Health indicators in Europe: availability and data needs

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Background: The European Union (EU) lacks adequate capacity for public health monitoring. The creation of a stable European Health Information System would help Member States to carry out evidence-based health policy. Such a system would also benefit EU health priorities by providing European wide comparable information. This study is the first comprehensive assessment of the availability of general health data in Europe. Methods: The main aim was to assess the availability of the European Community Health Indicators (ECHI) in each EU Member State. This was done by means of a review of international health databases, an online survey and face-to-face discussions with experts in 31 European countries. Results: The European average availability score for all ECHI indicators was 74% ranging from 56% to 84%. In most countries, about half of the ECHI indicators can be derived from routinely collected health information. This is true for demographic information, mortality and hospital discharge-based morbidity. However, many important ECHI indicators are lacking in most European countries. These include population representative data for health determinants, the provision and use of health care services, injuries, the quality of health care and health promotion. Conclusion: Valid health information is essential for improving people’s health across Europe. There is an urgent need to develop harmonized methods for gathering and disseminating representative health data. These methods should be developed jointly by DG Health and Consumers, Eurostat and EU Member States.

Introduction

A useful health information system integrates health data from various sources and as such is the backbone of effective, evidence-based public health policy-making.1 2 It is known that reductions of risk factors significantly reduce morbidity and mortality.3 4 The availability of representative population-based health data is a prerequisite for identifying public health problems at community level.5 Nevertheless, rather than basing their health policies on health determinants, most countries continue to rely on traditional mortality figures due to the lack of health data for many indicators. This reflects different historical developments and needs for information.6

The aim of this study was to assess the availability of the European Community Health Indicators (ECHI) in Europe. Much has been done in the recent decades to improve the availability and comparability of health data in Europe, including the creation of the WHO’s Health for All statistical database. Health data are currently gathered and disseminated by WHO, Eurostat and OECD,2 3 and many other international organizations also collect data about specific areas of health. Both the lack of organization and coordination in this field, and the differences in indicators, data collection and calculation methods, have caused much confusion.

The first step on the road to harmonization was the launch of the European Commission’s first Health Programme in 1993. Under this programme, projects were financed to develop harmonized health indicators.7 8 In 1996, at the request of the European Parliament, the European Commission set up a working group to draft a proposal on how to organize health monitoring in the European Union (EU).9 10 Next year, the Amsterdam Treaty of 1997 provided harmonized instructions of the public health responsibilities for the Member States.11 12 At the same time, a succession of infectious diseases epidemics had created rising public expectations and awareness of the need for health monitoring and disease control.

While most EU-funded health projects have been concerned with specific diseases or health determinants, the multi-phase action ‘European Community Health Indicators’ (ECHI, ECHI 2, ECHIM and Joint Action for ECHIM) has taken a more comprehensive approach. It aims to establish the core of a European health monitoring system by defining and implementing common health indicators. During 1998–2008, these projects joined forces with experts from all Member States to develop a list of 88 most preferred health indicators in Europe (ECHI indicators).13 14 Since 2009 work has been ongoing to define these indicators more accurately, and to implement them in all EU Member States. The focus of ECHI indicators is on general public health issues and they are designed to provide a comprehensive overview of health.15 16 For more specified purposes other agreed indicators are needed.
Methods

ECHIM Country Reports (2006–07) were prepared based on the information in international data sources (Eurostat Health Database, WHO Health for All, OECD Health Data) as well as some topic-specific databases to gain an overview of the availability of ECHI indicators in each country. The data were submitted for review to the national contact persons in all 27 Member States and in 5 other European countries. Most of them were employed at public health institutes, statistical offices and ministries of health. They were instructed to consult other experts in their country if necessary. The Country Reports helped to identify data availability, gaps and relevant data sources.

