Brussels) and between three communities (Flemish language, French language and German language). The federal authority has a key role in the coordination and financing of health care through a national health insurance system. The regions are responsible for the accreditation of hospitals, the planning of domiciliary care for elderly people and for mental health care. The communities have responsibilities in the field of health promotion, health education and preventative health.

Almost the entire population is covered by the compulsory health insurance scheme, which is managed by mutual insurance companies grouped into five organisations. The health insurance schemes are 39% funded by Government subsidies, 23% by staff contributions, 34% by employer contributions and 4% by income from financial investments. Public mutual insurance companies and private insurance companies offer additional coverage.

Local democracy

The current organisation of local democracy in Belgium is the result of several revisions of the constitution that was adopted in 1831. In 1993, the last of these changes transformed Belgium into a federal state composed of three communities and three regions as described above.

Each region and each community has its own council elected by direct, universal and compulsory suffrage and its own government whose members are elected by the council.

The regions are responsible for the accreditation of hospitals, planning of domiciliary care for elderly persons and for mental health care. The communities have responsibilities in the field of disease prevention and education. In practice, the French language community has transferred a large portion of its powers to the committee of the French-speaking community of the Brussels region.

The Flemish region is divided into five provinces as is the Walloon region. In the Brussels-capital region, the provincial level merges with regional level. The provincial council members are elected by direct, universal and compulsory suffrage. At provincial level, the executive body is composed of a governor appointed by the Crown outside the provincial council and of six permanent deputies elected from within the council. The Province has no constitutional jurisdiction in the health sector but may, at its own initiative, manage programmes in this field.

The last level of local democracy is the commune whose deliberating body is the local council elected by direct, universal suffrage. The council executive is composed of a burgomaster appointed by the Crown within the local council and of deputy burgomasters elected within the local council. The commune intervenes in the management of health institutions that are part of public social services centres as well as in measures to promote health and social services.

Responses to the ISARE questionnaires

Responses have only been obtained for the Walloon part of Belgium and in respect of two levels: the community and the province. Even if identical levels exist for the Flemish part of the country, the method of organising responsibilities and the health care system cannot necessarily be assumed to be the same as that which has been reported for the Walloon region.

Communities

The French community covers the five Walloon province as well as the French-speaking inhabitants of the Brussels-capital region. At present the responsibilities adopted at this level are limited to solely that of prevention: the French community authorities are developing and implementing a five-year health promotion plan. A consultative committee is responsible for advising political authorities in this field. Health reports have been produced on mortality and certain limited aspects of morbidity including the HIV virus. At present, this level presents problems in terms of drawing up health statistics: in effect, for political reasons, it is currently impossible to differentiate, from within the population of the Brussels-capital region, the French-speaking part of the population which thus comes under this level.

Province

This geographical level corresponds to NUTS 2 level. The Walloon region includes five provinces. The local authorities of the provinces can take the initiative to intervene in the field of health promotion. On the other hand, they do not have particular responsibilities in the field of health, social policy and planning health services. However, it is possible for them to manage health care and prevention institutions within the scope of the policy established at federal and community level.

Health reports are now starting to be published at provincial level : four of the five Walloon provinces as well as the Brussels-capital region have drawn up or are going to draw up this type of report. Similarly, health information systems are under construction at this level.

Conclusion

At present, health care policy is essentially defined at federal level. These political platforms are applied on the one hand at community level, on the other hand, and at a more refined level, at provincial level. Health promotion and prevention is the responsibility of the communities.

In the French-speaking provinces, a health observatory has been developed whose objective is to assist with the decision-making process.

As a result, it seems pertinent to propose the province as a level at which to observe health indicators between the regions of Europe. Moreover, substantial data are already available at this level which shows the importance of corresponding to NUTS 2. On the other hand, it should be noted that the authorities elected at this level do not have specifically adopted responsibilities, however in practice, all the Walloon provinces have responsibilities in the field of health promotion.

Summary tables

Apart from the main characteristics of the level, the data that appears in these summary tables only concern, as previously, the French-speaking part of Belgium.

Principal characteristics of the levels

	Community*	Province & Brussels region
Number of units	3	11
Population size		
Minimum	954 460	245 140
Average	3 404 584	928 523
Maximum	5 926 838	1 640 966
Standard deviation	2 486 974	439 823
Surface Area (km²)		
Minimum	162	162
Average	10 176	2 773
Maximum	16 844	441
Standard deviation	8 830	1 270
Correspondence with NUTS level	No	Yes
Exact correspondence to a NUTS level		NUTS 2
If not, nearest corresponding level	NUTS 1	
Boundaries stability	Yes	Yes

* Data presented for community are those of the 3 Belgian regions : Flemish region, Walloon region and Brussels capital region. The Flemish community is constituted by the population of the Flemish region and an undetermined part of the Brussels population. The French community, is constituted by the population of the Walloon region and an undetermined part of the Brussels population minus the German speaking community. The German speaking community is a part of the population of the Walloon region.

Responsibilities regarding the management of health and social policies

	Community	Province & Brussels region
Definition and management of policy regarding		
Hospital care	No	No
Ambulatory care	No	No
Social services	No	No
Health promotion	Yes	Yes
Public health reporting	Partially	Yes

Data availability

	Community	Province & Brussels region
Health care professionals	Yes	Yes
Education of health care professionals	Yes	No
Health care structures	Yes	Yes
Health care utilisation	Yes	Yes
Demographic and socio-economic data	Yes for part of the items	Yes
Mortality data	Yes	Yes
Generic health status data	Yes	Yes for some units
Morbidity data		Yes for some items
Biological factors and health habits		Yes for some items
Living and working conditions		Yes for some items
Data on prevention		Yes for some items

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Denmark

Health care system

The major features of the Danish system are: high decentralization, free primary and hospital care, and a tax funded system.

Hospital care and primary health care are managed at county level. Municipalities are in charge of care for the elderly, home care services as well as medical and dental school services. Free medical care is offered to those entitled that are registered with a general practitioner, whose consultations are also free. This system applies to 98% of the Danes. The remaining 2% can choose to visit the physician they want without any previous arrangement but in that case the consultation is only partly free.

Access to public hospitals is free and offered to everyone on an equal footing. There is virtually no private sector in the Danish system.

Social contributions are extremely low (1,7 % of GDP compared to an average of 15,3% if the E.U.). Therefore the health system is mainly financed by the income taxes and tax on the estate (31,6% of GDP compared to 13,1%).

Local democracy

Denmark is divided in 14 counties (amtskommuner), H:S (Copenhagen Hospital Cooperation) and 275 municipalities (kommuner). Copenhagen and Fredericksburg are both a county and a municipality. The kingdom also includes two autonomous regions, each with a legislative assembly : Faroe Islands and Greenland.

Each municipality or county has a board with elected members for four years. A general election is organised throughout the whole country. Citizens from other Nordic countries or the European Union are allowed to vote and to stand for election.

Counties coordinate and issue plans for several municipalities, public transportation services, hospital care, secondary education and regional development.

Social services, as well as general administrative tasks and public safety, are managed at municipal level.

Responses to the ISARE questionnaires

Responses from Denmark to the ISARE questionnaire concern the level of amtskommuner (NUTS 3).

Amtskommuner

The 14 counties, H:S (Copenhagen Hospital Cooperation) and Copenhagen and Frederiksberg, manage the greatest part of the Danish health care system. Nevertheless some activities are considered as part of the social sector (inter alia : benefits to the elderly) and therefore fall within the scope of town management.

Virtually all the indicators are updated annually and are currently available for years 1998 to 2000. Figures are available at county level through the national department of statistics.

The only two data which are restricted to a local statistic department are schizophrenia and Parkinson's prevalence. Denmark has no compulsory notification ; morbidity data emanate from hospital and diseases registers, completed in some cases by quinquennial surveys.

Conclusion

At the level of county, the Danish compilation of data is to a certain point readily usable in comparative statistical studies with the other E.U. regions. These data are accurate as the counties manage virtually the whole health care system on a national base. They are also geographically accurate as there are no other intermediary level between the state and the towns. They are statistically relevant as the indicators are reliable at county level.

The only drawback being the small size of Danish counties as compared to other E.U. regions. This scale problem can complicate comparative studies.

Summary tables

Principal characteristics of the level

	Amtskommuner
Number of units	14
Population size	
Minimum	45 076
Average	334 644
Maximum	625 224
Standard deviation	155 692
Surface (km²)	
Minimum	526
Average	3 071
Maximum	6 173
Standard deviation	1 637
Correspondence with NUTS level	Yes
Exact correspondence to a NUTS level	NUTS 3
If not, nearest corresponding level	
Boundaries stability	Yes

Responsibilities regarding the management of health and social policies

	Amtskommuner
Definition and management of policy regarding	
hospital care	Yes
ambulatory care	Yes
social services	Yes
health promotion	Yes
Public health reporting	Some

Data availability

	Amtskommuner
Health care professionals	Yes
Education of health care professionals	Yes
Health care structures	Yes
Health care utilisation	Yes
Demographic and socio-economic data	Yes
Mortality data	Yes
Generic health status data	Yes
Morbidity data	Yes
Biological factors and health habits	Yes for some items
Living and working conditions	Yes for some items
Data on prevention	Yes for some items and some units

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- Structure et fonctionnement de la démocratie locale et régionale: Danemark*. Conseil de l'Europe, Strasbourg, France. 1997.