In 2007, the ECHIM Survey was carried out to gather information about health data and data sources that could not be derived from the international sources used. Indicators known to be available according to the ECHIM Country Reports were not included in the survey. The list of indicators covered in the ECHIM Survey differed slightly from the list of ECHI indicators, since it also included some additional topics. The online survey is available at the ECHIM website (www.echim.org). It included questions on (i) the availability of health data, (ii) possible new national data sources and their accessibility and quality, (iii) organizations gathering data, (iv) institutions producing health statistics, (v) details of health information and health reporting systems, (vi) future expectations and (vii) respondents’ ideas of how to implement the ECHI indicators in their country. Like ECHIM Country Reports, also the survey was e-mailed to the country contact persons for review. Responses were received from 31 of the 32 countries. The quality of the replies varied widely; some were rather general statements, others were highly detailed. Nevertheless, all provided a good overview of the topics concerned.

ECHIM Bilateral Discussions were held in 2008 to clarify and complement the submitted survey replies. Based on the issues covered in the ECHIM Country Reports and ECHIM Survey, these face-to-face discussions were held with national contact persons from 18 Member States. They typically lasted ~1 h. In the other 13 countries, outstanding issues were addressed by means of e-mail correspondence. The national contact persons who took part in the Bilateral Discussions were the same as those replying to the ECHIM Survey. The discussions were closely structured around the previous survey questions and responses.

Overall, the study identified what types of additional health data not found in the international databases were available in each Member State, and from which sources the current health information was derived. It also gave an overview of the health information system in each Member State, and provided a starting point for future implementation of indicators in the countries.

The results of the study are based on all three methods of data collection. In the analyses, an indicator was considered to be ‘available’ when relevant data were available in at least one national or international database. All ‘positive’ information of indicator availability information was considered, including cases where data were reported to be only ‘partly available’ or ‘expected in the near future’. The indicator definitions were not necessarily consistent with the ECHI definitions. Instead of identifying exact matches, this research assessed the availability of each type of health information in the country concerned, even if that information could not always be obtained by carefully constructed indicators. For example, for home/leisure injuries and limitations in usual activities, information could not always be obtained by carefully constructed indicators.

At the time of the collection of this material, in 2008, 11 of the current 88 ECHI indicators were not available in any country (Supplementary Appendix 1), either because there was no agreement on indicators or measurement methods or because the indicator was added to the ECHI list after 2008. Furthermore, the combined indicators, such as health expectations were not included in the analyses. Demographic and socio-economic indicators (nine indicators) were also excluded from the analysis as they are generally available population-level indicators. In total, 68 indicators were analysed. For several indicators, identical data were found in various international and national databases. The analysis was always based on the data source that gave the highest values.

Results

The ECHIM Survey and Bilateral Discussions showed that the major international databases gave an incomplete picture of the availability of health data in the EU. Many countries had relevant national data, but those data were not recorded in international databases.

Figure 1 shows the overall availability of the data needed for ECHI indicators in European countries, reported by indicator group. The percentages indicated are unweighted means for all 31 countries. The findings are divided into eight groups of ECHI indicators, according to topic areas. The classification of the ECHI shortlist has been reorganized in order to simplify the presentation. The detailed list of the indicators is available in Appendix 1.

Interventions in health care

The data were readily available as part of routinely collected information in almost all countries. They were drawn from registers and national health interview surveys (HISs). Information on vaccination coverage was widely available from the European Centre for Disease Prevention and Control (ECDC).

Mortality

Data were routinely collected and available in almost all countries.

Morbidity and functioning

Data were widely available. In some cases they were available from registers and health examination surveys (HISs), but mostly from national HIS. Information on communicable diseases was widely available through the ECDC.

Health determinants

Data were available in almost all countries. They were mostly collected through national HIS, meaning that direct observations (measurements) of risk factors were not available at the national level. Some countries had access only to register information (e.g. sales statistics) instead of individual-level consumption data. Cardiovascular diseases (CVD) are the leading cause of all deaths in the EU. Data on the risk factor of CVD (BMI, physical activity, smoking, blood pressure) were available in most European countries. However, this is not the whole truth. In most countries, these data were not obtained from HES, but from self-reported interview and mail questionnaire surveys. Furthermore, when HES data were available, they were usually drawn from certain communities and regions and, thus, were not nationally representative. The most important international effort (WHO Monica) to obtain health examination-based CVD data dates back >15 years.
Provision and use of health care
Data were available in two of the three countries. The main sources of data were hospital statistics and registers and HIS. Basic hospital data were available in all countries. Data availability was poorest for mobility of professionals, other outpatient visits than to general practitioner (e.g. visits to dentist, psychologist or medical specialist), medicine use and expenditures on health.