Finland

Health care system

The main characteristic of the Finnish health system is its decentralization, the fundamental principle being that it is the predominant responsibility of the Communes. The 1972 Primary Health Care Act obliges them to provide public primary health care to all their citizens, either within the health centres they run (either alone or jointly with other municipalities), or by purchasing these services from the private sector. The goals of this legislation were to level geographic inequities in the availability of care, and to better balance secondary care (which amounted then for 90% of the total health expenditure) and primary care. In addition to that, a 1979 law compels employers to provide occupational health services to their employees.

Hospitals and health protection are thus an exclusive competence of the municipalities.

Every municipality belongs to a hospital district which runs specialist led hospitals. 22 such consortiums exist, formed by contracting communes, the members of their board being named by the municipal councils. The budget and investments of these intermunicipal trusts are financed by the communes.

Private health care in Finland comprises mainly ambulatory care, provided mainly in large cities in the southern parts of the country. Most physicians working in the private sector are specialists, whose main activity is within public structures.

The Finnish health system provides universal coverage based on residence. This system is financed mainly by taxes: in 1997, 41% of total health expenditure was financed by municipalities, 21% by the state through an allowance to the municipalities, 14 % by the national state sickness insurance and 24 % by private sources.

Local democracy

At the national level, people elect the 200 members of their parliament every 4 years by universal suffrage, as well as the republic's president (for 6 years).

The government is decentralised at the provincial level: Finland is divided into 5 provinces (since September 1997, following a merging of the 11 provinces previously) plus the Åland islands which have autonomous status.

At the local level, the municipalities have, in their long history, gained many responsibilities. Their average size is 748 km² for 11 441 inhabitants. Most of the municipal populations are much smaller, however, in nearly half of the municipalities there are less than 4 000 inhabitants. The Constitution establishes local democracy by granting these 452 communes autonomy. They constitute the first level of administration. The municipal councils are the only elected bodies at a sub-national level, and comprise between 17 and 85 members (depending on the population size, that range from 122 to 551 123 citizens). The municipal councils are thus elected every 4 years by universal suffrage with proportional representation. They then elect their executive, the communal council, as well as the mayor. Municipalities have very general competencies including health: they are the basic units for managing health related issues.

Responses to the ISARE questionnaires

The answers deal with two levels : provinces and regions.

Province

This level does not correspond to any NUTS level, and has no health competence. However, provinces play a role in monitoring and guiding health and social policies. It should be noted that a recent modification of the provinces' frontiers has reduced their number from 12 to 6.

Region

This geographical unit is equivalent to the NUTS 3 level . It has no health competence as such but in some cases corresponds to a group of municipalities with hospital responsibilities (hospital district).

Conclusion

These two levels, though they do have health related data available, do not correspond to any decision making level concerning health services.

Summary tables

Principal characteristics of the levels

	Province	Region
Number of units	6	20
Population size		
Minimum	25 706	25 706
Average	861 884	258 565
Maximum	2 068 259	1 290 618
Standard deviation		
Surface (km²)		
Minimum	1 552	1 552
Average	56 358	16 907
Maximum	98 946	98 946
Standard deviation		
Correspondence with NUTS level	No	Yes
Exact correspondence to a NUTS level		NUTS 3
If no, nearest corresponding level	NUTS 2	
Boundaries stability	No	Relatively stable

Responsibilities regarding the management of health and social policies

	Province	Region
Definition and management of policy regarding		
hospital care	No	No
ambulatory care	No	No
social services	No	No
health promotion	No	No
Public health reporting	No	No

Data availability

	Province	Region
health care professionals	Yes	Yes
education of health care professionals	Yes	No
health care structures	Yes	Yes
health care utilisation	Yes	Yes
demographic and socio-economic data	Yes	Yes
mortality data	Yes	Yes
generic health status data	Yes	Yes for some units
morbidity data	Yes for some items	Yes for some items
biological factors and health habits	Yes for some items	Yes for some items
living and working conditions	Yes for some items	Yes for some items
data on prevention	Yes for some items	Yes for some items

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France

Health care system

The French Health Care system is based on a social insurance model. Health care policy and management are defined by the government and the implementation relies on both public and social insurance fund administration. There are a number of specific social insurance funds, but three of them cover the majority of the population. Executive offices of the ministry of health exist at regional (the DRASS) and « départements » (district) levels (DDASS). The role of the regional level is mainly strategic, whereas the DDASS are comparatively more involved in the operational management of public health services. Reforms introduced in 1996 significantly enhanced the powers and functions performed at regional level. The Agence Régionale de l'Hospitalisation (ARH) were created in order to allocate budget to both public and private hospitals. Two other regional agencies were created in order to represent and co-ordinate the actions of the social insurance funds (URCAM), and the private practitioners (URML). The 1996 reforms also introduced yearly national and regional health conferences gathering all the main stakeholders, including the public, in order to identify and monitor progress on a set of national and local priorities.

Most doctors working at community level whether general practitioners (“généralistes”) or specialists are private practitioners paid on a fee for service basis. Two thirds of the hospital bed provision belongs to the public sector where doctors and staff are salaried. The social insurance funds reimburse on average 70% of expenses incurred by the patients. Complementary insurance schemes, contracted on a voluntary basis, covers all or a part of the remaining costs.

Local democracy

The three main levels of local democracy in France are the Regions (26), the Départements (100) and the Municipalities (36 763). All have assemblies of locally elected representatives and executive bodies.

The competencies of the regions include education and major public transport projects. Regional local authorities are therefore not strictly speaking involved in health and social care issues.

Départements' competencies covers health protection, social welfare, housing, culture and transport. More specifically the Départements co-ordinate child protection and elderly accommodation. They often collaborate with the health administration in respect to social exclusion issues.

Municipalities have a wide range of responsibilities (sometimes shared) which include security and police, health protection, kindergarten and nursery, town planning, environment and sanitation, culture, transport and economic services.

The local authorities are funded by specific local taxes, for which they can decide the rate within defined limits. The state provides additional funds which in the case of municipalities amount to approximately 30% of their budget.

Responses to the ISARE questionnaires

Answers for France concern the levels of regions and departments.

Region

This geographical level corresponds to NUTS 2. Mainland France is made up of 22 regions, to which can be added the four overseas departments, each of them combining the responsibilities of a department with those of a region.

All data concerning care supply, health care utilisation, mortality, demography and socio-economic situation are available at this level. The regional information system, however, is still poor for morbidity and biological or behavioural risk factors. One can stress that, since 1994, the Regional Health Observatories have been editing and updating reports regularly about health (in “*Tableaux de bord régionaux sur la santé*”)

Department

France is made up of 100 departments (including overseas departments), equivalent to NUTS 3 level.

Policies on child welfare, housing, and elderly dependence are defined at the departmental level by the General Councils (Conseils généraux). These policies have to comply with a minimal framework defined at the national level. On top of that, policies fighting exclusion are set nationally and implemented by departmental administrations (DDASS) in connection with the General Councils.

Available data at departmental level is about the same as at regional level, but only very few departmental health reports have been published.

Conclusion

Regionalisation has been progressing in France for several years, with the definition and implementation of health policies made by Regional Health Conferences, and the creation of many regional institutions (ARH = Hospitalisation Regional Agencies, URCAM = Regional Union of Health insurance Funds, URML = Regional Union of the liberal Physicians). With regards to this, the region seems the most suitable level in France.

However, the process of decentralisation started in the eighties has also reinforced competence at the departmental level for socio-medical matters. Furthermore, the newly set up regional institutions (ARH, URCAM & URML) generally base their policies upon sub-regional, and especially departmental analysis. Therefore, departments are also a relevant level for exchanging health data within Europe.

Summary tables

Principal characteristics of the levels

	Régions	Départements
Number of units	26	100
Population size		
Minimum	156 790	73 508
Average	2 314 893	601 872
Maximum	10 951 136	2 554 449
Standard deviation	2 168 331	457 597
Surface (km²)		
Minimum	1 100	106
Average	24 770	6 440
Maximum	91 000	91 000
Standard deviation	18 640	8 777
Correspondance with NUTS level	Yes	Yes
Exact correspondence to a NUTS level	NUTS 2	NUTS 3
If no, nearest corresponding level		
Boundaries stability	Yes	Yes

Responsibilities regarding the management of health and social policies

	Régions	Départements
Definition and management of policy regarding		
hospital care	Yes	No
ambulatory care	Yes	No
social services	No	Yes
health promotion	Yes	Yes
Public health reporting	Yes	Yes for some units

Data availability

	Régions	Départements
Health care professionals	Yes	Yes
Education of health care professionals	Yes	Yes
Health care structures	Yes	Yes
Health care utilisation	Yes	Yes
Demographic and socio-economic data	Yes	Yes
Mortality data	Yes	Yes
Generic health status data	No	No
Morbidity data	Yes for some items (<i>transmissible diseases</i>)	Yes for some items (<i>transmissible diseases</i>) and sometimes only for some units (<i>cancers, Ischaemic heart disease</i>).
Biological factors and health habits	No	No
Living and working conditions	Yes for some items	Yes for some items
Data on prevention	No	No

References

Duriez M, Lequet-Slama D. *Les systèmes de santé en Europe*. Que sais-je n° 3343. Presses universitaires de France, Paris, France. 1998.