Injuries
Data could be extracted from national registers and HIS, and they were available in two of the three countries. The incidence of suicide attempts, however, was mostly unknown.

In the following two paragraphs, we will more closely analyse two groups of indicators whose overall availability was poor (<50%).

Quality of health care
Data for ECHI health-care quality indicators (figure 2) were drawn from hospital and cancer registers and national HIS. They were available in only half of the European countries.

Although these indicators do not provide a comprehensive picture of overall health-care quality, they refer to a wide range of quality issues as they have been measured both in research studies and at the level of health-care systems. 75% of the countries had data for cancer survival rates, 69% for surgical wound infections and 38% for diabetes control. These findings show that in many countries the needs of clinical practice have had an impact on health information. Forty nine per cent of the countries had data on equity of access, which reflects the political interest of health-care provision. Poor availability of data on waiting times is clearly due to that they just recently become an issue in the official health policy agenda.

To measure and compare quality of health care in and between European countries is a demanding exercise, which can be mastered only by the high-quality research and by implementing the indicators in all Member States.

Health promotion
Just as the indicators on quality of health care, ECHI indicators for health promotion need much further development. Data were drawn from policy documents and health programmes, and they were available in only one-fifth of the countries.

It is bewildering that one of the most important parts of European health policies has been neglected. In most European countries, only some aspects of health promotion policies and actions can be described by specific indicators. One explanation may be that health promotion activities are often integrated into other health-care activities, so that indicators of their resources, processes and outcomes cannot be recorded separately. This tends to be true for activities, which are not carried out under separate organizational frames. For example, as since the 20th century, most countries have had excellent maternity and child welfare services, national screening and vaccination programmes, a fair amount of data on them are available. European comparisons of health promotion are hardly feasible, but policy documents and site visits help the experienced observer to gain a valid insight. Both in the countries and at EU level, much research and development work is needed to enable the assessment of the true extent and nature of such health promotion.
**Availability of data for ECHI indicators by country**

The availability of data for ECHI indicators was also reviewed separately for each country. Figure 3 shows the overall data availability for ECHI indicators across Europe. The analyses covered 31 European countries. The ECHI indicators were widely available, but none of the countries reported having access to all of them. The European average score for all ECHI indicators was 74%, ranging from 56% (Turkey) to 84% (Denmark and Finland). Overall, data availability were better in Northern and Central Europe than in Eastern and Southern Europe. Overall, data availability did not differ between the EU-15 (79%) and the EU-27 (76%).

**Conclusions**

**Main observations**

ECHI indicators were widely available in the European countries surveyed, but no country reported having a full set of indicators. In most countries, about half of the ECHI indicators could be drawn from routinely collected register or statistical information. This was true for demographic information, mortality and hospital discharge-based morbidity. However, several European countries lacked appropriate data on health determinants, the provision and use of health care, the quality of health care and health promotion. In addition, although, the reduction of health inequalities is a major policy objective, most countries are not in the position to link information on individuals’ socio-economic status to any health problems, except by research studies. Without major improvements to their health information systems, most EU countries cannot base their health policy on evidence.

Differences in the availability are due to the varying interest and historical background in the countries. Much work is needed to integrate international databases with a view to creating one joint health data set for Europe. One of the most important tasks of the European health monitoring system is to help Member States to execute their public health responsibilities by providing comparable information for benchmarking, but also to benefit EU health policy at large. Implementing relevant health indicators is an essential starting point in this effort.