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Germany

Health care system

Set up by Bismarck in 1883, the German social protection system is the oldest in Europe. The health system from western Germany was extended to the eastern Länder after the reunification. In 1996, health expenses were financed by the national health insurance (50.6 %), businesses (14.1 %), the State (12.1 %), households (8.0 %), pension organisations (7.3 %), private insurance (5.1 %) and accident insurance (2.8 %).

Everyone with an income below a threshold defined by the federal State (6,450 DM per month in 2000) must contribute to a public health fund. Others can choose either to subscribe to a public fund or to a private insurance. In 1999, out of the 82 million insured people in Germany, 88.5 % contribute to a public fund. Firms finance half the contribution of their employees.

The 452 public funds are autonomous and responsible for their own budget balance. Since the 1992 reform, these funds are in competition, because people are no longer compelled to subscribe to a given fund according to their professional occupation.

For prescription expenses, dental care and hospital care, the patient pays only a fixed charge, and primary medical care (general and specialised physicians) is free of charge. In order to benefit from this free treatment, the insured must choose a physician for a period of at least three months. Physicians are grouped in Union funds that pay them on a fee for service basis. These unions are financed by the funds on the basis of a fixed amount, negotiated every three months. In case of one fund's budget skipping, the payment for all the physicians belonging to this fund is reduced. On top of that, since 1999 physicians and dentists can no longer set up practice in areas where there are a large number of doctors. This reform aims to provide a better spread of the medical services. Though the ambulatory system is totally private, the hospital system is split between public hospitals, private for-profit hospitals, and private not-for-profit hospitals. Hospitals are managed within a global budget and the vast majority of the physicians in this sector are salaried. Hospital financing is from two sources: the local authorities (Länder, Kreise) fund investments, whereas running costs are funded by users (patients, funds). Hospitals are managed by the private sector, religious congregations, or local bodies (Kreise).

Local democracy

In Germany, democracy works at three levels: federal (the State), regional (Länder) and local (Kreise or big town). Each of these three levels has their own budget and elected assembly. The biggest Länder also have another level (Bezirksregierungen or Regierungspräsidium) with an administrative body that is not elected but may play an executive and co-ordinating role.

The German Constitution allows delegation of the State's responsibilities to the Länder. Furthermore, there has been for several years a decentralisation process, with a competence delegation from the State and Länder to the Kreise. The sharing of responsibilities between these three levels varies greatly from one place to another. There is similar sharing of responsibilities between the central State, Länder and Kreise in the organisation of the health system. The State is responsible for public health, the education and working conditions of the health professionals, the organisation and control of the health insurance, the law regarding drugs, food safety and guidelines for hospitals. Länder are responsible for implementing the federal laws, especially concerning hospital planning. They also have a legislative power, as long as their laws are consistent with the federal law. In the field of health, the essential role of the Kreise is to implement federal and regional laws: therefore, even though they often own hospitals, they cannot do their own planning.

Responses to the ISARE questionnaires

The answers for Germany concern the three levels: Länder, Bezirksregierungen and Kreise (or big towns).

Bundesland

This level corresponds to NUTS 1. As said above, their legislative power can include health matters.

Available data at this level are complete for mortality and demography, and partial about care supply, care consumption, biological factors and health behaviour. Data is scarce for morbidity, prevention, and living and working conditions.

Bezirksregierung

This level corresponds to NUTS 2. Since this level does not exist throughout the country, only the first part of the questionnaire (competence for health matters, health observation ...) has been completed, and this level is not suited to a European comparison of health indicators.

Kreis

This level corresponds to NUTS 3. Very little data are available at this level, except for causes of death, medical care facilities and demography.

Conclusion

Considering data availability, and authorities running health policies, Bundesländer appear to be the best level to retain for purposes of comparative analysis, though the big size of some of them could in some cases set methodological problems for a comparison to much smaller geographical units in some other countries.

Summary tables

Principal characteristics of the levels

	Land	Bezirksregierung	Kreis
Number of units	16	38	445
Population size			
Minimum	682 000	501 000	31 900
Average	5 090 000	2 079 000	182 000
Maximum	17 788 000	5 288 000	2 174 000
Standard deviation	3 745 000	1 191 000	184 000
Surface (km²)			
Minimum	404	404	36
Average	22 295	9 387	801
Maximum	70 554	29 480	3 058
Standard deviation	18 664	5 996	595
Correspondence with NUTS level	Yes	Yes	Yes
Exact correspondence to a NUTS level	NUTS 1	NUTS 2	NUTS 3
If no, nearest corresponding level			
Boundaries stability	Yes	Yes	Yes

Responsibilities regarding the management of health and social policies

	Land	Bezirksregierung	Kreis
Definition and management of policy regarding			
hospital care	Yes	Yes	No
ambulatory care	Yes for some units	No	No
social services	Yes	Yes	Yes
health promotion	Yes	Yes	Yes
Public health reporting	Yes for some units	No	Yes for some units

Data availability

	Land	Bezirksregierung	Kreis
Health care professionals	Yes for some items	-	Yes for some items
Education of health care professionals	Yes for some items	-	No
Health care structures	Yes for some items	-	No (except Pharmacies)
Health care utilisation	Yes for some items	-	No
Demographic and socio-economic data	Yes for some items	-	Yes for some items
Mortality data	Yes	-	Yes except for perinatal death
Generic health status data	Yes for some items	-	No
Morbidity data	Yes for some items	-	No (except tuberculosis)
Biological factors and health habits	Yes for some items	-	No
Living and working conditions	Yes for some items	-	No (except average dwelling size)
Data on prevention	Yes for some items	-	No

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Greece

Health care system

The health system tries to reconcile a centralised, national system with split insurance funding from many different professional and business organisations. The health system incurs chronic deficits which are compensated by the State. The Ministries (of Health and Welfare until 1995, now of Labour and Social Insurance, and of National Economy) are the leading institutions in developing and financing health policies.

Until 1983, the health system in Greece offered a considerable diversity of health care and coverage. This was due to the many occupational social insurance funds, creating provision specifically for their own profession or sector. Hence the inequities between rural and urban areas were huge, the cost of hospitals (with a predominance of private structures) and drugs was high, the number of physicians excessive with an opposite shortage of qualified nurses.

Therefore, a reform was implemented, aiming at unifying the services offered by the various social security organisations (the Government set up a National Health Service = NHS), creating health centres to provide primary care all over the territory, increasing the control over hospitals (reducing the capacity of private hospitals : 30% in 1990 compared to 42% in 1982), and launching a national drug company to produce cheaper drugs (mostly antibiotics). The Central Health Council (KESY) has been created to play an advisory role to the Minister for the national health policy, as do special Committees for AIDS, Drugs, Cancer, etc.,.

Although many improvements concerning the delivery of health care services are clearly visible in Greece over the last decades, some major problems remain to be solved. These include unequal access to health services, high payment by individuals and low consumer satisfaction.

The Ministry of Health is responsible for provision and financing of the National Health Service as well as health and social services for the poor, the elderly and the disabled; a very small part of health and social services is provided by municipal authorities. Local authorities (52 districts or prefectures) play a limited role in the administration of 128 NHS hospitals and 176 rural health centres. The decentralisation introduced by the reforms has recently approved and 17 Regional Health Systems have been established. A Regional Governor and a Regional Health Board are responsible for the system's administration.

Local democracy

Greece is divided into 13 regions, ranging from 2307 to 15490 km² and 198241 to 3522769 inhabitants, which themselves consist of 51 districts or prefectures (plus a specific structure for the capital city of Athens). These regions and prefectures are not strictly speaking levels of local administration, but a form of state decentralisation.

The smallest territorial division comprises 913 municipalities, which are autonomous units. Representatives to these bodies are elected every 4 years in a list system by a universal, secret ballot: Municipal Councils for Municipalities, whose 11 to 41 members then elect a Town Committee, chaired by the Mayor. The executive and political authority is the Mayor.

Though some Municipalities (especially the largest) may run health centres, old peoples' homes, and lead social action, these local bodies have no formal role regarding health matters, which are all dealt with by the national government.

County Councils are the administrative bodies at the District or the Prefecture level and their members are elected every 4 years. They guided by the President of the Council or local Governor. County Councils remain responsible until now for the delivery of Public Health Services.

The Regions are led by a General Secretary of Region, nominated by and directly representative of the state government. The General Secretary of Region chairs the Regional Council (including the Heads of each prefecture and representatives of the Municipalities and communes), in charge of planning and co-ordinating the development of the region.

Responses to the ISARE questionnaires

So far the answers have only been received for the region of Crete . Crete the biggest island of Greece is divided into 4 districts (prefectures) which 540,000 inhabitants (national census of population 1991).

Conclusion

The new Health Regions seem to be the appropriate unit level for the developing some health related registries. Crete seem to be an ideal place with sufficient population size and structure in order to be used as a pilot region to test the Regional Health System's adequacy for exchanging health related information between regions in Europe. Locally available registries either at the University or at the Health Centres of Crete can act as an important supplementary source of data.

Summary Tables

Principal characteristics of the level

	Region
Number of units	13
Population size	
Minimum	198 241
Average	789 431
Maximum	3 522 769
Standard deviation	
Surface (km²)	
Minimum	2 307
Average	10 125
Maximum	15 549
Standard deviation	
Correspondence with NUTS level	Yes
Exact correspondence to a NUTS level	NUTS 2
If no, nearest corresponding level	
Boundaries stability	Yes

Responsibilities regarding the management of health and social policies

	Ministry of Health and Welfare
Definition and management of policy regarding	
hospital care	Yes*
ambulatory care	Yes*
social services	Yes*
health promotion	Yes*
Public health reporting	Yes*

* The Regional Health Systems have been currently defined as the responsible bodies for hospital and ambulatory care, as well as health promotion according to the New Act.

Data availability

	Regional level	National level *
Health care professionals	Yes	Yes
Education of health care professionals	Yes	Yes
Health care structures	Yes	Yes
Health care utilisation	Yes, for secondary care. Data on primary care utilisation are available in some regions.	Yes for secondary care (<i>admissions and discharges</i>) No for health care utilisation (2)
Demographic and socio-economic data	Yes	Yes
Mortality data	Yes	Yes
Generic health status data	No	No
Morbidity data	Cancer registries are available in some regions. Data for diabetes mellitus and stroke are also available in some regions. Incidence rates can be accounted for all notified infection diseases.	Yes for HIV/AIDS and all notified infections.
Biological factors and health habits	1. Data on Biological factors are available for social population groups. 2. Data on health habits are available in some well- defined population groups.	Yes for some health habits, including smoking.
Living and working conditions	Yes (except leisure accidents and occupational diseases).	No
Data on prevention	Data from individual-based or massive screening of cervix smear and mammography are available in some population groups. Vaccination coverage for different age groups in children is available based on the results of the recent national survey.	Data from individual-based or massive screening of cervix smear and mammography are available in some population groups. Vaccination coverage for different age-groups in children is available based on the results of the recent national survey.

Source: 1. National Office for Health Statistics
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Ireland

Health care system

The Irish health care system operates mainly as a national health service, with some element of private insurance. There is a mixed public and private practice even within publicly funded hospitals. The main source of funding is general taxation. Above a defined income level, patients contribute to the costs of ambulatory and or dental care. In the lower income group (~30% of the population) people have free access to all levels of care provided within public services. In the medium or high income groups, patients bear most of the costs of ambulatory and dental care. Hospital care in the public sector is covered for all patients whatever their income though. Patients with higher income can chose to pay for private health insurance to cover all costs.

The Department of Health allocates budgets to seven health boards and one regional health authority. These agencies have responsibility for financing public and voluntary hospitals. They do not control the private hospital sector, however, this represents a relatively low proportion of hospital health care provision. Health Boards are also responsible for payment of general medical services.

Local democracy

The 29 county councils and county boroughs represent the main level of local democracy. They have important responsibilities in the areas of housing, transport, water and sanitation, environment, leisure and cultural facilities. Their involvement in the fields of agriculture, education, health and welfare is limited. The county councils and boroughs levy local charges on their own behalf but are mostly funded through central exchequer allocations.

Responses to the ISARE questionnaires

Responses from Ireland to the ISARE questionnaire concern the level of County councils and Health Boards. Correspondence of these two levels with the NUTS classification is provided in the last table.

County councils

The 26 county councils display a wide range of population sizes and area. Their boundaries are based on long standing traditions and therefore are very stable and not likely to change. Counties do not correspond to a given NUTS level. However they aggregate fairly well into NUTS level 3. As explained above, no responsibilities regarding the management of health or social policies are exerted at this level, and no public health reporting is done either.

Apart from demographic, vital statistics and socio-economic data, very few health related information is available at this level. Only information from cancer registers, and road and work accidents statistics can be reported. This information can be obtained from the Central Statistics Office.

Health Boards

Strictly speaking there are 8 different health boards in Ireland. However the newly established Eastern Regional Health Authority (formerly Eastern Health Board) is subdivided into 3 regions that each behave in much the same way as the other Health Boards. The reason for the change was the sheer demographic weight of the former Eastern Health Board in which 40% of the population are located. Five health Boards share boundaries with 5 NUTS regions and the remainder have slight differences (see table).

Health Boards are responsible for managing most aspects of public health care provision. Each Health Board has a Director of Public Health who is in charge of producing an annual report on the health of the population.

All information available at county level is also available at Health Board level. On top of those, infectious diseases notification and data on prevention can be obtained at health board level. Information on health care professionals, health care structures, or health care utilisation can be provided only for public institutions. Data aggregated at health board level can be obtained from a national statistical institution.

Conclusion

The Health Board level seems to be the most appropriate level for exchanging health related information between regions in Europe. The population sizes are large and Health Boards are important for the management of health care. As a logical consequence, more health related information is available at this level. Health Boards share some common boundaries with some NUTS 3 regions. Whether NUTS 3 represent a sufficiently good approximation to health boards remains to be decided. The Health Board does not coincide with any local democratic structure or power, although it has representatives from local county and borough councils. Counties and boroughs represent the important local democratic level. However, their population sizes are too small to allow meaningful exchanges and comparisons on health care matters between European regions.

Summary Tables

Principal characteristics of the levels

	County	Health Board
Number of units	26	10
Population size		
Minimum	25 000	205 500
Average	139 500	370 000
Maximum	1 060 000	1 295 939
Standard deviation	202 500	357 197
Surface (km²)		
Minimum	826	4 644
Average	2 703	8 784
Maximum	7 500	14 283
Standard deviation	1 761	3 185
Correspondence with NUTS level		
Exact correspondence to a NUTS level	No	No, but 5 of the 10 health boards correspond to 5 NUTS.
If no, nearest corresponding level	NUTS 3	NUTS 3 -
Boundaries stability	Yes	No, change to allow for important demography in one health board

Responsibilities regarding the management of health and social policies

	County	Health Board
Definition and management of policy regarding		
hospital care	No	Yes
ambulatory care	No	Yes
social services	No	Yes
health promotion	No	Yes
Public health reporting	No	Yes

Data availability

	County	Health Board
Health care professionals	No	Yes for public sector
Education of health care professionals	No	Yes for public sector
Health care structures	No	Yes for public sector
Health care utilisation	No	Yes for public sector
Demographic and socio-economic data	Yes	Yes
Mortality data	Yes	Yes
Generic health status data	No	No
Morbidity data	Only for cancer incidence	Yes for notification of infectious diseases and cancer incidence from registers
Biological factors and health habits	No	No
Living and working conditions	Yes (except leisure accidents and occupational diseases)	Yes (except leisure accidents and occupational diseases)
Data on prevention	No	Yes

Nuts versus Health Board/Regional Authority

Nuts Region	County	Health Board
Dublin	Dublin	Eastern Regional Health Authority
Mid East	Kildare Wicklow	
Midland	Laois Offaly Longford Westmeath	Midland
Mid West	Clare Limerick Tipperary North Riding	Mid Western
Mid-East	Meath	North Eastern
Border	Cavan Monaghan Louth	North Western
Border	Donegal Sligo Leitrim	
South East	Carlow Kilkenny Tipperary South Riding Waterford Wexford	South Eastern
South West	Cork Kerry	Southern
West	Galway Mayo Roscommon	Western

References

Duriez M, Lequet-Slama D. *Les systèmes de santé en Europe*. Que sais-je n° 3343. Presses universitaires de France, Paris, France. 1998.

Structure et fonctionnement de la démocratie locale et régionale: Irlande. Conseil de l'Europe, Strasbourg, France. 1998.

Italy

Health care system

The Italian health care system is a regionally-based national health service that provides universal coverage free of charge at the point of consumption.

The system has three levels: national, regional and local. The national level is responsible for ensuring the general objectives of the national health system with respect to its fundamental principles.

Regional governments, through the Regional Health Departments are responsible for ensuring the delivery of a benefits' package through a network of population-based health care organisations (Local Health Units) and public and private accredited hospitals.