**Health surveys to complete the missing data**

Registers and statistical information systems are important sources of health data, but both national HIS and HES are additionally needed to provide comprehensive information on morbidity, functioning and health determinants in the whole population. It is well-known that due to cultural differences in cognition and communication, self-administered health questionnaires produce very different results in various European countries. Furthermore, information obtained from interviews is often not consistent with other empirical findings. A recent European Parliament and Council regulation states that EU Member States shall use ECHI indicators when delivering health data to the European Commission. In addition to ongoing ECHIM and national efforts, there are two major European actions that are expected to help Member States to gather most of the data for ECHI indicators that are still lacking: EHIS (European Health Interview Survey) by Eurostat and EHES (European Health Examination Survey), for which an ongoing pilot study has been funded by the European Commission. Both EHIS and EHES will help to improve both health data coverage and comparability. Surveys also provide health data by socio-economic status. Until today, national HISs have been carried out in most European countries, but national HESs only in 10 European countries. In addition, there are some regional HES in the EU Member States, but they are not representative for the whole population.

After the first EHIS round (2006–2009) with voluntary data collection, EHIS will become mandatory for all Member States in 2014. EHES pilot studies are being carried out in 12 European countries by 2012. At present, the comparability between previous national surveys is limited because of differences in survey methods and participation rates. Improved comparability will require joint methods and standardization, which EHIS and EHES can provide in the near future.

**How did we succeed?**

Our work has improved the understanding of the availability of health data needed for ECHI indicators, both from a national and international perspective. We have created a solid platform for implementation of the ECHI indicators in European countries, and ultimately for developing the core of a European health information system.

Our results may have been adversely affected by the lack of fine-tuning between the three methods used and by the incomplete definitions of some ECHI indicators. It is also noteworthy that we based our work on the ECHI indicators: had we assessed the availability of other sets of health indicators, the outcome would no doubt have been slightly different. As a matter of fact, in 2008, there was still a need to improve the ECHI indicators and their definitions. These improvements are being made by the Joint Action for ECHIM (2009–2011). Furthermore, since we included indicators ‘available in the near future’, our results may give an overly positive picture. After 2008, when our study was carried out, many European countries were faced with economic recession, and in many cases the planned improvements of the health information system were postponed. On the other hand, if the contact person was not fully aware of all the nationally available health data sources in the country, our picture of the situation in the country may be too pessimistic. Therefore, it is important to continue with more accurate availability assessments during the implementation of health indicators in each country.

**Next steps**

Much work is still needed at EU level and in the Member States in order establish a stable European health information system. However, the resources needed to this work are much smaller than the expected importance of the outcome—even in economic terms. Implementation of the ECHI indicators and other relevant health indicators are a pre-condition for evidence-based health policy in the individual Member States and at EU level. The European Commission gave its strong support to the implementation process at the start of 2011 by recommending that Member States shall implement health information based on the ECHI indicators. Recently, work has been continued to improve the definitions of ECHI indicators and to elaborate on the documentation. Member States have now a proper basis for implementing the indicators. Several countries already have highly advanced health information systems in place that provide a solid and suitable foundation for the new integrated system. Other countries still need to invest more work. Some financial support from the European Commission would help to speed up the implementation. At present, the emphasis must be on ensuring continuity for the development work and the maintenance of its results.

Data comparability of health information between Member States depends among other factors on indicator definitions, actual measurements, data collection methods, data sources, subjective components and cultural factors. Some work is currently ongoing to assess the comparability of EHIS and EHES data, but scientific comparability reviews are also needed for other ECHI indicators between the European countries. Comparability should be evaluated between population groups, between countries and over time, but this is a demanding task requiring sophisticated methods.

Finally, no information system makes sense unless the data are processed and disseminated. Health reports at EU level and in the Member States are currently too heterogeneous and based on data that happen to be available. Europe needs a uniform system for data gathering, analyses, dissemination and interpretation for public health policy. The European Commission has recently launched the HEIDI data tool to present European health data by means of charts, maps and tables. This could be one of the sustainable elements of the future European health information system.
Supplementary data
Supplementary Data are available at EURPUB online.