The National Health System (NHS) was introduced in 1978. The system was reformed for the first time in 1992. The first reform was intended to give a larger degree of autonomy to the regional level in terms of policy making, health care administration and management, resource allocation and control. In addition, a partial split between purchaser and providers was introduced, with the aim of introducing elements of competition in the health care system. The devolution process started with the reform of 1992 and has been brought forward the 1999 reform (Decree n. 229/1999) which gave higher degrees of autonomy to the Regional Health Departments and affected the management of health care providers.

Local democracy

In Italy there are three levels of local democracy: region, province and municipality. The country is divided into 20 regions (5 of which have a special statute), 103 provinces and 8100 municipalities.

At the regional level, the executive and regional council are elected by popular vote. The regional council has legislative power at regional level and administrative powers beyond the areas of responsibility of the regional government. The Region has significant responsibilities in the area of the administration and financing of the health care system, in particular as regards the local health units and the independent hospitals.

The Italian provinces also have a council elected by direct popular vote and a government elected by and within the provincial council. In the area of public health, it has responsibility for hygiene and monitoring disease.

At the head of the municipalities, which are the finest level of local democracy in Italy, there is a municipal council elected by popular vote. The mayor is elected directly in towns with more than 15,000 residents.

Responses to the ISARE questionnaires

The answers to the questionnaires on Italy relate only to the regional level ("regioni" in Italian), that is the appropriate sub-national level given the structure of the national health system.

Region

This level corresponds to the NUTS 2 level. While the regions are defined in the Constitution, the provinces, that are groups of municipalities, did vary over overtime. In fact, in the early nineties new provinces were created by splitting some of the existing provinces in two new ones but always within the same region.

The 20 regions differ in size (Piedmont region is 25,000 sq. km versus Valle d'Aosta region that is only 3,000 sq. km) and in population (Lombardia region has a population representing the 15% of the total Italian population, while Molise region has a population representing less than 1%). The regions also differ in terms of age distribution: given that the nationwide average of population aged 65 and older is 17%, the South is relatively younger (15%) than the Centre-North (19%).

In one of those 20 regions, Trentino - Alto Adige, the two provinces are actually independent for many aspects including health care.

Lastly, information is available at this level on demographic, social and health issues.

Conclusion

Given the decentralisation of the health system in Italy, the region would seem to be the appropriate level for a comparison of health indicators at European level except in Trentino Alto Adige where the province will be the appropriate level. Regions (and those two provinces) have significant responsibilities in organising the health care system and data collection has been implemented already for many of the aspects that are relevant to the ISARE project.

Summary tables

Principal characteristics of the level

	Regioni *
Number of units	19+2
Population size	
Minimum	118 200
Average	2 720 881
Maximum	8 901 000
Standard deviation	2 317 440
Surface Area (km²)	
Minimum	3 264
Average	14 348
Maximum	25 707
Standard deviation	7 642
Correspondence with NUTS level	Yes
Exact correspondence to a NUTS level	NUTS 2
If not, nearest corresponding level	
Boundaries stability	Yes

* Nineteen Regioni + the two provinces of the Trentino-Alto Adige region

Responsibilities regarding the management of health and social policies

	Regioni *
Definition and management of policy regarding	
Hospital care	Yes
Ambulatory care	Yes
Social services	Yes
Health promotion	Yes
Public health reporting	Yes for some regions

* Nineteen Regioni + the two provinces of the Trentino-Alto Adige region

Data availability

	Regioni *
Health care professionals	Yes for some items
Education of health care professionals	No
Health care structures	Yes
Health care utilisation	Yes
Demographic and socio-economic data	Yes
Mortality data	Yes
Generic health status data	No (only from surveys)
Morbidity data	Yes for some items
Biological factors and health habits	Yes for some items
Living and working conditions	Yes
Data on prevention	Yes for some units

* Nineteen Regioni + the two provinces of the Trentino-Alto Adige region

References

Duriez M, Lequet-Slama D. *Les systèmes de santé en Europe*. Que sais-je n° 3343. Presses universitaires de France, Paris, France. 1998.

Structure and operation of local and regional democracy: Italy. Conseil de l'Europe, Strasbourg, France. 2000.

Luxembourg

Health care system

The health care system in Luxembourg is based on the patient having the freedom to choose his/her own doctor, on a pay-as-you-go basis and a compulsory health insurance scheme. The system is structured according to two main themes: prevention, for which the Minister for Health is predominantly responsible, and medical treatment, for which the Minister for Health and the Minister for Social Security are jointly responsible.

The health insurance scheme, managed by the Union of health insurance funds, covers 99% of the population and is organised into 9 agencies to which insured persons are assigned according to their profession. It is financed by the State, employers and individuals.

Local democracy

On account of its size, the only level of application of local democracy in Luxembourg is the commune. There are 118 communes wherein a local council is elected every six years. The burgomaster and deputy burgomasters who form the executive body are appointed by the Grand duke or the Home Secretary from among the members of the local council. The communes share responsibility for the field of hospitals and health protection with the State.

Responses to the ISARE questionnaires

The responses to the questionnaire concern only the single level of the state of Luxembourg. In effect, taking into account its size, in comparison to that of other countries, and the absence of an intermediate level between national level and local level, it was decided to explore only this single level, which, of course, has full powers with regard to health and has access to all health-related statistical data.

Conclusion

Given the particular characteristics of Luxembourg in terms of size and population, only national level is suggested.

Summary tables

Principal characteristics of the level

	National level
Number of units	1
Population size	
Minimum	
Average	420 416
Maximum	
Standard deviation	
Surface Area (km²)	
Minimum	
Average	2 586
Maximum	
Standard deviation	
Correspondence with NUTS level	Yes
Exact correspondence to a NUTS level	NUTS 1
If not, nearest corresponding level	
Boundaries stability	Yes

Responsibilities regarding the management of health and social policies

	National level
Definition and management of policy regarding	
Hospital care	Yes
Ambulatory care	Yes
Social services	Yes
Health promotion	Yes
Public health reporting	No

Data availability

	National level
Health care professionals	Yes
Education of health care professionals	Yes
Health care structures	Yes until 1994 (1)
Health care utilisation	Yes for some items until 1994 (1)
Demographic and socio-economic data	Yes
Mortality data	Yes
Generic health status data	No
Morbidity data	Yes for some items
Biological factors and health habits	Yes for some items
Living and working conditions	Yes
Data on prevention	Yes

(1) Data will be available when the new hospital plan will be finalised and comes into force.

References

Health care system in transition: Luxembourg. European observatory on health care system, Copenhagen, Denmark. 1999

Duriez M, Lequet-Slama D. *Les systèmes de santé en Europe.* Que sais-je n° 3343. Presses universitaires de France, Paris, France. 1998.

Structure et fonctionnement de la démocratie locale et régionale: Luxembourg. Conseil de l'Europe, Strasbourg, France. 1997.

Netherlands

Health care System

The Dutch health system represents a combination of a national health service and a social insurance based system. People choose to contract with one of several public or private sickness funds which compete for offering packages of health care. Very expensive health care (e.g. care of the elderly, long term psychiatric care) is still provided under a dedicated national scheme managed by the state. General practitioners are usually paid on a capitation basis for about two third of their income, whereas most specialist doctors are salaried.

Apart from the responsibility regarding very expensive health care, the role of the government is mainly to regulate the market, and to supervise health care quality. The government also controls capital investment for hospital care provision, whereas running costs are provided by the competing sickness funds. Provinces are involved in planning and advice on location of facilities, emergency posts etc. Municipalities are engaged in local planning and performance.

The municipalities have responsibility for ambulance transport, medical services in case of disasters, community health, health care for young people and infectious diseases.

Local democracy

The 12 provinces and the 572 municipalities represent the two main levels of local democracy in the Netherlands. Provinces and municipalities have responsibilities in the fields of housing, environment, culture, leisure and sports, transports, and economic development. Provinces are not involved in the day to day management or administration of health care. However they are involved in planning and provide advice on location of services. Municipalities are engaged into local planning and performance of health services. Their responsibilities also include education, public health, and social services.

Main sources of funding to the local authorities come in the form of subsidies allocated by the central government. Both Provinces and Municipalities decide the rate for and collect their own taxes.

Responses to the ISARE questionnaire

The two administrative levels investigated during the ISARE survey are the 50 Municipal Health Service Regions (GGD) and the WZV regions. A municipal health service refers to an aggregate of neighbouring municipalities, for which it provides prevention services as well as ambulance transport and medical services in case of disaster.

Unlike the municipal health services, the WZV regions do not refer to a specific organisation managing or providing services. They represent the administrative regional distribution used for the planning of hospital care. This planning process involves health care suppliers, insurance companies, patients representatives and local authorities (provinces and municipalities). About ten other slightly different regional distributions are used for other aspects of service provision such as mental health care, ambulatory care (58), ambulance transport and emergency aid (28) etc

Municipal health service region (GGD)

The Municipal health services have responsibility for health and social policy planning including public health reporting. They have at their disposal a health information system covering demographic, mortality and morbidity data.

There have been important changes in the boundaries of municipal health services. Their number has decreased from 64 in 1990 to 50 in 2000. Further changes are expected in the future. The current boundaries of municipal health services do not correspond to the NUTS division.

Information regarding health care professionals and hospital supply can be obtained at this level. However the same does not apply to health care utilisation data. These are mainly processed for insurance and stateness funds themselves and data are not usually or cheaply accessible to outside institutions or organisations.

Infectious diseases notifications are collected by the municipal health services and are therefore available at this level. National cancer registry data is post coded and can be aggregated at municipal levels. The national household survey, which is run on a yearly basis by the Central Bureau of Statistics (CBS), provides post coded information on long standing illness. However the sample size (around 9 000) precludes valid usage at low geographical unit level. The same problem applies for a national mental health survey (Nemesis). Municipal health services often run their own health interview surveys. However the issue there is one of data comparability because of variation in instruments.

WZV regions

WZV regions are used exclusively for the planning and provision of hospital services. This covers acute services, as well as psychiatric hospitals and nursing homes. There are no public health functions performed as such at this level though. The planning process relies mainly on the analysis of hospital supply and production figures. The regions boundaries have not changed since 1987. There is no direct correspondence with the NUTS classification, although the WZV regions keep within province's boundaries (NUTS 2).

Most information sources referred to in the municipal health services paragraph (above) are geographically coded and available from a national source. This includes demography, mortality, cancer registration, notification, and household survey data. Therefore such information could be aggregated at the WZV regions level.

Conclusion

The municipal health services regions probably represent the most relevant level for health information exchange between regions of the EUMS. This is mainly because of their responsibilities for prevention and public health reporting. The remit of the WZV regions although important, is narrower in scope. Local authority elected representative are involved at both levels. One difficulty with the municipal health services is their changing numbers and boundaries. The existence of a national co-ordinating body may help to make locally generated data more comparable across regions.

Summary tables

Principal characteristics of the levels

	GGD	WZV
Number of units	50	27
Population size		
Minimum	124 475	238 038
Average	315 205	583 712
Maximum	777 397	1 295 645
Standard deviation	156 708	276 933
Surface (km²)		
Minimum	56	221
Average	699	1 295
Maximum	3 531	3 531
Standard deviation	672	833
Correspondence with NUTS level		
Exact correspondence to a NUTS level	No	No
If no, nearest corresponding level	3	2
Boundaries stability	No	Yes

Responsibilities regarding the management of health and social policies

	GGD	WZV
Definition and management of policy regarding		
hospital care	No	Yes
ambulatory care	No	No
social services	Yes	No
health promotion	Yes	No
Public health reporting	Yes	No

Data availability

	GGD	WZV
Health care professionals	Yes	Yes
Education of health care professionals	No	No
Health care structures	Yes	Yes
Health care utilisation	Not readily accessible	Yes
Demographic and socio-economic data	Yes	Yes
Mortality data	Yes	Yes
Generic health status data	Yes for some GGDs	Yes
Morbidity data	Yes for infectious disease notification and cancer register <i>(to be confirmed)</i>	Yes for infectious disease notification and cancer register <i>(to be confirmed)</i>
Biological factors and health habits	Yes for some GGDs	idem GGD
Living and working conditions	<i>(GGD estimates possible from data held at national level)</i>	idem GGD
Data on prevention	Yes	idem GGD

References

Duriez M, Lequet-Slama D. *Les systèmes de santé en Europe*. Que sais-je n° 3343. Presses universitaires de France, Paris, France. 1998.

Structure et fonctionnement de la démocratie locale et régionale: Pays-Bas. Conseil de l'Europe, Strasbourg, France. 1997.

Portugal

Health care system

The health system in Portugal has been organised on the 'Beveridge Model' since 1979 with the setting up of a national health system. Prior to that, social protection was organised on the basis of agreements between employee unions and employer organisations of which a part still remains. Although the law of 1979 provided for cover for the whole population, in actual fact approximately one quarter of the population is not covered by the National Health Service. According to the wording of the law, this National Health Service is independent both from an administrative and a financial viewpoint. In reality, there was significant involvement in the running of the NHS by the Minister of Finance.

Since 1989, Portugal has been involved in a process of privatisation which has affected all sectors of the economy, including the health sector with the development of the option for doctors to work in both the public and private sector, and the development of a private sector providing the means to respond to the growing health needs of the population. The development of private insurance has occurred in parallel with this.

Thus Portugal is distinguished by the coexistence of three social protection systems: the National health service, health insurance schemes for certain professions (1/4 of the population) and private and mutual benefit insurances which cover 10% and 7% of the population respectively.

The National Health Service is financed by taxes. The health insurance schemes are financed by the State (via taxes) and by a contribution from the employees and employers. The private and mutual insurances are financed by their members' subscriptions. Thus taxes finance 62% of the total health cost (through the national health service and the insurance schemes) and the subscriptions to the health insurance schemes finance 5 % of these costs, the remainder being borne by the population including less than 2 % through voluntary insurance and mutual insurance. The contribution of the users is thus one of the highest in Europe.

A reform in 1993 resulted in the creation of five independent health regions, responsible for the field of health management.

Local democracy

Portugal is divided into 18 districts and two self-governing regions (the Azores and Madeira). Each district is then divided into "municipalities" and "parishes".

The 18 districts are today only circumscriptions of the decentralised administration of the State. A reform was planned which should have resulted in the creation of administrative regions to replace these districts with a regional assembly designated by a body of electors formed by the members of the municipal assemblies and a regional executive elected from the regional assembly. This reform was however rejected by referendum.

Each municipality has an assembly made up of the Chairmen of the Parish committees (themselves elected by direct popular vote with proportional representation) and members of a number equal to the number of parishes plus one elected by direct popular vote, with proportional representation. The executive consists of directly elected members. The municipalities have jurisdiction in the areas of civil protection, the education infrastructures, day nurseries and day-

care centres, home help, housing, the environment and salubrity, culture and transport. It is to be noted that the municipalities do not have jurisdiction in the area of health.

Responses to the ISARE questionnaires

The responses for Portugal relate to three levels: the communities, the regions and the health regions.

Communities

This regional level corresponds to the NUTS 3 level. It consists of a grouping of municipalities. There are 30 of them. The size and the population of these groups vary greatly.

There is currently no elected political body at this level. Similarly, there is no decision-making or specific direction relating to the organisation or the operation of the care system at this level.

Conversely, it is to be remembered that the very large majority of the socio-demographic data and a large part of the health or social data are available at this geographic level.

Region

The regions correspond to the NUTS 2 level with wide variation in size (less in surface area).

The planned reform having been rejected, the regional level has no elected political body. It only relates to a management level devolved from the State. The areas of responsibilities assumed at this level do not directly cover the health and social fields. However, it is to be remembered that it has responsibility in terms of organisation and planning, which may inter-react, indirectly in the area, which concerns us.

As with the previous level, the majority of the socio-demographic and a good amount of the health data are available for the regions. On the other hand, there is no information or a health report production system at this level.

Health region

As stated above, this geographic level results from the 1993 reform.

There are five of these health regions. They vary in size. There is no democratic structure at this level.

Even though the major directions and decisions as regards health are made at the national level, the responsibilities devolved on this level are wide and cover both ambulatory care and hospital care and care and prevention equally.

All of the data available at the other level described is available at this level also. There is also additional data in terms of morbidity, mainly through registers.

Information systems exist and health reports are produced at health region level for certain specific health programmes.

Conclusion

Although the information as regards health is available at several geographic levels in Portugal, the independent health regions seem to be the level to be used as a priority for Portugal. Indeed, it is now at this level that a large part of the health system is being decided and organised. On the other hand, no local democratic structure is to be found at this level.

The geographic level of the region however is of interest: the availability of information and correspondence with a local democratic level and to a NUTS level support its usage. Conversely, no specific responsibility as regards health has evolved at this level.

Finally, the last geographic level explored, that of the community, does not appear as though it should be used even if information exists at this level and it corresponds to an NUTS level: not linked to a local democratic level ,no responsibility for health and the small size of this level.

Summary tables

Principal characteristics of the levels

	Community	Region	Health care region
Number of units	30	7	5
Population size			
Minimum	48 300	239 200	360 185
Average	330 070	1 412 500	1 720 718
Maximum	1 836 300	3 503 300	3 234 727
Standard deviation	359 817	1 452 175	1 392 239
Surface (km²)			
Minimum	779	779	4 960
Average	3 064	13 129	17 225
Maximum	8 503	26 931	24 662
Standard deviation	2 179	10 839	7 993
Correspondence with NUTS level	Yes	Yes	No
Exact correspondence to a NUTS level	NUTS 3	NUTS 2	
If no, nearest corresponding level			NUTS 2
Boundaries stability	Yes	Yes	Yes

Responsibilities regarding the management of health and social policies

	Community	Region	Health care region
Definition and management of policy regarding			
hospital care	No	No	Yes
ambulatory care	No	No	Yes
social services	No	No	Yes
health promotion	No	No	Yes
Public health reporting	No	No	Yes

Data availability

	Community	Region	Health care region
Health care professionals	Yes	Yes	Yes
Education of health care professionals	Yes	Yes	Yes
Health care structures	Yes	Yes	Yes
Health care utilisation	Yes for some items	Yes for some items	Yes for some items
Demographic and socio-economic data	Yes	Yes	Yes
Mortality data	Yes	Yes	Yes

Generic health status data	Yes for some units	Yes for some units	Yes for some units
Morbidity data	Only for transmissible diseases	Only for transmissible diseases	Yes for transmissible diseases and some other diseases
Biological factors and health habits	No	No	No
Living and working conditions	Yes	Yes	Yes
Data on prevention	Yes	Yes	Yes

References

Health care system in transition : Portugal . European observatory on health care system, Copenhagen, Denmark. 1999

Duriez M, Lequet-Slama D. *Les systèmes de santé en Europe*. Que sais-je n° 3343. Presses universitaires de France, Paris, France. 1998.