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Key points
• To create a permanent health information system is one of the main goals of the Public Health policy actions. Currently there is no such a system available in Europe. It should support Member States to implement their public health responsibilities, improving citizen’s health or giving a picture of the health of their population. Such a system also benefits EU health policy at large.
• The availability of data for European core health indicators (ECHI indicators) differed widely both between the topics and between the countries. In many EU countries, health planning is based on mortality data, quite scarce morbidity data and scattered information on health determinants. Health policies and programmes can be properly targeted only if there is representative information also on health behaviour, risk factors, the occurrence the major chronic diseases and functioning.
• The availability of ECHI data was poorest in regard of the quality of health care and health promotion The EU average availability was between 20% and 45%. In most countries, these are the developing areas of the health information systems.
• The overall availability of data for ECHI shortlist indicators was better in Northern and Central European countries than in Eastern and Southern Europe.
• Long-term efforts are still needed both in the countries and at the EU level to create the permanent health monitoring system. This article presents a vision of the ECHIM experts about such a system.

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Healthy action against poverty: a descriptive analysis of food redistribution charity clients in Berlin, Germany

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Background: The socio-economic gap and its associated health inequalities are increasing in Germany. Actions against poverty include the redistribution of foods through charities. One project supported by the main German food redistribution charity is offering fresh produce including mostly fruits, vegetables and bread to people receiving welfare in Berlin, Germany. Methods: Through retrospective analysis of monthly visits (from January 2006 to June 2010) data from 45 surplus food redistribution points was examined. Clients’ health status and health behaviour were examined using self-report questionnaires. Results: On average, 10 485 people visited the 45 food redistribution points weekly. A monthly increase of ~900 additional clients per week over all distribution points could be observed since 2006. The percentage of retirees (28.2%), single parents (20.6%) and families with children (29.5%) was high. The results of the self-report questionnaires (n=101) revealed a sample population with a high percentage of smokers (59.4%) and moderate to heavy alcohol consumers (58.8%). Buying additional fruits and vegetables to those received through distribution points and eating breakfast regularly was associated with significantly better self-rated health status. Conclusion: Especially, vulnerable groups appear to supplement their diet with fresh produce from food redistribution points. The health status of the sample population is somewhat different from the German population with more unhealthy behavioural patterns. Future research is necessary to further investigate this impoverished population with increased health risks.

Introduction

Lifestyle-related diseases such as obesity and cardiovascular diseases are increasing in Germany as well as globally.¹,² One major contributing factor to these developments is a diet generally too low in nutrients and vitamins but conversely with high energy density. There is evidence that socioeconomically disadvantaged people, in particular, eat an inadequate unhealthy diet.³–⁷ Consistently, there is evidence for the association between lower socio-economic status and poorer self-rated health status in many countries.⁸,⁹ Since healthy foods are often less affordable than processed foods such as snacks, fast food and sugar-sweetened beverages, people with financial constraints tend to eat a diet with more refined grains, added sugars and fats.⁵,⁶,¹⁰ For Germany, it is shown that the socio-economic gap and the associated health inequalities are increasing.¹¹,¹² This puts equitable access to health-related quality of life across the entire society into question when it comes to healthy diet.

To help people in need, non-profit-making food redistribution centres provide food assistance for disadvantaged groups of society in numerous high-income countries. So far only few studies have examined the effect of these food assistance programs on health effects associated with poverty.¹³ In Germany, the Berliner Tafel e.V. was started in the mid-1990s as the first non-profitable food redistribution centre aiming at providing surplus food to those in need. More than 800 food charities have been established on the Berliner Tafel e.V. concept in Germany since and collaborate with each other under the umbrella of ‘Die Tafel’ movement.

In 2004, ‘LAIB und SEELE’ was started as a joint project of the Berliner Tafel e.V., parochial facilities and the regional radio station Rundfunk Berlin-Brandenburg (RBB). The project is offering surplus fresh produce on a weekly basis to impoverished people at distribution points in Berlin, Germany. The offered produce are mostly collected from supermarkets and farmer markets and include mainly fruits and vegetables with minor damages affecting sales or left over foods from overproduction (e.g. fresh baked bread, seasonal fruits and vegetables).

The objectives of this study are to analyse the usage trends of this LAIB und SEELE project over time and to describe a sample of their clients in regards to health status and behaviour influenced by general health conditions and dietary aspects.

Methods

Two separate methodological approaches were used in conjunction and are outlined in the following.