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Spain

Health care system

As set out in the 1978 Constitution, health care provision in Spain follows the principles of a national health service providing free health care to all citizens. In the 1980's Spain underwent important political and administrative changes with the creation of 17 Autonomous Communities. In the health sector, this decentralisation has led to a full transfer of competencies regarding health promotion and health protection to the 17 autonomous communities. Seven of the latter (corresponding to 60% of Spain population) also have competencies for the management of primary health care and hospital services. In the remaining autonomous communities health services are managed by the INSALUD, which is directly controlled by the Ministry of Health. For all areas of Spain, the national level is responsible for inspection, national co-ordination and for international relationships.

Primary health care is provided either by individual practitioners or by the more recently introduced multidisciplinary primary health care teams. In the former model, practitioners work part-time for the public service and are paid on a capitation basis. Conversely, members of the multidisciplinary primary health care team are salaried. They work in a primary care centre which provides a full range of preventive and treatment services to the population of a health zone. Access to ambulatory and inpatient specialised services is via referral from the primary health care level (gatekeeper). Around 70% of hospital care provision belongs to the public sector, and 18% to the private profit making sector. Hospitals depending from INSALUD receive global budgets whereas autonomous communities are moving towards funding mechanisms based on contract taking account activity levels and performance measures.

Local democracy

The three main levels of local and regional authorities in Spain are the Autonomous Communities (17), the Provinces (50), and the Municipalities (8097). Both levels have assemblies of elected representatives. Following decentralisation, Autonomous Communities enjoy exclusive competencies in a wide range of services such as : police, education, health, social welfare, housing, environment, transport, culture leisure and sports, and economic services. Provinces share competencies in several fields including hospital services, social welfare, housing, and culture leisure and sport. Municipalities are involved in as wide a range of competencies as that of autonomous communities, often under the authority of the latter. Some of the Autonomous Communities levy and collect taxes. They have powers to introduce surcharges on existing taxes and to introduce new taxes.

Responses to the ISARE questionnaire

Each Autonomous Community was approached individually and 12 out 17 provided information (corresponding to 83 % of the Spanish population) for the ISARE survey. Both Autonomous Communities and Provinces were taken into consideration for the first part of the survey regarding health social systems functioning. Answers from the questionnaire on data availability concern the Autonomous Communities only.

Autonomous Communities

As mentioned above, 7 Autonomous Communities, representing more than 60% of the Spanish population have substantial political and administrative competencies in the field of health planning. This covers hospital services, ambulatory care, social care and health promotion. For the remaining 10 Autonomous Communities, the regional governments have similar responsibilities for health promotion, but competencies regarding management of primary and hospital health care continue to lie at national level (INSALUD). Public health reporting is performed in the majority of Autonomous Communities, and in some cases, this is part of wider Health Strategy / Plan defined for the population of the community. The Autonomous Community levels correspond to NUTS level 2, and their boundaries have not changed in last ten years.

Recent and regularly updated data regarding health care professionals, structures and utilisation are available at Autonomous Community levels. Figures regarding nursing homes / elderly home care which can be more difficult to obtain. Several sources of information provide demographic and socio economic data, among which the population census (performed every ten year), the Municipal Registry of population (Padron municipal, performed every 5 years and reviewed every year), and the Active population survey, which reports on a yearly basis regional figures regarding economic activity and unemployment. The Mortality Registry provides data in all Autonomous Community and at national level on a yearly basis.

Some morbidity information is available from the communicable diseases notification system. This information can be analysed at Autonomous Community level despite usual limitations of notification systems regarding reliability and exhaustiveness. Better information is available for HIV/AIDS, which is monitored via a specific register. A national register of drug users provides information at Autonomous Community level. Population based cancer registries exist in 9 Autonomous Communities, but in 5 of them they only cover the population of one province. In some Autonomous Community, surveys or registers provide information on the prevalence of other chronic diseases such as asthma and diabetes.

Data on long-standing illness, disability, and smoking prevalence are available for all the Autonomous Communities via national surveys. In some Autonomous Communities, local surveys provide additional information on mental illness, biological factors (body mass index, blood pressure ...), and diet. Representative data on work and traffic accidents can be obtained from the national statistical office. Immunisation and screening coverage figures are available in each Autonomous Community. The scope may vary according to local policy, since for instance tuberculosis immunisation and cervical cancer screening are not organised in all Autonomous Communities.

Provinces

No responsibility for the management of health services lie at the provincial level when the Autonomous Community is composed by only one province. Provinces may share with Autonomous Communities responsibility for the planning and management of social services. No public health reporting is performed at this level, although some Autonomous Communities report health indicators at this level. Provinces correspond to NUTS level 3, and their boundaries have been stable in the last ten years.

Conclusion

The Autonomous communities represent an important level of local democracy and of public service planning and management. This includes most, if not all, aspects related to health and health care, although the level of competencies varies due to differing progress of the decentralisation. Public health reporting is performed at this level and a wide range of updated data is usually available for this function. Their boundaries have been stable and they correspond to the NUTS classification. Autonomous communities represent an appropriate level for the purpose of exchanging health indicators between regions of Europe.

Summary tables

(enter only factual answers such as : yes, +/-, no. If required, develop / comment in the preceding section)

Principal characteristics of the levels

	Autonomous Communities	Provinces
Number of units	17	52
Population size		
Minimum	263 644	172 236
Average	2 344 274	787 238
Maximum	7 236 459	3 478 803
Standard deviation	2 243 269	661 572
Surface (km²)		
Minimum	5 045	1 980
Average	29 694	9 731
Maximum	94 224	21 766
Standard deviation		
Correspondence with NUTS level	Yes	Yes
Exact correspondence to a NUTS level	NUTS 2	NUTS 3
If no, nearest corresponding level		
Boundaries stability	Yes	Yes

Responsibilities regarding the management of health and social policies

	Autonomous Communities	Provinces
Definition and management of policy regarding		
hospital care	Yes, but shared for 10 units	No
ambulatory care	Yes, but shared for 10 units	No
social services	Yes	Yes
health promotion	Yes	No
Public health reporting	Yes	No

Data availability

	Autonomous Communities	Provinces*
Health care professionals	Yes	Yes
Education of health care professionals	Yes	No
Health care structures	Yes	Yes
Health care utilisation	Yes	Yes
Demographic and socio-economic data	Yes	Yes
Mortality data	Yes	Yes
Generic health status data	Yes for some units and items	Yes
Morbidity data	Yes for some units and items	Yes
Biological factors and health habits	Yes for some units	Yes
Living and working conditions	Yes	Yes
Data on prevention	Yes	Yes

* Autonomous Communities are responsible of Health Information System and its management, but some of the information described above is available at the Province level.

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Sweden

Health care system

The Swedish health care system operates like a national health service with a high level of decentralisation. The objectives of, and demands upon the system are set out in laws passed by the Riksdag (the Parliament), but the responsibility for provision of health care rests primarily with the 21 county councils and to a lesser extent with the municipalities. The National Board of Health and Welfare is the government authority supervising health care services.

There is only a small private health sector. Whether publicly or privately provided, 80% of care is financed through taxation. The county councils receive financial support from the Government. The main source of funding, however, is taxes that the councils can levy on the income of their inhabitants.

The county councils are also responsible for public health and preventative services. This responsibility is, however, shared with the municipalities. Social services, and some long-term health care are the responsibility of the municipalities.

Local democracy

Below the national level there are two levels of political and administrative local authorities, county councils and municipalities. Currently there are 21 county councils and 289 municipalities. All of them are led by assemblies of locally elected people. These authorities can levy taxes on the income of their inhabitants and these taxes constitute their main financial resources.

The local authorities enjoy a substantial amount of autonomy for the management of services under their responsibility. These are mainly: general administration (e.g. statistical office), health care, culture, and public transport for the County Councils; social services, education, environment and sanitation for the Municipalities.

Responses to the ISARE survey

Responses were given for the levels of county councils and of municipalities.

County council

Most information regarding health care provision and utilisation is available at county level, can be accessed via a national source and is updated on a yearly basis. This also applies to demographic and mortality data. The Survey of Living Conditions conducted on an annual basis provides information on generic health status, as well as on specific diseases (e.g. Asthma) and impairments (e.g. vision and hearing disorders). However given the sample size of the survey, indicators at county council level are expressed as 5 year moving averages. Infectious diseases notification, cancer registers and occupational diseases are exploitable at county council level. Disease registers for diabetes or multiple sclerosis exist in some, but not all counties. National and local information systems gather data on traffic

accidents, whereas home-leisure accidents data is collected only in some counties. Immunisation coverage figures are held at national level and can be aggregated at county level. Whereas coverage figures for breast and cervical cancer screening are held at local levels.

Municipalities

Regarding demographic, socio-economic and mortality data, data availability at municipality level is similar to that at county council level. The situation is quite different for health care structure, health care utilisation and morbidity information which is scarce at the level of municipality. Exceptions relate to traffic accidents, occupational diseases, cancer registers, and coverage figures for immunisation, breast and cervical cancer screening.

Conclusion

The county council level appear to be the obvious contender for health information exchange at sub national level between EU Member states. Responsibilities for health care management and democratic representation coexist at this level. A wide range of relevant indicators can be produced for county councils which also correspond to the NUTS III category.

Summary tables

Principal characteristics of the levels

	County	Municipality
Number of units	21	289
Population size		
Minimum	57 428	2 746
Average	421 972	30 662
Maximum	1 803 377	743 703
Standard deviation	446 904	57 451
Surface (km²)		
Minimum	2 941	9
Average	19 568	1 487
Maximum	98 910	19 446
Standard deviation	22 980	2 485
Correspondence with NUTS level	Yes	Yes
Exact correspondence to a NUTS level	NUTS 3	NUTS 5
If no, nearest corresponding level		
Boundaries stability	Relatively stable	Relatively stable

Responsibilities regarding the management of health and social policies

	County	Municipality
Definition and management of policy regarding		
hospital care	Yes	No
ambulatory care	Yes (with municipalities)	Yes
social services	No	Yes
health promotion	Yes (with municipalities)	Yes
Public health reporting	Yes	Yes, but variable

Data availability

	County	Municipality
Health care professionals	Yes	No, only pharmacists
Education of health care professionals	No	No
Health care structures	Yes	No, only nursing homes
Health care utilisation	Yes for most items [*]	Yes for general information
Demographic and socio-economic data	Yes	Yes
Mortality data	Yes	Yes
Generic health status data	Yes	No
Morbidity data	Yes for some items	No
Biological factors and health habits	Yes for some items	No
Living and working conditions	Yes	Yes for most items [†]
Data on prevention	Yes	Yes

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* Data for private sector and bed occupancy figures are not available

† Dwelling size and dwelling with bath or shower not available

United Kingdom

Health care system

The National Health Service (NHS) provides the vast majority of health care to the population. The private health care sector accounts for only about 6% of all hospital admissions. The NHS is funded essentially through general taxation, and the budget is voted every year by the parliament. At national level, the Department of Health (DoH) designs major health care policies. Eight regional offices act as decentralised executive bodies. It is also at this regional level that operates that Public Health Observatories have been recently introduced, with a broad remit of monitoring health inequalities. At a lower administrative level, 99 Health Authorities (HA) have responsibilities for identifying health needs and managing the provision of health care. HA responsibilities have decreased as a result of successive reforms introduced in the 1990's. Health care providers such as hospitals, and community care organisations have acquired "Trust" status which has meant more autonomy as well as competition within the Health care market. The main purchasers are Primary Care Groups, led by General Practitioners, which provides primary care services and have autonomy for buying secondary health care.

Local democracy

In England, local government is represented by 115 Unitary Councils in some areas, or by the older two tiers system comprising 34 County Councils and 237 Districts Councils. These local authorities receive funding from central government. Additional income is provided by a local tax (the council tax) which is set by the local authority themselves. In areas where a two tiers system of local government exists, County Councils have responsibility for education, social services, police, fire, registration of births, marriages and deaths, consumer protection, libraries. Responsibilities of the District Councils include electoral registration, collection of council taxes, housing and allotments, environmental health and cemeteries and crematoria. All these functions (County and District) are under the responsibility of a single authority in areas with unitary local government.

Following devolution, Scotland and Wales, have assemblies with powers to pass legislation on a wide range of matters including health, education, economic development and transport. Due to the political situation in Northern Ireland, the situation is in flux.

In addition to County, District or Unitary authorities, all countries in the UK have parish, town or community councils. These units of local government have important advisory role, but few statutory functions and very little finance.

Responses to the ISARE questionnaire

Responses were provided for the levels of Health Authorities and of Local Authorities Social Services. The latter correspond to the unitary councils and county councils.

Health Authorities

At the time of the survey there were 99 Health Authorities in England, with an average population size of 500 000 inhabitants. The number and boundaries of Health Authorities have changed substantially in the past and this is likely to continue. Health Authorities boundaries do not correspond to the NUTS classification.

The role of Health Authority with respect to hospital and ambulatory care management has changed following the introduction of Primary Care Groups and Trusts. In each Health Authority, a Director of Public Health was in charge of producing an annual report on the Health of the population.

The overall level of data availability in the HA is high. Data regarding health care structures, professionals and health care utilisation are available for the public sector. This does not apply to the private sector which, as was previously mentioned, accounts for about 6% of total hospital admissions. This proportion is probably higher for some elective surgery procedures such as cataract operations and hip replacements. Also, activity data from Nursing Homes is not readily available. All demographic and socio-economic data can be aggregated at Health Authority level, although this is not necessarily done routinely (e.g. active population, number of unemployed). Notifications of infectious diseases are collected at local authority level which most of the times can be aggregated well enough to approximate health authority areas. Cancer registers data is postcoded and can therefore be aggregated at Health Authority level. Data related to general health functioning, biological factors and health habits can be derived from the Health Survey for England. This is a survey performed on a yearly basis, with a sample size of around 18 000 persons. Health Authority estimates can be derived by pooling together data from several years. Childhood Immunisation and breast and cervical cancer screening coverage figures are available at health authority level.

Local Authority Social Services (LASS)

As suggested by their name, the main remit of this administrative level is to plan and manage social services. Social services and HA get involved in joint planning when co-ordination between health and social care is required. No public health reporting is done at this level though. The 150 LASS correspond exactly to the NUTS classification level 3, with the exception of Greater London.

Because any postcoded data can be aggregated at whatever upper geographical level, no substantial differences exist between data availability at Health Authority or LASS levels. This applies to most data quoted for HA. However the issues of representativeness of national surveys such as the Health Survey for England or the General Household Survey is more acute at this level due to smaller population size compared with HA.

Conclusion

There are arguments in favour or against HA or LASS. Data availability does not discriminate between one level or the other. Boundary stability and correspondence with democratic power plead in favour of LASS. However the responsibilities of HA regarding health care planning and particularly the function of public health reporting strongly support this level as the most appropriate for health information exchange between regions in Europe. There are questions however regarding the future role of HA in the evolving NHS, the continuing process of boundary changes, and the absence of democratic accountability at this level. The regional level where public health observatories have recently been created, might deserve consideration at a later stage.

Summary tables

Principal characteristics of the levels

	Health Authorities	Local Authorities Social services
Number of units	99	150
Population size		
Minimum	128 231	2 086
Average	502 554	331 672
Maximum	1 013 177	1 344 023
Standard deviation	190 020	251 741
Surface (km²)		
Minimum	34	3
Average	1 317	870
Maximum	8 306	8 038
Standard deviation	1 549	1 509
Correspondence with NUTS level	No	Yes
Exact correspondence to a NUTS level	No	NUTS 3*
If no, nearest corresponding level	NUTS 3	
Boundaries stability	No	Relatively stable

* in the majority there is an exact match with NUTS level 3 with exception of Greater London - inner and outer where the geographical units correspond to NUTS level 4

Responsibilities regarding the management of health and social policies

	Health Authority	Local Authority Social services
Definition and management of policy regarding		
hospital care	Yes	No
ambulatory care	Yes	No
social services	No	Yes
health promotion	Yes	No
Public health reporting	Yes	No

Data availability (to be completed)

	Health Authority	Local Authority Social services
Health care professionals	Yes	
Education of health care professionals	Yes (by medical schools)	
Health care structures	Yes	
Health care utilisation	Yes (except private sector, nursing home)	
Demographic and socio-economic data	Yes	
Mortality data	Yes	
Generic health status data	Possible	
Morbidity data	Yes	
Biological factors and health habits		
Living and working conditions		
Data on prevention	Yes	

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Post survey note:

In April 2001, the 99 health authorities in England were abolished and replaced by 302 primary care trusts. At the same time regional public health responsibilities were transferred to nine Government Office Regions. The eight NHS regions were abolished. In the future there will be nine public health observatories based on the Government Office Regions. These regions are relatively stable and in the future are likely to form the basis of devolved regional government (subject to referendum). London already has an elected assembly and an elected mayor.

There are also changes to health structures in Scotland and Wales, which now are significantly different to those in England.

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